REPUBLIC OF RWANDA

MINISTRY OF INFRASTRUCTURE

FINAL REPORT

ON

Transport Sector Strategic Plan for EDPRS2

KIGALI: JUNE, 2013

Executive Summary

Background

Rwanda is a landlocked country and far from the maritime ports having the nearest port of Dar-Es-Salaam approximately 1 400 km away. The country lacks a link to regional railway and Inland Water Transport (IWT), which means most trades are conducted by road. Moreover, the country is fully dependent imported fuel for transport. Consequently transport costs of imports and exports are high and these have negative impacts on the economic growth and development of the country. Transport is therefore considered as a strategic sector to enable the expanding of the Rwandan economic base from predominantly agriculture based into the secondary and the tertiary sectors.

Transport infrastructure in Rwanda is comprised of the following: (i) Road transport, which until now is the main form of passenger and goods transportation, with a network of about 14,000 km corresponding to a road density of 0.53 km/km², (ii) Air transport with, one international airport and six aerodromes spread across the country, and (iii) lake transport, which is limited mainly to Lake Kivu. Rwanda does not have a rail transportation system.

The transport service sector in Rwanda is rather informal and uncoordinated. Although at present there are 41 companies and cooperatives, the major market share of vehicles come from individual operators. In terms of total available seat capacity, the individual operators provide 70% of the supply.

When it comes to public transport for intercity and urban public transport, it is distinctively essential to the economic growth of Rwanda that an efficient transport system is in place for the movement of its citizens. Again, it is also essential to ensure accessibility and mobility of people in remote rural areas regardless of level of demand by providing the basic public transport service.

Rwanda's limited capacity to generate trade and in turn the capacity to stimulate the demand for logistics services is exacerbated further by the fact that existing export product value chains under Rwandan control is at the downstream rather than the upstream where more value adding activities usually take place. It is therefore difficult to develop an efficient freight transport system considering economy of scale.

While developing the Strategic Transport Plan for EDPRS-2, efforts were made to develop an integrated transport system for economic development and poverty reduction.

Methodology of the Strategic Plan

In order to develop the Transport Strategic Plan for EDPRS-2, a "Bottom-up Approach" has been adopted. The main steps for the bottom-up transport planning process will be as follows:

1) Establish goals;
2) Identify of needs, problems and opportunities;
3) Develop thresholds/criteria;
4) Develop options/solutions;
5) Rank problems and corresponding solutions;
6) Develop the Action Plan for Implementation of the solutions;
7) Implement the recommended solutions;
8) Regularly monitor and evaluate performance with respect to objectively verifiable indictors; and
9) Modify the plan if necessary

Current Status of the Transport Sector

The current status of the Transport sector in Rwanda is outlined in brief in the following sections.

Gaps in Current Transport Policy and Strategy

The key weakness of current transport policy and strategies are as follows:

- Lack of proper logical framework linking policy, strategy and programmes;
- Lack of direction for introduction of market forces;
- Lack of direction for special needs for a land-locked country;
- Services not separated from infrastructure;
- No mode-specific transport policy;
- Types of regulation are not properly defined;
- Policy silent on facilitation and logistical support;
- Human resource development- no structured planning approach for skills development and training;
- Modal preference - no provision in the policy to develop other modes of transport;
- Lack of details in policies of funding of transport; and
- Sustainability – issues related to sustainability need to be elaborated upon

Weaknesses in Common Performance Assessment Framework (CPAF) indicators

The performance of the transport sectors against its objectives are assessed annually with respect to CPAF indicators. It appears there are number of deficiencies of the CPAF indicators as follows:

- There are no indicators for other modes of transport except road transport;
- The CPAF indicator assign only a single combined index for road condition for classified National Road without making any distinction between paved and unpaved roads;
- There are no performance indicators for feeder and urban roads;
- There are no performance indicators for transport services and provisions; and
- There are no indicators for connectivity and accessibility.

Current Condition of the Riding Quality of Classified Road Network

The condition of National Paved Roads is very good having 95.6% in Good condition. The conditions of National unpaved and District roads, which are also unpaved roads, are not satisfactory. The percentages of National unpaved and District roads in Good condition are 40.6% and 37% respectively. It is therefore apparent that efforts should be concentrated to improve the condition of unpaved roads.

Assessment of Road Capacity and Continuity of the Current Road Network

National Road Network is operating at undesirable levels with 11.1% and 88.9% of the total length of road network being analysed operating at a LOS E and F respectively. It is therefore clearly evident that the LOS of the road network of Rwanda is not satisfactory.

Status of Axle Load Control Regime

It appears from the past studies that the overloading is one of the main reasons for this early damage of the paved road network. According to the main study, which was conducted by Egis BCEOM in 2009, the heavy goods vehicle (HGV) category with 3 axles on average exhibited the highest percentages of overloading. The study analysed that about 5% (from Kigali) and 25% (to Kigali) of axles load fall in axle load classes of 12 to 14 tons and hence exceeding axle load limit of 10 tons.

Aviation Network

There are seven functioning airfields in Rwanda at present, i.e. Kigali International Airport and the other local airdromes in the national airports network are Kamembe (Rusizi), Rubavu, Ruhengeri, Butare, Gabiro and Nemba.

Due to the limited capacity of the current international airport which is anticipated to be reached by 2015 and other limitations, a new international airport is being planned at Bugesera about 40 km South-East of Kigali. It is essential to upgrade other airdromes to meet growing traffic demand.

Inland Water Transport

At present there is no significant inland waterway in Rwanda. There are very limited Inland Water Ways (IWW) operations in Lake Kivu and Akagera River.

Rail Network

At present Rwanda does not have any railway line. The detailed design study on Dar es Salaam-Isaka-Kigali-Keza-Musongati railway line is currently underway.

Road Transport Services

In aggregate, individual operators and 41 companies including ONATRACOM provides 72,264 passenger capacities for public transport services in Rwanda. Out of the total supply capacity, individual operators are the dominant providing 70% of the total seat capacity.

Current Problems of Intercity Public Transport

The current problems of intercity public transport services can be characterised as follows:

- The current road public transport services are generally acknowledged to be inefficient and costly;
- Passenger transport services are uncoordinated;
- Most services emphasise access (multi-stops) at the cost of mobility;
- There is no mechanism in place to ensure quality service and customer care; and
- The whole intercity public transport industry is profit driven without any regard to quality of services.

Current Problems of Rural Public Transport

The general transport problems for rural public transport services mainly comprise:

- Poor quality of the mostly unpaved road network;
- Lack of accessibility of unpaved roads during rainy seasons;
- Private operators are reluctant to provide services because high investment costs, poor quality of roads and low passenger demands; and
- Passenger transport services are uncoordinated;

Current Problems of Public Transport Service of Kigali City

The main problems for public transport operation in Kigali City are as follows:

- No time table operation and appropriated layout of routes
- Inefficient and unconventional mini buses
- Absence of integrated ticketing and revenue sharing mechanisms for public transport service under a multi-route and multi-operator environment of the Kigali City;
- Lack of standard and coordinated taxi services;

- Rapid population growth and traffic increase but inadequate bus service
- Lack of well-designed pedestrian crossing facilities giving pedestrians and public transport more priority; and
- Lack of bus priority of dedicated bus lanes to give public transport priority.

Current Status of Freight Transport

Rwanda's road-freight operations have the following constraints:

- The road-freight market in Rwanda is very small and there are few transport operators;
- Rwanda is constrained from accessing global markets due to high transport costs as well as delays;
- Rwanda depends on quality of transport and transport procedures on corridors' and
- In addition trade-off between passenger and freight transport to reduce road congestion is also a critical factor for providing seamless freight transport services, particularly for Kigali City.

Current Status of Air Transport

- The Aviation sub-sector in Rwanda is currently characterized by scattered and limited public investment in across the sub-sector:
- The National Carrier (RwandAir) is currently at a start-up phase and will require a clear investment plan into the future in order to grow to its full potential and the number of international operators serving the country is still low.
- The Airports infrastructure and administration still suffers from serious public under-investment;
- The Regulatory authority lacks adequate investment in both human and institutional capacity to accomplish its mandate;
- General aviation and Cargo business are yet to establish in the Country;
- The national carrier, RwandAir has limited route network and therefore it does not enjoy economy of scale. It depends on government financial support to maintain its operation.
- Private investment in the sub-sector is still very low.

Challenges of Transport Sector in EDPRS-1

The key challenges of the Transport sector during EDPRS-1 period were as follows:

- Coordination of transport agencies was not very smooth as they have different roles and responsibilities;
- Monitoring of the activities of the sister agencies by MININFRA was not very effective, and coordination of and monitoring of the sector appear to be difficult;

- The reporting and assessing the performance of the different sub-sectors of Transport sector were hampered due to lack of adequate indicators and targets;
- Unbalanced allocation of resources for paved and unpaved roads;
- No axle load control policy and strategy were in place;
- No reference laboratory to ensure the quality of construction and maintenance work in the Transport sector;
- Poor performance of local companies in the transport sector, apparently due to both inefficient human resources, institutional and financial capacity;
- Lack of coordination between RTDA, Districts and City of Kigali to monitor transport development initiatives of the local government institutions;
- The Transport sector Strategic Plans were not very well defined; and
- Budgetary allocation for unplanned projects poses a significant challenge.

Goals and Objectives of Transport Sector

The strategic goals and objectives of the transport sectors are given below:

Vision (Goal -1)

To gain modern infrastructure, cost effective and quality services, while ensuring sustainable economic growth and developing eco-friendly, safe and seamless integrated multimodal transport system for passenger and goods both at national and regional level;

Mission (Goal-2)

To contribute towards the realization of the economic development and poverty reduction objectives as formulated in strategic policy guidance, such as Vision 2020 and EDPRS, by the establishment and rational management of transport infrastructure and services

Objectives: To develop an integrated and seamless multimodal transport system considering key policy objectives, are as hereunder:

1. Economy;
2. Safety;
3. Environment;
4. Accessibility; and
5. Social Equity and Integration

Key Challenges of the Transport Sector by Order of Importance

In order to rank challenges and priorities in the transport sector, multicriteria analyses were conducted having the two goals at the higher level of the hierarchy and the five objectives at the lower hierarchy of the value tree.

The key challenges of the transport sector in accordance with multicriteria analysis are as follows:

1. Inadequate Mobility, Connectivity and Accessibility of Urban, Intercity and Rural Road Network;
2. Fragmented and uncoordinated of transport services, unreliable and inefficient operations, no clear service standards, financing and demand management system;
3. Over dependence on road transport and lack of priority of sustainable modes of transport;
4. Inadequate Provision for Social Equity and Integration in Transport Infrastructure and Service;
5. Inadequate accident and emergency investigation, mitigation and impact management system in Rwanda;
6. High transport costs estimated to be about 40% of the value of imports or exports;
7. Inadequate investment, institutional and human resource capability in air transport infrastructure and service provisions;
8. Quality control and assurance, monitoring & evaluation and coordination of development activities are inadequate; and
9. Delay in procurement, construction and project implementation process due to absence of proper mechanism and the shortage of qualified and experienced manpower.

Key Priorities of the Transport Sector

The key priorities of the transport sector by order of preference rating with respect to their relative importance as per multicriteria analysis are as follows:

1. To improve riding quality and LoS for Road Network;
2. To develop an integrated public transport system for Rwanda;
3. To develop an efficient and sustainable air transport infrastructure for Rwanda;
4. To develop an integrated multimodal transport system for Rwanda;
5. To Improve institutional and human resources capacity for land, water and air transport system;
6. To improve integration and social equity in transport infrastructure and service;
7. To develop an efficient and sustainable air transport service for Rwanda; and
8. To transform Rwanda into a Regional Freight Logistics Hub.

Linking Outcomes with Thematic Priority Areas

It appears that the vast majority, i.e. about 83.3% of outcomes belong to the 2 designated thematic areas, i.e. Accountable Governance and Economic Transformation for Rapid Economic Growth. Only 8.3% of the outcomes represent the Foundation area, i.e. priorities outside the designated thematic areas. Among the

thematic areas, the Accountable Governance represents the dominant area having a share of 50.0% of the total outputs. This is followed by Economic Transformation for Rapid Economic Growth, Rural Development and Productivity and Youth Employment with a share of 33.3%, 8.3% and 0% respectively.

Strategies for Improvement of Transport Network and Services

The following network scenarios were modelled and evaluated[1] in RSTMP (2012):

1. Base Case: Current Network
2. Alternative 1: Rail Scenario
3. Alternative 2: Improved Road links
4. Alternative 3: Quality Bus Corridors
5. Alternative 4: IWT Scenario
6. Alternative 5: All Projects

The NPV's for Alternative 1, Alternative 2, Alternative 3, Alternative 4, and Alternative 5 with respective to Base case are USD 1,147, -249, 15, -218 and 697 million respectively. This means although three alternatives are economically viable, the second best option, i.e., Alternative 5, which comprises all multimodal options has been chosen due to tactical reasons.

Strategies for Improvement of Intercity Public Transport Services

The key strategies for the development of Intercity road passenger services are as follows:

- A Quality Bus Service will be introduced as a dedicated service on 11 major corridors linking important cities and nodes within Rwanda providing a faster and more convenient service that would successfully compete with the private car; and
- A scheduled bus service will be employed to provide feeder services in low demand areas;

Strategies for Improvement of Rural Public Transport Services

The key strategies for the improvement of rural public transport services are as follows:

- To upgrade existing National and District unpaved roads into paved roads; and
- To ensure bus service in rural areas under a route franchising approach.

[1] RTDA (2012) "Rwanda Strategic Transport Plan", Final Report, Rwanda Transport Development Agency, Kigali, October, 2012

Strategies for Improvement of Public Transport Services for Kigali City

The key strategies for improvement of public transport services for Kigali City are as hereunder:

- Re-Organization & Improvement of Existing Modes and Public Transport Services;
- Consolidation, Formalization & Integration (Infrastructure, Schedules, Fares, Systems, etc.);
- Application of Route franchising approach;
- Implementation of Dedicated Bus Lanes (DBLs);
- Transform to Dedicated Bus Lanes (DBLs) for exclusive use by Dedicated Right-of-Way Buses;
- Implementing bus priorities at designated intersections; and
- Implementation of demand and supply management approach.

Strategies for Reduction of Fuel costs for Motor Vehicles

The fuel costs for motor vehicles in Rwanda are very high. It is therefore essential to conduct studies how to reduce fuel costs and hence the Vehicle Operating Costs (VOC) to reduce the total transport costs.

Two studies are therefore proposed during the EDPRS2 period as follows:

- Study on reduction of fuel costs for motor vehicle in Rwanda; and
- Study on alternative fuel and fuel efficient engine for motor vehicles in Rwanda.

Strategies for Transforming Rwanda into a Regional Logistics Hub

The key strategies for transforming Rwanda into Regional Logistics Hub are as follows:

- Reduction of non-tariff barriers for freight transport;
- Reduction of generalised travel time for export and import via sea ports;
- Improvement of freight logistic system for Rwanda and the extended market (Eastern DRC and Burundi); and
- Reinforcing Air Cargo Market Development.

Strategies for reduction of non-tariff barriers for International Transport

Strategies of the reduction of non-tariff barriers are, among others, as follows:

- To achieve and implement uniform transit transport policies and regulations by the member States;
- To take regional initiatives to reduce transit time in sea ports

- To take regional initiatives to expand the capacity of sea ports
- To establish an efficient customs transit regime;
- To reduce time and costs associated with transporting goods along the international corridors
- To ensure faster clearance of Cargo from its discharge to exit at the port of Mombasa and Dar es Salaam;
- To ensure border crossings posts operating and working 24 hours a day along international corridor routes
- To provide up-to-date information on stops, bribes, time delays, costs, security and safety encountered along the international corridor;
- To operationalize real-time information on stops and time delays monitoring on transport observatories;
- To develop improved quality of communications and advocacy with stakeholders;
- To establish more One-Stop Inspection Stations; and
- To introduce Electronic Cargo Tracking System (ECTS) Inter-face (Inter-connectivity) amongst Tanzania, Rwanda, Uganda and Burundi.

Strategies for Air Transport

The key strategies for the way forward in the Air transport are as follows:

RCAA Strategy:

- Enhance safety and security of air services
- Infrastructure expansion, up grading and maintaining airport infrastructure and facilities at par with international standard
- Strengthen legal and institutional capacity, and improve service delivery system

RwandAir Strategy:

- Increase of Aircraft fleet from 7 narrow bodied Aircraft to 12 including 3 wide bodied Aircraft
- Increases in Destinations served from 13 currently to at least 32 destinations
- Increase in staff complement from current 560 to the region of 1,000 employees
- Annual Revenues increase from $46m to $388m during the period

Capacity Building:

- Forming partnerships with educational institutions to provide aviation related knowledge and skills
- Facilitating establishments of Aviation Training Organizations such as flying schools, maintenance training organization, etc.

Strategies for Inland Water Transport

The key priorities for the development of IWT under an integrated transport system as per the analysis of RSTMP are as follows:

- The implementation of an advanced ferry system for both passengers and cargo vessels on Lake Kivu, serving the major communities along the shores; and
- The possible introduction of inland waterways navigation on the Akagera River, connecting Rwanda with Lake Victoria.

Monitoring & Evaluation for Implementation of the Programs of the Strategic Transport Plan

This M&E system will ensure the following key tasks:

- Statistics for Transport /Strategy policy making and updating;
- Baseline data and updated for Strategic Plan M&E system;
- Statistics data for projects and sector management (including financial data);
- Various information for different users of Transport; and
- Continuous monitoring and evaluation of the both financial and physical progress of different programs with respect to key indicators

Key Performance Indicators

At strategic level about eight key indicators may be adopted as follows:

(i) Indictor for riding quality for paved National roads (e.g. % of National paved roads in Good condition);

(ii) Indictor for riding quality for unpaved National roads (e.g. % of National unpaved roads in Good condition)

(iii) Indictor for riding quality for District roads (e.g. % of District road Class 1 in Good condition);

(iv) Indictor for service quality for urban public transport (e.g. Number of km of scheduled bus routes);

(v) Indicator for service quality for intercity public transport (e.g. Number of km of Quality bus routes);

(vi) Indicator for service quality for rural public transport (e.g. Number of km of scheduled bus routes);

(vii) Indictor for air transport infrastructure (e.g. Total passenger carrying capacity per year for all airports combined); and

(viii) Indictor for air transport services (e.g. Total number of passenger transported per year (all airlines combined);

Budget for Transport Plan for EDPRS-2

The estimated budget for the 2012-13 to 2017-18 of EDPRS period is RWF 1,664 billion which is about RWF 458 billion more than the most likely budget of the period (as shown below). It may be mentioned that transport service sector was largely ignored in EDPRS-1. However, it is essential to maintain a balance between development of infrastructure as well as service to ensure a reliable and sustainable transport system.

RWF '000	Total for 2013-14 to 2017-18 of EDPRS 2
Funds Available	
Government	**487,469,030**
Donor projects	**718,332,063**
Private sources	**0**
Other sources	**0**
Total	**1,205,801,093**
Existing Baseline Expenditure	**0**
Funds Available for EDPRS 2	1,205,801,093
Total Projected Cost	
National projects costs	**1,419,554,167**
Districts' project costs	**244,734,243**
Total	**1,664,288,411**
Overall Deficit/Surplus	**-458,487,318**
% Surplus/deficit	-38%

Participation of Private Sector in EDPRS-2

In the Strategic Transport Plan, efforts were made to ensure effective participation of private sector as follows:

- Participation private sectors for public transport service under route franchising approach by sharing the risk of profit and loss;
- Participation in financing road infrastructure development by toll road;
- Encouragement of public transport industry consolidation by providing tax rebate for importation of large standard busses;
- Training of local contractors and consultants on procurement and project construction management;
- Categorisation of contractor and suppliers on the basis of technical and financial capabilities;
- Conversion of ONATRACOM into a public limited company and availing shares for private sector entry in rural and urban public transport service;
- Develop 300 road site cooperatives for labour based routine maintenance of road network; and

- Participation of the Private Sector to Development an Effective Vehicle Fitness and Environmental Rating Control Regime.

Risk and Uncertainty Mitigation Measures

The estimated cost for the implementation is RWF 1,664 billion indicating the most optimistic scenario, which means very high risk venture with a potential deficit of RWF 458 billion;

The Cabinet has already approved the Public Transport Policy and strategy with an estimated cost of RWF 254 billion. Again, about RWF 85.2 billion will be required for the construction of 4 lane road from Kigali to New Bugesera International Air ports. External funding is essential for the project. With the potential funding for these key projects from the development partners, the risk would likely to be substantially reduced. As far as possible, infrastructure and public transport service should be funded through user charges and/or investments by the private sector. The value of indirect infrastructure/service related returns will also be considered.

In order to reduce delay in procurement and transport project implementation process, in the Strategic plan, the following mitigation measures have been adopted.

- Categorization and registration of conductors on the basis of technical and financial capabilities
- Training for 50 transport professionals and contractors on contract and project management;

Table of Contents

List of Figures

List of Tables

List of Maps

List of Abbreviations

AADT	Annual Average Daily Traffic
AMO	Aircraft Maintenance Organisation
BADEA	Arab Bank for Economic Development in Africa
BRT	Bus Rapid Transit
COMESA	Common Market for Eastern and Southern Africa
CPAF	Common Performance Assessment Framework
CSP	Country Strategy Paper
DBL	Dedicated Bus Lane
DRC	Democratic Republic of Congo
EAC	East Africa Community
EDPRS	Economic Development and Poverty Reduction Strategy
ETO	Ecole Technique Officielle translates 'Official Technical School'.
EU	European Union
FONA	First Order Network Assessment
GoR	Government of Rwanda
GPS	Geographical Positioning System
HCM	Highway Capacity Manual
HGV	Heavy Goods Vehicle
ICAO	International Civil Aviation Organisation
ICT	Information and Communication Technology
IMT	Intermediate Means of Transport
IRI	International Roughness Index
IWT	Inland Water Transport
LoS	Level of Service
MINECOFIN	Ministry of Finance and Economic Planning
MININFRA	Ministry of Infrastructure
NPTC	National Public Transport Company Ltd.
NTSIS	National Transport Sector Investment Strategy
ONATRACOM	Office National des Transports en Commun
OPEC	Organisation of Petroleum Exporting Countries
IATA	International Air Transport Association

IOSA	IATA Operational Safety Audit
OSBP	One Stop Boarder Post
PPP	Public Private Partnership
PT	Public Transport
QBC	Quality Bus Corridor
RCAA	Rwanda Civil Aviation Authority
RDB	Rwanda Development Board
RFTC	Rwanda Federation of Transporters Companies
RLDSF	Rwanda Local Development Support Fund
RMF	Road Maintenance Fund
RPTA	Rwanda Public Transport Authority
RSTMP	Rwanda Strategic Transport Master Plan
RTDA	Rwanda Transport Development Agency
RURA	Rwanda Utility and Regulatory Authority
RWF	Rwandan Franc
SADC	Southern African Development Community
SIP	Strategic Investment Programme
Swap	Sector Wide Approach
TOD	Transit Oriented Development
UNDP	United Nations Development Programme

CHAPTER 1. INTRODUCTION

1.1 BACKGROUND

Rwanda is a landlocked country and far from the maritime ports of Kenya and Tanzania. The distance to the nearest port of Dar-Es-Salaam is approximately 1 400 km. The country lacks a link to regional railway networks, which means most trade is conducted by road. Consequently transport costs of imports and exports are high and this has a negative impact on the economic growth and development of the country. Transport is therefore considered as a strategic sector to enable the expanding of the Rwandan economic base from predominantly agriculture based into the secondary and the tertiary sectors.

Although Transport sector is a strategic sector for Rwanda, it has an exceptionally high cost of transport at national as well as international levels, as well as insufficient affordable and accessible modes of transport for people in both urban and rural areas, which constitute major constraints that must be taken into account in the effort to achieve the short-, medium- and long-term development goals that Rwanda has mandated.

The current planning tools available in Rwanda, such as the Vision 2020, the Economic Development and Poverty Reduction Strategy (EDPRS-1), the National Investment Strategy (NIS) and the Medium Term Expenditure Framework (MTEF), take into account other tools of reference such as the Millennium Development Goals (MDGs) and the action plan of the Sub-Saharan Africa Transport Policy (SSATP). It also takes into account cross-cutting issues such as HIV/AIDS and environmental protection. The rehabilitation and development of transport infrastructure and services are regarded as crucial aspects to lower the costs of doing business in Rwanda.

Transport infrastructure in Rwanda is comprised of the following: (i) Road transport, which until now is the main form of passenger and goods transportation, with a network of about 14,000 km (including a classified road network of 4,698 km) corresponding to a road density of 0.53 km/km²; (ii) Air transport, with one international airport and six aerodromes spread across the country; and (iii) Lake transport, which is limited mainly to Lake Kivu. Rwanda does not have a rail transportation system, but the rail road systems of the neighbouring countries (Tanzania, Uganda and Kenya) which are used as transit routes, contribute to a certain extent for goods originating or destined for Rwanda in a multi-modal railway-road combination. The planned railway connecting Rwanda to the Tanzanian port of Dar es Salaam will provide a direct link to international sea transit routes.

The transport service sector in Rwanda is not well developed and consolidated. Although at present there are 41 companies and cooperatives, which operate different types of public transport vehicles, the major market share of vehicles come from individual operators. In terms of total available seat capacity, the individual operators provide 70% of the supply.

When it comes to public transport for rural, intercity and urban public transport, it is distinctively essential to the economic growth of Rwanda that an efficient system is in place considering the current reliance on road-based transport for the movement of its citizens. Rwanda is one of the least urbanised countries in the world, and for the rest of

the major centres in the country to grow there needs to be appropriate public transport connections between the capital city of Kigali and these cities. This will increase competitiveness of these areas by reducing the travel time to the urban markets. With the increased connectivity comes a reduction in the isolation of remote areas. Again, it is essential to ensure accessibility and mobility of people in remote rural areas regardless of their level of demand by providing the basic public transport service.

Rwanda's limited capacity to generate trade and in turn the capacity to stimulate the demand for logistics services is exacerbated further by the fact that existing export product value chains under Rwandan control is are the upstream rather than the downstream where more value adding activities usually take place. It is therefore difficult to develop an efficient freight transport system considering economy of scale

The transport sector contributes considerably towards poverty reduction and economic growth, and serves as support to other economic sectors. It plays a fundamental role in the economy of Rwanda as it contributes about 7% to the GDP, and represents about 15% of total service delivery.

1.2 PROCESS AND METHODOLOGY OF TRANSPORT STRATEGIC PLAN

In order to develop the Transport Sector Strategic Plan for EDPRS-2, a "Bottom-up Approach" has been adopted. This methodology aims to propose the untraditional planning approach in implementing integrated transportation demand and supply management measures for Rwanda. Although the public participation has been realized as an indispensable element of transportation planning process in the developed countries of the world for the last thirty years, this issue is still being considered in developing countries. It is the codification of existing social experiences, sociological theoretical order to achieve a well-defined goal. To serve every stakeholder group in the developed area of the project, any development policy must be directly oriented towards the problems in that specific area, and must be motivated and initially controlled from the bottom level. The conceptual idea of an integrated public transport system will be a bottom-up planning process[2] as shown in **Figure 1-1**. The citizens/stakeholders shall participate in every step of the public transport planning process, and the development and implementation of the project alternatives must be based on the basic community needs. The bottom-up approach will effectively take the citizens/stakeholders into the planning and implementation process. In order to develop an integrated transport system during the EDPRS-2 time period for Rwanda using a bottom-up approach, efforts will be made to involve all relevant stakeholders like City of Kigali, Districts, Ministry of Infrastructure, Rwanda Transport Development Agency (RTDA), Rwanda Utility and Regulatory Authority (RURA), Road Maintenance Fund (RMF), ONATRACOM, bus operators, taxi operators, motorcycle taxi operators and other stakeholders.

2 AUSTROADS (1991) Guide to traffic engineering practice: Local area traffic management, AUSTROADS, Sydney, Australia

The main steps for the bottom-up transport planning process will be as follows:

- Establish goals;
- Identify needs, problems and opportunities;
- Develop thresholds/criteria;
- Develop options/solutions;
- Rank problems and corresponding solutions;
- Develop the Action Plan for Implementation of the solutions;
- Implement the recommended solutions;
- Regularly monitor and evaluate performance with respect to objectively verifiable indictors; and
- Modify the plan if necessary

Figure 1-1: Basic Planning Process for Bottom-up for the Strategic Transport Plan for EDRRS-2

CHAPTER 2. OVERVIEW OF THE TRANSPORT SECTOR IN RWANDA

2.1 POLICY CONTEXT

The Rwanda's Vision 2020 and Economic Development and Poverty Reduction Strategy 2008-2012 (EDPRS-1) prioritize infrastructure development as a key driver of the country's national development aspirations of transforming into middle income status by 2020.

2.1.1 Vision 2020

In dealing with transport infrastructure the Vision 2020 addresses strategies to overcome the negative impact that Rwanda's landlocked status has on transport costs to the sea ports and the role that regional rail transport can play to alleviate this situation. It is essential to recognize that transport infrastructure and land use management are closely associated, as there is a need to ensure the land's optimal utilisation in urban and rural development as well as land for infrastructure.

2.1.2 EDPRS-1

The Transport sub-sector policy is also influenced by the Economic Development and Poverty Reduction Strategy (EDPRS-1) adopted to guide Rwanda's medium-term objectives over the 2008 – 2012 period towards economic growth and increase in the wellbeing of its citizens[3]. The development of an effective transport network at national and at regional levels, the diversification of the modes of transport, and improvement in the quality of transport services on the transport corridors will contribute to achieving the objectives of the strategy.

EDPRS-1 provides for a strategy framework as is also embodied in Vision 2020, the seven-year Government of Rwanda Programme and the Millennium Development Goals. One of the so-called 'flagship programmes' specifically addresses "Growth for jobs and exports", with a global objective to play a cross-sectoral role in partnership with the private sector to facilitate growth and reduce the incidence of income poverty through employment generation. A number of key policy interventions are found under the objective "Improve Economic Infrastructure", including the following:

- implement an appropriate institutional and legal framework;
- capacity building including improvement of monitoring and evaluation and the management of information systems;
- increase infrastructure capacity;
- ensure good quality service delivery;
- reduce cost;
- increase accessibility;
- ensure maintenance and sustainability of infrastructure and equipment;

3 Government of Rwanda Economic Development and Poverty Reduction Strategy, 2007

- improve safety.

In dealing specifically with the Transport sub-sector, the following objectives can be identified:

- improve transport links nationally and internationally;
- reduce and keep transport costs under control;
- improve the institutional framework and strengthen the capacity of partners involved in the sector;
- improve road safety;
- achieve sustainable financing of road maintenance; and
- maintain the roads rehabilitated or constructed with particular focus on the improvement of Rwanda's classified road network.

2.1.2.1 CPAF Indicators

The performances of the Transport sector against the objectives of EDPRS-1 are assessed annually with respect to Common Performance Assessment Framework (CPAF) indicators. The CPAF indicators for Transport, which were last updated in May 2011, are mainly concerned with the condition of the classified roads in "Good" condition as percentage of the total network. It appears that there are number of deficiencies of the CPAF indicators as follows:

- There are no indicators for other modes of transport except road transport;
- The first CPAF indicator assigns only a single combined index for road condition for classified National Road without making distinction between paved and unpaved roads;
- There are no performance indicators for feeder and urban roads;
- There are no performance indicators for the provision of transport services;
- There are no indicators for connectivity and accessibility; and
- There are no indicators for transport safety.

2.1.3 Millennium Development Goals

In 2000 the United Nations Millennium Summit took place where world leaders agreed to set measurable goals and targets for fighting poverty, hunger, disease, environmental degradation and discrimination against women. The goals were termed the Millennium Development Goals (MDGs), and provide for a framework for the UN system to work coherently together towards common goals.

In support of the MDGs, United Nations agencies together with other international organizations are mobilizing their efforts to ensure financial support and political will, re-engaging governments, re-orientating development priorities and policies, building capacity and thus paving the way for new and integrated initiatives to address the challenges facing the African Continent.

From the above it is evident that transport services and infrastructure and the maintenance and development of infrastructure play a vital role in achieving these goals. MDG-related transport targets and indicators were endorsed by the African Heads of State and Governments through the AU. These indicators will guide the transport strategies in identifying priority areas and setting targets. The key targets for 2015 include:

- Halving the proportion of the rural population living beyond 2 kilometres of an all-season road;
- Difference in average transport cost between Africa and Asia narrowed downward by 50 percent;
- Closing the inter-African highway gap.

2.1.4 Policy Focus of the Transport Policy of 2008

As part of the efforts to give clear policy and strategic direction to the sector, the Transport Sector Policy (MININFRA, Dec. 2008) was developed with the aim of contributing to the achievement of the national development goals indicated in the EDPRS-1 (2008 – 2012) and Vision 2020. The Transport Policy was aligned to the EDPRS, National Investment Strategy (NIS) as well as other development reference points such as the Millennium Development Goals and the action plan of the Sub-Saharan Africa Transport Policy (SSATP) Program. It also takes into account cross-cutting issues such as HIV/AIDS and environmental protection.

The Transport Policy of 2008 provides for principal "strategic axes" to guide the actions that will be necessary to give effect to the objectives. Strategic axes of importance to regional integration are:

- private sector to play a more important role in developing infrastructure;
- participation of local communities in maintenance of roads;
- support from decentralized entities that can assume their responsibilities in the management of the sector within the framework of established policies;
- taking into account regional dimensions and processes of integration currently in progress, in order to develop a transport sector that will benefit from opportunities offered and which respond to the challenges of the regional context; and
- reinforcement of the human resource capacities to build a viable transport sector.

2.1.5 Policy Gaps of the Transport Policy of 2008

The following key policy issues have been identified to which little or no reference has been made in the policy instruments of 2008:

a) Customer focus;

b) Introduction of market forces;

c) Separation of functions;

d) Excessive transport costs;

e) Special needs for a landlocked country;

f) Services separated from infrastructure;

g) Appropriate policy for public transport;

h) Mode-specific transport policy;

i) Integrated Multimodal transport;

j) Inadequate coordination between transport and land use;

k) Types of regulation;

l) Legal and regulatory framework of the transport services;

m) International conventions;

n) Facilitation and logistical support;

o) Regional initiatives recognized;

p) Human resource development;

q) Modal preference;

r) Funding of transport; and

s) Sustainability.

2.1.6 Fundamental Principles of the Proposed Transport Policy

After a comprehensive review in Rwanda Strategic Transport Master Plan (RSTMP 2012) and stakeholder consultation, the fundamental principles of a new Transport Policy have been set up. The policy must express itself on a number of fundamental principles on which the policy should be founded. The basic principles should include statements on the following issues:

(a) Transport policy to be fully integrated;

(b) Establishing legal ownership;

(c) No specific modal choice and preference;

(d) Focus on the user of transport services;

(e) Separation of functions;

(f) Market-based solutions; and

(g) Least total cost.

On the basis of these fundamental principles, a detailed multimodal and mode specific transport policy has been proposed in the Transport Sector Retreat of 2012[4]. It should be mentioned here that a Public Transport Policy[5], which will be part of the proposed revised Transport Policy, was adopted by the Cabinet on 10th October, 2012.

4 "Land, Water and Air Transport Policy, Strategy and Programmes of Rwanda", Final Report of the Transport Sector Retreat, Ministry of Infrastructure, Kigali, May, 2012

5 "Public Transport Policy and Strategy for Rwanda", Ministry of Infrastructure, Kigali, October, 2012 "

2.2 TRANSPORT SECTOR STATUS

2.2.1 Travel Demand Pattern

Travel demands for both passenger and freight are very radial centring on Kigali City as shown in Figure 2-1 and Figure 2-2 respectively. There is hardly any significant travel demand in between other regional town or growth centres. It is essential to divert some of the demands to other regional towns. This can preferably initiated by promoting urbanization and integrated transport development in regional urban areas.

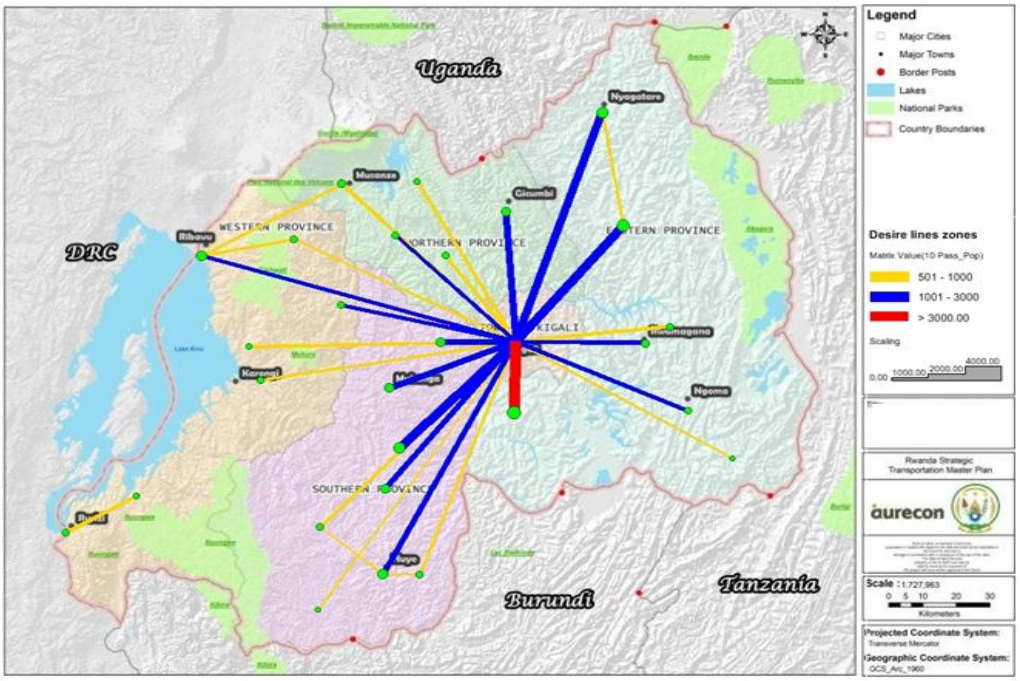


Figure 2-1: Travel Demand Pattern for Passenger Transport (Source: RSTMP 2012)

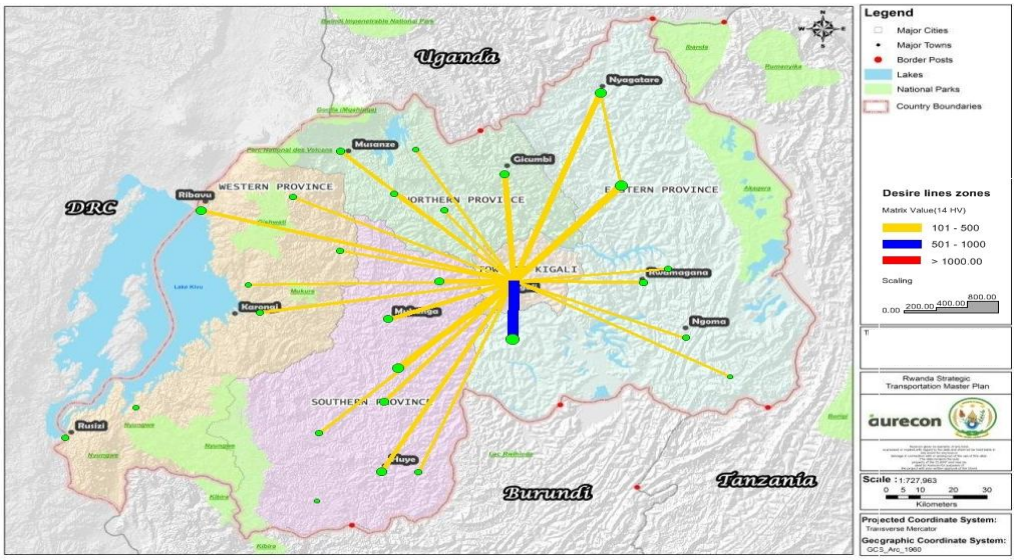


Figure 2-2: Travel Demand Pattern for Freight Transport (Source: RSTMP 2012)

2.2.2 Road Network

As mentioned earlier, the road density in Rwanda is relatively high having 0.53 km roads per sq. km. The total length of different types of roads in Rwanda is 14,000 km as shown in Table 2-1.

Table 2-1: Lengths in km for different types of roads in Rwanda

Type of Roads	Length (km)
Classified Roads	
Total Paved National Roads Class 1	1,172
Total Unpaved National Roads Class 1	1,688
Total Unpaved District Roads Class 1	1,838
Total Classified Roads Class 1	**4,698**
Kigali City Roads	
Total paved roads in Kigali City	153
Total unpaved roads in Kigali City	864
Total Kigali City Roads	**1,017**
Rural District Roads Class 2	8,285
Total Roads in Rwanda	**14,000**

2.2.3 Current Condition of the Riding Quality of Classified Road Network

Rwanda's Road Transport network consists of around 14,000 Km of National, District, Feeder and urban roads. Road Transport is Rwanda's main mode of transport for both passengers and goods. The classified road network consists of 1,172 km of paved national roads, 1,688 km unpaved national roads and 1,838 km of district roads in Class 1 (unpaved). The remaining 8,235 km of the network consists of unclassified unpaved roads (urban and District roads in Class 2).

The riding quality of roads is measured in term of International Roughness Index (IRI) in cm/km. In the case of paved roads, if the IRI less than or equal to 4 cm/km a road is considered to be in "Good" condition. On the other hand, for unpaved roads, they are considered to be in "Good" condition if the IRI is less than or equal to 8 cm/km. The condition of National Paved Roads is very good having 95.6% in Good condition as shown in Table 2-. The conditions of National unpaved and District roads, which are also unpaved roads, are not satisfactory. The percentages of National unpaved and District roads in Good condition are 40.6% and 37.1% respectively. It is therefore apparent that efforts should be concentrated to improve the condition of unpaved roads.

Table 2-2: Summary of the Riding Quality of Main Road Network of Rwanda (Source: RTDA 2012)

Roads	Total length (Km)	Good Condition %
National Paved Roads	1,172	95.6 %
National Unpaved Roads	1,688	40.6 %
Overall National Roads (paved + unpaved)	2,860	63.2 %
District Roads Class 1	1,838	37.1 %

2.2.4 Assessment of Road Capacity and Continuity of the Current Road Network

The Level of Service (LoS) provides a qualitative ranking of the traffic operational conditions experienced by a facility. The operational conditions are defined free speeds and delays. The LoS is divided into six levels, i.e. A to F with A being the highest LoS while F is the lowest.

The analysis of the 2010 Base Year Scenario (40 & 60 km/h), as shown in Table 2-2 and Figure 2-3, shows that the Rwandan National road network is operating at undesirable levels with 11.1% and 88.9% of the total length of road network operating at LoS E and F respectively. It is therefore clearly evident that the LoS of the road network of Rwanda is not satisfactory. It may be mentioned here that the 'Base Year Scenario (40 &60 km/h)' appears to be more realistic than the 'Base Year Scenario (80 &100 km/h)' depicted in Table 4-2 and Figure 4-2 to represent LoS of the National Road network of Rwanda, which shows better results. Due to hilly terrains and widths of the most of the National roads are less than or equal to only 7m, it is difficult to attain average free speeds of 80 and 100 km/h.

Table 2-2: Assessment of LoS of the Road Network of Rwanda (Source: RSTMP for the year 2010)

Rwanda FONA Results							
Scenarios	A	B	C	D	E	F	TOTAL
2010 Base Year (40 & 60km/h)	0.0%	0.0%	0.0%	0.0%	11.1%	88.9%	100%
2010 Base Year (80 & 100km/h)	10.6%	0.5%	76.2%	12.7%	0.0%	0.0%	100%
2020 5% Growth	8.5%	2.6%	51.4%	37.5%	0.2%	0.0%	100%
2020 8% Growth	7.7%	3.4%	40.4%	47.2%	1.5%	0.0%	100%

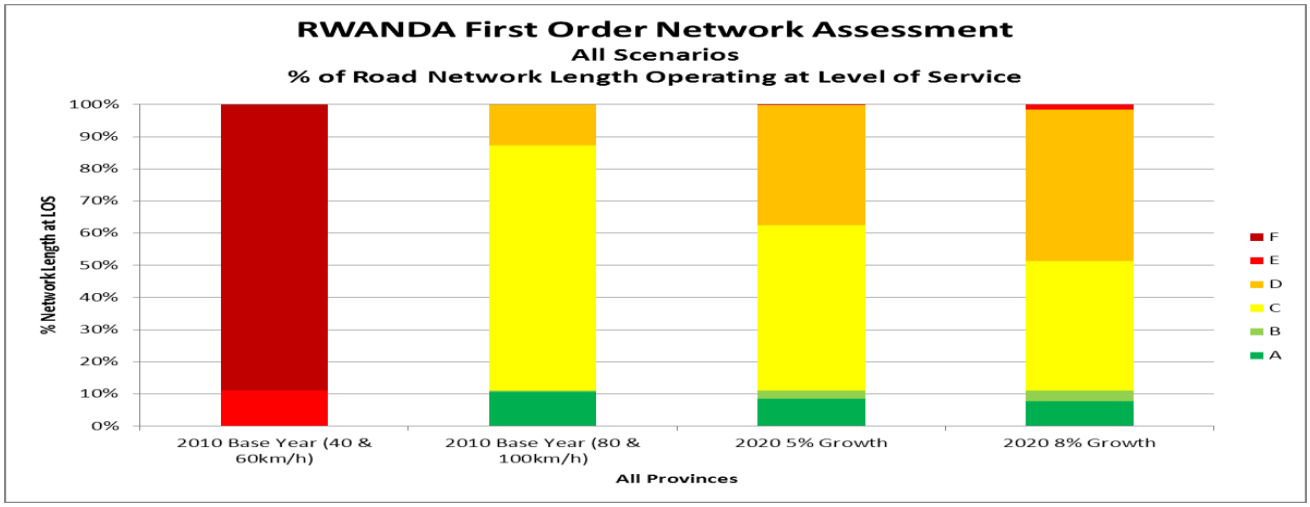


Figure 2-3: Assessment of LoS of the Road Network of Rwanda (Source: RSTMP for the Year 2010)

2.2.5 Status of Axle Load Control Regime in the Road Network of Rwanda

Recent studies have identified overloading as one of the main reasons for the early damage of the paved road network. Two axle load studies have been conducted in Rwanda as found from the available documents. The main study was done by Egis BCEOM (with EU financing) in 2009 for most of the major roads, while another study was done by the National University of Rwanda (NUR) in 2008 only for RN4: Kigali-Ruhengeri road.

The BCEOM study analysed overloading data in terms of the individual vehicle Class's contribution to the overall overloading at every survey station for each direction of flow. According to the study, the heavy goods vehicle (HGV) Class with 3 axles on average exhibited the highest percentages of overloading. The study analysed that 5% (from Kigali) and 25% (to Kigali) of axle loads fell in axle load classes of 12 to 14 hence exceeding the axle load limit of 10 tons.

The National University of Rwanda (NUR), under a Memorandum of Understanding (MoU) with MININFRA, carried out an axle load control survey on one of the major corridors, RN4: Kigali-Ruhengeri-Rubavu Road in May 2008. This study also identified massive overloading of heavy goods vehicles (HGV). The very high overloading (on average 55%) of 3-Axle HGV in Kigali-Ruhengeri section reinforces the finding of the BCEOM study that the absence of any in-country axle load control system leads the transporters to higher level of overloading.

Currently no axle load control mechanism is in operation in Rwanda.

2.2.6 Rail Network

Rwanda does not presently have a rail network. The rail systems of neighbouring countries extend towards but do not reach Rwanda:

- The URC/RVR (Uganda) mainline from Mombasa goes as far as Kampala. The Kampala-Kasese branch line is in operational but RVR (Rift Valley Railway) is investigating the feasibility of reopening it.

- The TRL (Tanzania) mainline from Dar es Salaam reaches Mwanza and Kigoma. The Kigoma section is especially subject to service interruptions because of the poor state of repair. The plan to extend a branch line from Isaka to Kigali is well advanced.
- The SNCC (DRC) system has a branch line from Kabalo to Kalémie. The SNCC system is in the process of being rehabilitated.

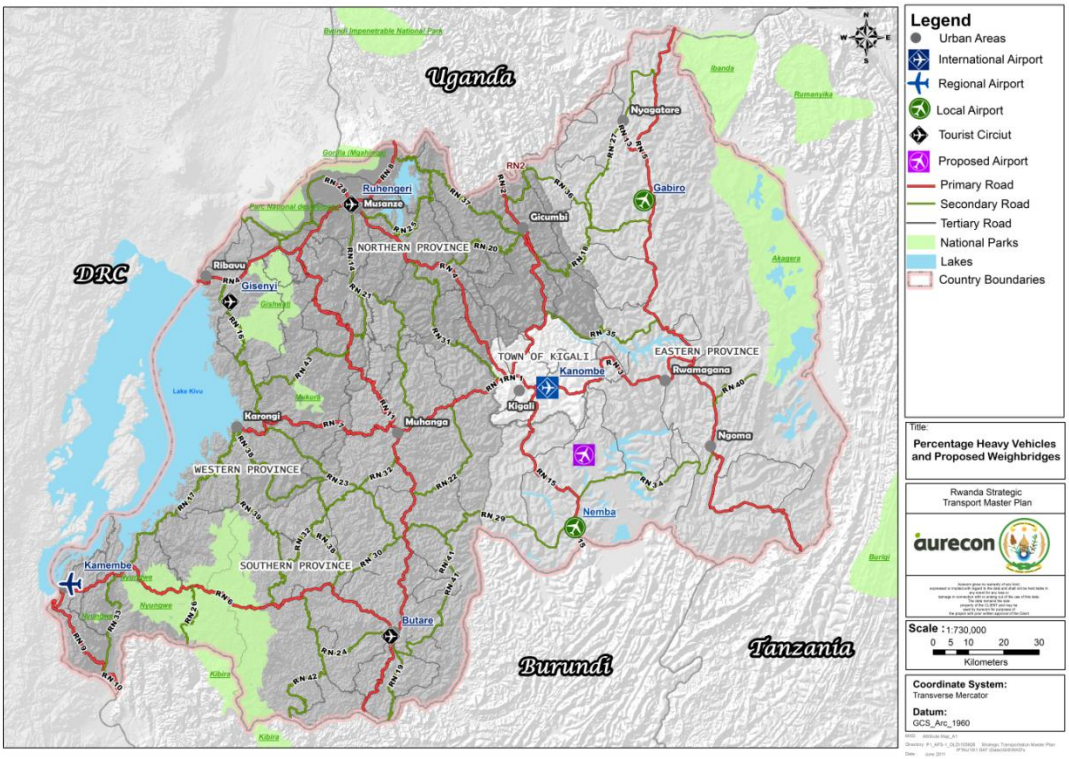
2.2.7 Aviation Network

There are seven functioning airfields in Rwanda at present, i.e. one international airport and six local aerodromes (refer to Map 2-1 below). The International airport in Rwanda is Kigali International Airport (KIA) which is located at Kanombe, about 10 km from the city centre. This is the main international aviation gateway to the country.

Kigali International has both terminal and airside capacity constraints. An interim terminal upgrade should help alleviate immediate pressure. The short, single runway is not designed to accommodate fully-laden wide body aircraft (necessary for long haul). However, it cannot be extended due to the terrain and the airport's proximity to Kigali City.

Due to the limited maximum capacity of the current airport (which is anticipated to be reached by 2015) and other limitations, a new international airport is being planned at Bugesera about 40 km South-East of Kigali. The future role of KIA is currently not decided yet, although it is understood that its role might possibly entail use as a military asset. The specific role is pending discussions between the City of Kigali and the Rwandan Defence Force.

The other aerodromes in the national airport network are Kamembe (Rusizi), Gisenyi (Rubavu), Ruhengeri (Musanze), Butare (Huye), Gabiro and Nemba.



Map 2-1: Airports and Airdromes in Rwanda (Source: RSTMP 2012)

2.2.8 Inland Waterways Network

At present there is no significant inland waterway in Rwanda. There are very limited Inland Water Ways (IWW) operations in Lake Kivu. In the case of the Akagera River, transport operations are carried out over short distances with small vessels and the amount of freight and passenger traffic is very limited.

2.2.9 Pipeline Network

The regional pipeline network responds to the needs and requirements of the upstream (extraction and import/export) and midstream (refining and processing) sub-sectors. The Kenya Pipeline Company (KPC) system distributes petroleum products through Kenya and towards Uganda (Refer to Map 2-2). Although designed to transport refined products, the TAZAMA line now exclusively exports crude to Zambia. Recent developments in Uganda could lead to the region becoming an oil producer and exporter. Events in South Sudan could furthermore result in crude exports transiting the region.

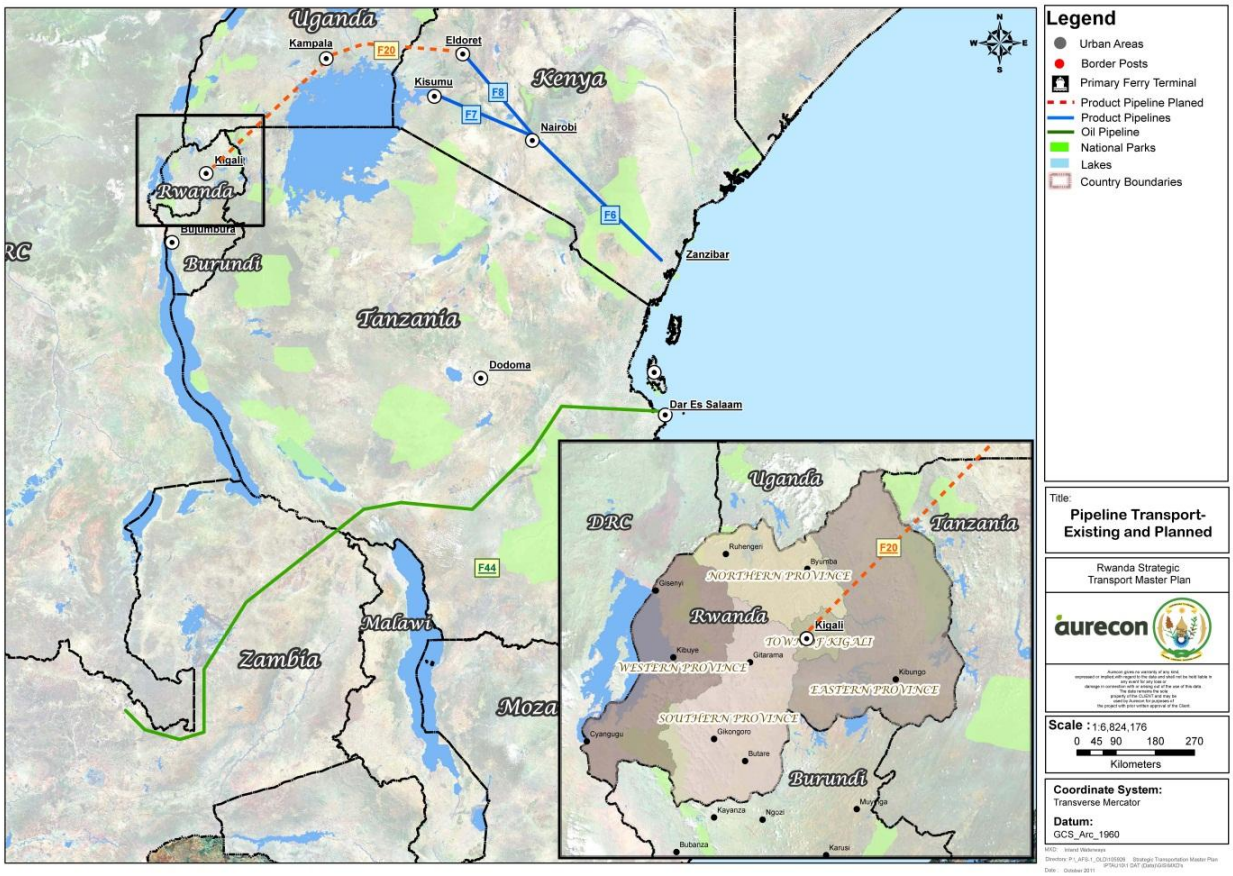
Currently, landlocked countries of the East African Community (such as Uganda, Rwanda and Burundi) import all of their petroleum requirements by road and rail, through either the Port of Mombasa or Dar es Salaam.

Currently Rwanda has no pipeline network in place and there are no immediate plans to implement a pipeline network. However, given the continuing demand for liquid petroleum products and crude oil and the economic growth trend of Rwanda, the viability of implementing a pipeline network will become a reality in the future.

Liquid petroleum products and crude oil storage in Rwanda (50 days) is regarded as under par in comparison to the remainder of the East African Community countries. This situation has led to fuel shortages that have had a serious adverse effect on price levels.

A number of pipeline initiatives are planned within the East African Community, and there is potential for Rwanda to align and integrate with these initiatives in order to fast-track pipeline transportation as a modal option within the country.

The Uganda-Kampala Pipeline link project was first conceived to link Uganda into the existing Mombasa-Eldoret pipeline. This would open the possibility of an extension to Rwanda and eventually onto Burundi. While an MoU between Uganda and Rwanda was signed to implement the project, it is understood that this forms part of the agreement between Uganda and TAMOIL East Africa on the Eldoret-Kampala extension. However, that extension is currently on hold until the implications of the oil finds at Lake Albert are known, including whether and how Uganda will export oil and petroleum products.



Map 2-2 Existing and Proposed Pipelines within the East Africa Region (Source: RSTMP 2012)

2.2.10 Inter and Multimodal Infrastructure

Kigali is the capital and largest city of Rwanda and is situated near the geographic centre of the nation. It is the economic, cultural, and transport hub of the country. Most of the passenger and freight transport in the country originates from, goes to or passes through the city. However, the existing intermodal infrastructures are not properly designed to meet the travel demands for both urban and inter-urban passenger and freight transport. A comprehensive study is essential to develop inter and multimodal facilities for Kigali City.

2.2.11 Road Transport Services

2.2.11.1 Road Passenger Transport Service Operators

The road-based public transport services are mainly provided by minibuses, buses and motorcycle taxis. The total number of registered vehicles in Rwanda is 118,656 as shown in **Table 2-3**. Minibuses and buses, which represent about 5% of all the vehicles, play the key role. Another important mode of public transport is motorcycle, which is the dominant vehicle mode in Rwanda representing about 49% of all vehicles. However, only 17% of the motorcycles have legal licenses to operate as a public transport mode on commercial basis. According to the Preliminary Draft Final Report of Planning & Design of Public Transport Report (SSI 2012), the modal share of motorbikes in Kigali City is 14% which is quite significant and makes apparent that a significant number of

motorcycle taxis are currently operating as public transport taxis without a valid license.

Table 2-3: Total Number of Different Types of Registered Vehicles from till August, 2012 in Rwanda

Vehicle Type	Number of Vehicles	Percentage
Car	21,422	**18.1%**
Pick up	13,834	**11.7%**
Jeep	15,254	**12.9%**
Minibus	5,451	**4.6%**
Bus	511	**0.4%**
Trucks	3,849	**3.2%**
Motorcycle	57,650	**48.6%**
Others	**685**	**0.6%**
Total	**118,656**	**100.0%**

(Source: Rwanda Revenue Authority 2012)

In aggregate, individual operators and 41 companies including ONATRACOM provide 72,264 passenger seats for public transport services in Rwanda. Out of the total supply capacity, individual operators are the dominant providing 70% of the total seat capacity as demonstrated in **Table 2-4**.

Table 2-4: Distribution of Passenger Carrying Capacity for all types of Public Transport Operators and Vehicle Categories in Rwanda

Type of Vehicle/Operator	Company	Individual	Total	Percentage
Bus and Medium Bus for ONATACOM	2,580	0	2,580	
Bus, Medium Bus and Minibus for Private Operators	18,197	39,590	57,787	
Total for Bus, Medium Bus and Minibus for all Operators	20,777	39,590	60,367	83.5%
Taxi Cab	844	1,444	2,288	3.2%
Motorbike	0	9,609	9,609	13.3%
Total for all vehicles	21,621	50,643	72,264	100.0%
Percentage	29.9%	70.1%	100.0%	

The number and distribution of different types of public transport vehicles and their relative passenger carrying capacities are demonstrated in **Table 2-5** and **Figure 2-4**. It is evident that minibus represents the most dominant mode of public transport vehicle with a total of 5,451 vehicles having 38,934 passengers carrying capacity, which represent a share of 54% of all public transport passengers. The Medium Bus is the next prominent mode having 588 vehicles and a passenger capacity of 16,271, i.e. 22.5% of the total supply capacity. The motorcycle also represents a significant mode having a total of 9,609 vehicles with a passenger capacity of 9,609, i.e. 13.3% of the total. However, since only 17% of the all registered motorcycles have valid license to operate

on commercial basis as public transport mode, the actual share of passenger carrying capacity of motorcycle taxis is likely to be significantly higher.

Table 2-5: Number of different types of Public Transport Vehicles and Their Passenger Carrying Capacity

Type of Vehicle/Operator	Number of Vehicle	Percentage of Vehicle	Passenger Capacity/Vehicle	Total Passenger Carrying Capacity	Percentage of Passenger Carrying Capacity
Bus	110	0.8%	51 to 80	5,162	7.1%
Medium Bus	588	4.5%	25 to 33	16,271	22.5%
Minibus	2,163	16.6%	18	38,934	53.9%
Taxi Cab	579	4.4%	4	2,316	3.2%
Motorbike	9,609	73.6%	1	9,609	13.3%
Total for all vehicles	13,049	100.0%		72,292	100.0%

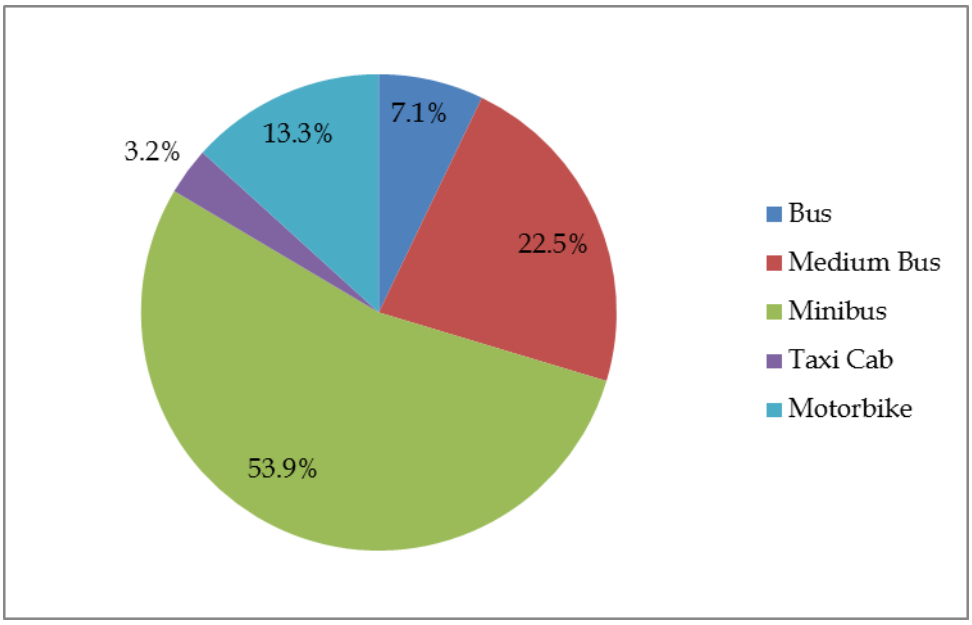


Figure 2-4: Distribution of the Passenger Carrying Capacity of Different Types of Public Transport Vehicles in Rwanda

2.2.11.2 Current Problems of Road Passenger Transport Services

The current problems of intercity, rural and urban public transport (Kigali City) are outlined in the following sections.

The condition of National Paved Roads is very good having 95.6% in Good condition in 2012. However, there are lacks of network continuity, capacity and Level of Service (LoS) for National and District Road Class 1. As mentioned earlier, the Rwandan National Road Network is operating at undesirable levels with 11.1% and 88.9% of the total length of road network operating at a LoS E and F respectively.

The current problems of intercity public transport services can be characterised as follows:

- The current road public transport services are generally acknowledged to be inefficient and costly;
- Passenger transport services are uncoordinated;
- Most services emphasise access (multi-stops) at the cost of mobility;
- There is no mechanism in place to ensure quality service and customer care;
- In general, the intercity public transport industry is profit-driven with little regard to quality of services.

The main problems of rural public transport services are as follows:

- Initial investment for providing bus services in rural areas are relatively higher because of the poor quality of roads;
- Passenger demands are relatively lower;
- Private operators are reluctant to provide services because of high investment costs, poor quality of roads and low passenger demands;
- The current rural road public transport services are generally acknowledged to be inefficient and costly;
- Passenger transport services are poorly coordinated;
- Most services emphasise access (multi-stops) at the cost of mobility;
- Rural public transport services are mainly provided by large buses having 60 seat capacity, as it is difficult to operate mini buses services in unpaved roads particularly in rainy seasons;
- There is no mechanism in place to ensure quality service and customer care; and
- In general, the rural public transport industry is profit-driven with little regard to quality of services.

The existing general transport problems related to transport infrastructure in Kigali City are as follows:

- Intersection traffic signals not working in accordance with traffic demand
- Intersections operating over capacity
- Inadequate road signs
- Inappropriate road signs
- Insufficient street lighting
- Deteriorated road surfaces (especially unpaved)
- Inadequate proper drainage system (especially unpaved)
- Inadequate protection for cyclists and pedestrians (appropriate sidewalk and cycle ways)
- Narrow existing road space
- Uncoordinated parking facilities

- Inadequate coordination between different policy making, regulatory and implementing agencies
- Inadequate pedestrian facilities
- Absence of coordinated maintenance and rehabilitation of roads in appropriate time
- Inadequate enough separations and medians between opposite lanes.

The main problems for public transport operation in Kigali City are as follows:

- Congestion in existing Bus Terminals
- No timetable operation
- Inappropriate layout of routes
- Insufficient bus bays (bus stops) and parking spaces in the city centre
- Inefficient and unconventional mini buses
- Insufficient bus routes
- Absence of integrated ticketing and revenue sharing mechanisms for public transport service under a multi-route and multi-operator environment of Kigali City
- Inadequate standard and coordinated taxi services
- Rapid population growth and traffic increase but inadequate bus service
- Inadequate coordination between authorities, which seek no consultation when roads are re-constructed and new roads developed without any consideration for Bus pull-ins, shelters etc.
- With the unrestricted allocation of new licenses for minibuses the city is now congested with buses parking everywhere and anywhere creating great problems
- The presence of "private" unlicensed buses operating without any structure and no policy on bus routes from the authorities
- Inadequate central planning or standardization used in the road and supplementary infrastructure, which has detrimental impact on transport vehicles and the efficient operating of traffic within the city
- Inadequate well-designed pedestrian crossing facilities giving pedestrians and public transport more priority
- Inadequate bus priority or dedicated bus lanes to give public transport priority.

2.2.11.3 Road Freight Logistics and Services

The main challenges of road freight logistics and services are landlocked location, small domestic market, low production with concomitant import dependence, and the high cost and the poor quality of logistics services.

The Rwanda Road Freight Network can be classified into two types that operate within the country: domestic goods or localised freight, as well as exporting goods or long-haulage freight transport.

Domestic Freight Transport

Domestic distribution of crops at rural level needs transportation from small plots of farms to provincial intermediary warehouses. Small pick-up trucks are the preferred mode of transport for movement of short distance delivery. For larger consignments transported from provincial intermediary warehouses to Kigali, as well as from Kigali for exporting of goods, larger trucks are used for goods transportation.

Regional and International Freight Transport

Rwanda's limited capacity to generate trade and in turn the capacity to stimulate the demand for logistics services is exacerbated further by the fact that existing export product value chains under Rwandan control are at the upstream rather than the downstream where more value adding activities usually take place. It is therefore difficult to develop a transport system considering economy of scale. Time required for regional or international freight transport is affected by:

- long processing times at the ports due to inefficient terminal handling procedures, onerous transit preparations owing to Customs transit transport requirements,
- poor truck access and egress at the terminals, slow transit on the road as a result of compulsory stops at many weighbridge stations, numerous random police road checks and cumbersome border crossings resulting in long queues, and
- burdensome Customs bond cancellation procedures.

These factors exacerbate the resources consumed (capital cost, driver and assistant, license, fuel, tires, repair and maintenance, truck, etc.) in providing the truck services due to the time to deliver a load to the destination. The freight logistics costs including travel time from Kigali to sea ports for import and export are shown in Table 2-6 and Table 2-7 respectively. It appears that the import and export from Kigali to sea ports are characterised by long delays in sea ports (10-day or more vessel stay at the harbour) and the high travel times (12 to 19 days). The Reliability indicators vary from 155% to 261%. These represent the reliability of the freight transport for import and export is poor. The overall freight logistics costs for the Northern and the Central are also very high.

Table 2-6: Freight Logistics Costs per ton by Corridor for Import to Kigali

Destination /corridor	Mode	Distance (km)	Light containers			Dry bulk			Liquid bulk		
			Price (US$)	Time (h)	Reliability indicator (%)	Price (US$)	Time (h)	Reliability indicator (%)	Price (US$)	Time (h)	Reliability indicator (%)
Northern	Road	1,661	3,901	376	167	6,658	329	220	6,463	293	178
Central	Road	1,495	3,314	420	171	4,661	525	166	4,661	429	155

Table 2-7: Freight Logistics Costs per ton by Corridor for Export from Kigali

Origin/corridor	Mode	Distance (km)	Light containers			Heavy containers		
			Price (US$)	Time (h)	Reliability indicator (%)	Price (US$)	Time (h)	Reliability indicator (%)
Northern	Road	1,661	3,864	422	250	6,588	422	261
Central	Road	1,495	3,314	454	248	4,918	454	228

Furthermore, on the return trip the truck is frequently faced with empty backhauls due to trade imbalances (Rwanda imports exceed exports by a factor of 11 in terms of weight), and as a result the head haul is often required to bear the full cost burden of the round trip. For these reasons, freight logistics costs for regional and international trade exact serious penalties on Rwandan producers and as a result blunt the competitiveness of the export sector.

According to Rwanda's Diagnostic Integration Study (2005, p.28 - 31), road-freight operations have the following constraints:

- The road-freight market in Rwanda is very small and there are few transport operators;
- Rwanda is constrained from accessing global markets due to high transport costs as well as delays;
- Rwanda depends on quality of transport and transport procedures on corridors.

In addition, trade-off between passenger and freight transport to reduce road congestion is also a critical factor for providing seamless freight transport services, particularly for Kigali City.

Freight Operators

The national freight service providers are all from the private sector. It is reported that they are faced with many challenges that make competition among themselves and with the locally-based international firms ineffective. Some of the challenges include 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.

The domestic road freight industry is deregulated, currently there are no requirements for transport operators to be licensed to operate. This is an area that RURA is investigating to formalise the freight transport industry.

2.2.11.4 Road Accidents

The total number of road accidents between 2005 and 2010 more than doubled (increased by 2,486 accidents). Nonetheless, the percentage of severe accidents decreased from almost 32 percent to almost 26 percent. In 2005 and 2010, there were almost 760 and 1,170 severe accidents in Rwanda respectively, as indicated in Figure 2-5. MININFRA and RTDA also estimated a total of 308 and 445 road-related deaths in 2005 and 2010, respectively. In 2010, pickups accounted for 1,944 accidents; cars and motorcycles accounted for 1,684 and 1,442 accidents respectively; wheelbarrows were involved in 44 road accidents and pedestrians in 628.

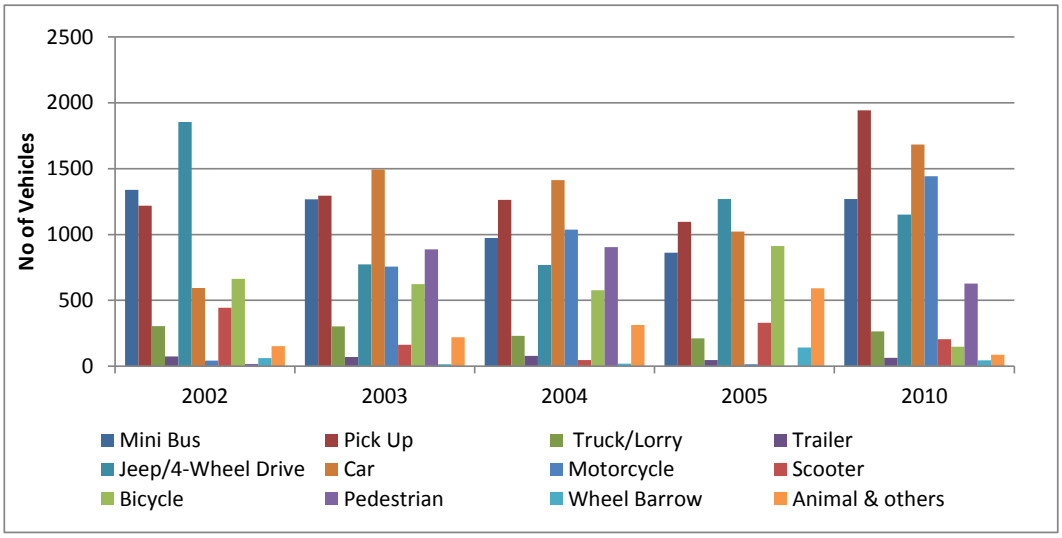


Figure 2-5: Road accidents in Rwanda by vehicle type between 2002 and 2005, and 2010 (Source: RSTMP 2010).

The annual accident frequencies of different types of vehicles are shown in **Table 2-8**, **Table 2-9** and **Figure 2-6**. It appears that although in absolute terms motorcycle represents the highest number of occurrence (44%) for accidents, in accordance to weighted frequency the bus and truck are the main dominant modes contributing to road accidents. In order to reduce the accidents, efforts should be made to reduce the number of motorcycles and to improve safety and driving mechanisms of buses and trucks in Rwanda.

Table 2-8: Frequency Distribution of Road Accidents for Different Types of Vehicles (Source: RNP 2012)

Vehicle Type	Frequency of Accident in Sample	Total Number of Accident in 2011	% of Total Accident	Number of Vehicle in 2011	Proportion of Vehicle in 2011	Frequency of Accident per 1000 vehicles
Car	284	1,051	23.2%	18,266	17.0%	58
Jeep	184	681	15.0%	12,112	11.3%	56
Pick up	64	237	5.2%	13,017	12.1%	18
Minibus	165	610	13.5%	12,120	11.3%	50
Bus	41	152	3.3%	425	0.4%	357
Truck	152	562	12.4%	2,970	2.8%	189
Trailer	3	11	0.2%	879	0.8%	13
Motorcycle	332	1,228	27.1%	47,622	44.3%	26
Total	1,225	4,531	100.0%	107,411	100.0%	

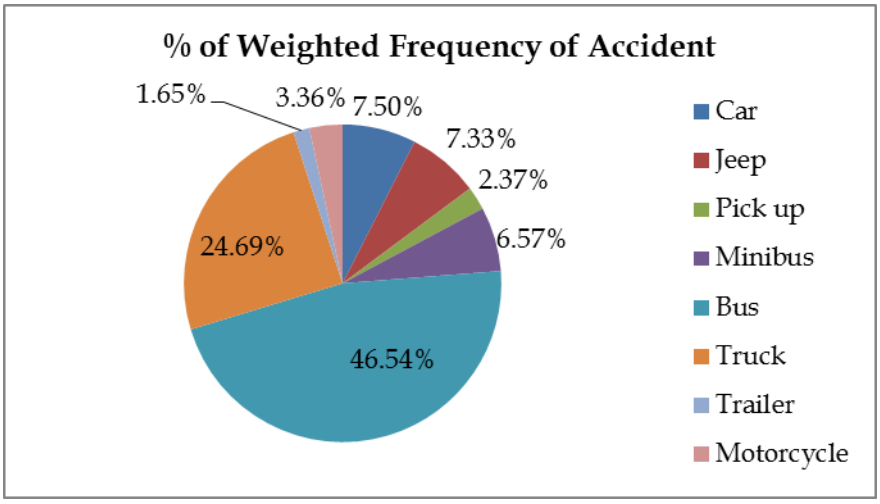


Figure 2-6: Weighted Frequency Distribution of Road Accidents for Different Types of Vehicles (Source: RNP 2012)

Table 2-9: Frequency Distribution of Different Types of Road Accidents for Different Types of Vehicles (Source: RNP 2012)

Vehicle Type	Frequency of Accident per 1000 vehicles	Frequency of Minor Accident per 1000 vehicles	Frequency of Major Accident per 1000 vehicles	Frequency of Injury Accident per 1000 vehicles	Frequency of Fatal Accident per 1000 vehicles
Car	58	43	15	220	26
Jeep	56	42	14	215	25
Pick up	18	14	5	70	8
Minibus	50	37	13	192	23
Bus	357	265	92	1,364	161
Truck	189	141	49	724	85
Trailer	13	9	3	48	6
Motorcycle	26	19	7	99	12
Total	767	570	197	2,931	345
Percentage	100.00%	74.3%	25.7%		

2.2.12 Air Transport Services

The Aviation sub-sector in Rwanda is currently characterized by scattered and limited public investment in across the sub-sector:

- The National Carrier (RwandAir) is currently at a start-up phase and will require a clear investment plan into the future in order to grow to its full potential and the number of international operators serving the country is still low.
- The Airports infrastructure and administration still suffers from serious public under-investment;
- The Regulatory authority lacks adequate investment in both human and institutional capacity to accomplish its mandate;
- General aviation and Cargo business are yet to establish in the Country;
- The national carrier, RwandAir has limited route network and therefore it does not enjoy economy of scale. It depends on government financial support to maintain its operation.
- Private investment in the sub-sector is still very low.

As an Airline proper, RwandAir can be said to have started operations in January 2010, acquiring its first Aircraft and crew after many years of Wet Leasing Aircraft. RwandAir's operations prior to this period were characterized by:

- Wet Leased Aircraft sometimes from unreliable lessors
- No Human Skills and other Capacity to run an Airline properly
- Inadequate Strategic Direction and Ownership

- Weak infrastructural base
- Fleet inconsistency

RwandAir is the designated national carrier and provides services to the region (Bujumbura, Dar es Salaam, Entebbe/Kampala, Kilimanjaro, Mombasa, Nairobi), the rest of Africa (Addis Ababa, Brazzaville, Johannesburg, Libreville) and intercontinentally (Brussels and Dubai). Air services rights are negotiated bilaterally, with carriers of most of these countries also serving Kigali.

RwandAir operates scheduled domestic services linking Kigali with Cyangugu/Kamembe and Gisenyi. There are at least two non-scheduled carriers registered in the country. Internationally, the trend remains that domestic air services (cabotage) remains reserved for carriers owned and registered in a country. Where regionalisation is advanced (e.g. the European Union) cabotage rights in a member state become available to carriers of other member states too. It is anticipated that this is the direction that will be taken in the EAC as well. In the meantime, it is proposed that Rwanda deregulate the domestic air services market so that there will not be an artificial limitation on air services responding to growing demand.

As regards international (including regional) air services, it is presently an EAC member state's prerogative to negotiate and award these on a bilateral basis. For intra-Africa services, the Yamoussoukro Decision requires countries of the continent to share air transport rights freely. It is expected that the EAC will enforce this requirement on its member states at least. For inter-continental services, again following the EU example, it is foreseen that rights to/from East Africa will be awarded at the regional level by a body designated by the EAC.

As the degree of integration increases in East Africa, member states will come under pressure not to provide artificial advantages to national carriers. This will include preventing subsidies to loss-making airlines, or supporting airlines' specific programmes (e.g. route development and equipment purchase).

Rwanda presently provides lower airspace (approach and aerodrome) control via the RCAA at Kigali International Airport. Upper airspace (area/over flight) control is provided by Tanzania through the TCAA.

Under the EAC Treaty partner states agreed to the establishment of a unified upper area control system, i.e. a regional upper flight information region (UFIR) to be controlled by one upper area control centre (UACC). A study covering Kenya, Tanzania and Uganda found that such a unified UACC would be feasible, but the study has not yet been expanded to include Rwanda and Burundi. A point of contention was how the lower airspace services would be protected if cross-subsidies currently derived from over flight revenue were to be directed to the UACC.

Before Rwanda takes a unilateral view on changing the current model for the provision of CNS/ATM, the investigations into an optimal regional model should be concluded at EAC level.

2.2.13 Rail Transport Services

The decision on the optimal structuring of rail transport service provision will face Rwanda shortly with the construction of the Isaka-Kigali rail extension of the TRL

system. The service will be dominated by long-haul trade freight with the potential of some more localised passenger services.

Given the projected volumes, there will be a single operator. Since the line is effectively a branch of the Tanzania system, and given the increased efficiencies associated with a non-interrupted service, the operator on the TRL system should also be granted the franchise to operate the Rwanda (and Burundi) lines. Thereafter, a new concession is likely to be awarded with improved contracts.

Rwanda, through RURA, should position itself to participate in the procurement process. It is expected that the EAC would facilitate such a three-way discussion between Tanzania, Rwanda and Burundi. The operating licence would be awarded multi-laterally by the three countries. It would be for an integrated track-rail operation service.

2.2.14 Inland Water Transport Services

Lake transport services are presently provided on an ad hoc basis and outside any formal transport licensing regime. As per the Economic and Technical Feasibility Study for Water Transport on Lake Kivu (Draft Final Report), September 2009, the intention is to formalise lake transport. The service would entail a scheduled passenger and freight service operated with a fleet of two vessels. The transport operator would be required to determine the optimal route options for operation in order to maximise ferry operating hours and to achieve the highest attainable service levels using the available fleet. The feasibility study proposed the following two route options, i.e. a local service stopping at all lake ferry terminals en-route, or an express service/local service overlap with one vessel operating a local service and the other an express service only stopping at major ports.

The projected demand (250 passengers and 15t to 20t cargo per day) is too low to sustain a commercially viable service and it is anticipated that a government subsidy would be required until the passenger volumes increase. Although a service of this nature should be provided commercially and privately, a degree of commercial and income subsidy income is required. There will therefore be a single operator appointed under some form of concession agreement. The preparation of the tender specifications, concession contract as well as the concession contract negotiations can be jointly undertaken by the RTDA and RURA with the support of the Public Investment Technical Team and the PPP Unit.

Transport on the Akagera River, has conclusively proven to be technically feasible, will entail similarly limited passenger and cargo demand as on Lake Kivu, but probably lower. Prior to commence commercial operation, it is essential to ascertain economic and financial viability of inland water transport service in Akergera River. If the Government of Rwanda wishes to support the development of the river as a transport route, river transport rights should be awarded to a single operator to maximise the commercial potential. Otherwise, rights should be deregulated and local operators should be allowed to ply their trade on the river without economic limitation.

2.2.15 Pipeline Transport Services

Pipeline infrastructure and services are generally operated as one business. In other words, pipelines are considered an integrated service whereby the entity who constructs the pipeline generally operates the services.

Given the inherent difficulties of vertically separating infrastructure provision and transport services in the pipeline mode, it would be logical to subsume the pipeline transport services under the infrastructure provision responsibilities of the designated pipeline concessionaire.

In the case of natural monopoly infrastructure, such as pipelines, Third Party Access (TPA) will come into play after the infrastructure has been constructed and operated for a sustained period. A TPA policy requires owners of natural monopoly infrastructure facilities to grant access to those facilities to parties other than their own customers, usually competitors in the provision of the relevant services, on commercial terms comparable to those that would apply in a competitive market.

2.2.16 International Corridors

The Northern Corridor anchored by the port of Mombasa in Kenya, and the Central Corridor, anchored by the port of Dar es Salaam in Tanzania, are principal and crucial transport routes for Rwanda. Being landlocked, moving goods into and out of Rwanda is not seamless. Main international supply chains are these heavily used sea-land routes (accounting for 99.6% of total overseas trade by weight) that utilize the ports of Mombasa and Dar es Salaam with transit transport through third (and fourth) countries along the Northern Corridor (Mombasa as the gateway) and Central Corridor (Dar es Salaam as the gateway). Due to inadequate physical infrastructure and inefficiency, these corridors are characterized by long transit times and high cost. Freight costs per km are more than 50 percent higher than the USA and Europe and for the landlocked countries; transport costs can be as high as 75 percent of the value of exports. Modernization of transport infrastructure and removal of non-tariff barriers along these corridors is critical for trade expansion and economic growth, which are key to the success of regional integration as well as creation of wealth and poverty alleviation in the individual countries, Rwanda is particular.

Northern Corridor generally requires 376 hours to complete the truck journey covering the road distance of 1661 km. The Central Corridor requires 420 hours to complete the somewhat shorter distance of 1495 km. This level of performance implies a processing speed of 4.4 km/hour for the Northern Corridor and 3.6 km/hour for the Central Corridor, both of which are extremely slow compared to international operating standards of 50 to 70 km/hour in the EU and North America.

The major causes of delays in these corridors are, notably:

(i) Excessive delays in sea ports, i.e. Mombasa and Dar es Salaam;
(ii) Cargo scanning causes delays, especially when scanned containers are then subjected to 100% verification;
(iii) Inadequate staffing levels, especially at cargo release points cause delays;
(iv) Delays occur in acceptance of entries as a result of delays associated with submission of payment information by banks;

(v) Unreliable internet connectivity both at customs and business entities delay the processing of entries and release of cargo;
(vi) Over control of transactions resulting checking and rechecking of the same information by several different sections of Customs, as a result of document checks being based on transactions rather than risk management;
(vii) Delayed lodgement of declaration and submission of supporting documents, as well as poor quality of declarations made importers, which result in rejection and queries, cause delays;
(viii) There are long delays associated with transfer of cargo from the port to Container Freight Services; and

Along the way, delays are attributed to a number of causes that include: duplicated procedures at border posts; Customs check points; Police check points; weighbridges.

2.2.17 Institutional Overview of the Transport Sector

2.2.17.1 Ministries

At the national level there are eight 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 finances are channelled through the Ministry of Infrastructure (MININFRA), which is responsible for transport and four other sub-sectors: Energy; Housing and Human settlement; Water and Sanitation; and, Meteorology. The MININFRA is responsible for: (i) overall supervision of the agencies directly responsible for implementation of various transport sub-sectors projects; (ii) transport policy and strategic planning; (iii) creating of an enabling transport environment; and, (iv) setting transport rules, regulations and standards.

The Ministry of Internal Security (MININTER), through the Rwanda Police, has the responsibility for enforcing traffic laws and regulations, and collection and collation of road traffic accident data. 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, 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) and Ministry of Commerce, Trade, Industry, Tourism and Cooperatives (MINICOM) in prioritising interventions for the district and District Roads Class 2. 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 East African Community (MINEAC), in collaboration with MINIFRA, coordinates the planning and development of regional policies and transport infrastructure.

2.2.17.2 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. These include the Rwanda Transport Development Authority (RTDA), which was established by Law No. 02/2010 of 20 January 2010 as an autonomous Government agency under MININFRA with the mandate for the implementation of government transport policies, advising the Ministry on all transport sector matters, and project management. It has the dual mandate of sector planning and infrastructure delivery.

The RTDA is therefore specifically responsible for transport strategic development plans, planning data collection, preparation of project design documents including environmental and social impact reports, and quality control and assurance. It is also responsible for overall management of contracts, monitoring and evaluation of quality of works and cost control, maintenance works, condition surveys and routine road safety inspections, the maintenance management system and preparation of maintenance action plans. Management of the vehicle axle load weighbridges and issues related to water and rail transport, are other responsibilities.

Within the decentralised administration framework, District Infrastructure Departments or local authorities are accountable for the development and maintenance of local unpaved and communal 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 of service is provided to the consumers, and that operators comply with national transport service laws and regulations.

Rwanda Civil Aviation Authority (RCAA) is responsible for operation, management and regulation of air transport infrastructure and services. The aviation sub-sector is regulated by the Rwanda Civil Aviation Authority (RCAA), which is responsible for the management of civil aviation operations in conformity with the International Civil Aviation Organization (ICAO) and other international standards. RCAA is the regulator for all civil aviation services, and the provision and maintenance of airport infrastructure.

The Rwanda Environmental Management Authority (REMA) was established in 2006 and is responsible for following up and ensuring that issues relating to the environment

receive attention in all national development plans, including transport projects. Currently, REMA is effectively enforcing environmental requirements that all transport projects should be compliant with relevant laws and Ministerial orders.

The transport structure as described above is similar to those in other countries in the region and seems to be working well at the moment. However, the human and financial capacity of institutions and weak internal processes are key challenges that hinder the effective performance of their mandates in particular the Inadequate asset maintenance management systems is critical in guiding and preserving costly investments.

2.2.17.3 Transport Sector Funding Institutions

General Overview

The entire transport infrastructure which include the national road network, the airport and air navigation systems and the inland waterway port facilities in Rwanda, is state-owned. The current transport funding, which is mainly available from Government sources and assistance from the development partners, is not adequate 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 sectoral investment programs are consistent with the national development frameworks, such as EDPRS-I.

From a development partner/donor funding perspective it is 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 – Class 1. The Common Development Fund (CDF) is used for financing development management of District road – Class 2 and District Roads Class 2. A brief description of the financing institutions is outlined in the following sections.

Road Maintenance Fund (RMF)

The Road Maintenance Fund (RMF) is the institution responsible for collection and disbursement of money intended for road maintenance. The Road Maintenance Fund (RMF) is established by the law No.52 bis/2006 of 12/12/2006. The Vision of RMF is to maintain efficiently within its financial means the classified road network thus supporting the sustainable development of the national economy in line with the national policies in place. Its mission is "To fulfil the mandate, as a public institution, defined by the organic law establishing the fund "of receiving, effectively managing and disbursing funds for the maintenance of national roads network" with excellence in accordance with the regulations in place". However, in order to regulate the road network in Rwanda and determine its reserves, classification and management, the Government of Rwanda has adopted a new law N°55/2011 OF 14/12/2011. According to the law, maintenance works for National roads, Districts and City of Kigali roads and that of other urban areas Class-1 shall be funded by the Road Maintenance Fund.

The RMF is still a 1st Generation road fund. Even though RMF is a 1st generation road fund, it has sufficient autonomy as the funds collected from various sources are all used in maintenance activities and the RMF has a clear planning of maintenance activities together with maintenance stakeholders.
For the distribution of funds between maintenance of National Roads and Kigali City roads, the percentage have been always in the range of 70 – 75% for the National roads and 25 – 30% for the Kigali City Roads.

RMF sign a performance contract with the Road Maintenance Agencies to ensure that the funds allocated are effectively and efficiently used.

RMF is now in the final stage of the process of hiring a Consultant to elaborate the RMF Procedures Manual which will determine the ratios of funds allocation to various stakeholders'.

The Road Maintenance Fund (FER) finances the following works:

- Periodic maintenance works.
- Current maintenance works
- Routine works.
- Emergency work
- Studies, control and supervision of works
- Bridges rehabilitation

The financial resources of RMF comprise the following sources:

- State budget;
- Government / donor subsidies;
- Funds from activities performed by RMF;
- Interest from investments;
- Road user charge levied on gas, oil & petrol;
- Road toll levied on foreign registered vehicles;
- Fines levied on overloaded transport vehicles;
- Compensation for damages caused to the road sector;
- Donations & bequests.

However, a part from the RWF 62.37 per litre of fuel and road toll levied on foreign registered vehicles, other sources of revenue more or less remained unexplored.

Rwanda Local Development Support Fund (RLDSF)

The Rwanda Local Development Support Fund (RLDSF) is a government-owned fund with its own Board of Directors, set up to support the implementation of the decentralisation policy in Rwanda. It is an instrument to finance development projects at the grass roots including development management of District roads- Class 2 and District Roads Class 2. It is envisaged to have 10% of the annual national revenues allocated to the Fund who will be responsible for the distribution of allocations between the Districts and the City of Kigali, and also to monitor the use of the funds allocated and to increase local capacity.

The Government policy of decentralisation means that individual districts are responsible for planning, programming and implementing Routine maintenance of National road, District Road – Class 1 and 2, and the unclassified District Roads Class 2 and tracks within their geographical area. Each District has an Infrastructure Unit responsible for overseeing maintenance works to District and District Roads Class 2 and has some involvement with National Roads.

The purpose of the RLDSF is to:

- finance development projects, to distribute between Districts and the Kigali City funds allocated to those projects and to ensure that these funds are equitably distributed between those entities;
- monitor the use of funds by RLDSF to development projects in Districts and the City of Kigali; and
- serve as an intermediary between Districts, Kigali City and Donors who particularly finance development projects in these entities.

It may be mentioned here that funds allocated from RLDSF for development and maintenance management of District and District Roads Class 2 constitute only a small portion of the actual demand in the sector.

It may be mentioned here that funding for District roads Class 2 (Feeder) is generally channelled through MINIAGRI and RTDA by different development partners.

2.2.17.4 Human Resources in Transport Sector

Rwanda lags behind in terms of professional skills and training, with the most acute deficiency being apparent in the fields of applied and natural sciences, economics and engineering. Although it is expected that the country will continue to rely on imported technology from advanced countries, well trained, specialised nationals will be essential to run as well as maintain technological systems ranging from medicine, agriculture, telecommunications, industries and other service sectors including transport.

The 2003 census showed that there are only 0.5% of graduates in the population, compared to the African average of 4%. However, the gross enrolment rate at tertiary level is 3.2%, which is regionally comparable. The number of students in the eighteen Rwandan higher learning institutions, six of which are publicly funded, increased from 10,000 in 2002 to 27,787 in 2005.

According to Human Resource Development Agency survey[6] over the whole economy, the public sector skills gap was found to be 31%, and the private sector gap to be 62%. Figures are also given for the building and construction and the engineering sectors; the engineering sector is not broken down further into engineering discipline or speciality. The building and construction sector has no managers or professionals - 100% gap was reported - whilst the gap for technicians (i.e. foremen and engineering assistants) was reported at 91%. The conclusions of the skills audit are stark – there are huge skills gaps across all sectors.

In the engineering and construction sectors, the skills shortages signify a serious risk that the goals for infrastructure and managed urbanisation will not be met, or that Rwanda will have to continue importing expensive skilled labour for infrastructure development including transport sub-sector.

In transport sub-sector, both in the private and the public sector, one key problem is the Inadequate experienced senior engineers. This means that supervision and informal on-the-job training for younger engineers is lacking, and also that graduates often go into senior jobs without the appropriate experience, due to the overall Inadequate supply. Some professionals, therefore, lack the experience and training necessary for their roles. In particular, the public sector is lacking expertise in monitoring and evaluation of contracted work and in supervising projects. Another key problem is the Inadequate structured in-service training available in the transport sub-sector.

2.3 EDPRS-1 Transport Sector Achievements, Challenges and Lesson Learn

2.3.1 Transport Sector Achievements in EDPRS-1

In 2008, the Ministry of Infrastructure developed and defined the policy and strategy for the Transport sector for the first time.

It appears that the cumulative achievement for riding quality on National Classified network till 2012-2013 exceeded the target by a big margin, i.e. 63.5% achievements

[6] National Skills Audit Report (Human Resource Development Agency (HIDA) 2009).

against a target of 31% as shown in Table 2-10. However, the cumulative achievement in District roads is 32.6%, which is well short of the target of 50% for the year 2012-2013.

Table 2-10: Achievements to Improve the Riding Quality of Roads in EDPRS-1

EDPRS-1 Target/Year	2008-2009	2009-2010	2010-2011	2011-12	2012-2013
Increase of the % of National Classified roads in Good condition from 11% to 31%	18%	18%	53.8%	59.9%	63.2%
Increase of the % of District Classified roads in Good condition from 15% to 50%	15%	15%	23%	15.1%	37.0%

During the EDPRS-1 period (2008 to 2012), the Ministry of Infrastructure created a number of implementing agencies. Rwanda Transport Development Agency (RTDA) was created and populated with staff for implementing development activities of road, rail and inland water transport. In addition, Rwanda Civil Aviation Authority (RCAA) for air transport regulation and airport operation, RwandAir for air transport service and Road Maintenance Fund (RMF) for financing of road maintenance work have been put in place.

During the EDPRS-1 period, RDTA entered into partnership with Memoranda of Understanding signed with the National University of Rwanda, the Kigali Institute of Science and Technology, and INES-MUSANZE for technical cooperation by sharing information and technical skills. Among other institutions and ministries in the country like Rwanda Natural Resources Authority, Rwanda Environmental Management Authority, Rwanda National Institute of Statistics, Ministry of Agriculture, Ministry of Local Government, Rwanda National Police and Rwanda Revenue Authority were involved in technical cooperation by information sharing. The Ministry of Defence, using its Engineer Regiment, provided assistance in dealing with emergency road works.

In order to improve human resources, short, medium and long term training programs, logistic support and technical assistance were provided though a number of initiatives financed by the World Bank, African Development Bank and European Union. Under a technical assistance project financed by the World Bank, about 25 transport sector professionals were trained in postgraduate level leading to MSc in Highway Engineering & Management and Transport Engineering & Economics during EDPRS-1 period.

The bulk of the budgetary allocation in Transport sector goes through RTDA, which the main agency responsible for implementing transport development and maintenance works. The budget execution rates of RDTA during last 4 years (2008-2009 to 2011-2012) of EDPRS-1 are shown in Table 2-11. It is evident from the table that baring exception of the Mini Budget execution in 2008-2009, when the execution rate was only 70%, RTDA has been able to maintain satisfactory execution rates ranging from 97 to 111%.

Table 2-11: Budget Allocation and Execution by RDTA during EDPRS-1

Budget Year	Approved Budget (RWF)	Execution (RWF)	Execution (%)
2008-2009	47,898,813,224	47,506,271,598	99%
2008-2009 (Mini Budget)	10,759,500,000	7,542,300,000	70%
2009-2010	26,124,870,669	25,413,225,413	97%
2010-2011	43,948,932,289	48,250,661,671	111%

In 2008-2009 the budget execution of Road Maintenance Fund (RMF) was 65% of the planned budget. During the Mini-Budget of 2008-2009, the budget execution rate went down to 33% and it rose again to 41% during 2009-2010. In the fiscal year 2010-2011, the budget execution rate shoot up to a record 143%. The reason for the high increase in budget execution rate against planned budget is that there were huge backlogs of committed projects from the previous years.

2.3.2 Challenges of Transport Sector in EDPRS-1

The key challenges of the Transport sector during EDPRS-1 period were as follows:

- Coordination of transport agencies was not very smooth as they have different roles and responsibilities;
- Monitoring of the activities of the sister agencies by MININFRA was not very effective, and coordination of and monitoring of the sector appear to be difficult;
- The reporting and assessing the performance of the different sub-sectors of Transport sector were hampered due to Inadequate adequate indicators and targets;
- Unbalanced allocation of resources for paved and unpaved roads;
- No axle load control policy and strategy were in place;
- No reference laboratory to ensure the quality of construction and maintenance work in the Transport sector;
- Poor performance of local companies in the transport sector, apparently due to both inefficient human resources, institutional and financial capacity;
- Inadequate coordination between RTDA, Districts and City of Kigali to monitor transport development initiatives of the local government institutions;
- The Transport sector Strategic Plans were not very well defined; and
- Budgetary allocation for unplanned projects poses a significant challenge.

2.3.3 Lessons Learnt from EDPRS-1

A summary of the lessons learn from the EDPRS-1 is given below:

2.3.3.1 Policy, Strategy and Priorities

- Setting up adequate policy, strategy and priorities for transport infrastructure and services are vital for the development of the Transport sector; and
- The responsibilities in the strategy need to be defined, and the mechanisms to monitor and evaluate the performance for implementation should be put in place.

2.3.3.2 Reporting and Operational Issues

- Unbalanced prioritization for development and maintenance of paved vs. unpaved roads;
- Reporting of the performance of Districts and Kigali City transport infrastructure and service development and maintenance/operation works due to Inadequate appropriate indicators; and
- Targets and indicators for non-road modes, like air, rail and inland water transport including transport service are missing;

2.3.3.3 Management

Inadequate experienced human resource in the Transport sector both in private and public institutions; and

Coordination of activities and definition of responsibilities of each actor in the Transport sector development are essential.

2.3.3.4 Financing

- Insufficient financial resources for transport infrastructure and service development, maintenance and operation; and
- Inadequate diversification of available funds outside government and development partners.

2.3.3.5 Partnership

- Greater role for Districts and Kigali City in coordination with RTDA for development and maintenance of transport infrastructure and services under local government institutions;
- For an effective implementation of transport projects, especially in roads, collaboration with local authorities appears to be very important;
- The wide consultations with Development partners, private sectors and other stakeholders in the policy and decision making process can improve the ownership of all activities in the Transport sector;

- Formalisation of the activities, time frames and deliverables by signing a Memoranda of Understanding between the Transport sector partners, such as, the GoR, the Ministry and other sister organisations may help consolidating the partnership

CHAPTER 3. THE STRATEGIC FRAMEWORK

3.1 CONCEPTUAL APPROACH OF THE TRANSPORT SECTOR

3.1.1 Mission and Vision

The vision of the transport sub-sector under Vision 2020 is to develop modern infrastructure and quality services, while ensuring sustainable economic growth and developing eco-friendly, safe and seamless integrated multimodal transport system for passenger and goods both at national and regional level.

The mission of the transport sector is to contribute towards the realization of the economic development and poverty reduction objectives as formulated in strategic policy guidance, such as Vision 2020 and EDPRS, by the establishment and rational management of transport infrastructure and services.

By fulfilling its vision and mission, the transport sector will encourage economic growth and create an enabling environment for the development of socio-economic interactions, employment creation, and poverty reduction.

3.1.2 Transport Sector Objectives

The key objective of the transport sectors is to develop an integrated and seamless multimodal transport system considering key policy principles, as hereunder:

(i) Economy (Public Accounts, Transport Economic Efficiency: Business Users & Transport Providers, Transport Economic Efficiency: Consumers, Reliability, Wider Economic Impacts);

(ii) Safety (Accidents, Security);

(iii) Environment (Noise, Local Air Quality, Greenhouse Gases, Landscape, Townscape, Heritage of Historic Resources, Biodiversity, Water Environment, Physical Fitness, Journey Ambience);

(iv) Accessibility (Option values, Severance, Access to the Transport System);

(v) Social Equity and Integration (Transport Facilities for Everyone Including Disables and Infirm, Gender Equality, Employment for Vulnerable population, Integration of Transport Interchange, Land-Use Policy, Other Government Policies).

3.2 TRANSPORT SECTOR PRIORITIES

3.2.1 Ranking of New Priorities and Innovations Proposed

Having identified the key challenges the next step was to develop priorities to solve those challenges. In addition, the ranking of the candidate priority was done by

establishing a utility algorithm using Multicriteria approach as presented in Appendix-A.

The Value Tree for Ranking of Challenges and Priorities for the Strategic Transport Plan of EDPRS-2 is demonstrated in the Figure A-1 of Appendix-A. The same value of tree is used for both ranking of challenges and priorities. A questionnaire survey was conducted involving a number of transport experts and decision makers to derive relative weights for different attributes of the value trees, which were subsequently used to rank challenges and priorities.

3.3 CURRENT CHALLENGES AND PROPOSED STRATEGIES OF THE TRANSPORT SECTOR

3.3.1 Key Challenges of the Transport Sector

Under the bottom-up approach for the development of the Transport Strategic Plan for EDPRS-2, the first step was to identify key challenges in the Transport sector in from the review of the current situation and consultation with the stakeholders. The key challenges are then weighed in accordance to its relative negative impacts for achieving the goals and objectives of the transport sector as demonstrated in the value tree of the Figure A-1 of Appendix-A with 1 being the most important are shown in Table 3-1.

Table 3-1: Ranking of Challenges in Transport Sector

Challenges	MCA Score	Rank (with 1 being the most import)
Inadequate Mobility, Connectivity and Accessibility of Urban, Intercity and Rural Road Network	69.3	1
Fragmented and uncoordinated of transport services, unreliable and inefficient operations, no clear service standards, financing and demand management system;	64.0	2
Over dependence on road transport and lack of priority of sustainable modes of transport	60.7	3
Inadequate Provision for Social Equity and Integration in Transport Infrastructure and Service	58.6	4
Inadequate accident and emergency investigation, mitigation and impact management system in Rwanda	56.8	5
High transport costs estimated to be about 40% of the value of imports or exports	52.8	6
Inadequate investment, institutional and human resource capability in air transport infrastructure and service provisions	51.3	7
Quality control and assurance, monitoring & evaluation and coordination of development activities are inadequate	51.1	8
Delay in procurement, construction and project implementation process due to absence of proper mechanism and the shortage of qualified and experienced manpower	47.8	9

The Ranking of the Challenges and Corresponding Solutions of the Transport sector and Priority Ranking and Expected Outcomes of the Transport Sector are demonstrated in Table A1 and A2 of Appendix-A.

3.4 DESIRED TRANSPORT SECTOR OUTCOMES AND LINKAGE WITH THEMATIC PRIORITIES FOR THE NEXT 5 YEARS

As already known, the process of preparing EDPRS 2 is under way. EDPRS 2 will be developed around 4 strategic thematic areas;

❶ Economic Transformation,

❷ Rural Development,

❸ Productivity and Youth Employment, and

❹ Accountable Governance

The above themes will be implemented under 16 sectors and 6 crossing cutting themes Gender and family inclusive of those key cross cutting themes.

1) Gender
2) HIV/AIDS
3) Regional integration
4) Environment
5) Disability
6) Capacity building

As described earlier, vast majority of the outputs belong to the one designated area. There is one Foundational issue included in the priorities as follows:

(i) Foundation -Social protection:

- To improve gender equality
- To improve access to transport for disables
- To improve social equity in transport development initiatives
- To improve freight transport parking and rest facilities for drivers

The contributions to thematic areas/priorities are demonstrated in the transport sector priorities and outcome matrix of Table C-1 of Appendix-C. A brief description of these contributions is outlined in the following sections.

The distributions of outputs of different outcomes/priorities with respect to different thematic Area are demonstrated in Table 3-2. It appears that the vast majority, i.e. about 83% of outcomes belong to the 2 designated thematic areas. Only 8.3% of the outcomes represent the Foundation area, i.e. priorities outside the designated thematic areas. Among the thematic areas, the Accountable Governance represents the dominant area having a share of 50% of the total outputs. This is followed by Economic Transformation for Rapid Growth, Rural Development and Productivity and Youth Employment with a share of 33.3%, 8.3% and 0% respectively.

Table 3-2: Distribution of Outcomes with respect to Thematic Area

Thematic Priority Area	Number of Outcomes	% of the Total Outcomes
Thematic - Economic Transformation for Rapid Growth	3	33.3%
Thematic - Rural Development	1	8.3%
Thematic - Accountable Governance	4	50.0%
Thematic - Productivity and Youth Employment	0	0.0%
Foundation - Social protection	1	8.3%
Total	**8**	**100.0%**

3.4.1 Economic Transformation

While developing strategies for the development of transport sector, efforts were made to ensure sustaining rapid growth and accelerating Rwanda's economic transformation. The Economic Transformation "Vision" for EDPRS-2 is:

"Sustain rapid economic growth and facilitate the process of economic transformation by increasing the internal and external connectivity of the Rwandan economy through improved infrastructure, exports, and more integrated supply-chains, while pre-empting demand in the energy sector, planting seeds of a green economy, and better managing the process of urbanization"

The vision can be broken down into 5 main priority areas as follows:

i. Increase the domestic interconnectivity of the Rwandan economy in hard and soft infrastructure;

ii. Increasing the external connectivity of the Rwanda's economy and boosting exports;

iii. Increasing investment in priority sectors and attracting large firms;

iv. Transform the economic geography of Rwanda by facilitating and pre-empting urbanization and promoting secondary cities;

v. Rwanda pursues a "green economy" approach to economic transformation

In the Strategic Transport Plan for EDPRS-2, efforts were made to align key strategies in the line of the priority areas. A brief description of the strategies, which are fully compatible with the priority areas of economic transformation, is outlined in the following sections.

3.4.1.1 Priority Area 1: Domestic Interconnectivity:

Economic Transformation Priority: Increase the domestic interconnectivity of the Rwandan economy in hard and soft infrastructure;

Target 1.1: Make it a national policy to give preferential access to electricity, water, roads and land to priority sectors of the economy and/or large investors;

In order to improve domestic interconnectivity a comprehensive programme has been undertaken in EDPRS-2. Among the hard infrastructure, key programmes include:

- Upgrading 680 km of unpaved National roads into paved roads;
- Widening of 42 km of Kigali-Bugesera International Airport road into a four lane road;
- Upgrading of 300 km of unpaved District Road Class 1 into paved/gravel road;
- Upgrading of 2,550 km of unpaved District Road Class 2 into gravel standard;
- 20 km of BRT line;
- 30 km of Dedicated bus lane;
- Feasibility study of Kigali-Rubavu railway line; and
- Introduction of Lake Kivu Inland formal Water Transport operation, etc.

Among other, key soft infrastructure includes:

- Setting up of real time central control centre of public transport at Kigali City;
- Introduction of Smart and Integrated ticketing system of public transport; and
- Introduction of vehicle actuated and bus priority signals in Kigali City.

3.4.1.2 Priority Area 2: External Interconnectivity

Economic Transformation Priority: Increasing the external connectivity of the Rwanda's economy and boosting exports;

Target 2.1: Bring comprehensive change to Rwanda's external connectivity by building a new airport, expanding RwanAir, develop feasibility studies for a railway and pipeline

These include:

- Construction of Bugesera International airport in between 2013 to 2016 with an annual passenger handling capacity of 3 million and with an estimated cost of USD 700 million.
- Expansion of the route network of RwandAir in Africa, Asia and Europe from 13 to 32 during the EDPRS-2 period;
- Expansion of the Fleet of RwandAir from 7 Narrow body aircrafts to 9 Narrow body and 3 Wide body aircrafts;
- Mobilisation of funds for construction of DSM-Isaka-Kigali Railway line; and
- Feasibility and Detailed Design Study of the Kampala-Kigali-Bujumbura, Kigali-Muhanga-Ribavu and Huye-Rusizi Pipelines

Target 2.2: Transform Rwanda's logistics system, with a strategic focus on exports and re-exports to Burundi and Eastern DRC

In order to fulfil the target, the key planned programmes include:

- Development of 5 One-Stop Border Posts at Akanyaru, Cyangugu, Gatuna, Rubavu and Rusumo Border Posts;
- Construction of Air Cargo Centre (ACC) and Commercial Mall
- Development of Off-dock Container Depots at Mombasa and Dar Es Salaam;
- Development of Regional logistic centres in Kigali and bonded ware houses in Goma and Bukavu; and
- Construction of 4 Truck Stops/Roadside Stations

Target 2.3: Invest in soft and hard sector-specific infrastructure to accelerate growth in the commodity and tourism sectors, and to facilitate the increasing exports for firms in the manufacturing and agro-processing sectors;

The programmes of the target include:

- Development of Agro-logistics and Multi-Service Centres; and
- Development of E-Freight exchange service in Rwanda.

3.4.1.3 Priority Area 3: Transform private sector

Economic Transformation Priority: Increasing investment in priority sectors and attracting large firms;

Target 3.1: Significantly strengthen the business environment through tax and regulatory reform to spur medium and large enterprise growth and attract large investors;

The public sector needs to continue to play a pro-active role in facilitating the process of economic transformation. The small size of the private sector which remains burdened by the resulting high transport costs, poor freight logistics facilities, low value chain integration and a high trade deficit in the order of import and export ration 11 to 1. Public services and investments across sectors need to combine to achieve targeted structural change. The key programmes include for achieving the target:

- Consolidated public limited companies or operators' cooperatives working in the Public Transport Sector; and
- Providing full tax rebate for importation large standard bus for public transport (approximately 300)

3.4.1.4 Priority Area 4: Manage process of urbanization

Economic Transformation Priority: Transform the economic geography of Rwanda by facilitating and pre-empting urbanization and promoting secondary cities;

Target 4.1: Develop secondary cities as centres of non-agricultural economic activities

The target includes the following key programmes:

- 140 km of all main roads in major urban centres have basic facilities for PT, NMT and pedestrians;
- Feasibility study and Detailed design on the construction of 3 town bypass roads in Huye, Muhanga and Musanze;
- Upgrading 82 km of unpaved road in Kigali City to paved roads; and
- Harmonisation of Transport and land use planning for Kigali City;

Target 4.2: Enhance existing infrastructure in anticipation of accelerated movement of people into urban areas;

The target involves, among others, undertaking the following programmes:

- 30 km of Dedicated Bus Lanes (DBLs) for Kigali City;
- Detailed Design Study for a BRT system for Kigali City;
- Improvement of 650 bus shelters in Kigali City;
- Development of 430 km of scheduled bus service in Kigali City;
- 140 km of all main roads in major urban centres have basic facilities for PT, NMT and pedestrians; and
- Feasibility study and Detailed design on the construction of 3 town bypass roads in Huye, Muhanga and Musanze

3.4.1.5 Priority Area 5: Green Economy

Economic Transformation Priority: Rwanda pursues a "green economy" approach to economic transformation

The target involves implementing a number of sustainable and eco-friendly transports, like NMT and pedestrian development initiatives as follows:

- Setting up additional four regional vehicle fitness and environmental rating inspection centres;
- Construction of 3 park and ride facilities for Kigali City;
- Public transport incentive and private car disincentive measures, such parking control and dedicated bus lanes;
- Development of 100 km of High Quality footpath on both side of roads with shade tree at 10 m interval including wheel chair access facilities for disables;
- Improvements to pedestrian access ways/tracks (100 km);
- Development of 100 number of pedestrian crosswalks with signal; and
- Development of Bicycle parking at 25 sites.

3.4.2 Rural Development

In order to improve accessibility and connectivity of rural areas, which is essential to ensure that growth is broad-based and inclusive, a number of key programmes are planned as follows:

- 680 km of National unpaved road upgraded to paved roads;
- 300 km District Class 1 unpaved roads upgraded to paved/gravel road
- Upgrading of 2,550 km of District road Class 2 to gravel standards; and
- Reintroduction of 8,100 km of rural scheduled bus service

3.4.3 Productivity and Youth Employment

In order to increase productivity of the professionals and technicians in the transport sector, a number of training programmes are planned as follows:

- 100 transport sector professional trained at Master level;
- 50 technicians in transport sector provided on-job practical training
- Training for 50 transport professionals and contractors on contract and project management; and
- Technical teams of all District trained

In addition, to create employment opportunities for the rural population, about 400 roadside local communities to be trained on Labour Intensive Public Works (HIMO/LIPW) activities related to road construction and maintenance.

3.4.4 Accountable Governance

In order to strengthen the service delivery in the development process and to initiate necessary reform in the governance sector to support growth and poverty reduction and reinforce accountability, among other, a number of key programmes are planned as follows:

- Restructuring of RTDA to undertake tactical functions for public transport;
- An effective M&E system with Objectively Verifiable Indicators in place;
- National Reference Laboratory for Road/airport Infrastructures created and operational;
- Establishment of Transport Safety and Vehicle Fitness Investigation and Control Unit in RTDA under the proposed restructuring plan;
- At least four regional vehicle inspection centres established under private sector;
- Establishment of a separate emergency work management unit in RTDA
- Allocation of at least 6% of funds from GoR for emergency work and disaster management
- Establishment of an advanced Accident Investigation System and Accident Database for National Police in collaboration with RTDA;

- Development of Safety Standards and Establishment of annual safety auditing system; and
- Design and Establishment of Trauma centres in Rusizi and Rubavu.

3.4.5 Thematic Foundation Areas of the Transport Sector

The Cross-cutting issues of the Transport sector have been included under the Foundation area under the designated Class of "Social Protection". The following priorities have been identified under this Class:

- To improve gender equality
- To improve access to transport for disables
- To improve social equity in transport development initiatives
- To improve freight transport parking and rest facilities for drivers

The key programmes under the thematic area of "Social Protection" include:

- Incentive for Bus/Taxi operators for ensuring access for disable and infirm passengers
- Reserving parking facilities for disables in all parking lots;
- Special provisions in all tender documents for large capital projects incorporate HIV prevention activities, Gender equality and access to transport for disables and infirm;
- Preferential treatment and Incentive for companies employing women labourers and supervisors for road construction and maintenance;
- Campaign for companies employing women labourers and supervisors for road construction and maintenance; and
- Encouragement of women to run transport companies by arranging special campaign and preferential treatment

3.5 STRATEGIES FOR ACHIEVING OUTCOMES AND CROSS-CUTTING ISSUES

3.5.1 Strategies for Achieving Transport Sector Outcomes, including Innovative Methods for achieving those Strategies

In order to obtain an appropriate solution for road network development including public transport service improvement, a number of alternatives were evaluated in the Strategic Transport Master Plan Study7. The following network scenarios were modelled and evaluated:

1) Base Case: Current Network
2) Alternative 1: Rail Scenario
3) Alternative 2: Improved Road links
4) Alternative 3: Quality Bus Corridors
5) Alternative 4: IWT Scenario

[7] RTDA (2012) "Strategic Transport Master Plan for Rwanda" Final Report, September 2012, Kigali, Rwanda

6) Alternative 5: All Projects

The comparison of Economic Feasibility Indicators for different alternatives is demonstrated in Table 3-3. It appears that Alternatives 1, 3 and 5 are viable having Alternative 1, i.e. the Rail Scenario is the best option. However, the initial investment cost of the development of local railway system is very high. It is therefore decided to adopt Alternative 5, i.e. all project including rail, improved road links, quality bus service and IWT in EDPRS-2. This also represents the second best option. The Scenarios for improved road links and IWT are not viable on their own merits.

Table 3-3: Comparison of Economic Feasibility Indicators for Different Alternatives for Transport Services (Source: RSTMP 2012)

Economic Indicator/Alternative	Alternative 1: Rail Scenario	Alternative 2: Improved Road links	Alternative 3: Quality Bus Corridors	Alternative 4: IWT Scenario	Alternative 5: All Projects
NPV (US Dollars in Million)	1,147	-249	15	-218	697
IRR (%)	27.3%	5.4%	12.3%	-7.7%	15.9%
B/C Ratio	2.24	0.57	1.02	0.02	1.29

The strategies for achieving the transport sector outcomes are outlined in the following sections. If it is possible to adopt the recommended strategies, the expected output for each outcome is presented in the Table A-2: Priority Ranking and the Expected Outcomes of the Transport Sector of Appendix-A.

The Logical Framework for the Chain of Results of the Strategies of the Transport Sector is demonstrated in Table A-3 of Appendix-A.

3.5.2 Strategies for Achieving Improved and Sustained Quality of Road networks (Rank = 1)

3.5.2.1 Strategies to improve mobility, riding quality and LoS for Strategic Road Network

In order to determine the best alternative for each road under the Classified National Road network, a 20 year Life Cycle economic analysis was undertaken for each road. Under this approach, different alternative road maintenance and improvement alternatives were developed for each road under the Classified National road network. These alternatives comprise different road maintenance and /or improvements works and there are specified for each road section. Each alternative option was then compared against the base case or Do minimum option (minimal routine maintenance) to obtain the best alternative.

All the Partner States of EAC agreed to adopt a Gross Vehicle Mass (GVM) of 56 tonnes on seven standard axles and to set axle load of 10 tonnes. The Overload Guidelines Document (Synthesis Report and Guidelines on Vehicle Overload Control in Eastern and Southern Africa, SSATP, March 2010), provide comprehensive guidance to practitioners and officials tasked with Overload Control in the region to enable them to address most infrastructural and operational issues relating to weighbridges in particular and overload control in general.

In summary, the guidelines cover aspects such as:

- Selection, installation and operation of weighbridges;
- Data collection, analysis and reporting;
- Private sector involvement and financing mechanisms;
- Cross border overload control, and
- Training of weighbridge personnel.

A stepwise action plan has been proposed to implement appropriate programmes for the next five years to control overloading as follows:

a) Formulation of Axle load policy and approval of the same;
b) Review of axle load control regulations;
c) Engagement of consultant for axle load study and implementation;
d) Civil construction of axle load stations in different phases;
e) Finalization of penalty structure as per policy and regulations;
f) Formulation and implementation of training program;
g) Establishment of centralized digital monitoring framework;
h) Awareness building and drivers' education; and
i) Regular evaluation and recommendation by a government committee.

In order to assess the road network continuity and capacity, LOS was chosen as the guiding criteria in the Rwanda Strategic Transport Master Plan (RSTMP) study. The Transport Model (VISUM) is utilised across all transport modes to assess the relationship between traffic and infrastructure capacity, i.e. it identifies where actual or

projected traffic does or is likely to exceed the infrastructure's ability to process that traffic at an acceptable level of service. In the case of roads, the high-level assessment carried out by means of the Transport Model is refined by applying the more detailed First Order Network Assessment (FONA) model, which is based on Highway Capacity Manual (HCM 2000) approach. The analysis assessed road continuity for 2020 traffic demand under a number of potential scenarios. The Climbing lanes required for the Base Year to improve the capacity of the road network are demonstrated in Figure 3-1. However, building climbing lane is a very costly work considering mountainous terrain of the Rwanda. According to the preliminary FONA analysis, it is desirable to add additional 760 km of climbing lanes, which is very expansive exercise. It is therefore essential to conduct an economic analysis and to prioritise the potential widening options during the EDPRS-2 period.

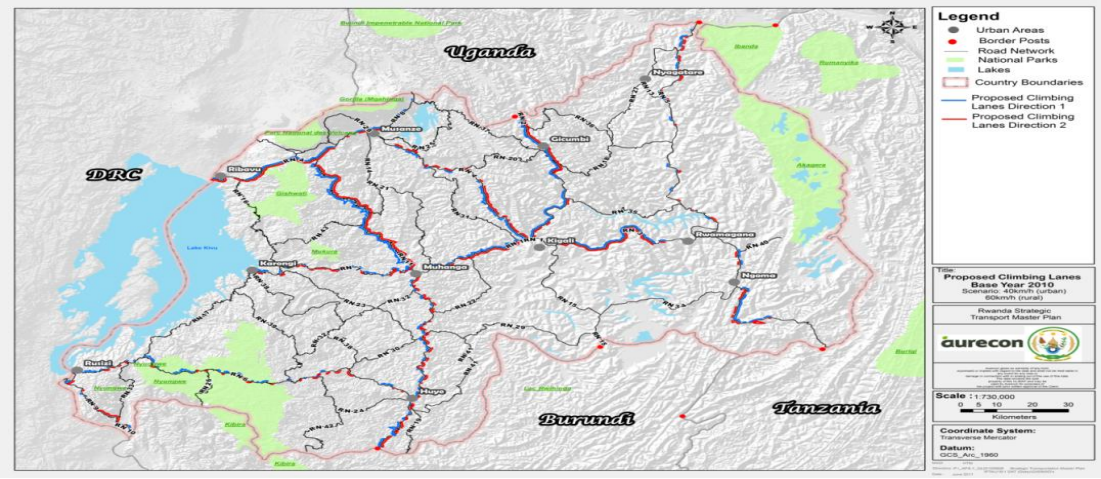


Figure 3-1: **Climb Lanes required in Base Year (2010) 40km/h and 60km/h scenario to attain at least LOS (Source: RSTMP 2012)**

The new International Bugesera Airport is expected to start operation in 2018/19, i.e. immediately after the 5 year period of EDPRS-2. The airport will serve 1.5 to 3.0 million passengers annually. At the present moment there is a two-lane road connecting Kigali to Bugesera. However, the road may not be sufficient to meet increased traffic demand. However, it is important to ensure congestion free connectively between Kigali and the new International airport at Bugesera. To this end a number of programs will be undertaken in EDPRS-2 as follows:

- Feasibility Study and Detailed Design for a four lane divided highway from Kigali to New Bugesera International Airport;
- Acquisition of land for a six lane divided highway from Kigali to New Bugesera International Airport; and
- Construction of 4 lane Divided Highway from Kigali to New Bugesera International Airport.

3.5.2.2 *Strategies to improve mobility and riding quality for District Roads*

Normally, the Classified District roads have low volume of traffic and it is not practical to conduct a Life Cycle economic analysis for the Classified District road network. In

order to obtain the best possible alternative for each road, either a 20 year Life Cycle road condition maximization approach or a multi-criteria analysis based on AADT and road condition (IRI) was adopted.

3.5.2.3 *Strategies for improving integrated and sustainable transport facilities in regional urban areas*

In order to divert pressure from Kigali City, which is the main urban agglomeration with a 9% population of Rwanda, it is imperative to develop other regional urban centres. To achieve the objective, about 140 km of urban road will be developed in 11 towns with integrated PT, NMT and pedestrian facilities.

While developing solutions for NMT and pedestrian, it is essential to take into account of the current and emerging schemes that may influence the future programs and their development. A framework for the development of future (refreshed) program and a time frame for the life of each scheme have been set out.

Due importance will be given to consider, among other, a number of key issues when generating proposals for the development of walking and bicycling facilities as follows:

- Improvements needed to enable and enhance walking and cycling;
- Standards for planning, designing and maintaining bikeways and walkways for urban road network;
- Provisions for adequate bicycle parking facilities;
- Integration of walking facilities with public transits so that walking and public transit (including bus, taxi, and even air transport) work well together.
- Provisions of Infrastructure for pedestrians in all major works for road upgrading and strengthening; and
- Provisions for adequate signalised crosswalks for pedestrians.

In addition to divert traffic from the urban areas, a feasibility study and Detailed design on the construction of 3 town bypass roads mainly for diverting freight in Huye, Muhanga and Musanze will be undertaken.

The purpose of a road-freight by-pass is to restrict movement of freight vehicles by re-directing it from a focal point like a city centre. There are three road-based ring roads being proposed for Rwanda as follows:

Within the Town of Kigali Province: a ring road around the City of Kigali is being proposed to allow movement of freight outside the jurisdiction of the city. The ring road needs to connect the Freight Trade Zone as well as other proposed freight facilities (i.e. truck stop; Kigali International airport and the proposed Bugesera International Airport) to the main freight corridors.

Within the Southern Province: a bypass is proposed in the proximity of Muhanga and Huye towns to divert heavy vehicle traffic from the area of influence of the towns. The bypasses need to connect the proposed freight facilities (i.e. weighbridges and truck stops) to the main freight corridors.

Within the Northern Province: a bypass is proposed at the town of Musanze in order to bypass heavy vehicle traffic from the influence area of the town.

3.5.3 Strategies for Achieving Improved Public Transport Services (Rank = 2)

3.5.3.1 Strategies for the Development of An Integrated Public Transport System for Kigali City

In order to formalise existing uncoordinated and mainly unscheduled public transport service, a number of programs will be undertaken as follows:

- Review of Public Transport Regulations;
- Development of a public transport fare policy and
- Designing and bundling routes

The basic philosophy for the solution of transport problems would be the application of an integrated traffic demand and supply management approach. Under an integrated traffic demand and supply management approach an integrated multimodal transport development strategy will be adopted in three phases as shown Table 3-4.

It should be mentioned that these three phases are not mutually exclusive, but in fact steps towards achieving an ultimate single solution. It may be mentioned here all the programs of Phase I and II and some features of the Phase III excluding the BRT system will be implemented in the 5 year period of EDPRS-2. The proposed public transport routes are shown in *Figure 3-2*

Table 3-4: Phased Implementation Programmes for the Development of an Integrated Public Transport System for Kigali City.

Phase I: (Duration 0 to 6 months)	Phase II: (Duration from 7^{the} month to 2 years)	Phase III: (Duration 2 to 20 years)
• Re-Organization & Improvement of Existing Modes and Public Transport Services • Consolidation, Formalization & Integration (Infrastructure, Schedules, Fares, Systems, etc.) • Feeder- & Distribution Services • Application of Route franchising approach.	• Giving Permanence to Corridors & Nodes • Implementation of Dedicated Bus Lanes (DBLs) • Transform to Dedicated Bus Lanes (DBLs) for exclusive use by Dedicated Right-of-Way Buses • Implementing bus priorities at designated intersections.	• Fully-fledged Integrated ("Customized") DBL System with Integrated Rapid Public Transport Network Characteristics • Development of Bus Rapid Transit (BRT) system in designated high demand corridors • Integrated Demand and Supply Management Approach

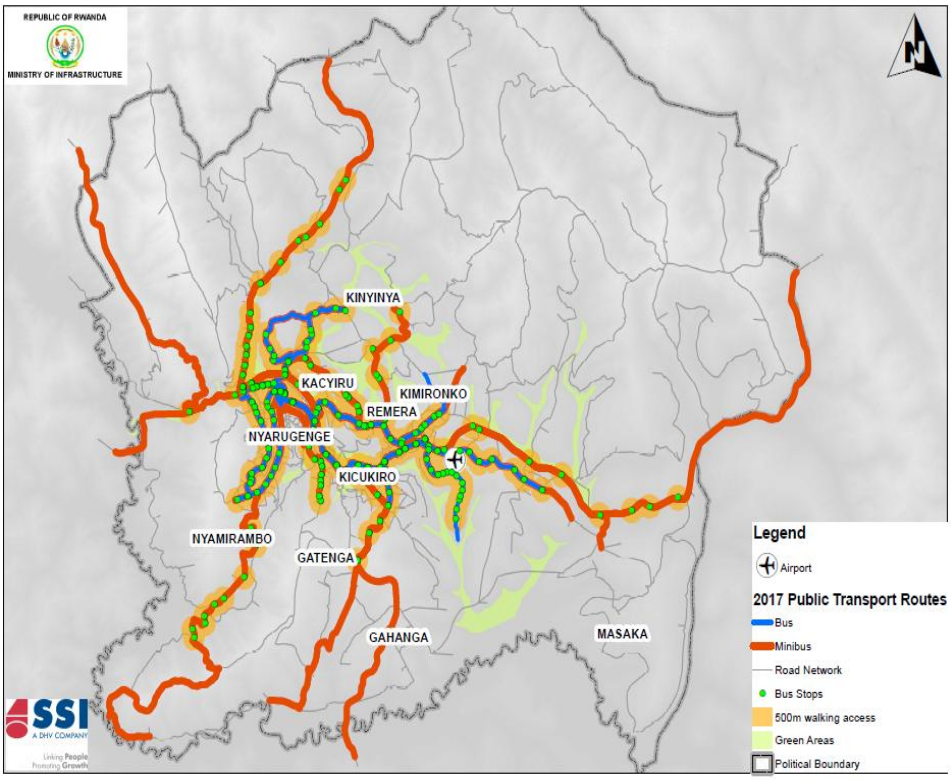


Figure 3-2: Proposed Public Transport Routes for Kigali City

3.5.3.2 *Strategies to develop an integrated public transport system for Intercity Service*

The key strategies for the development of Intercity road passenger services are as follows:

- A Quality Bus Service will be introduced as a dedicated service on 11 major corridors linking important cities and nodes within Rwanda providing a faster and more convenient service that would successfully compete with the private car; and
- A scheduled bus service will be employed to provide feeder services in low demand areas;

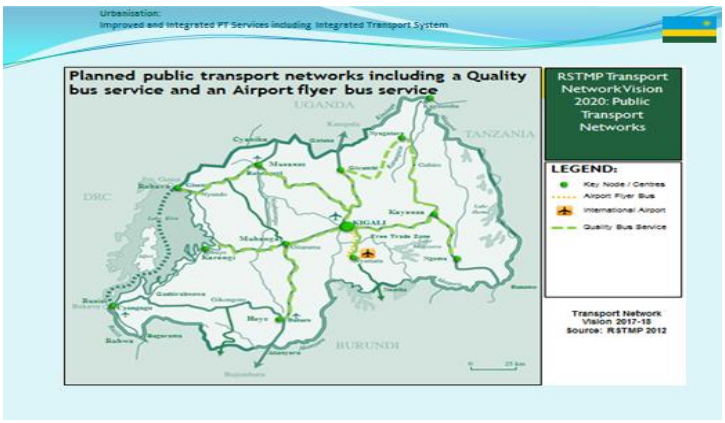


Figure 3-3: Planned Quality Bus Routes for Intercity Services

3.5.3.3 Strategies to develop an integrated and sustainable multimodal transport system for Kigali City

In order to develop an integrated and sustainable transport system, it is essential to assign due importance to Non-motorised Transport (NMT) in urban areas. To this end, the following programs will be undertaken for Kigali City:

- Development of 100 km of High Quality footpath on both sides of roads with shade tree at 10 m interval including wheel chair access facilities for disables
- Improvements to pedestrian access ways/tracks (100 km)
- Development of 100 number of pedestrian crosswalks with signal and
- Development of Bicycle parking at 25 sites.

The planned walk access zones and routes are shown in Figure 3-4.

In order to balance development of the transport system, efforts will be made to improve infrastructures as well as services in the Kigali City. To this end about 82 km of City of Kigali unpaved roads upgraded to paved road for bus routes.

Parking facilities in Rwanda, and particularly in Kigali, are still underdeveloped. For instance, most of the vehicles in the business centre mainly use on-street parallel and inclined parking facilities, which eventually hinder the through-traffic in the area due to the reduced lane width.

Therefore, the level of vehicle ownership coupled with the insufficient facilities has resulted in increased levels of congestion, particularly in areas of high demand such as business districts. Again, the parking is generally treated only from the considering the supply side of the problem without due regard to using it as a tool for travel demand management.

To resolve the problems, efforts will be made to develop appropriate parking strategies under an integrated demand management approach and hence to implement the same during EDPRS-2 period.

Figure 3-4: Close up View of 500 Metre Walk Access Zone and Routes to Provide for Walk-Way for Kigali City

3.5.3.4 *Strategies to develop an integrated public transport system for Rural Service*

In order to ensure adequate, all weather and competitive bus services in rural areas by involving private sectors, it is imperative to improve the ridding quality and Level of Services of the rural roads in Rwanda. To improve rural road infrastructure existing National and District unpaved roads will be gradually upgraded into paved roads.

Since the private sectors are reluctant to provide bus service in remote rural areas, a properly regulated bus service under a route franchising approach, in which the Government of Rwanda will partner with private investors under a PPP venture, will be introduced. For this, a Public Limited company will be set up to take over the responsibility of bus service operations of ONATRACOM under a PPP initiative.

In order to implement restructuring plan for the rural public transport in the base year about 168 buses (136 buses with 60 seat capacity and 32 buses with 30 capacity) are required out of which the new company may procure some of the buses by selling disposable assets of the ONATRACOM.

3.5.4 Strategies for Achieving Enhanced Capacity of Air transport Infrastructure (Rank = 3)

The Government of Rwanda has identified efficient air transport sub sector as key for the growth of Rwandan service based economy. By providing links with the rest of the world, they facilitate business and leisure travel, as well as trade, investment and technology transfer. Accordingly, and in line with the Government's broader economic and trade policy objectives **(Vision 2020)**, Rwanda seeks to conclude with other countries the most liberal and flexible air services arrangements possible, providing for freer access for international airlines and thereby for increased competition among them.

The key strategies for Infrastructure expansion, up grading and maintaining airport infrastructure and facilities at par with international standard the way forward in the Air transport sub-sector in the next five years during EDPRS-2 period are as follows:

- Construction of Bugesera International airport in between 2013 to 2016 with an estimated cost of USD 700 million;
- Expand Kigali International Airport Terminal Building, runways to meet international standards (at least level "C");
- Upgrade up country aerodromes to facilitate operation of medium sized jet aircraft;
- Enhance security surveillance system and emergency response capabilities;
- Up-grade and modernize communication and navigation aid, meteorological services and the Air Traffic Control facilities; and
- Develop and expand infrastructure and associated facilities.

3.5.5 Strategies for Achieving Integrated Multimodal transport System in Place (Rank = 4)

3.5.5.1 Strategies for developing an integrated and sustainable railway system for Rwanda

At present there is no rail network in Rwanda. In the region, there are two plans investigating possible future expansion of the rail system.
The EAC Rail Master Plan (EARMP) proposed new links, i.e.:

- Isaka (TRL) to Kigali with a branch line into Burundi, and
- Kigali via Kabale to Bihanga/Kasese (URC/RVR).

The Great Lakes Railway Pre-feasibility Study investigated links, such as:

- Bukavu to Kigali,
- Bujumbura to Kigali and
- Rubavu to Kigali.

The topography of the terrain along the Bujumbura-Kigali and Bukavu-Kigali sections is not conducive to a rail solution. Kigali-Kasese is feasible from a construction perspective.

Therefore two potential railway routes connecting both Central and Northern corridors are under investigation now. In addition to railway line along the Central Corridor, it is high time exploring the feasibility of developing another railway line along the Northern Corridor. The Rubavu-Kigali line could be extended connecting Goma in DRC and Kasese in Uganda leading up to Kampala to become a part of Northern Corridor. This lane has been included in EDPRS-2 for feasibility study including detailed design.

3.5.5.2 To develop a sustainable Pipeline system in Rwanda

In order to reduce fuel costs and to develop sustainable pipeline system for both the Central and the Northern Corridors, the Feasibility and Detailed Design Studies of the Kampala-Kigali-Bujumbura, Kigali-Muhanga-Ribavu and Huye-Rusizi Pipelines are planned for the EDPRS-2 period.

3.5.5.3 To develop an integrated and sustainable Inland Water Transport system for Rwanda

Rwanda does not have any major experience so far with relevant instruments, new developments or projects as a basis for the development of an integrated maritime policy. The key priorities for the development of IWT under an integrated transport system as per the analysis of RSTMP are as follows:

- the implementation of an advanced ferry system for both passengers and cargo vessels on Lake Kivu, serving the major communities along the shores.
- the possible introduction of inland waterways navigation on the Akagera river, connecting Rwanda with Lake Victoria.

3.5.6 Strategies for Achieving Enhanced Transport Institutional Capacity (Rank = 5)

3.5.6.1 Strategies for the improvement institutional and human resources capacity for land, water and air transport system at National Level

In order to address urgent short to medium term skills gaps, the Government of Rwanda initiated the Multi-Sector Capacity Building Program (MSCBP). MSCBP plans to set up a professional skills development fund, which will allow 'high flier' young and mid-career public sector staff to obtain training at home or abroad. Public sector employers such as the Ministry of Infrastructure do currently send staff abroad for training such as Master's degrees, but there is not always enough sufficient money available to do this.

Efforts were made in the EDPRS-2 to align the human resources development initiative in the transport sector as per guidance of MIFORTRA and PSCBS (2012).

At the tradesman/artisan level, one pilot initiative currently in operation has placed a number of inexperienced ETO graduates into public or private sector jobs for a year, half funded by the government. The employer has no obligations to the ETO graduate after the year, but it is hoped that they will be kept on, or that the experience will help them to find other work. This initiative is being under the responsibility of the new Workforce Development Agency.

In higher education, many universities of USA, UK and other EU countries, China and Japan work with Rwandan institutions, exchanging students, staff and expertise. Public sector procurement in the transport sub-sector has an important role to play. The training of local workers could be made a contractual requirement for major contracts; and increasing the input of local labour, goods and services should be a priority.

Considering the importance of the development of professional skill particularly in transport sector, where the shortage of trained professionals remains very acute, the Government of Rwanda initiated long-term in-country training to professional staff of the transport sector leading to Master's degrees in transport planning & engineering and transport economics, postgraduate degrees by research and also to organise short courses for transport professional in partnership with a local institution of higher learning, i.e. Kigali Institute of Technology. In addition, special trainings on road maintenance are being imparted to people in rural areas through road maintenance cooperatives.

In higher education, there are three broad areas of opportunity. One is to improve experiential learning, i.e. to get students into better quality work placements. The second is to invite experienced professionals into universities to teach, either as short term visiting lecturers or simply by delivering guest lectures or seminars. The third is to send transport professional aboard for higher educations. All these approaches would allow students to learn from practitioners and gain insights into real project experience. These approaches could also provide a good opportunity for corporate social responsibility for foreign private sector firms working in Rwanda. Academic knowledge exchange between Rwandan universities, as well as regionally and globally, should be encouraged and expanded. In the EDPRS-2, efforts will be made to train professionals in the Transport sector using all available alternatives.

In air transport sector a number of initiatives can be undertaken to improve human resource capacity. There has never been an effort to invest in human resources to attain aviation related skills in Rwanda. Focus is therefore to develop strategies the industry should adopt to attract, retain and plan for their future skills needs to remain competitive in a tight labour market.

- Forming partnerships with educational institutions to provide aviation related knowledge and skills
- Facilitating establishments of Aviation Training Organizations such as flying schools, maintenance training organization etc. The necessary funding can be secured from donors and other development partners if this project is included in EDPRS-2 as a priority.

There are millions of Rwandan citizens living abroad, both in the East African region and further afield, who contribute greatly to Rwanda's development. The UNDP TOKTEN (Transfer of Knowledge Through Expatriate Nationals) programme arranges short-term volunteer posts for experienced professionals. This programme does exist in Rwanda but it does not currently focus on engineers.

In restructuring public transport institutions along the functional line, a hierarchical model having five distinct functional layers will be adopted as follows:

- Political layer - Ministry of Infrastructure will be responsible for formulating integrated transport, land use and public transport policies and corresponding strategies;
- Authority layer – A Public Transport Division will be set up in Rwanda Transport Development Agency (RTDA) to perform all tactical functions for land public transport excluding regulation and Rwanda Civil Aviation Authority (RCAA) in air transport for undertaking tactical functions for public transport system. The Transport Unit of Rwanda Utility and Regulatory Authority (RURA) will be responsible for regulation of land public transport system. It is understandable that these authorities should work closely with Municipalities and Districts while exercising their authority.
- Operator layer – Standardized public transport limited companies and cooperatives for providing public transport services
- Infrastructure Development layer – Rwanda Transport Development Agency (RTDA), Rwanda Civil Aviation Authority (RCAA), City of Kigali and Districts for development management of transport infrastructure.
- Enforcement layer – Rwanda National Police for safety and security;

A comprehensive bus service operation system will be developed under a route franchising approach involving RTDA, RURA and private bus operators to regularize existing fragmented and informal bus services of Rwanda. The Net Cost Route Contracts, which allow paying a fixed amount per km of service regardless of ridership and revenue collection by the regulator to the operator, might be appropriate for during initial phase for the route franchising contracts in Rwanda.

Delay in the procurement and project implementation process in transport sector is one of the main problems in the transport sector. This is a very complex issue and an integrated approach is essential to resolve the problem. In the EDPRS-2, efforts will be made to ensure assigning works on the basis of technical and financial capabilities of

the contractors and to impact training to professionals and contractors on contract and project management.

3.5.6.2 Strategies for ensuring adequate monitoring & evaluation, inspection and quality control of development activities in Transport Sector

During the EDPRS-2, an effective M&E system with Objectively Verifiable Indicators will be set as elaborated in Chapter 5 of the report. In support of the M&E system, detailed programs and adequate budgets have been earmarked for the whole EDPRS-2 period.

The key strategy for testing and quality assurance for physical works of transport infrastructures is to set up of a National Laboratory for testing of road, bridge and airport pavement works having the following key features;

- Reference Laboratory in Rwanda for the road, bridge and airport pavement works;
- Metrology entity, able to perform calibration of the equipment for the National Laboratory but also for the private laboratories, including the site laboratories handled by the road contractors; and
- Accreditation Laboratory - in case of claim or any dispute regarding the quality of material used for the roads works, the National Laboratory shall become the only entity able to issue the official tests results to guarantee the efficient interpretation about the testing procedure.

In order to improve vehicle safety and environmental rating, an integrated strategy will be undertaken as follows:

- Development of Safety Standards and Establishment of annual safety auditing system;
- Establishment of Transport Safety and Vehicle Fitness Investigation and Control Unit in RTDA under the proposed restructuring plan; and
- At least four regional vehicle inspection centres established under private sector.

An approach to road safety strategy may involve accident prevention, injury reduction, knowledge base development and capacity building measures. This approach can be translated into several road safety functions can in turn be encapsulated into several programs during theEDPRS-2. One of key areas is to improve accident investigation and analysis system of Rwanda National Police in collaboration with RTDA.

To reduce the adverse impacts of road accidents, it is imperative to improve post-accident response management. To ensure proper care and rehabilitation of the accidents victim two more trauma centre will be set up in Rusizi and Rubavu during the EDPRS-2 period.

3.5.6.3 Strategies to improve institutional and human resources capacity for Districts

As a part of overall strategies for the development of human resources, efforts will also be taken to develop human resources in Districts. The main programs are as follows:

- To impact training for technical teams of all Districts and
- To provide training for 400 roadside local communities on Labour Intensive Public Works (HIMO/LIPW) activities related to road construction and maintenance.

The strategy also places much emphasis on the participation of local communities in road maintenance activities. This directly addresses the ultimate goal of EDPRS-2, which is poverty reduction. Engaging of local communities on labour based routine maintenance work has two benefits:

- Providing the opportunity to gain practical skills on alternate off-farm employment; and
- Generating the opportunity for the local community earning a supplemental income enabling them to raise their own standards of living.

In order to promote employment generation, much emphasis is given on labour based methods to increase the disposable income of the population, which in turn stimulates the growth of the micro-economies.

3.5.6.4 To promote innovation and development in the transport sector

It is not possible to promote innovation without conducting research. However, there is no institutional set up in the transport agencies under the Ministry of Infrastructure for undertaking research initiatives to promote innovation, new approach and technologies for the development of transport sector in Rwanda. To this end, efforts will be made to introduce postgraduate research degree in the Kigali Institute of Technology and the National University of Rwanda and thus to initiate innovate research programs in the transport sector.

The fuel costs for motor vehicles in Rwanda are very high. It is therefore essential to conduct studies how to reduce fuel costs and hence the Vehicle Operating Costs (VOC) to reduce the total transport costs. Two studies are therefore proposed during the EDPRS-2 period as follows:

(i) Study on reduction of fuel costs for motor vehicle in Rwanda

(ii) Study on alternative fuel and fuel efficient engine for motor vehicles in Rwanda

3.5.6.5 To increase proportion of large and medium firms

With a view to consolidating existing public transport system into an operating system, which consists of a small number of large operators of standard large bus, effort should be taken for gradual bus fleet renewal and a shift toward larger buses and greater industry consolidation through several related policy initiatives as follows:

- Encouraging entry of several new, professionally managed private operators, in the form of public limited companies, having fleets of large buses in accordance with demand projections;
- Limiting the validity of permits issued for minibuses to 1 year;
- Encouraging collective (corporate in the form of public limited companies or cooperative) rather than individual route license applications;
- Allocating new route permits only for standard large buses;
- Encouraging minibus operators to form collectives and purchase new standard large buses;
- Experimenting with bus route franchising involving a few large fleet operators of standard large buses;
- Gradually shifting minibuses to provide service in low demand District Roads Class 2 only; and
- Announcing all of the above policy initiatives in advance, which helps to demonstrate the government's seriousness and thereby reduce political resistance, and which provides time to existing minibus operators to recoup their investments and plan for the future.

In addition, to encourage consolidation of the existing fragmented mini bus services by replacing them with standard and large buses, the Government of Rwanda will provide tax holidays for importation of standard large buses (minimum seat capacity 30). In this connection the Government may also define the minimum fleet size (30 to 100) to be eligible for tax exemption in order to discourage large number of small operators to enter to competition with large operators.

3.5.6.6 Strategies to improve emergency work and disaster management

The key strategies for the management of disaster and emergency works are as follows:

- Develop local capabilities at District level in coordination with central transport agencies for a national emergency work management system;
- Separate emergency work management system from normal route maintenance work and allocate sufficient block fund in each financial year to deal with emergency works;
- Coordinate the establishment of emergency communications capabilities between the central and local authorities,
- Designate one person responsible for each District for managing emergency works at District level in coordination with the national emergency work response plan;
- Involve local communities and NGO's in dealing with emergency works and designate a local leader for each Sector;

- Ensure target capabilities and preparedness priorities for emergency works,
- Ensure availability of equipment and construction materials at local levels for emergency works;
- Provide training to local communities to undertake appropriate first response to emergency works; and
- Develop and implement a contracting strategy for transport agencies for each District that involves advance block contracts and that takes into consideration of the local preference and needs for emergency works

In addition the transport as a movement of people, animals and goods, from one place to another needs to take into account disaster management. When a disaster occurs, it destroys transport infrastructures and the transport is generally interrupted or stopped for a long period. That transportation disruption can serve to accentuate pre-existing conditions of Disaster vulnerability and, in this way, lead to the development of long-term economic Loss from disasters. Below are listed key areas for mainstreaming Disaster management into transport Sector for EDPRS-2.

Table 3-5: Key Strategies for Mainstreaming Disaster Management into Transport Sector

No.	Strategies for Disaster Management into Transport Sector
1.	To incorporate disaster risk impact assessments as part of the planning process before the construction of new roads or bridges and other different transport infrastructure.
2.	To promote use of hazard risk information in land-use planning and zoning programmes
3.	Mainstreaming DRR into the planning process before construction of new Roads and Bridges and other related infrastructures
4.	Promote IWT transport means by use of modern technologies
5.	Put in place laws and regulations for protecting transport infrastructure against disaster risks.

3.5.6.7 Strategies to diversify the financing sources for road maintenance and development management

One of the key strategies of the EDPRS-2 is to diversify the source of funding and not to rely solely on public sector to finance transport infrastructure and service development and management programmes. Efforts should be made as far as possible to assess viability of funding for transport infrastructure and service through user charges and/or investments by the private sector. The value of indirect infrastructure/service related returns should be considered. In this connection, toll road could be one of the potential options. However, in order to be successful for collecting revenue from a toll road, at least one alternative route to the route to be tolled should be available for road users who are not willing to pay toll. To begin with a feasibility study on the Development of low-cost Toll Roads: RN4 from Musanze to Gisenyi (Rubavu), which

has some alternative routes, will be carried out. Depending on the viability of toll roads, the strategy could be extended to other roads as well.

3.5.7 Strategies for Achieving Enhanced Air transport Services (Rank = 7)

Currently Rwanda operates old, unreliable, inefficient and unfriendly infrastructure that is no longer compatible with modern technology. For effective use of new technology embodied on new aircraft and management of air space, the air transport sub-sector is geared to:

(a) Enhance safety and security of air services

Given Rwanda's noncompliance history, the impetus is to work on complying with the International Civil Aviation Organization standards for the industry to benefit from the unlimited opportunities in the global economy. In this respect, the air transport sector;

(i) Continuously ensures high levels of safety and security of commercial air transport in compliance with Rwanda's obligations under international conventions ratified by the government, other regional and domestic laws and regulations;

(ii) Fulfils the 8 critical elements of safety oversight by 2016

(iii) Establishes an effective emergency and disaster management system;

(iv) Develops search and rescue capabilities;

(v) Separates regulatory, provider and development functions;

(vi) Consolidates all security responsibilities at the airports;

(vii) Ensures effective management of Rwandan airspace, including the establishment of Flight Information for the Region through required infrastructure and facilities.

(b) Strengthen legal and institutional capacity, and improve service delivery system

To help operators secure off shore capital in line with international conventions, attract foreign investment, build internal capacity, allow both private and public participation, provide for operator expansion and consolidation, the air transport sector is focussed to:

(i) Develop institutional capacity and professionalism at all levels for efficient delivery of services;

(ii) Promote the use of Information and Communication Technology to enhance productivity and reduce cost;

(iii) Improve airport services and public service delivery system.

(iv) Provide legal framework that attracts public and private sector investments in air transport business

(v) Facilitate adoption of international conventions

(c) RwandAir Strategy

As defined in the Strategic Plan, RwandAir's lofty targets to be achieved within 5 years include:

- Increase of Aircraft fleet from 7 narrow bodied Aircraft to 12 including 3 wide bodied Aircraft
- Increases in Destinations served from 13 currently to at least 32 destinations
- Increase in staff complement from current 560 to the region of 1,000 employees
- Annual Revenues increase from $46m to $388m during the period
- Net Results move from a loss to a profit of $2.5m, growing exponentially thereafter
- Local (Rwandan) Pilots and Engineers to cater for more than 50% of the employees in that Class
- IOSA Certification achieved and maintained
- Full AMO set up and able to serve 3rd party carriers
- Rwandans in most top management positions
- RwandAir a Global Brand the result of intensive Brand Building
- Route and equipment optimization
- Airline Code Sharing and Alliances
- Catering Unit set up to also serve 3rd parties
- Ancillary Revenues contributing significant portion of Total Revenues

(d) Promote and implement the Yamoussoukro Decision/Open Sky Policy

Despite the numerous changes in international air transport in the last fifty years, its basic ground rules established in the Chicago Convention of 1944 have remained intact. The principle of national sovereignty over each country's airspace is still firmly entrenched and, except in a few common market situations, international aviation relations continue to be regulated by a system of bilateral government-to-government agreements for the exchange of traffic rights, or market access, based on the principle of reciprocity. This bilateral framework is unlikely to change in the foreseeable future. However, recognizing the **Yamoussoukro Decision** and similar regional agreements which provides for the "open air" traffic rights that is meant to encourage and improve aviation in Africa hence activate air transport in a continent poor in road and railways infrastructure, Rwanda is positioning itself to take a leading role. In modern economy, airlines' direct contribution of value added becomes relatively small as compared to the sizes of tourism, trade, foreign direct investment, etc. that depend on efficient and more convenient air services. Therefore, air transport existence in modern economy is justified as a supporting industry; helping other industries to grow and helping consumers improve welfare

- Rwanda will **proactively pursue** opportunities to negotiate more liberalized agreements for international scheduled air transportation that will provide maximum opportunity for passenger and all-cargo services to be added according to market forces.
- Be a leader in liberalization of air space especially implementation of the **Yamoussoukro Decision.**

3.5.8 Strategies for Achieving Improved Freight Logistics System (Rank = 8)

The key strategies for transforming Rwanda into Regional Logistics Hub are as follows:

- Reduction of non-tariff barriers for freight transport;
- Reduction of generalised travel time for export and import via sea ports;
- Improvement of freight logistic system for Rwanda and the extended market (Eastern DRC and Burundi); and
- Reinforcing Air Cargo Market Development.

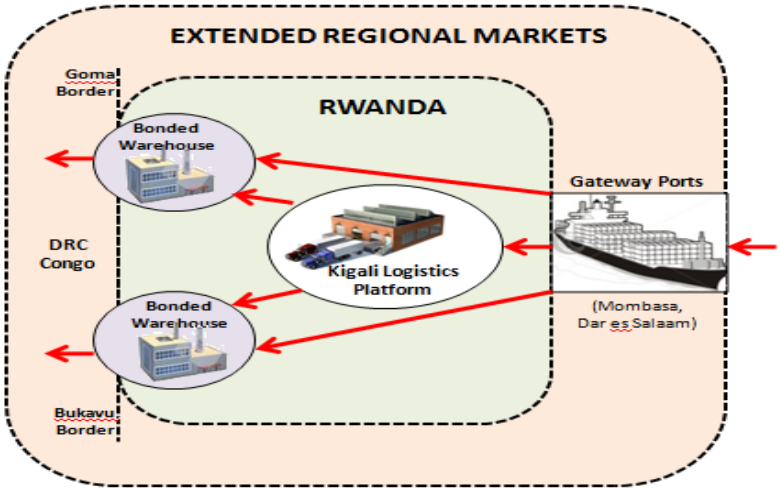


Figure 3-5: Schematic Representation of Regional Transit Cargo Flows with Rwanda as Regional Transport Hub

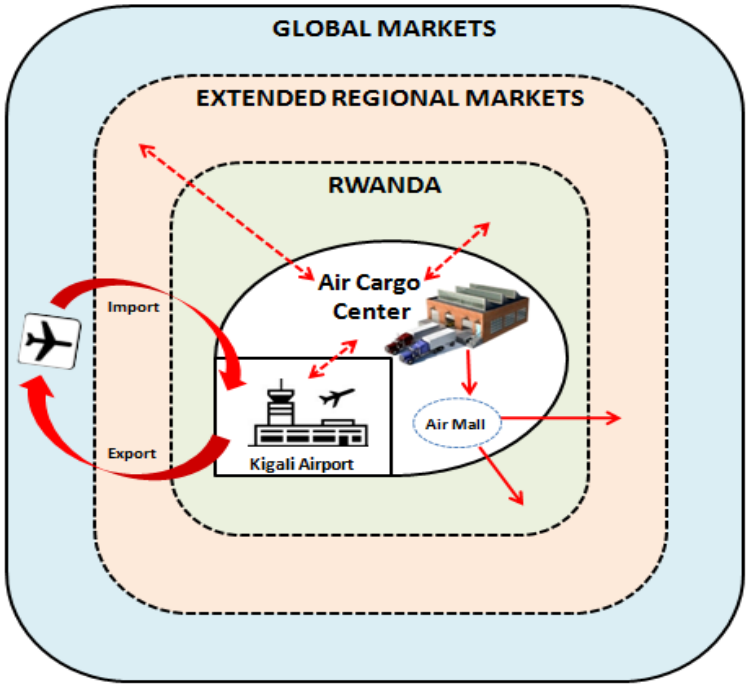


Figure 3-6: Schematic Representation of Air Cargo Flows with Regional Air Cargo Centre in Kigali for Rwanda as a Logistic Hub

The key planned programmes for transforming Rwanda into a Logistics Hub include:

- Development of 5 One-Stop Border Posts at Akanyaru, Cyangugu, Gatuna, Gisenyi and Rusumo Border Posts;
- Construction of Air Cargo Centre (ACC) and Commercial Mall
- Development of Off-dock Container Depots at Mombasa and Dar Es Salaam;
- Development of Regional logistic centres in Kigali and bonded ware houses in Goma and Bukavu; and
- Construction of 4 Truck Stops/Roadside Stations

Strategies of the reduction of non-tariff barriers are, among others, as follows:

- To achieve and implement uniform transit transport policies and regulations by the member States;
- To remove of non-physical barriers to transit traffic along the international corridors;
- To take regional initiatives to reduce transit time in sea ports
- To take regional initiatives to expand the capacity of sea ports
- To establish an efficient customs transit regime;
- To develop and use of ICTs to expedite movement and exchange of information between stakeholders
- To ensure that relevant ICT solutions are identified and applied across operations of all international corridors;
- To disseminate regularly transit transport related information on the international corridors
- To reduce time and costs associated with transporting goods along the international corridors
- To ensure faster clearance of Cargo from its discharge to exit at the port of Mombasa and Dar es Salaam;
- To ensure border crossings posts operating and working 24 hours a day along international corridor routes
- To provide up-to-date information on stops, bribes, time delays, costs, security and safety encountered along the international corridor;
- To ensure improved handling of complaints along the international corridors;
- To operationalize real-time information on stops and time delays monitoring on transport observatories;
- To develop improved quality of communications and advocacy with stakeholders;

- To collaborate and arrange formal agreements with regional economic committees and other corridor authorities, such as SADC, COMESA;
- To introduce benchmarking to share best practice and to compare our progress against well-established corridor agencies that will assist with continuous improvement;
- To establish more One-Stop Inspection Stations;
- To introduce Electronic Cargo Tracking System (ECTS) Inter-face (Inter-connectivity) amongst Tanzania , Rwanda, Uganda and Burundi;
- To conduct and publish regular user surveys with drivers using the CC to inform users and stakeholders of impediments to transit, trends and to ascertain practical operating conditions on the Central Corridor; and
- To set-up and administer a "hotline" telephone number to report and register complaints and a page on the website of the corridor authorities to provide results and feedback.

The strategies adopted for the development of international corridors are also applicable for the improvement of freight transport system, particularly for regional and international freight transport services. In addition, special strategies will be adopted to develop freight transport infrastructures. There are four types of road-based freight transport infrastructure that greatly impact road freight transport services, namely truck stops and road By-pass.

A Truck/Roadside Stop is an establishment, usually located near a busy road, with a large parking area for cars, trucks and other heavy vehicles.

In order to ensure convenient, safe and comfortable truck/roadside stops will be established on all major road freight routes around Rwanda.

The following are minimum standards required at a Truck/Roadside Stop:

- Ample parking space for trucks and other heavy vehicles;
- Accommodation facilities;
- A place to purchase food and other refreshments; and,
- Ablution facilities for those not making use of accommodation facilities.

Again, the transfer of HIV/Aids and sexually transmitted infections is a growing concern in the transport industry. These threats can only be addressed by way of the partnerships of society: government and the private sector; workers and management; transport operators and commuters. Truck/Roadside Stops can be an important part of the strategy to protect Truck Drivers against these and other illnesses and provide information on these risks.

The future transport network and service configuration at the end of the EDPRS-2 period is presented in **Figure 1-1**Figure 3-7.

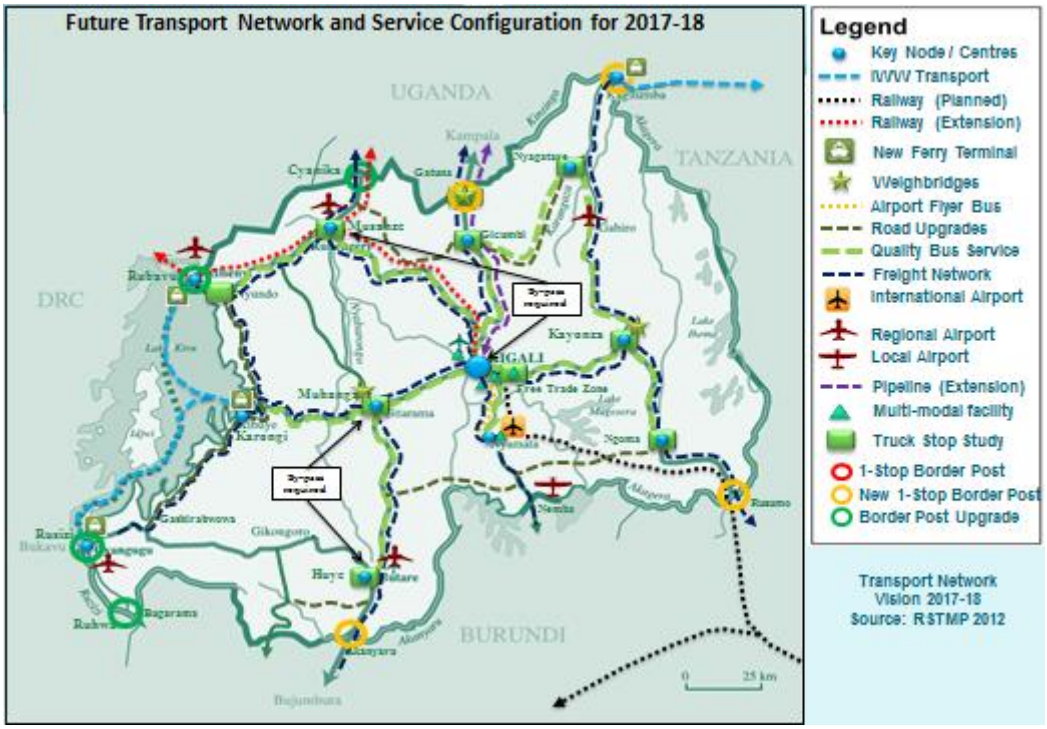


Figure 3-7: Future Transport Network and Service Configuration for 2017-18

3.5.9 Strategies for Mainstreaming Crosscutting Issues (Rank = 6)

Social inclusion refers to people's ability to participate adequately in society, including education, employment, public services, social and recreational services'. The following focal areas have been targeted for purposes of further investigation:

- gender and transport;
- transport for the disabled and elderly;

The key strategies for ensuring social inclusions are as follows:

- Ensure access to all modes of transport for women, disabled, infirm and elderly people;
- Provision of roads has proven to be more liberating, providing women with more opportunities, more choice and freedom from restraints of traditional society;
- Gender-informed Transport Project Planning, Implementation and Evaluation;
- Gender-responsive Intermediate Means of Transport (IMT or NMT);
- Promoting Women's participation in the Transport Sector;
- Expanding Women's Access to Public Transport, District Roads Class 2 and Paths;
- Awareness-raising and Advocacy to Gender and Transport;
- Engendering Transport Organisational Structures;
- Mainstreaming Gender in Transport Policy;
- Multi-sectoral Approaches (Transport and HIV/AIDS, Maternal Health, etc.).

Vision 2020 considers HIV/AIDS prevalence as one of the key indicators which should be reduced to 8 per cent in 2020.

The EDPRS provides for employers (public and private) to implement national HIV and AIDS work place policies. More specifically the Infrastructure Sector will develop an 'evidenced-based' AIDS action plan to ensure that a set of appropriate measures are in place, so that delivery of transport infrastructure and services contribute positively to HIV/AIDS response over the 2013-2018 period.

The strategies for tackling HIV/AIDS are as follows:

- Undertake appropriate measures to ensure that transport infrastructure and services can contribute to combating the disease – one such example is the construction of truck rest areas equipped with truck-driver HIV/AIDS education and prevention measures;
- Include to clauses addressing HIV/AIDS counter measures in the Contract documents for road construction and maintenance;
- Allocate of certain percentage of contract amount to be dedicated to HIV/AIDS prevention.
- Integrate HIV into environmental and social impact assessment guidelines;
- Conduct environmental and social impact assessment in all projects;
- Ensure that all tender documents for large capital projects incorporate HIV prevention activities;
- Implement HIV prevention programs during construction works; and
- Implement comprehensive HIV workplace activities within MININFRA and affiliated institutions and
- Implement roadside stations for truck drivers who are vulnerable to HIV infection.

In order to mainstreaming cross-cutting issues, they have been included as one of key Foundation area for Transport sector. The key objectives of the cross-cutting issues are duly incorporated in the objectives of the Transport sector. In addition, cross-cutting issues are also prioritised with other priorities using same ranking criteria.

3.5.10 Expected Output for each Outcome of Transport Sector Strategies

The expected output for each outcome is presented in the Table A-2: Priority Ranking and the Expected Outcomes of the Transport Sector of Appendix-A.

3.5.11 Transport Sector Priorities for Districts

The key transport sector priorities for Districts are:

- To improve institutional and human resources capacity for Districts
- To improve mobility and riding quality for District roads
- To improve mobility and riding quality for District Roads Class 2

CHAPTER 4. IMPLEMENTATION OF THE TRANSPORT SECTOR STRATEGIC PLAN

4.1 SEQUENCING OF INTERVENTIONS

The interventions for the adopted strategies are sequenced in orderly manner for the five year period of the EDPS-2, normally starting with feasibility study, detailed design and finally implementation of the programmes. In addition efforts were made to strike a balance between each intervention and usual budget annual allocation for the specific sub-sector. The sequencing of interventions for each programme is presented in the Log-frame of the Table A-3 of Appendix-A.

4.2 ROLE OF GOVERNMENT

The responsibility of organising and overseeing the transport system including implementation of the Strategic Transport Plan for EDPRS-2 in Rwanda lies with central government and more specifically the Ministry entrusted by Government with the enabling of the transport function, which in this case the Ministry of Infrastructure. This will in the first instance require the formulation of an integrated national transport policy covering all modes of transport and incorporating all levels of government. Secondly it will necessitate policy guidelines in support of standardisation of policy implementation for EDPRS-2 at all levels of government. The aforementioned initiatives will have to be organised in proper consultation with all stakeholders and role players engaged in the transport sector or who are depended upon the effective and efficient functioning of the transport system. These initiatives are considered a prerequisite to smooth ensure implementation of the strategic transport plan for EDPRS-2.

4.3 INSTITUTIONAL FRAMEWORK FOR IMPLEMENTING EDPRS-2 IN TRANSPORT SECTOR

4.3.1.1 Road Infrastructure and Service Responsibilities

During the EDPRS-2, The Ministry of Infrastructure continue to be responsible for overall transport policy and strategic planning, the creation of a transport enabling environment, and setting of transport rules, regulations and standards. The Rwanda Transport Development Agency (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. RURA will remain the regulatory authority for transport sector. Under a restructuring plan, ONATRACOM will be converted into public limited company for providing public transport services in rural areas.

4.3.1.2 Civil Aviation Infrastructure

The entire Rwanda civil aviation infrastructure system is government-owned and reports to MININFRA. This includes international airports, aerodromes and landing air strips, air navigation aids and the Rwanda airspace. At present there are two international airports, three other airports with paved runways and two aerodromes

with unpaved air strips. The Rwanda Civil Aviation Authority (RCAA) has been entrusted with the development, management and operation, and maintenance of all the services (except services handled in terms of a concession) associated with the infrastructure, including the air traffic management system.

4.3.2 Roles of Central versus Local Government

4.3.2.1 Central government level

The overall responsibility for the National Road Network infrastructure in Rwanda lies with MININFRA and its Road Transport Development Agency (RTDA) as was already described earlier. RTDA continues to assume specific responsibility for road works on national roads. In accordance with the decentralized policy of government, some road responsibilities have been transferred from the central government to the provincial governments and the Districts within each province.

With respect to the four Provinces and the City of Kigali the administrative structures of their Districts, headed by their respective Councils under the auspices of the Ministry responsible for Local Government, are charged with the responsibilities as set out in the text below.

4.3.2.2 District level

The Law Determining the Organization and Functioning of the District No.08/2006 of 24/02/2006 relates to the organization, functioning and competencies of the District. A District is divided into Sectors, the Sectors into Cells and the Cells into Villages. The District is an autonomous administrative legal entity with legal status and administrative and financial autonomy. The District is administered by a Council supported by selected committees. Amongst its responsibilities the District Council is responsible for the development and monitoring of public transport of persons and goods as well as the maintenance of classified roads and bridges in the District as well as the management of non-classified roads, including signposting and street lights. The transportation function is conducted in collaboration with all other 'concerned' organizations involved in transport matters. Instructions of the District Council establish the inventory of District Roads. Such instructions indicate the status of the roads, their order of importance, their maintenance and inspection as well as the preliminary survey preceding the inventory.

The Law provides details on the funding and budgeting of the District. A distinction is drawn between an Ordinary Budget and a Development Budget. City of Kigali level

The Law Determining the Organization and Functioning of the City of Kigali No.10/2006 of 03/03/2006 is very similar to the Law on the District, although in terms of structure there are significant differences. The City of Kigali is considered as one of the administrative entities of the Republic of Rwanda with its own administration and a legal personality. It is autonomous in terms of administration and financial responsibilities. The City of Kigali is administered by a Council supported by selected committees and an executive secretariat.

The City of Kigali is divided into Districts, comprising Sectors and Cells. Cells are sub-divided into Villages. Every District in the City of Kigali has its own administration and a legal personality. Without prejudice to laws and the decisions of the Council of Kigali,

every District is autonomous in matters of administration and finance and it is administered by its own Council.

In relation to roads the City of Kigali is responsible for:

- the preparation of a master plan and planning of the development for the City of Kigali;
- coordinating activities of a strategic plan of those Districts in the City of Kigali;
- maintain roads, bridges shared by at least two Districts;
- road sign posting and street lights; and
- following up on the implementation of the national policy in the Districts of Kigali.

At the District level of the City of Kigali the Districts are responsible for maintenance of classified roads and their repair and reconstruction, as well as for the management of non-classified roads, bridges and drainage systems. With respect to funding, it is important to note that the Government pays into a Common Development Fund for the Districts and the City of Kigali. An amount of money not less than 10% of Government's annual revenue is paid in order to promote development and to strengthen the economic development of the Districts and the City of Kigali within the context of decentralization.

The arrangement for public road transport services responsibilities can be summarized as follows:

- at the central government level, the responsibilities include the establishment of the public transport enabling environment on a national basis with the help of the regulatory, authority, i.e. RURA.
- at the district level, District Councils are responsible for planning, integration and coordination of public transport within their areas of jurisdiction.

4.3.3 Role of Private Sector

The key roles of the private sector are as follows:

- The national networks, as well as the urban roads, are maintained by private contractors under the supervision of the RTDA, RCAA and District supervisory structures.
- The private sector is responsible for the main form of public transport utilizing the taxi, minibus, bus and motorcycle providing a stopping taxi service, as well as an express service for longer distances, similar to a bus service;
- The private sector is also responsible for road freight transport including road freighters (trucks) that can, inter alia, handle the larger containers.

The public transport operations by the private operators during the EDPRS-1 period were somewhat uncoordinated and informal. During the EDPRS-2 the operation of public transport service will continue to be run by private sectors. However, private sector will have to provide service under more regulated and structured environment.

While preparing the Strategic Transport Plan for EDPRS-2, due importance has been assigned to the private sector in bridging the resource gap in investment and improving

the operational and managerial efficiency in the transport sector in order to address capacity constraints and deficiencies in the existing transport infrastructure and service provisions to meet rapidly growing demand. Efforts were made to promote private sector involvement in the development of transport infrastructure and services. A brief description of the key initiatives of the Strategic Transport Plan for EDPRS-2 for the participation of the private sector is outlined in the following sections:

4.3.3.1 *Participation of the Private Sector for Public Transport Services under Route Franchising Approach*

The private sector participation can take different forms in service sectors. The public transport sector in particular can either be unbundled and opened in a segmented fashion to private sector participation, or the complete sector can be opened to such processes. The operation of the public transport system in Rwanda will be vested with the private sectors. However, the sector will be properly regulated to ensure adequate service and allocation of risk of profit or loss between the Government and the private sector.

The participation of the private sector for public transport will be in the form of service contract under route franchising approach. This is a type of small duration contracts where a private operator performs specific tasks such as provision of buses. By using this option, it is possible to take advantage of private sector expertise for performing technical tasks or even to open such tasks to competition. The relevant management authority, i.e. RTDA or RURA under this option, has the responsibility for co–coordinating the tasks being performed by private operators and the responsibility for ensuring investment in the sector would lie with the concerned public authority. It is not possible to bring management expertise or improve operating efficiency in this option. However, unlike other infrastructure sectors, it is possible to bring additional investment under this option in the public transport sector. At the initial state of service contract approach, a Net Route Contract approach will be applied. When an authority issues a contract for the operation of one specified route or a specified group of routes, it's described as a route contract. Under a net-cost route contract, the authority pays the operator a subsidy if the bus routes are unprofitable. If the routes are profitable, the authority receives a royalty from the operator. Under Net Route Contract approach, it is possible to ensure cross-subsidy for the non-profitable route to ensure universal public transport service for all with full participation of the private sector.

4.3.3.2 *Feasibility of Private Sector Financing for Road Maintenance Management*

In order to assess the potential for private sector financing for road maintenance management, a feasibility study will be carried to assess the financial viability of low cost toll roads to raise funds for road maintenance management in collaboration with private sector.

4.3.3.3 Encouragement of public transport industry consolidation by providing tax rebate for importation of large standard busses

In order to encourage consolidation of the existing fragmented mini bus services by replacing them with standard and large buses, the Government of Rwanda can provide tax holidays for importation of standard large buses (minimum seat capacity 30). In this connection the Government may also define the minimum fleet size (30 to 100) to be eligible for tax exemption in order to discourage large number of small operators to enter to competition with large operators.

4.3.3.4 Training of Local Contractors and Consultants on Procurement and Project Management

Two of main reasons of the delays in the infrastructure development projects in transport sector are attributed to the complicated public procurement process and inadequate expertise for project and contract management both in the public and private sectors. In order to overcome the problems, special training programs will be arranged for the professionals of both public and private sectors during the EDPRS-2.

4.3.3.5 Categorisation of Contractor and Suppliers on the Basis of Technical and Financial Capabilities

One of the main causes of delays and under performance of the contractors in the transport sector is the procurement system which awards the contract to the lowest bidder without considering the technical and financial capabilities of the contractors. In order to overcome the problems and to ensure effective participation of the private sector more efficiently, the steps will be taken in EDPRS-2 to introduce categorisation and registration of the contractors on the basis of technical and financial capabilities.

4.3.3.6 Privatization of Public Owned Transport Operation Entity

In the line of the market friendly policy, it was decided to privatise the publicly owned public transport organisation, ONAYRACOM into a public limited company. ONATRACOM is currently publicly owned and managed, and heavily regulated. The organisation operated at a loss and remained tied to government financial support for survival. Poor cost recovery — partly resulting from low tariffs — and general subsidies reduced the viability of transport service operations and imposed heavy costs on both users and the macro-economy. To overcome the situation, the Government of Rwanda will gradually withdraw from the role of transport operation and delegate the responsibility for providing transport services to private operators. It will certainly create the opportunity for the private sector to tap in the business potentials of providing public transport services in the rural areas of Rwanda.

4.3.3.7 Development of Roadside Cooperative for Labour Base Routine Maintenance of Road Network

In order to create employment opportunities for local communities, about 300 road cooperatives will be developed and trained to undertake routine maintenance of road network of Rwanda.

4.3.3.8 *Participation of the Private Sector to Development an Effective Vehicle Fitness and Environmental Rating Control Regime*

At present, there is only one vehicle inspection center under Rwanda National Police to ensure fitness and emission limit of every vehicle in Rwanda. However, the existing facility is quite inadequate both in terms equipment and manpower to ensure adequate inspection of all vehicles in Rwanda annually. In order to overcome the problems, it is envisaged to allow the private sector to play a key role in developing an appropriate vehicle inspection regime under proper regulation from the Government.

4.3.4 Role of Civil Society and Other Organisations

In order to implement the Strategic Transport Plan for EDPRS-2, the active participation of the Civil Society, development partners and other public and private organisation is essential. It would be highly desirable to involve them while taking key policy decisions. This will enable them having adequate understanding and ownership of the sector policies, strategies and priorities. The will be involved in reporting and monitoring of the sector in Sector Working Group. As in during the EDPRS-1, effort will be made to encourage technical cooperation between implementing agencies, such as RTDA and other government, private, academic and professional organisations.

4.3.5 Transport Funding

The entire transport infrastructure which include the national road network, the airport and air navigation systems and the inland waterway port facilities in Rwanda, is state-owned. The Ministry of Infrastructure is the organ with overall responsibility for transport infrastructure development, maintenance and execution management. In respect of the road network the Ministry, with the assistance of the RTDA, supervises the implementation and reviews the Road Maintenance Strategy (RMS), which is the management tool governing all road maintenance operations in the country. Within the decentralized administration framework, Districts or local authorities are accountable for the development and maintenance of local unpaved and communal roads, thus making them responsible for the execution of the road maintenance procedures as well as assisting the Ministry in reviewing the RMS. According to the Road Maintenance Fund (RMF) (2009), the RMF should also finance programs and projects at district level, however, presently; the funds for the 30 districts are transferred by the Ministry of Finance and Economic Planning (MINECOFIN) (WP01) who 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 sectoral investment programs are consistent with the national development frameworks, such as EDPRS-2.

4.3.6 Transport Regulation

The formal regulators engaged in transport regulation in Rwanda consist of the following three regulators with their main focus and functions as set out below:

4.3.6.1 Rwanda Utilities Regulatory Agency (RURA)

The key functions of RURA are:

- Ensure that certain utilities (including transport related entities) provide goods and services to meet in transparency all reasonable demands and needs of people and organizations;
- Ensure that all utility suppliers have adequate means to finance their activities;
- Continually promote the interests of users of goods and services provided by utilities so that there is effective competition when competition is introduced in each utility sector and protection of users from abuses of monopoly positions;
- Facilitate private sector participation in investments in public utilities
- Ensure compliance by public utilities with the laws governing their activities.

The main focus of the Regulatory Board of RURA is on the following:

- promoting effective competition within each public utility sector in the interest of those wishing to use the goods and services of a particular utility;
- investigating and terminating anti-competitive conduct;
- Impose sanctions in respect of anti-competitive behaviour;
- informing and notifying the incidences of anti-competitive conduct and measures taken and sanctions applied.

4.3.6.2 Rwanda Civil Aviation Authority (RCAA)

The RCAA is, inter alia, responsible for construction and maintenance of air transport infrastructure, all aviation safety and security related regulation in Rwanda.

4.3.6.3 Rwanda National Police (RNP)

Under the auspices of the Commissioner for Operations and Public Order, the RNP has road traffic and road safety, airport security and water transport security as part of its regulatory portfolio. The RNP is responsible for enforcing laws related to transport services and standards.

4.4 MECHANISMS FOR CO-ORDINATION AND INFORMATION SHARING

In order to develop mechanisms for co-ordination and information sharing for the implementation of the Strategic Transport Plan for EDPRS-2, it is essential to establish appropriate mechanisms for the coordination of implementation programmes under the umbrella Transport Sector Working Group (TSWG). It is imperative to ensure common representation in Transport Sector Working Group 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 Transport Sector Working Group and the relevant coordinating unit of the Ministry of Infrastructure, i.e. the Planning & Policy Coordination unit undertake 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;

4.5 RISK ANALYSIS AND MITIGATION MEASURES

4.5.1 Risk Analysis

One of the risks of the Strategic Transport Plan is to assessing risk associated with the availability of requisite funds. In order to assess the risk, the budgeting was based on three probabilistic values, as follows:

(i) Most likely value: This is what you would expect the sales or cost would be

(ii) Most optimistic value: In terms of cost this is the minimum expected cost. In terms of outputs this represents the maximum expected outputs given a good economy and minimum competition. and

(iii) Most pessimistic value: This is the opposite of most optimistic. 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 most likely, the most optimistic and the value pessimistic values of the budget for five years during the EDPRS period are RWF 1,250 billion, 1,020 billion and 750 billion respectively. The estimated cost for the implementation is RWF 1,664 billion indicating the most optimistic scenario, which means very high risk venture with a potential deficit of RWF 643 billion.

Another potential risk is the potential delays in procurement and project implementation process, which seems to be prevalent in the Transport sector of Rwanda

4.5.2 Risk Mitigation Measures

Although the estimated total cost for the implementation of the Strategic Transport Plan represents very high risk strategy, it should be bear in mind in addition to normal expenditure on transport infrastructure, the plan also include potential costs for providing better public transport services. The Cabinet has already approved the Public Transport Policy and strategy with an estimated cost of RWF 254 billion. Again, about RWF 85.2 billion will be required for the construction of 4 lane road from Kigali to New Bugesera International Air ports. External funding is essential for the project. The total budget requirement is RWF 1,664 billion against potential available fund of RWF 1,205 billion with a deficit of RWF 458 billion. If the extra budgets for the implementation public transport strategies and the construction of 4 lane roads from Kigali to Bugesera International airport are provided, it will still require additional RWF 119 billion for the proposed programmes of EDPRS-2. It is therefore essential either to mobilise additional funds or scale down some of the development activities. It may be mentioned here that about RWF 1,131 billion will be required to support the Rural Development activities, which mainly consists of road development programmes. In order to reduce to budget deficit, it might be appropriate to reduce some the road development programmes. Again, the potential diversification of the financing sources for road maintenance and development management, as proposed in the Strategic Plan, could also mitigate some of the risks associated with availability of funds.

In order to reduce delay in procurement and transport project implementation process, in the Strategic plan, the following mitigation measures have been adopted.

- Categorization and registration of conductors on the basis of technical and financial capabilities
- Training for 50 transport professionals and contractors on contract and project management;

CHAPTER 5. MONITORING AND EVALUATION PLAN

The different strategies for the M&E framework to monitor the progress of the strategy and implementation plan during 2013/14 - 2017/18 periods will be as follows:

5.1 TRANSPORT SECTOR MONITORING ARRANGEMENTS

M&E framework for Transport sub-sector has been in the first step developed under the umbrella of M&E system for the whole infrastructure sector. The basis for the M&E framework Transport subsector during the planning period of 2013-2018 will be similar to that described on the Guidance Note on Monitoring & Evaluation by MINECOFIN in 2012[8]. The underlying structure of EDPRS 2 is its two goals of Growth and Poverty Reduction and four key priority areas or Themes, i.e. Economic Transformation, Productivity and Youth Employment, Rural Development and Accountable Governance and Foundational Issues identified to achieve these goals. The underlying principle for implementing the EDPRS is through strategic planning around priorities identified for the Thematic Areas. In turn, Sector Strategic Plans (SSPs) will be developed to achieve thematic priorities and implementation of SSP will be done through District Development Plans (DDPs).

The EDPRS 2 monitoring and evaluation framework will replicate the above structure, in order that at the end of the EDPRS 2 period in 2018 the EDPRS can be evaluated and the contribution of its Districts, Sectors, Thematic and Foundational Areas properly assessed. Therefore, the priorities of the four thematic areas of Economic Transformation, Productivity and Youth Employment, Rural Development and Accountable Governance and those of the Foundational Issues will be monitored through their expected Outcomes. These outcomes will be cascaded to the Sector level where intermediate Sector Outcomes will be developed in alignment to the Thematic Outcomes. Sector Outcomes will be the basis for action both by sectors and Districts as the undertake implementation.

A three axis based approach will be adopted: (i) observing how a set of indicators changes over time; (ii) analysing and drawing conclusions from those observations, and (iii) feeding those conclusions back into the policy process.

To be able to do so, it is essential to take appropriate actions in three directions: (i) enhancing institutional arrangements for M&E; (ii) systematically implement the results based management at all sub-sector levels; (iii) putting in place a statistical based information system and associated Management Information System.

The Transport Sector Monitoring Matrix for EDPRS-2 is demonstrated in Table D-1 of Appendix-D. In addition, the Transport Sector Priority Policy Action Matrix for EDPRS-2 is given in Table E-1 of Appendix-E.

[8] MINECOFIN (2012) "GUIDANCE NOTE: MONITORING AND EVALUATION FRAMEWORK ECONOMIC DEVELOPMENT & POVERTY REDUCTION STRATEGY (EDPRS 2)

5.2 TRANSPORT SECTOR EVALUATION

In order to execute the monitoring, evaluation and reporting plan for EDPRS 2, a monitoring framework has been developed. This framework of three frameworks/matrices is designed to ensure that information will be available to Sectors on an on-going basis to feedback into policy. This is the information that will be the basis of the reports that will be generated on EDPRS 2. Additionally, the information will be available for the mid- and end-term evaluations of EDPRS 2. The monitoring framework consists of the following framework/matrices, which are added as appendices as indicated:

- Table A-3: Logical Framework for the Chain of Results of the Strategies of the Transport Sector;
- Table C-1: Transport Sector Priority and Outcome Matrix for EDPRS-2
- Table D-1: Transport Sector Monitoring Matrix for EDPRS-2
- Table E-1: Transport Sector Priority Policy Action Matrix for EDPRS-2

5.3 INSTITUTIONAL ARRANGEMENT FOR MONITORING

The Transport Sector benefited from a study commissioned in 2007 in order to assess constraints and weaknesses in Planning and M&E system in place in MININFRA. Based on that assessment, a "Guide" for the whole infrastructure sector was prepared for the improvement of Planning and M&E mechanisms within EDPRS-1 period. It appears the approach proposed is still relevant for EDPRS-2. Adopting the similar approach, various tools are foreseen for the strategic planning period of 2013-2018: (i) a set of performance indicators has 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 the road condition database of 2012-13, which will enable regular comparison of actual achievements against baseline values of 2012-13; 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 in the form regularly on annual basis for general road maintenance programmes and (i) 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

information technology equipment and materials for M&E system established under Transport sub-sector Planning and M&E systems.

Given the limited capacity of MININFRA, RCAA and RTDA, it might be appropriate that data collection would be administrated by external consultants but involving local human resources from MININFRA, RTDA, RCAA, Universities (currently National 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 development to monitor development initiatives of RCAA. These databases can be linked to the central infrastructure M&E/MIS at MININFRA.

To be able to achieve targets prescribed for the 2013-18 period, support to organizational structure will be necessary for capacity enhancement, including: restructuring of RTDA, setting a public limited company transforming ONATRACOM, separation of regulatory and operational functions of RCAA, 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 sectoral coordination and regularly assess the progress, includes: Implementation Working Groups (IWGs), Forum for Secretaries General, Development Partner's Coordination Group (DPCG) and Cabinet. EDPRS Central M&E and Evaluation Secretariat is in place in MINECOFIN has to ensure regular collection of information on EDPRS-2 and subsequent progress of strategic initiatives and to recommend speedy resolutions to implementation bottle-neck. The same institutional set up could be utilised to monitor the progress during the 2013-2018 period.

In addition to closely monitor progress towards achieving the targets set for the 2013-2018 period, it is foreseen to collaborate with National Institute of Statistics which is "responsible for maintaining the database of indicators to monitor the EDPRS-2 results and Policy Matrix 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.

5.4 SYSTEMATIC IMPLEMENTATION OF RESULTS BASED MANAGEMENT AT ALL LEVELS WITHIN TRANSPORT SECTOR

First of all, the criteria and targets for 2013-18 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 2013-2018 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 2013-18.

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.

5.5 PUTTING IN PLACE A STATISTICAL BASED MANAGEMENT INFORMATION SYSTEM

Transport sector envisaged to build a more detailed database related to both transport infrastructure and service to be linked to the central infrastructure M&E/MIS. Above the 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 following sub-sector needs:

- Statistics for Transport /Strategy policy making and updating;
- Baseline data and 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.

5.6 KEY PERFORMANCE INDICATORS

At present the performance of the transport sectors against its objectives are assessed annually with respect to Common Performance Assessment Framework (CPAF) indicators. However, the present performance indicators does not assign due importance to different mode of transport including transport services except riding quality for National and District roads. In the Strategic Transport Plan a large numbers of indicators have been developed to monitor performance of different outcomes 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.

At strategic level about eight key indicators may be adopted as follows:

(i) Indictor for riding quality for paved National roads (e.g. % of National paved roads in Good condition);

(ii) Indictor for riding quality for unpaved National roads (e.g. % of National unpaved roads in Good condition)

(iii) Indictor for riding quality for District roads (e.g. % of District road Class 1 in Good condition);

(iv) Indictor for service quality for urban public transport (e.g. Number of km of scheduled bus routes);

(v) Indicator for service quality for intercity public transport (e.g. Number of km of Quality bus routes);

(vi) Indicator for service quality for rural public transport (e.g. Number of km of scheduled bus routes);

(vii) Indictor for air transport infrastructure (e.g. Total passenger carrying capacity per year for all airports combined); and

(viii) Indictor for air transport services (e.g. Total number of passenger transported per year (All Airlines Combined);

The subprograms and projects having a particular influence on evolution of the adopted 8 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. The Transport Sector Strategic Monitoring Matrix for Key Outcomes for EDPRS-2 indicating annual targets is demonstrated in Table D-2 of Appendix-D.

5.7 COMMUNICATION WITH STAKEHOLDERS AND CITIZENRY

The first MININFRA's communication channel will be based on Internet link such as Google and website. Enhancement of this communication channel is envisaged through establishment of baseline and online connection of associated database. Update of MININFRA Internet link and website will be done regularly.

The second communication mechanism consists in meetings and joint sector reviews including MININFRA, RTDA and representative of stakeholders. Implementation Working Group meetings will be held once in a quarter and one Joint Sector Review (JSR) will be held every year.

Awareness rising to public will be organized regularly. This includes publications of articles in the media as well as radio and television broadcastings.

The ministry of Infrastructure has established close collaboration with different development partners in collection of information, co-management of projects, etc.

5.8 MULTI ANNUAL MONITORING PLAN INCLUDING PUBLIC POLICY ACTIONS

The key indicators set for the Strategic Plan will serve as basis for M&E key actions in Transport sector. Internally, an assessment on achievements related to key policy actions will be organized on monthly and quarterly basis, a summarized report will be

produced and communicated to MINECOFIN and shared with Sector Working Group (SWG) and through Joint Sector Review (JSR).

CHAPTER 6. COSTING AND FINANCING OF THE TRANSPORT SECTOR STRATEGIC PLAN

6.1 LINKAGE TO BUDGET PROGRAMMES

The overall Transport Sector cost and financing are demonstrated in Table B-1 of Appendix-B. The budget Linking Transport Sector Programmes to EDPRS2 Thematic Priorities is shown in Table B-2 of Appendix-B. The summary of the budget linking with Thematic Priority Areas is given in Table 6-1. It appears that as per as budget allocation is concerned, the Thematic – Rural Development Economic represents the most dominant area having a 68.0% share of the budget, which is followed by Economic Transformation for Rapid Economic with a share of 28.9%. The share of other Thematic and Foundation areas are relatively small of the total budget RWF 1,664 billion.

Table 6-1: Linkage of Budget and Thematic Areas

Thematic Priority Area	Number of Outcomes	Total Cost for 2013/14 to 2017/18 in Million RWF	% of the Total Costs
Thematic - Economic Transformation for Rapid Growth	3	480,698	28.9%
Thematic - Rural Development	1	1,131,077	68.0%
Thematic - Accountable Governance	4	19,389	1.2%
Thematic - Productivity and Youth Employment	0	27,788	1.7%
Foundation - Social protection	1	5,336	0.3%
Total	8	**1,664,288**	**100.0%**

6.2 FINANCING OF THE PROGRAMMES FOR EDPRS-2 IN TRANSPORT SECTOR

The future funding mechanisms should not rely solely on public sector to finance transport infrastructure and service development and management programmes. Each type of infrastructure (road, rail, public transport facilities, etc.) and public transport service should be analysed and classified into sub-categories according to their suitability for cost recovery through user charging and/or investments by the private sector. The criteria that determine this suitability are: technical suitability and economic viability. Possible sub-categories of infrastructure are:

- 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.

One of the main sources of public sector funding for road maintenance management is Road Maintenance Fund (RMF). From the Road Maintenance Fund (RMF) standpoint, future funding mechanisms 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.

From a sector perspective the Government of Rwanda has adopted a Transport Sector Wide Approach (SWAp) in 2009.

SWAp is a process in which funding for a sector (internal or donor) sustains a sole objective and programme. In a broader context, it promotes government coordination and accountability by strengthening institutional development. Ultimately, SWAp aims at (MININFRA, Undated):

- Ensuring the coordinated implementation of policies, strategies and related programmes;
- Harmonizing efforts toward a common objective;
- Coordinating programme planning;
- Establishing a single work programme; and
- Strengthening government performance.
- Rwanda Transport Sector Wide Approach (SWAp) supports many activities initially established by the Ministry of Infrastructure (MININFRA, Undated), namely:
    - Conducting road condition surveys and establishing its database;
    - Developing a comprehensive road maintenance strategy;
    - Creating incentives for skilled staff at MININFRA; and
    - Developing a capacity building programme through a Master's degree in Transport and Economic Planning.

Apart from promoting the private-sector investment in the transport infrastructure development, the Government of Rwanda also introduced a local labour-intensive programme initiative called the Rwanda's Labour Intensive Local Development Programme (PDL-HIMO) to develop communal roads and bridges (African Development Bank, 2006).

Rwanda Vision 2020 recognises the importance of private participation and the liberalization of the economy for economic growth. Additionally, the adoption of the National Public Investment Policy and the establishment of the Rwanda Development Board (RDB) clearly indicate the Government's willingness to promote Public Private Partnerships (PPPs) in the country.

The Government of Rwanda, through the Ministry of Finance (PPP unit) and Rwanda Development Board, manages joint ventures between public and private partners. The main functions of the PPP unit are:

- Manage joint ventures between public and private partners;
- Mobilize financing for large projects;
- Assist in negotiations of complex projects; and
- Establish conducive legal and regulatory frameworks for PPPs.

The most common models of joint ventures in Transport Sub-sector are: Build – Own – Operate (BOO), Build – Operate – Transfer (BOT) and Joint Ventures and Operating Licences.

As far as possible, infrastructure and public transport service should be funded through user charges and/or investments by the private sector. The value of indirect infrastructure/service related returns should 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:

- 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 must be created. 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 pro-active 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.

Barriers to private involvement should be eliminated. These include:

- legislation;

- attitudes within transport authorities;
- financial rules; and
- perceptions about government commitment.

Annex A: Details on Structure and Content of the Transport Sector Strategy

Multicriteria Analysis for Ranking of Challenges and Priorities

In order to rank challenges and priorities, a pairwise comparison Multicriteria Analysis technique, i.e. Analytical Hieratical Process was employed. A questionnaire survey was conducted using the technique to determine relative weights of different challenges/priorities involving a number of transport professionals and decision makers.

The procedure for using the AHP can be summarized as:

(i) Model the problem as a hierarchy containing the decision goal, the alternatives for reaching it, and the criteria for evaluating the alternatives;

(ii) Establish priorities among the elements of the hierarchy by making a series of judgments based on pairwise comparisons of the elements. For example, when comparing potential real-estate purchases, the investors might say they prefer location over price and price over timing;

(iii) Synthesize these judgments to yield a set of overall priorities for the hierarchy. This would combine the investors' judgments about location, price and timing for properties A, B, C, and D into overall priorities for each property;

(iv) Check the consistency of the judgments; and

(v) Come to a final decision based on the results of this process[9].

The ranking of a candidate challenge/priority will be done by using following steps:

(i) The overarching goals and their corresponding objectives of the Transport sector to be met by priority in Rwanda are represented in a structured way in the form of a "decision-tree".

[9] Saaty, Thomas L. (2008). Decision Making for Leaders: The Analytic Hierarchy Process for Decisions in a Complex World. Pittsburgh, Pennsylvania: RWS Publications. ISBN 0-9620317-8-X.

(ii) The relationship between challenges/priorities, the goals, objectives and their related qualitative and quantitative inputs will be modelled based on a predetermined method or value function, to provide an output;

(iii) The relative preferences for each goal with respect different criteria that is set out in the transport sector will be identified;

(iv) The relative preferences for each objective with respect different criteria that is set out will be identified;

(v) The relative weight of each challenge/priority with respect to its importance for different criteria will be determined;

(vi) The overall score of each challenge/priority will be determined by summing up its weight of all attributes; and

(vii) The challenges/priorities will be ranked according to their aggregate scores.

In terms of Multicriteria Analysis each of the criteria is rated in terms of the specific challenge/priority being assessed, each criterion is scored between 0 and 100 points with zero indicating that the specific challenge/priority is the least important in terms of the specific criterion while 100 indicates it is the most important.

Scale for Comparison (Saaty and Varga, 1991)[10]

Scale	Degree of preference
1	Equal importance
3	Moderate importance of one factor over another
5	Strong or essential importance
7	Very Strong importance
9	Extreme importance
2, 4, 6, 8	Values of inverse comparison

The questionnaire survey will provide pair wise comparison data between each criterion of the value tree for ranking of priorities and challenges of the Strategic Transport Plan for EDPRS2. A slightly different ranking procedure of Saaty and Varga (1991) was employed.

[10] Saaty, T.L. and Vargas, L.G. (1991). *Prediction, Projection and Forecasting*, Kluwer Academic Publishers, Dordrecht, 251pp.

Results of the comparison for (each factors pair) will be described in term of integer values from 1 (equal value) to 9 (extreme different) where higher number means the chosen factor is considered more important in greater degree than other factor being compared with.

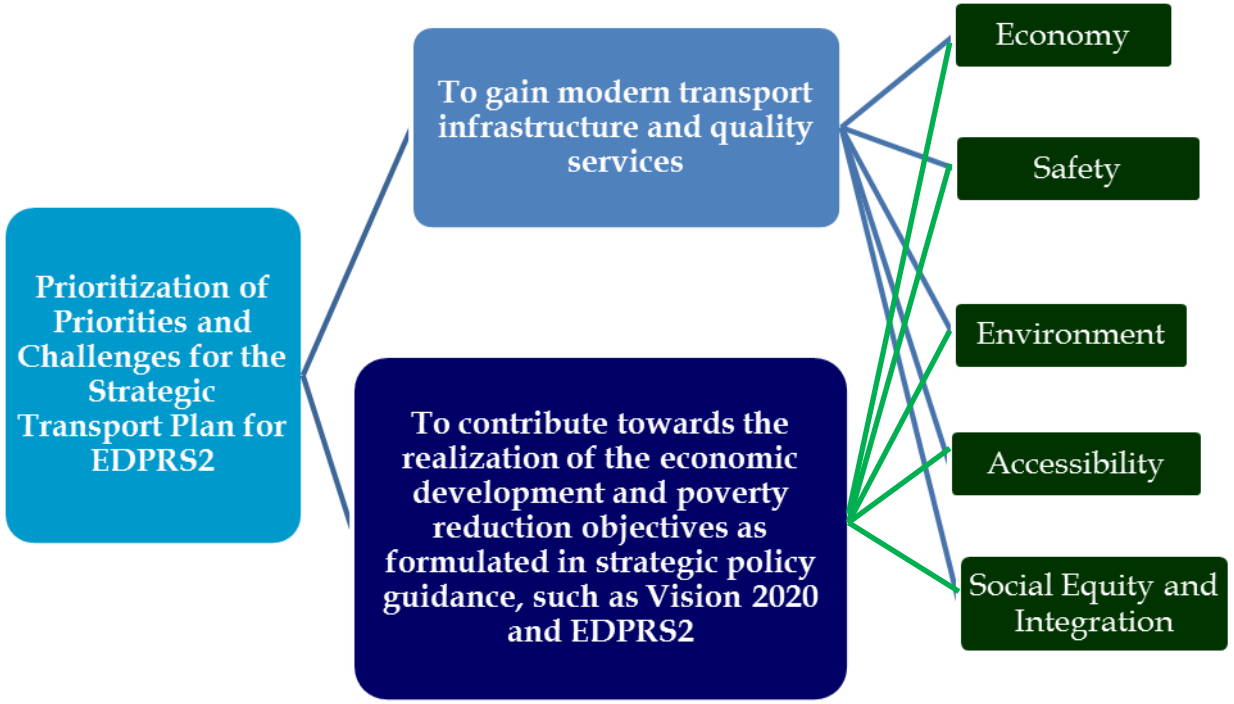


Figure A-1: Value Tree for Ranking of Challenges/Priorities for the Strategic Transport Plan of EDPRS-2

Table A-1: Ranking of the Challenges and Corresponding Solutions of the Transport Sector

Transport Sector Challenges	MCA Score	Ranking of the Challenges (with 1 being the most prominent)	Solution(s) Corresponding to the Challenge	MCA Score	Priority Rank (with 1 being the most important)
Inadequate Mobility, Connectivity and Accessibility of Urban, Intercity and Rural Road Network	69.3	1	To improve riding quality and LoS for Road Network	73.2	1
Fragmented and uncoordinated of transport services, unreliable and inefficient operations, no clear service standards, financing and demand management system;	64.0	2	To develop an integrated public transport system for Rwanda	71.5	2
Over dependence on road transport and lack of priority of sustainable modes of transport	60.7	3	To develop an integrated multimodal transport system for Rwanda	60.4	4
Inadequate Provision for Social Equity and Integration in Transport Infrastructure and Service	58.6	4	To improve integration and social equity in transport infrastructure and service	59.1	6
Inadequate accident and emergency investigation, mitigation and impact management system in Rwanda	56.8	5	To Improve institutional and human resources capacity for land, water and air transport system	60.1	5
High transport costs estimated to be about 40% of the value of imports or exports	52.8	6	To Improve institutional and human resources capacity for land, water and air transport system	60.1	5

			To develop an integrated multimodal transport system for Rwanda	60.4	4
			To transform Rwanda into a Regional Freight Logistics Hub	43.3	8
			To develop an integrated public transport system for Rwanda	71.5	2
Inadequate investment, institutional and human resource capability in air transport infrastructure and service provisions	51.3	7	To develop an efficient and sustainable air transport infrastructure for Rwanda	62.4	3
			To develop an efficient and sustainable air transport service for Rwanda	49.7	7
Quality control and assurance, monitoring & evaluation and coordination of development activities are inadequate	51.1	8	To Improve institutional and human resources capacity for land, water and air transport system	60.1	5
Delay in procurement, construction and project implementation process due to absence of proper mechanism and the shortage of qualified and experienced manpower	47.8	9	To Improve institutional and human resources capacity for land, water and air transport system	60.1	5

Table A-2: Priority Ranking and the Expected Outcomes of the Transport Sector

MCA Score	Transport Sector Priority Rank (Starting with the most important)	Transport Sector Priority	Expected Sector Outcome(s) that relate to the Priority
73.15	1	To improve riding quality and LoS for Road Network	Improved and sustained quality of road network
71.47	2	To develop an integrated public transport system for Rwanda	Improved public transport services
62.41	3	To develop an efficient and sustainable air transport infrastructure for Rwanda	Enhanced capacity of air transport infrastructure
60.38	4	To develop an integrated multimodal transport system for Rwanda	Integrated multimodal transport system in place
60.08	5	To Improve institutional and human resources capacity for land, water and air transport system	Enhanced transport institutional capacity
59.09	6	To improve integration and social equity in transport infrastructure and service	Improved Gender equality in transport sector
49.74	7	To develop an efficient and sustainable air transport service for Rwanda	Enhanced air transport services
43.34	8	To transform Rwanda into a Regional Freight Logistics Hub	Improved freight logistics system

Table A-3: Logical Framework for the Chain of Results of the Strategies of the Transport Sector

GOAL/IMPACT: Rural Development									
Priority 1: To improve riding quality and LoS for Road Network									
	INDICATOR	**BASELINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
OUTCOME	**Improved and sustained quality of road network**								
Riding Quality of National Paved Roads maintained	% of National Paved Road in Good Condition	95.6%	95.0%	95.0%	95.0%	95.0%	95.0%	Roughness and speed survey record from annual road condition survey	Annual road condition survey takes place regularly
Riding Quality of National Unpaved Roads improved	% of National Unpaved Road in Good Condition	40.6%	46.0%	52.0%	58.0%	66.0%	70.0%	International Roughness Records from Annual Road Condition Survey	Annual Road Condition Survey takes place regularly
Riding Quality of National Roads (combined) improved	% of National Road in Good Condition	63.2%	66.1%	69.6%	73.2%	77.9%	80.0%	Speed Survey Records from Annual Road Condition Survey	Annual Road Condition Survey takes place regularly
Riding Quality of District Road Class 1 improved	% of District roads class 1 in Good Condition	37.0%	42.0%	47.0%	52.0%	57.0%	60.0%	Speed Survey Records from Annual Road Condition Survey	Annual Road Condition Survey takes place regularly
Riding Quality of District Road Class 2 (Feeder Road) improved	% of District roads class 2 in Good Condition	0.9%	7.0%	13.2%	19.3%	25.5%	31.6%	Speed Survey Records from Annual Road Condition Survey	Data on improvement of District Road Class 2 gather regularly
OUTPUT 1:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**

National unpaved roads upgraded to paved road	Number of km of National unpaved roads upgraded to paved roads	1,172	1,308	1,444	1,580	1,716	1,852	Project Progress and Implementation Report of RTDA	Prioritization of candidate roads made by appropriate traffic/economic analysis
OUTPUT 2:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
District Class 1 unpaved roads upgraded to paved roads	Number of km of District Class 1 unpaved roads upgraded to paved roads	0	30	60	90	120	150	Road Inventory Report of RTDA	Prioritization of candidate roads made by appropriate traffic/economic analysis
OUTPUT 3:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
District Class 1 unpaved roads upgraded to gravel roads	Number of km of District Class 1 unpaved roads upgraded to gravel roads	0	30	60	90	120	150	Road Inventory Report of RTDA	Prioritization of candidate roads made by appropriate traffic/economic analysis
OUTPUT 4:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
District Class 1 unpaved roads upgraded to gravel roads	Number of km of District Class 1 unpaved roads upgraded to gravel roads	0	30	60	90	120	150	Road Inventory Report of RTDA	Prioritization of candidate roads made by appropriate traffic/economic analysis
OUTPUT 5:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Rural connectivity and standard of District Road Class 2 (Feeder Road) upgraded	No of km of District Road Class 2 upgraded to gravel road	71.6	510	1,020	1,530	2,040	2,550	Road Inventory Report of RTDA and MINAGRI	Prioritization of candidate roads made by appropriate traffic/economic analysis

OUTPUT 6:	INDICATOR	BASE LINE (2012/13)	TARGET 2013/14	TARGET 2014/15	TARGET 2015/16	TARGET 2016/17	TARGET 2017/18	MEANS OF VERIFICATION	ASSUMPTIONS
Integrated Urban roads with PT and NMT facilities created	Number of km of integrated roads created	0.0	31.0	61.0	91.0	116.5	140.0	Project completion Report of RTDA	Location of, PT, NMT and pedestrian routes have been identified and prioritized
OUTPUT 7:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Four lane Bugesera International Airport Road Constructed	Number of km of road constructed	0	0	11	22	32	42	Project progress record of RTDA	Appropriate design and project action plan in place
OUTPUT 7:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Weigh bridge at Akanyaru, Cyangugu, Gatuna, Rubavu and Rusumo Border Posts installed	Number of Weigh Bridge Installed	Number Weigh Bridge in Operation	1	2	3	4	5	Project progress record of RTDA	Axle Load Policy and Strategies Adopted
GOAL/IMPACT: Economic Transformation for Rapid Growth									
Priority 2: To develop an integrated public transport system for Rwanda									
OUTCOME	**INDICATOR**	**BASELINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Improved public transport services	**Number of km of scheduled public transport services**	**1,600**	**2,900**	**4,500**	**6,100**	**7,700**	**9,290**	**Approved report on public transport services**	**-Governing laws and regulations in place.**
OUTPUT 1:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**

Public transport service in Kigali City Improved	Number of km of scheduled bus routes	0	0	110	220	330	430	Improved Bus Shelters in Operations	Locations of the improved Bus Shelters have been Identified and Prioritized
OUTPUT 2:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Bus shelters in Kigali City Improved	Number of Improved Bus Shelter	0	130	260	390	520	650	Improved Bus Shelters in Operations	Locations of the improved Bus Shelters have been Identified and Prioritised
OUTPUT 3:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Automated smart fare collection system in bus shelter installed	Number of Improved Bus Shelter with Automated Fare collection system	0	20	40	60	80	100	Improved Bus Shelters with Automated Fare Collection system in Operations	Locations of the Bus Stops with automated fare collection system have been Identified and Prioritised
OUTPUT 4:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Automated smart fare collection system in bus shelter installed	Number of Improved Bus Shelter with Automated Fare collection system	0	20	40	60	80	100	Improved Bus Shelters with Automated Fare Collection system in Operations	Locations of the Bus Stops with automated fare collection system have been Identified and Prioritised
OUTPUT 5:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Integrated Smart ticketing system with micro processing ability (1000,000 cards) installed	Number of Micro processing Ability	10,000	200,000	400,000	600,000	800,000	1,000,000	Smarting Ticketing in Operation	Appropriate and Compatible Smart Ticketing system Identified
OUTPUT 6:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**

Integrated Smart ticketing system with micro processing ability (1000,000 cards) installed	Number of Micro processing Ability	10,000	200,000	400,000	600,000	800,000	1,000,000	Smarting Ticketing in Operation	Appropriate and Compatible Smart Ticketing system Identified
OUTPUT 7:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
A Public Transport Operation control centre established	Number of Coordinated Public Transport Control System in place	0	0	0	0	0	1	Public Transport Control Centre in operation	Appropriate system architecture for public transport control centre Identified
OUTPUT 8:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Establishment of an Integrated Intercity Bus Terminal	Number of integrated intercity bus terminal in operation	0	0	0	0	0	1	Integrated Intercity Bus Terminal in operation	Appropriate Location of the Integrated Intercity Bus Terminal Identified
OUTPUT 9:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Dedicated Bus Lanes (DBLs) developed	Number of km of Bus Lane developed	0	7.5	15.0	22.5	30.0	37.5	Priority Bus Lanes in Designated Routes in Operation	Selection of Routes have been Finalised
OUTPUT 10:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**

Bus priority at intersections implemented	No of Junctions with Bus Priority Queue Jump	0	5.0	7.0	9.0	11.0	13.0	Bus Priority System in Operation in Designated Signalised Junctions	Appropriate Signalised Junctions for Bus Priority system Identified
OUTPUT 11:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
High Quality footpath on both side of roads with shade tree at 10 m interval including wheel chair access facilities for disables developed	Number of km of High Quality footpath on both side of roads	0	20	40	60	80	100	Project completion Report of RTDA	Location of footpaths have been identified and prioritised
OUTPUT 12:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Improved pedestrian access ways/tracks developed	Number of km of access tracks for pedestrian	0	20	40	60	80	100	Project completion Report of RTDA	Location of pedestrian access tracks have been identified and prioritised
OUTPUT 13:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Bicycle parking sites developed	Number of Bicycle Parking site	0	5	10	15	20	25	Project completion Report of RTDA	Location of bicycle parking sites have been identified and prioritised

OUTPUT 14:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Park-and-ride facility (open lot parking) at peripheral areas developed	Number of Park-and-Ride Facility in Operation	0			1	2	3	Park and Ride Facilities Available in Kigali City	Locations for Park-and-Ride Facilities Identified
OUTPUT 15:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Unpaved roads in Kigali City upgraded to paved roads for new bus routes	Number of km of unpaved road upgraded to paved road	0	16.4	32.8	49.2	65.6	82.0	Project completion Report of RTDA	Location of unpaved roads have been identified and prioritised
OUTPUT 16:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Scheduled bus service for rural areas improved	Number of km of scheduled bus routes	1,600.0	2,900.0	4,200.0	5,500.0	6,800.0	8,100.0	Scheduled Bus Service in Designated Rural Routes in Operation	A new public limited company in operation under route franchising
OUTPUT 17:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Quality bus service for key intercity routes introduced	Number of km of Quality bus routes	0.0	0.0	190.0	380.0	570.0	760.0	Scheduled Bus Service in Designated Rural Routes in Operation	A new public limited company in operation under route franchising
OUTPUT 18:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**

Public Transport providers consolidated	% of operators are public limited companies or cooperatives	30%	45%	60%	75%	85%	100%	Vehicle Operating License Record of RURA	The Adopted Public Transport Policy and Strategy of 2012 fully operational
OUTPUT 19:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Preferential tax rebate for importation large standard bus for public transport introduced	Number of Large Standard Buses in Operation in Rwanda	73	130	190	250	310	365	Vehicle Operating License Record of RURA	Policy to Provide Full Tax Rebate for Large Standard Bus Adopted
GOAL/IMPACT: Economic Transformation for Rapid Growth									
Priority 3: To develop an efficient and sustainable air transport infrastructure for Rwanda									
OUTCOME	**INDICATOR**	**BASELINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Enhanced capacity of air transport infrastructure	**Passengers carrying capacity of all airports combined**	**809,488**	**956,718**	**1,122,401**	**1,336,531**	**1,579,798**	**3,055,322**	**Passenger records at airports**	**Appropriate development plans available**
OUTPUT 1:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Bugesera International Airport constructed	% of work done	0	0.00%	30.00%	50.00%	70.00%	100.00%	Project progress record of Bugesera Airport of RCAA	Appropriate design and project action plan in place
OUTPUT 2:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Air Cargo Centre (ACC) and Commercial Mall Constructed	% of work done	0	20.00%	40.00%	60.00%	80.00%	100.00%	Project progress record of RCAA	Appropriate design and project action plan in place

GOAL/IMPACT: Economic Transformation for Rapid Growth									
Priority 4: To develop an integrated multimodal transport system for Rwanda									
OUTCOME	**INDICATOR**	**BASELINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Integrated multimodal transport system in place	**Number of new transport modes introduced**	**2**	**2**	**3**				**Final Report on Feasibility Study and Detailed Design of Kigali-Gisenyi Railway Line**	**Feasibility Study and Final Design Report on Kigali-Gisneyi Railway line Approved**
OUTPUT 1:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Lake Kivu Inland Waterway Transport (IWT) System developed	Number of IWT ports developed	0	0	2	4	6	7	Project completion Report of RTDA	Location of ports have been identified and prioritised
GOAL/IMPACT: Accountable Governance									
Priority 5: To Improve institutional and human resources capacity for land, water and air transport system									
OUTCOME	**INDICATOR**	**BASELINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Enhanced transport institutional capacity	**Number of transport institutions created and strengthened**	**5 institutions**	**5 institutions strengthened**	**6**	**7**	**8**	**8**	**1. Operational structures 2. Organic laws**	**1. Planned institutions created 2. Relevant laws adopted timely 3. Relevant capacities built**
OUTPUT 1:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**

Regional vehicle inspection centres established under private sector ;	Number of vehicle inspection center in operation	1	1	2	3	4	5	Project implementation report of RTDA	Appropriate framework for vehicle inspection centres adopted
OUTPUT 2:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Transport professionals trained at Master level;	No of professional trained	30	45	60	75	90	100	Academic Records of KIST	Appropriate framework for the continuation of the Master degree program in place
OUTPUT 3:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Technicians in transport sector trained on-job	No of technicians trained	0	10	20	30	40	50	RTDA training records	Appropriate framework for the training program in place
OUTPUT 4:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
District Technical teams trained	Number of district technician trained	0	12	24	36	48	60	Training Records of RTDA and Districts	Appropriate framework for training in place
OUTPUT 5:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Local communities trained on road maintenance	Number of local communities trained	0	80	160	240	320	400	Training Records of RTDA and Districts	Appropriate framework for training in place

OUTPUT 6:	INDICATOR	BASE LINE (2012/13)	TARGET 2013/14	TARGET 2014/15	TARGET 2015/16	TARGET 2016/17	TARGET 2017/18	MEANS OF VERIFICATION	ASSUMPTIONS
Post-accident response management system improved	Number Trauma Centres established	2	2	3	4			Project Implementation and Progress Report of RTDA for Rusizi and Rubavu Trauma Centers	Appropriate framework for operation of Trauma Centres in place
OUTPUT 7:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Quality control in the construction and maintenance of road/airport infrastructure improved	% of the work for establishment of a National Reference Lab	0.0%	0.0%	25.0%	50.0%	75.0%	100.0%	Project Implementation and Progress Report of RTDA	Appropriate framework and design of National Reference Lab in place
OUTPUT 8:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Postgraduate research facilities in Transport sector Improved	Number of professionals with Postgraduate Research Degree in Transport from Academic Institutions in Rwanda	0	4	8	12	16	20	Academic Records of KIST and NUR	Appropriate framework for the research degree in place
GOAL/IMPACT: Foundation - Social Protection									
Priority 6: To improve integration and social equity in transport infrastructure and service									
OUTCOME	**INDICATOR**	**BASELINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**

Improved Gender equality in transport sector	**% of women employed in public and private transport companies**	**28.4% F and 71.6% M**	**31% F and 69% M**	**33% F and 67% M**	**35% F and 65% M**	**37% F and 63% M**	**39% F and 61% M**	**Labor Gender Statistics of the RBS**	**Appropriate action plan for gender equality in place**
OUTPUT 1:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Percentage women labourers and supervisors for road construction and maintenance increased	% of women and men labourers and supervisors employed in road construction and maintenance	25.4% F and 74.5% M	28% F and 72% M	30% F and 70% M	32% F and 68% M	34% F and 66% M	36% F and 64% M	Labor Gender Statistics of the RBS	Appropriate action plan for gender equality in place
OUTPUT 2:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Percentage of transport companies run by women increased	% increase of transport companies run by women	0.0%	1.0%	2.0%	3.0%	4.0%	5.0%	Labor Gender Statistics of the RBS	Appropriate action plan for gender equality in place
OUTPUT 3:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Access to transport for disables improved	% of Bus/Taxi operators with disable access facilities	0.0%	5.0%	10.0%	15.0%	20.0%	25.0%	Vehicle Registration records of RURA	Appropriate plan for ensuring disable access in public transport in place
OUTPUT 4:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**

Parking facilities for disables in parking lots introduced	% of parking lots with disable parking facilities	0.0%	5.0%	10.0%	15.0%	20.0%	25.0%	Parking lot records of City of Kigali and RTDA	Appropriate plan for ensuring disable access in parking lots in Kigali City in place
OUTPUT 5:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Social equity in transport budget allocation improved	% of development budget allocated for HIV and other cross cutting issues	0.5%	0.6%	0.7%	0.8%	0.9%	1.0%	Annual Budget of RTDA	Appropriate plan for promoting cross-cutting issues in place
GOAL/IMPACT: Economic Transformation for Rapid Growth									
Priority 7: To develop an efficient and sustainable air transport service for Rwanda									
OUTCOME	**INDICATOR**	**BASELINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Enhanced air transport services	**Number of passengers transported per year by all airlines combined**	**577,883**	**683,083**	**807,466**	**954,536**	**1,128,436**	**1,444,399**	**Passenger Travel Records of RCAA**	**Bugesera Airport Operational in Time**
OUTPUT 1:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Safety and Security to Air Service improved	% of the ACC & Automation Set up work completed	0.0%	50.9%	54.8%	75.3%	87.7%	100.0%	Final Project Progress and Implementation Report of RCAA	Appropriate specification for automation selected
OUTPUT 2:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**

Meteo Automation: SADIS upgraded	% of Mateo Automation upgrade: SADIS	Inadequate Mateo automation	53.9%	63.9%	86.4%	93.2%	100.0%	Final Project Progress and Implementation Report of RCAA	Appropriate specification for meteor automation selected
OUTPUT 3:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Airspace Safety control system upgraded	% of Airspaces Safety work	Inadequate Airspace Safety	20.0%	40.0%	60.0%	80.0%	100.0%	Final Project Progress and Implementation Report of RCAA	Appropriate specification for automation selected
OUTPUT 4:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Communication, Navigation, Surveillance and Data broadcasting systems of air transport services improved	% of CNS equipment set up	Inadequate CNS equipment	28.1%	42.2%	61.5%	80.7%	100.0%	Final Project Progress and Implementation Report of RCAA	Appropriate specification for CNS equipment selected
OUTPUT 5:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
ICAO Compliance improved	% of progress to achieve full ICAO Compliance	17.9%	28.4%	46.3%	64.2%	82.1%	100.0%	ICAO Certificate	Action plan for ICAO Compliance in place
OUTPUT 6:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Fuel Hydrant at KIA installed	% of progress to install Fuel Hydrant at KIA	0		100.0%				Project completion Report of RTDA	Appropriate location and design of fuel hydrant adopted
OUTPUT 7:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**

Kamembe & Rubavu Navaids and airfield Lights installed	% of progress to install Navaids and airfield lights	0			100.0%			Project completion Report of RTDA	Appropriate location and design of Navaids and airfield lights adopted
OUTPUT 8:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Fuel firm at Kamembe/Rubavu established	% Progress for establishment of fuel firm at Kamembe/Gisenyi	0					100.0%	Project completion Report of RTDA	Appropriate location for fuel firms adopted
OUTPUT 9	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Self-reliance for local air transport services improved	% of Government subsidy with respect to the net asset of the annual balance sheet	50.0%	40.0%	20.0%	0.0%	0.0%	0.0%	Balance Sheet of RwandAir	Business Plan of RwandAir in place
OUTPUT 10:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Routes network of RwandAir in Africa, Asia and Europe expanded	Number of destinations	13	18	25	30	32	32	Service Delivery Records of RwandAir	Appropriate route planning in place
OUTPUT 11:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**

Aircraft fleet of RwandAir expanded	Number of narrow and wide body aircrafts	7 Narrow Body	8 Narrow Body	Total 8 (7 NB + 1WB)	Total 11 (9 NB + 2WB)	Total 10 (8 NB + 2 WB)	Total 12 (9 NB + 3 WB)	Project Progress Report on General Capacity Building for RwandAir	Appropriate plan for general capacity building in place
GOAL/IMPACT: Economic Transformation for Rapid Growth									
Priority 8: To transform Rwanda into a Regional Freight Logistics Hub									
OUTCOME	**INDICATOR**	**BASELINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Improved freight logistics system	**Number freight logistics centers developed**	**0**	**0**	**11**	**22**	**33**	**44**	**Passenger Travel Records of RCAA**	**Bugesera Airport Operational in Time**
OUTPUT 1:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Regional logistic centres in Kigali developed	% implementation of Regional logistic centre in Kigali	0.0%	20.0%	40.0%	60.0%	80.0%	100.0%	Project implementation record of RTDA	Appropriate feasibility study and design in place
OUTPUT 2:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**

Bonded ware houses in Goma and Bukavu developed	% implementation of bounded ware houses in Goma and Bukavu	0.0%	20.0%	40.0%	60.0%	80.0%	100.0%	Project implementation record of RTDA	Appropriate feasibility study and design in place
OUTPUT 3:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Agro-logistics and Multi-Service Centres Developed	Number of Agro-logistics and Multi-Service Centres operational	0	6	12	18	24	30	Project implementation record of RTDA	Appropriate feasibility study and design in place
OUTPUT 4:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Non-tariff barriers for International Transport Reduced	Number of One Stop Border Posts Fully Operational	3	3	5	6	7	8	RRA Custom Operation Record	Custom Operations of Bordering Countries Integrated
OUTPUT 5:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Freight Logistics Infrastructure at Sea ports constructed	No. of Off-dock Container Deports at Mombasa and Dar Es Salaam	0	0	1	2			Sea Port Project completion Records	Collaborative initiative undertaken with in EAC framework
OUTPUT 6:	**INDICATOR**	**BASE LINE (2012/13)**	**TARGET 2013/14**	**TARGET 2014/15**	**TARGET 2015/16**	**TARGET 2016/17**	**TARGET 2017/18**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Truck Stops/Roadside Stations constructed	Number of road side stations operational	0	0	1	2	3	4	Project Completion Record of RTDA and Operation Management Records of Districts	Locations of the Truck Stops/Roadside Stations Finalised and Approved

Annex B: Linking Budget Programmes to Transport Sector Activities

Table B-1: Transport Sector Cost and Financing

RWF '000	2013/14	2014/15	2015/16	2016/17	2017/18	Total for EDPRS 2
Funds Available						
Government	90,000,000	93,600,000	97,344,000	101,237,760	105,287,270	**487,469,030**
Donor projects	130,000,000	136,500,000	143,325,000	150,491,250	158,015,813	**718,332,063**
Private sources						**0**
Other sources						**0**
Total	220,000,000	230,100,000	240,669,000	251,729,010	263,303,083	**1,205,801,093**
Existing Baseline Expenditure						**0**
Funds Available for EDPRS 2	220,000,000	230,100,000	240,669,000	251,729,010	263,303,083	1,205,801,093
Total Projected Cost						
National projects costs	189,380,916	322,847,814	281,779,623	306,242,664	319,303,150	**1,419,554,167**
Districts' project costs	46,159,047	46,856,039	47,785,496	49,178,752	54,754,910	**244,734,243**
Total	**235,539,963**	**369,703,853**	**329,565,119**	**355,421,416**	**374,058,060**	**1,664,288,411**
Overall Deficit/Surplus	**-15,539,963**	**-139,603,853**	**-88,896,119**	**-103,692,406**	**-110,754,978**	**-458,487,318**
% Surplus/deficit	-7%	-61%	-37%	-41%	-42%	-38%

Table B-2: Linking Transport Sector Programmes to EDPRS2 Thematic Priorities

Programme	Implementing agency	Total cost for 2013/14 to 2017/18 in Thousand RWF	Thematic priorities contributed to:
Preferential treatment and Incentive for companies employing women labourers and supervisors for road construction and maintenance	MININFRA, RTDA, RCAA	160,000	Foundation - Social protection
Campaign for companies employing women labourers and supervisors for road construction and maintenance	MININFRA, RTDA, RCAA	80,000	Foundation - Social protection
Encouragement of women to run transport companies by arranging special campaign and preferential treatment	MININFRA, RTDA, RCAA	40,000	Foundation - Social protection
Incentive for Bus/Taxi operators for ensuring access for disable and infirm passengers	MININFRA, RTDA, RCAA	3,200,000	Foundation - Social protection
Reserving parking facilities for disables in all parking lots	MININFRA, RTDA, RCAA	800,000	Foundation - Social protection
Special provisions in all tender documents for large capital projects incorporate HIV prevention activities, Gender equality and access to transport for disables and infirm	MININFRA, RTDA, RCAA	1,056,000	Foundation - Social protection
Sub-total for Social Protection		**5,336,000**	

Strengthen legal and institutional capacity and improve service delivery system	MININFRA, RTDA, RCAA	120,205	Thematic - Accountable Governance
Capacity Building for Air transport sector	MININFRA, RCAA	1,001,600	Thematic - Accountable Governance
Business Plan for all airports	MININFRA, RCAA	120,000	Thematic - Accountable Governance
Development of a Business Model for bus operation under route franchising approach for rural bus service	MININFRA, RTDA, RURA, CoK	140,625	Thematic - Accountable Governance
A new public limited company is fully operational to provide improved bus services in 98 rural routes	MININFRA, RTDA, RURA	18,000	Thematic - Accountable Governance
Implementation of Performance Based Maintenance and Management of Roads (PMMR) Contracts (PPP)	MININFRA, RTDA	256,000	Thematic - Accountable Governance
Feasibility Study on the Development of low-cost Toll Roads: RN4 from Musanze to Gisenyi (Rubavu)	MININFRA, RTDA	134,400	Thematic - Accountable Governance
An effective M&E system with objectively verifiable indicators in place	MININFRA, RTDA, RCAA	192,000	Thematic - Accountable Governance
Restructuring of RTDA to undertake tactical functions for public transport	MININFRA, RTDA, RURA, CoK	480,000	Thematic - Accountable Governance
National Reference Laboratory for Road/airport Infrastructures created and operational	MININFRA, RTDA	2,000,000	Thematic - Accountable Governance

Operation of National Reference Laboratory	MININFRA, RTDA	100,000	Thematic - Accountable Governance
Design and Establishment of Trauma centres in Rusizi and Rubavu ;	MININFRA, RTDA	165,000	Thematic - Accountable Governance
Operation of Trauma Centres	MININFRA, RTDA	8	Thematic - Accountable Governance
Establishment of an advanced Accident Investigation System and Accident Database for National Police in collaboration with RTDA;	MININFRA, RTDA, RNP	640,000	Thematic - Accountable Governance
Development of Safety Standards and Establishment of annual safety auditing system	MININFRA, RTDA	384,000	Thematic - Accountable Governance
Establishment of Transport Safety and Vehicle Fitness Investigation and Control Unit in RTDA under the proposed restructuring plan	MININFRA, RTDA	320,000	Thematic - Accountable Governance
Establishment of a separate emergency work management unit in RTDA	MININFRA, RTDA	320,000	Thematic - Accountable Governance
Allocation of at least 6% of funds from GoR for emergency work and disaster management	MININFRA, RTDA	9,749,381	Thematic - Accountable Governance
At least four regional vehicle inspection centres established under private sector ;	MININFRA, RTDA	640,000	Thematic - Accountable Governance
New Air transport regulatory authority created separating from airport operation	MININFRA, RCAA	640,000	Thematic - Accountable Governance

Study on reduction of fuel costs for motor vehicle in Rwanda	MININFRA, RTDA	270,000	Thematic - Accountable Governance
Study on alternative fuel and fuel efficient engine for motor vehicles in Rwanda	MININFRA, RTDA	270,000	Thematic - Accountable Governance
Categorization and registration of conductors on the basis of technical and financial capabilities	MININFRA, RTDA	128,000	Thematic - Accountable Governance
Technical teams of all District trained	MININFRA, RTDA, Districts	1,300,000	Thematic - Accountable Governance
Sub-total for Accountable Governance		**19,389,219**	
Consolidated public limited companies or operators' cooperatives working in the Public Transport Sector for Bus Services	MININFRA, RTDA, RURA, CoK	20,000	Thematic - Economic Transformation for Rapid Growth
Full tax rebate for importation large standard bus for public transport (approximately 292)	MININFRA,MINECOFIN, RRA	5,637,060	Thematic - Economic Transformation for Rapid Growth
Development of a public transport fare policy	MININFRA, RTDA, RURA, CoK	128,000	Thematic - Economic Transformation for Rapid Growth
Review of Public Transport Regulations	MININFRA, RURA	9,600	Thematic - Economic Transformation for Rapid Growth
Designing and bundling routes	MININFRA, RTDA, RURA, CoK	16,250	Thematic - Economic Transformation for Rapid Growth
Publication of route operators	MININFRA, RTDA, RURA, CoK	1,280	Thematic - Economic Transformation for Rapid Growth

Study on Parking Management Strategies for Kigali City	MININFRA, RTDA, RURA, CoK	192,000	Thematic - Economic Transformation for Rapid Growth
Implementation of Recommended Parking Strategies for Kigali City	MININFRA, RTDA, RURA, CoK	320,000	Thematic - Economic Transformation for Rapid Growth
Land use and Transport Plan for Kigali City	MININFRA, RTDA, CoK	650,000	Thematic - Economic Transformation for Rapid Growth
Feasibility Study and Detailed design of 5 One-Stop Border Posts, i.e. 3 at primary border posts of Kagitumba, Rusumo and Akanyaru Haut and 2 at secondary border posts of Rusizi/Cyangugu and Cyanika Border Posts	MININFRA, RTDA	320,000	Thematic - Economic Transformation for Rapid Growth
Develop 5 One-Stop Border Posts, i.e. 3 at primary border posts of Kagitumba, Rusumo and Akanyaru Haut and 2 at secondary border posts of Rusizi/Cyangugu and Cyanika Border Posts	MININFRA, RTDA	72,960,000	Thematic - Economic Transformation for Rapid Growth
Operation and Maintenance of 5 One Stop Border Posts	MININFRA, RTDA	364,800	Thematic - Economic Transformation for Rapid Growth
Feasibility study and detailed design of 4 Truck Stops/Roadside Stations	MININFRA, RTDA	12,800	Thematic - Economic Transformation for Rapid Growth
Construction of 4 Truck Stops/Roadside Stations	MININFRA, RTDA	4,377,600	Thematic - Economic Transformation for Rapid Growth
Operation and Maintenance of 4 Roadside Stations	MININFRA, RTDA	218,880	Thematic - Economic Transformation for Rapid Growth
Regional initiatives to reduce transit time in sea ports	MININFRA, EAC	9,750,000	Thematic - Economic Transformation for Rapid Growth
Regional initiatives to expand the capacity of sea ports	MININFRA, EAC	640,000	Thematic - Economic Transformation for Rapid Growth
Regional initiatives for simplification of custom, scanning, tracking,	MININFRA, EAC	211,200	Thematic - Economic Transformation for Rapid Growth

clearing and forwarding of international freight			
Integrated regional logistics service	MININFRA, RTDA	35,750,000	Thematic - Economic Transformation for Rapid Growth
Maintenance of Logistics centres	MININFRA, RTDA	1,787,500	Thematic - Economic Transformation for Rapid Growth
Development of Agro-logistics and Multi-Service Centres	MININFRA, RTDA	10,611,000	Thematic - Economic Transformation for Rapid Growth
Maintenance of Agro-logistics and Multi-Service Centres	MININFRA, RTDA	1,061,100	Thematic - Economic Transformation for Rapid Growth
Improved Communication in freight transport services	MININFRA, RTDA	2,275,000	Thematic - Economic Transformation for Rapid Growth
Feasibility study and preliminary design on the construction of 3 town bypass roads in Huye, Muhanga and Musanze	MININFRA, RTDA	320,000	Thematic - Economic Transformation for Rapid Growth
Feasibility study and preliminary design on the construction of Kigali City Ring road cum Expressway	MININFRA, RTDA	448,000	Thematic - Economic Transformation for Rapid Growth
Feasibility study and detailed design of Kigali-Gisenyi railway line	MININFRA, RTDA	1,280,000	Thematic - Economic Transformation for Rapid Growth
Development and implementation of Lake Kivu Inland Waterway Transport System and Service (Passenger and Cargo) including detailed design, Construction of Infrastructure including 7 ports; Delivery of Vessels; System Implementation and Operation	MININFRA, RTDA	2,848,000	Thematic - Economic Transformation for Rapid Growth
Operation and Maintenance of Lake Kivu IWT System and Service	MININFRA, RTDA	142,400	Thematic - Economic Transformation for Rapid Growth
Feasibility and detailed designs for Akagera river project	MININFRA, RTDA	224,000	Thematic - Economic Transformation for Rapid Growth

Feasibility and Detailed Design Study of the Kampala-Kigali-Bujumbura Pipeline	MININFRA, RTDA	422,500	Thematic - Economic Transformation for Rapid Growth
Feasibility Study of the Kigali-Muhanga-Ribavu and Huye-Rusizi Pipelines	MININFRA, RTDA	325,000	Thematic - Economic Transformation for Rapid Growth
Enhance Safety and Security to Air Service: ACC & Automation Set up	MININFRA, RCAA	632,252	Thematic - Economic Transformation for Rapid Growth
Mateo Automation upgrade: SADIS	MININFRA, RCAA	557,050	Thematic - Economic Transformation for Rapid Growth
Airspace Safety	MININFRA, RCAA	1,252,175	Thematic - Economic Transformation for Rapid Growth
CNS equipment: (Comms, Nav, Surv & data broadcasting)	MININFRA, RCAA	9,374,200	Thematic - Economic Transformation for Rapid Growth
ICAO Compliance	MININFRA, RCAA	704,000	Thematic - Economic Transformation for Rapid Growth
Infrastructure Upgrade: Resurfacing Kamembe Airport, Rwanda	MININFRA, RCAA	350,000	Thematic - Economic Transformation for Rapid Growth
Maintenance of Airport Pavement of Kamembe Airport	MININFRA, RCAA	35,000	Thematic - Economic Transformation for Rapid Growth
Apron and Taxiway expansion of KIA	MININFRA, RCAA	4,428,000	Thematic - Economic Transformation for Rapid Growth
Maintenance of Apron and Taxiway of KIA	MININFRA, RCAA	442,800	Thematic - Economic Transformation for Rapid Growth
KIA Terminal Building expansion	MININFRA, RCAA	10,500,000	Thematic - Economic Transformation for Rapid Growth
Maintenance of extended Terminal Building for KIA	MININFRA, RCAA	525,000	Thematic - Economic Transformation for Rapid Growth
Expropriation of Kamembe and Gisenyi	MININFRA, RCAA	3,000,000	Thematic - Economic Transformation for Rapid Growth

Gisenyi and Kamembe runway extension	MININFRA, RCAA	19,500,000	Thematic - Economic Transformation for Rapid Growth
Maintenance of extended Runway for Gisenyi and Kamembe	MININFRA, RCAA	1,950,000	Thematic - Economic Transformation for Rapid Growth
New Terminal Building Kamembe	MININFRA, RCAA	12,500,000	Thematic - Economic Transformation for Rapid Growth
Maintenance of New Terminal Building at Kamembe	MININFRA, RCAA	625,000	Thematic - Economic Transformation for Rapid Growth
Fuel Hydrant KIA	MININFRA, RCAA	4,500,000	Thematic - Economic Transformation for Rapid Growth
Kamembe Navaids installations and airfield Lights	MININFRA, RCAA	2,400,000	Thematic - Economic Transformation for Rapid Growth
Gisenyi Navaids installations and airfield Lights	MININFRA, RCAA	2,400,000	Thematic - Economic Transformation for Rapid Growth
Terminal at Gisenyi	MININFRA, RCAA	11,500,000	Thematic - Economic Transformation for Rapid Growth
Maintenance of the Terminal at Gisenyi	MININFRA, RCAA	575,000	Thematic - Economic Transformation for Rapid Growth
Fuel firm Kamembe and Gisenyi	MININFRA, RCAA	6,000,000	Thematic - Economic Transformation for Rapid Growth
Land Acquisition for the Construction of the New Bugesera International Airport	MININFRA, RCAA	18,000,000	Thematic - Economic Transformation for Rapid Growth
Construction of Air Cargo Centre (ACC) and Commercial Mall	MININFRA, RCAA	6,500,000	Thematic - Economic Transformation for Rapid Growth
Development of standard bus routes and schedules for Kigali City	MININFRA, RTDA, RURA, CoK	93,750	Thematic - Economic Transformation for Rapid Growth
Development of a Business model for bus operation under route franchising approach for Kigali City	MININFRA, RTDA, RURA, CoK	140,625	Thematic - Economic Transformation for Rapid Growth
Pilot project of standard scheduled bus service and integrated ticketing	MININFRA, RTDA, RURA, CoK	312,500	Thematic - Economic Transformation for Rapid Growth

system under a route franchising approach in Kigali City			
30 km of Dedicated Bus Lanes (DBLs) for exclusive use by Dedicated Right-of-Way Buses in bus routes with expropriation;	MININFRA, RTDA, RURA, CoK	20,625,000	Thematic - Economic Transformation for Rapid Growth
Maintenance of 30 km of Dedicated Bus lanes	MININFRA, RTDA, RURA, CoK	1,031,250	Thematic - Economic Transformation for Rapid Growth
Detail Design Study for a BRT system for Kigali City	MININFRA, RTDA, RURA, CoK	218,750	Thematic - Economic Transformation for Rapid Growth
Improvement of 650 bus shelters in Kigali City	MININFRA, RTDA, CoK	9,567,188	Thematic - Economic Transformation for Rapid Growth
Maintenance of Bus Shelters in Kigali City	MININFRA, RTDA, CoK	478,359	Thematic - Economic Transformation for Rapid Growth
100 Automated smart fare collection system in bus shelter	MININFRA, RTDA, CoK	187,500	Thematic - Economic Transformation for Rapid Growth
Integrated Smart ticketing system with microprocessing ability (1000,000 cards)	MININFRA, RTDA, CoK	4,437,500	Thematic - Economic Transformation for Rapid Growth
Intersection upgrade (Queue jumps at 6 numbers of signalised interactions)	MININFRA, RTDA, CoK	93,750	Thematic - Economic Transformation for Rapid Growth
Intersection upgrade (Queue jumps at 7 numbers of Intersections)	MININFRA, RTDA, CoK	109,375	Thematic - Economic Transformation for Rapid Growth
Establishment of a Public Transport Operation control centre	MININFRA, RTDA, CoK	390,625	Thematic - Economic Transformation for Rapid Growth
Development of a Central Intercity Bus Terminal;	MININFRA, RTDA, CoK	1,093,750	Thematic - Economic Transformation for Rapid Growth
Maintenance of Central Intercity Bus Terminals	MININFRA, RTDA, CoK	54,688	Thematic - Economic Transformation for Rapid Growth

Development of Bus Sleeping Ground by upgrading existing taxi park	MININFRA, RTDA, CoK	12,500	Thematic - Economic Transformation for Rapid Growth
Maintenance of Existing Bus Sleeping Ground	MININFRA, RTDA, CoK	1,250	Thematic - Economic Transformation for Rapid Growth
Establishing a new sleeping ground for bus	MININFRA, RTDA, CoK	31,250	Thematic - Economic Transformation for Rapid Growth
Maintenance of New Sleeping Ground	MININFRA, RTDA, CoK	1,563	Thematic - Economic Transformation for Rapid Growth
100 km of High Quality footpath on both side of roads with shade tree at 10 m interval including wheel chair access facilities for disables	MININFRA, RTDA, CoK	3,125,000	Thematic - Economic Transformation for Rapid Growth
Maintenance of 100 km of Footpath	MININFRA, RTDA, CoK	62,500	Thematic - Economic Transformation for Rapid Growth
Improvements to pedestrian access ways/tracks (100 km)	MININFRA, RTDA, CoK	2,187,500	Thematic - Economic Transformation for Rapid Growth
Maintenance of Pedestrian Access Ways/Tracks	MININFRA, RTDA, CoK	43,750	Thematic - Economic Transformation for Rapid Growth
100 number of pedestrian crosswalks with signal	MININFRA, RTDA, CoK	1,250,000	Thematic - Economic Transformation for Rapid Growth
Maintenance of Pedestrian Crosswalks with Signals	MININFRA, RTDA, CoK	25,000	Thematic - Economic Transformation for Rapid Growth
3 number of Park-and-ride facility (open lot parking) peripheral area	MININFRA, RTDA, CoK	3,750,000	Thematic - Economic Transformation for Rapid Growth
Maintenance of Park and Ride Facilities	MININFRA, RTDA, CoK	112,500	Thematic - Economic Transformation for Rapid Growth
Bicycle parking at 25 sites	MININFRA, RTDA, CoK	125,000	Thematic - Economic Transformation for Rapid Growth
Maintenance of Bicycle Parking at 25 sites	MININFRA, RTDA, CoK	2,500	Thematic - Economic Transformation for Rapid Growth

82 km of City of Kigali unpaved roads upgraded to paved road for bus routes	MININFRA, RTDA, CoK	26,650,000	Thematic - Economic Transformation for Rapid Growth
Maintenance of Upgraded Roads of Kigali City	MININFRA, RTDA, CoK	2,665,000	Thematic - Economic Transformation for Rapid Growth
Construction of a Grade Separated Intersection at Nyabugogo	MININFRA, RTDA, CoK	4,875,000	Thematic - Economic Transformation for Rapid Growth
Maintenance of the Grade Separated Intersection	MININFRA, RTDA, CoK	243,750	Thematic - Economic Transformation for Rapid Growth
Development of a Business Model and Detailed Design of Quality Bus Corridor Service for Intercity bus service	MININFRA, RTDA, CoK	1,562,500	Thematic - Economic Transformation for Rapid Growth
Quality Bus Corridor Service Pilot Project	MININFRA, RTDA, CoK	312,500	Thematic - Economic Transformation for Rapid Growth
Implementation of Quality Bus Corridor Service in 11 routes	MININFRA, RTDA, CoK	2,187,500	Thematic - Economic Transformation for Rapid Growth
Investment in RwandAir to help the airline expand it route network in Africa, Asia and Europe and build Kigali to an air transport and logistics hub for the region	MININFRA, RCAA, RwandAir	19,787,589	Thematic - Economic Transformation for Rapid Growth
Support to RwandAir to purchase wide body aircraft such as B787 or A330 to enter the European Tourist market and to build cargo capacity to meet the export demand of the nation	MININFRA, RCAA, RwandAir	25,445,028	Thematic - Economic Transformation for Rapid Growth
140 km of all main roads in major urban centres have basic facilities for NMT and pedestrians	MININFRA, RTDA, Districts	25,521	Thematic - Economic Transformation for Rapid Growth

Maintenance of NMT and Pedestrian Facilities in Urban Centres	MININFRA, RTDA, Districts	438	Thematic - Economic Transformation for Rapid Growth
Feasibility Study and Detailed Design for a four lane divided highway from Kigali to New Bugesera International Airport	MININFRA, RTDA	960,000	Thematic - Economic Transformation for Rapid Growth
Acquisition of land for a six lane divided highway from Kigali to New Bugesera International Airport	MININFRA, RTDA	6,300,000	Thematic - Economic Transformation for Rapid Growth
Construction of 4 lane Divided Highway from Kigali to New Bugesera International Airport	MININFRA, RTDA	67,200,000	Thematic - Economic Transformation for Rapid Growth
Maintenance of 4 Lane Kigali-Bugesera International Airport Road	MININFRA, RTDA	1,344,000	Thematic - Economic Transformation for Rapid Growth
Sub-total for Economic Transformation for Rapid Growth		**480,698,195**	
Establishment of Aviation Training Organisation	MININFRA, RCAA	60,032	Thematic - Productivity and Youth Employment
Postgraduate research degrees in Transport introduced in KIST and NUR	MININFRA, RTDA, KIST, NUR	512,000	Thematic - Productivity and Youth Employment
100 transport sector professional trained at Master level;	MININFRA, RTDA, KIST	1,280,000	Thematic - Productivity and Youth Employment
50 technicians in transport sector provided on-job practical training	MININFRA, RTDA	16,000	Thematic - Productivity and Youth Employment

Training for 50 transport professionals and contractors on contract and project management;	MININFRA, RTDA	320,000	Thematic - Productivity and Youth Employment
400 roadside local communities to be trained on Labour Intensive Public Works (HIMO/LIPW) activities related to road construction and maintenance	MININFRA, RTDA, Districts	25,600,000	Thematic - Productivity and Youth Employment
Sub-total for Productivity and Youth Employment		**27,788,032**	
Approval of axle load control policy and strategy	MININFRA, RTDA	10,000	Thematic - Rural Development
Install Weigh bridge at Akanyaru, Cyangugu, Gatuna, Gisenyi and Rusumo Border Posts	MININFRA, RTDA	6,560,000	Thematic - Rural Development
Operation and Maintenance of 5 Weigh Bridges at Border Posts	MININFRA, RTDA	65,600	Thematic - Rural Development
Economic analysis and prioritization of Capacity Upgrade Investigation and Detailed Design Study for addition of passing lane and road widening	MININFRA, RTDA	270,000	Thematic - Rural Development
680 km National unpaved roads upgraded to paved road	MININFRA, RTDA	804,236,000	Thematic - Rural Development
Maintenance of Upgraded National Roads	MININFRA, RTDA	24,127,080	Thematic - Rural Development
Acquisition of 5,200 km of road reserve for all classified roads	MININFRA, RTDA	78,000,000	Thematic - Rural Development

Acquisition of 75 km of road reserve for District Class 1 roads	MININFRA, RTDA, Districts	1,125,000	Thematic - Rural Development
Acquisition of 30 km of road reserve for District Class 2 (Feeder) roads	MININFRA, RTDA, Districts	300,000	Thematic - Rural Development
150 km District unpaved roads upgraded to paved road	MININFRA, RTDA, Districts	177,405,000	Thematic - Rural Development
Maintenance of Upgraded District roads	MININFRA, RTDA, Districts	13,535,250	Thematic - Rural Development
Upgrading of 2550 km of Feeder roads to gravel standards	MININFRA, RTDA, Districts	6,902,978	Thematic - Rural Development
Maintenance of Upgraded Feeder Roads	MININFRA, RTDA, Districts	4,598,750	Thematic - Rural Development
150 km District unpaved roads upgraded to gravel road	MININFRA, RTDA, Districts	13,535,250	Thematic - Rural Development
Maintenance of upgraded gravel District roads	MININFRA, RTDA, Districts	406,058	Thematic - Rural Development
Sub-total for Rural Development		**1,131,076,965**	
Grand Total		**1,664,288,411**	

Annex C: Transport Sector Priority and Outcome Matrix

Table C-1: Transport Sector Priority and Outcome Matrix for EDPRS-2

Thematic Outcome	**Transport Sector Priority**	**Expected Sector Outcome(s) that relate to the Priority**	**Transport Sector Outcome Indicator**
For Thematic Priority Statement of Accountable Governance ANNEX A-4; 1.3 Strengthened Decentralization) Thematic Outcome: Enhanced local economic development through efficiency and effectiveness in implementation of development programs.	To Improve institutional and human resources capacity for land, water and air transport system	Enhanced transport institutional capacity	Number of transport institutions created and strengthened
Thematic - Productivity and Youth Employment	To Improve institutional and human resources capacity for land, water and air transport system	Enhanced transport institutional capacity	Number of transport institutions created and strengthened
(For Thematic Priority Statement of Accountable Governance ANNEX A-4; 2.1 Improve service delivery at all levels) Thematic Outcome: Improved citizens' scores on the provision of services in all sectors.	To Improve institutional and human resources capacity for land, water and air transport system	Enhanced transport institutional capacity	Number of transport institutions created and strengthened

(For Thematic Priority Statement of Economic Transformation ANNEX A-1; 2.1 Increase proportion of large and medium firms) Thematic Outcome: Established large and medium firms in priority economic/export sectors through investments by global and regional investors.	To Improve institutional and human resources capacity for land, water and air transport system	Enhanced transport institutional capacity	Number of transport institutions created and strengthened
(For Thematic Priority Statement of Accountable Governance ANNEX A-4; 1.4 Home grown initiatives contribution that will contribute to National social and economic development) Thematic Outcome: Introduced new Home Grown Initiatives for greater impact and ownership.	To Improve institutional and human resources capacity for land, water and air transport system	Enhanced transport institutional capacity	Number of transport institutions created and strengthened
(For Thematic Priority Statement of Economic Transformation ANNEX A-1; 5.1 Infrastructure planning in anticipation of accelerated movement of people into urban areas). Thematic Outcome: Implemented master plans for the establishment of basic infrastructure prior to major population shift to secondary cities.	To develop an integrated public transport system for Rwanda	Improved public transport services	Number of km of scheduled bus routes
(For Thematic Priority Statement of Accountable Governance ANNEX A-4; 2.1 Improve service delivery at all levels) Thematic Outcome: Improved citizens' scores on the provision of services in all sectors.	To develop an efficient and sustainable air transport service for Rwanda	Enhanced air transport services	Number of passengers transported per year by all airlines combined

(For Thematic Priority Statement of Economic Transformation ANNEX A-1; 4.2 "Develop full-infrastructure solutions/packages for business (electricity, transport, water)). Thematic Outcome : Developed industrial parks/SEZs Implemented logistics strategy	To develop an integrated multimodal transport system for Rwanda	Integrated multimodal transport system in place	% progress for implementation of Dar-Es-Salaam-Isaka-Kigali-Keza-Musongati Railway line with a cost of USD 5 billion
(For Thematic Priority Statement of Economic Transformation ANNEX A-1; 4.2 "Develop full-infrastructure solutions/packages for business (electricity, transport, water)). Thematic Outcome : Developed industrial parks/SEZs Implemented logistics strategy	To develop an efficient and sustainable air transport infrastructure for Rwanda	Enhanced capacity of air transport infrastructure	Passengers carrying capacity of all airports combined
(For Thematic Priority Statement of Rural Development ANNEX A-2; Connect rural communities to markets through improved infrastructure, transport and ICT) Thematic Outcome: 4.1 Extended quality road network through the construction of (km)of main roads (km) rural feeder roads.	To improve riding quality and LoS for Road Network	Riding Quality of Road Network improved	% of Road Network in Good Condition

(For Thematic Priority Statement of Economic Transformation ANNEX A-1; 4.2 "Develop full-infrastructure solutions/packages for business (electricity, transport, water)). Thematic Outcome : Developed industrial parks/SEZs Implemented logistics strategy; 2.2 Remove barriers in priority industries and services (e.g. agro-processing)	To transform Rwanda into a Regional Freight Logistics Hub	Improved freight logistics system	Number freight logistics centers developed
Foundation - Social protection	To improve integration and social equity in transport infrastructure and service	Improved Gender equality in transport sector	% of women employed in public and private transport companies

Annex D: Transport Sector Monitoring Matrix

Table D-1: Transport Sector Monitoring Matrix for EDPRS-2

SECTOR OUTCOME	SECTOR OUTCOME INDICATOR	EXPECTED PERFORMANCE							PUBLIC POLICY ACTIONS			
		Baseline	Target 2013/14	Target 2014/15	Target 2015/16	Target 2016/17	Target 2017/18	Source of Data	Policy Area	Key Policy Benchmarks/Actions		Responsibility Centre
		2012/13								Policy Action	Year(s) of implementation	
Improved and sustained quality of road network	% of National Paved Road in Good Condition	95.6%	95.0%	95.0%	95.0%	95.0%	95.0%	RTDA	To improve riding quality and LoS for Road Network	Maintain 1,850 km (cumulative) of National paved roads	2013/14 to 2017/18	RTDA
Improved and sustained quality of road network	% of National Unpaved Road in Good Condition	40.6%	46.0%	52.0%	58.0%	66.0%	70.0%	RTDA	To improve riding quality and LoS for Road Network	Upgrade 680 km of National unpaved roads into paved roads	2013/14 to 2017/18	RTDA
Improved and sustained quality of road network	% of National Road in Good Condition	63.2%	66.1%	69.6%	73.2%	77.9%	80.0%	RTDA	To improve riding quality and LoS for Road Network			
Improved and sustained quality of road network	% of District roads class 1 in Good Condition	37.0%	42.0%	47.0%	52.0%	57.0%	60.0%	RTDA	To improve riding quality and LoS for Road Network	Upgrade 300 km of National unpaved roads into paved (150 km) and gravel (150 km)roads	2013/14 to 2017/18	RTDA

Improved and sustained quality of road network	% of District roads class 2 in Good Condition	0.9%	7.0%	13.2%	19.3%	25.5%	31.6%	RTDA	To improve riding quality and LoS for Road Network	Upgrade 2,550 km of District Road Class 2 unpaved roads into gravel roads	2013/14 to 2017/18	RTDA
Improved public transport services	Number of km of scheduled public transport services	1,600	2,900	4,500	6,100	7,700	9,290	RTDA, Districts, CoK and RURA	To develop an integrated public transport system for Rwanda	Introduce 9,290 km of scheduled public transport services	2013/14 to 2017/18	RTDA, Districts, CoK and RURA
Improved Public transport service in Kigali City	Number of km of scheduled bus routes	0	0	110	220	330	430	RTDA, CoK and RURA	To develop an integrated public transport system for Rwanda	Introduce 430 km of scheduled public transport services in Kigali City	2013/14 to 2017/18	RTDA, CoK and RURA
Improved Scheduled bus service for rural areas	Number of km of scheduled bus routes	1,600	2,900	4,200	5,500	6,800	8,100	RTDA, Districts and RURA	To develop an integrated public transport system for Rwanda	Introduce 8,100 km of scheduled public transport services in rural areas	2013/14 to 2017/18	RTDA, Districts and RURA
Quality bus service for key intercity routes	Number of km of Quality bus routes	0	0	190	380	570	760	RTDA, Districts and RURA	To develop an integrated public transport system for Rwanda	Introduce 760 km of scheduled public transport services for intercity routes	2013/14 to 2017/18	RTDA, Districts and RURA
Enhanced capacity of air transport infrastructure	Passengers carrying capacity of all airports combined	809,488	956,718	1,122,401	1,336,531	1,579,798	3,055,322	RCAA	To develop an efficient and sustainable air transport infrastructure for Rwanda	Sign contract with contractor for the construction of Bugesera International Airport and take initiatives for the development of all existing airports	2013/14 to 2017/18	RCAA

Integrated multimodal transport system in place	Number of new transport modes introduced	2	2	3				RTDA	To develop an integrated multimodal transport system for Rwanda	Introduce railway and Inland Water Transport system in Rwanda	2013/14 to 2017/18	RTDA
Enhanced transport institutional capacity	Number of transport institutions created and strengthened	5 institutions	5 institutions strengthened	6	7	8	8	MININFRA, RTDA, MIFORTA	To Improve institutional and human resources capacity for land, water and air transport system	Restructure RTDA with a Unit for Tactical Functions related to public transport and establish aviation training school	2013/14 to 2017/18	MININFRA, RTDA, MIFORTA
Improved Gender equality in transport sector	% of women employed in public and private transport companies	28.4% F and 71.6% M	31% F and 69% M	33% F and 67% M	35% F and 65% M	37% F and 63% M	39% F and 61% M	MININFRA, RTDA,RCAA, RMF, RwandAir	To improve integration and social equity in transport infrastructure and service	Take initiative for preferential treatment and provide incentives for ensuring gender equality and access for disabled	2013/14 to 2017/18	MININFRA, RTDA,RCAA, RMF, RwandAir
Enhanced air transport services	Number of passengers transported per year by all airlines combined	577,883	683,083	807,466	954,536	1,128,436	1,444,399	RCAA, RwandAir	To develop an efficient and sustainable air transport service for Rwanda	Improve safety, security and service delivery of air transport services	2013/14 to 2017/18	RCAA, RwandAir
Improved freight logistics system	Number freight logistics centers developed	0	0	11	22	33	44	MININFRA, RTDA, RCAA	To transform Rwanda into a Regional Freight Logistics Hub	Conduct Feasibility Study and Detailed design for Different Programs to transform Rwanda into a regional Transport hub	2013/14 to 2017/18	MININFRA, RTDA, RCAA

Table D-2: Transport Sector Strategic Monitoring Matrix for Key Outcomes for EDPRS-2

No	EDPRS SECTOR OUTCOME	OUTCOME INDICATORS	UNIT	BASELINE 2012/13	TARGET 2013/14	TARGET 2013/15	TARGET 2013/16	TARGET 2013/17	TARGET 2013/18	SECTOR Responsible for Reporting	DATA SOURCE (MoV)
Road Infrastructure											
1	Maintaining Riding quality of National Paved Roads in Good Condition	% of National Paved Road in Good Condition	%	95.6%	95.0%	95.0%	95.0%	95.0%	95.0%	Transport	RTDA
2	Increased Riding Quality of National Unpaved Roads	% of National Unpaved Road in Good Condition	%	40.6%	46.0%	52.0%	58.0%	66.0%	70.0%	Transport	RTDA
3	Increased the Riding Quality of District Road Class 1	% of District Road Class 1 in Good Condition	%	37.0%	42.0%	47.0%	52.0%	57.0%	60.0%	Transport	RTDA
Land Public Transport Services											
4	Improved and Scheduled bus service for Kigali City	Number of km of scheduled bus routes	KM	0.0	0	110	220	330	430	Transport	RTDA
5	Quality bus service for key intercity routes	Number of km of Quality bus routes	KM	0	0	190	380	570	760	Transport	RTDA

6	Improved and scheduled bus service for rural areas	Number of km of scheduled bus routes	KM	1,600	2,900	4,200	5,500	6,800	8,100	Transport	RTDA
Air Transport											
7	Enhanced Capacity of air transport infrastructure	Passengers carrying capacity of all airports combined	Number of Passenger	809,488	956,718	1,122,401	1,336,531	1,579,798	3,055,322	Transport	RCAA
8	Enhanced air transport services	Number of passengers transported per year by all airlines combined	Number of Passenger	577,883	683,083	807,466	954,536	1,128,436	1,444,399	Transport	RCAA

Appendix E: Transport Priority Policy Action Matrix

Table E-1: Transport Sector Priority Policy Action Matrix for EDPRS-2

Policy action Description	Policy action 2013/14	Policy action 2014/15	Policy action 2015/2016	Policy action 2016/2017	Policy Action 2017/2018
To improve riding quality and LoS for Road Network	Upgrade 136 km of unpaved District roads Class 1 into paved roads	Upgrade 272 km (cumulative) of unpaved National roads into paved roads	Upgrade 408 km (cumulative) of unpaved National roads into paved roads	Upgrade 544 km (cumulative) of unpaved National roads into paved roads	Upgrade 680 km (cumulative) of unpaved National roads into paved roads
To improve riding quality and LoS for Road Network	Upgrade 30 km of unpaved District Class 1 roads into paved roads	Upgrade 60 km (cumulative) of unpaved District Class 1 roads into paved roads	Upgrade 90 km (cumulative) of unpaved District Class 1 roads into paved roads	Upgrade 120 km (cumulative) of unpaved District Class 1 roads into paved roads	Upgrade 150 km (cumulative) of unpaved District Class 1 roads into paved roads

To improve riding quality and LoS for Road Network	Upgrade 30 km of unpaved District Class 1 roads into gravel roads	Upgrade 60 km (cumulative) of unpaved District Class 1 roads into gravel roads	Upgrade 90 km (cumulative) of unpaved District Class 1 roads into gravel roads	Upgrade 120 km (cumulative) of unpaved District Class 1 roads into gravel roads	Upgrade 150 km (cumulative) of unpaved District Class 1 roads into gravel roads
To improve riding quality and LoS for Road Network	Upgrade 510 km of unpaved District Class 2 roads into gravel roads	Upgrade 1,020 km (cumulative) of unpaved District Class 2 roads into gravel roads	Upgrade 1,530 km (cumulative) of unpaved District Class 2 roads into gravel roads	Upgrade 2,040 km (cumulative) of unpaved District Class 2 roads into gravel roads	Upgrade ,2550 km (cumulative) of unpaved District Class 2 roads into gravel roads
To improve riding quality and LoS for Road Network	Develop an axle load control policy and strategy				
To improve riding quality and LoS for Road Network	Conduct Feasibility study and Detailed design on the construction of 3 town bypass roads in Huye, Muhanga and Musanze				
To improve riding quality and LoS for Road Network	Construct a Grade separation at Nyabugogo intersection				
To improve riding quality and LoS for Road Network	Conduct feasibility study and Detailed design for the construction of Kigali City Ring road cum Expressway				
To improve riding quality and LoS for Road Network	Conduct a Study on Economic Analysis and Prioritization for LoS Upgrading Investigation for National Road Network				
To improve riding quality and LoS for Road Network	Acquire 1,040 km of road reserve for National Roads	Acquire 2,080 km (cumulative) of road reserve for National Roads	Acquire 3,120 km (cumulative) of road reserve for National Roads	Acquire 4,160 km (cumulative) of road reserve for National Roads	Acquire 5,200 km (cumulative) of road reserve for National Roads
To improve riding quality and LoS for Road Network	Acquire 12 km of road reserve for District Road Class 1	Acquire 24 km of road reserve for District Road Class 1	Acquire 36 km (cumulative) of road reserve for District Road Class 1	Acquire 48 km (cumulative) of road reserve for District Road Class 1	Acquire 60 km (cumulative) of road reserve for District Road Class 1

To improve riding quality and LoS for Road Network	Acquire 6 km of road reserve for District Road Class 2 (Feeder road)	Acquire 12 km (cumulative) of road reserve for District Road Class 2 (Feeder road)	Acquire 18 km of road (cumulative) reserve for District Road Class 2 (Feeder road)	Acquire 24 km (cumulative) of road reserve for District Road Class 2 (Feeder road)	Acquire 30 km (cumulative) of road reserve for District Road Class 2 (Feeder road)
To improve riding quality and LoS for Road Network	Acquire 42 km of road reserve for Kigali-New Bugesera International Airport road				
To improve riding quality and LoS for Road Network	Conduct Feasibility Study and Detailed Design for a four lane divided highway from Kigali to New Bugesera International Airport				
To improve riding quality and LoS for Road Network	Conduct Feasibility study and Detailed design on the construction of 3 town bypass roads in Huye, Muhanga and Musanze				
Policy action Description	**Policy action 2013/14**	**Policy action 2014/15**	**Policy action 2015/2016**	**Policy action 2016/2017**	**Policy Action 2017/2018**
To develop an integrated public transport system for Rwanda	Approve New Public transport fare policy				
To develop an integrated public transport system for Rwanda	Design and bundle routes for route franchising				
To develop an integrated public transport system for Rwanda	Develop a Business model for bus operation under route franchising approach for Kigali City				
To develop an integrated public transport system for Rwanda	Undertake an Pilot project of standard scheduled bus service and integrated ticketing system under a route franchising approach in Kigali City				
To develop an integrated public transport system for Rwanda	Conduct a Detailed Design Study for a BRT system for Kigali City				
To develop an integrated public transport system for Rwanda	Seek Cabinet Approval on Parking Management Strategies				

To develop an integrated public transport system for Rwanda	Develop a Business Model for a Public Limited Company for bus service in rural area				
To develop an integrated public transport system for Rwanda	Establish public limited company for rural bus service				
To develop an integrated public transport system for Rwanda	Develop a Business Model and Conduct Detailed Design study for Quality Bus Corridor Service for Intercity bus service	Implement Quality Bus Corridor Service Pilot Project	Implement Quality Bus Services in 3 routes	Implement Quality Bus Services in 7 routes (cumulative)	Implement Quality Bus Services in 11 routes (cumulative)
Policy action Description	**Policy action 2013/14**	**Policy action 2014/15**	**Policy action 2015/2016**	**Policy action 2016/2017**	**Policy Action 2017/2018**
To develop an efficient and sustainable air transport infrastructure for Rwanda	Sign contract with contractor for the construction of Bugesera International Airport	Resurface Kamembe Airport			
To develop an efficient and sustainable air transport infrastructure for Rwanda	Expropriate land for Kamembe and Rubavu airports	Extend Gisenyi and Kamembe runway			
To develop an efficient and sustainable air transport infrastructure for Rwanda	Expand KIA Apron and Taxiway	Construct New Terminal Building Kamembe			
Policy action Description	**Policy action 2013/14**	**Policy action 2014/15**	**Policy action 2015/2016**	**Policy action 2016/2017**	**Policy Action 2017/2018**
To develop an integrated multimodal transport system for Rwanda	Mobilise funds for DSM-Kigali Railway line	Mobilise funds for DSM-Kigali Railway line	Mobilise funds for DSM-Kigali Railway line	Mobilise funds for DSM-Kigali Railway line	Commence DSM-Kigali Railway project
To develop an integrated multimodal transport system for Rwanda	Conduct Feasibility Study and Detailed Design on Kigali-Rubavu Railway line				
To develop an integrated multimodal transport system for Rwanda	Conduct Feasibility Study and Detailed Design of Kampala-Kigali-Bujumbura Pipeline	Conduct Feasibility Study of the Kigali-Muhanga-Ribavu and Huye-Rusizi Pipelines			
To develop an integrated multimodal transport system for Rwanda	Conduct Detailed Design study of IWT in Lake Kivu				

To develop an integrated multimodal transport system for Rwanda	Conduct Further Feasibility Study and Detailed Design of IWT in Akagera River				
Policy action Description	**Policy action 2013/14**	**Policy action 2014/15**	**Policy action 2015/2016**	**Policy action 2016/2017**	**Policy Action 2017/2018**
To Improve institutional and human resources capacity for land, water and air transport system	Restructure RTDA with a Unit for Tactical Functions related to public transport				
To Improve institutional and human resources capacity for land, water and air transport system	Restructure RTDA with a Unit for Transport Safety and Vehicle Fitness Investigation and Control				
To Improve institutional and human resources capacity for land, water and air transport system	Enact Procurement Law regarding categorization and registration of conductors on the basis of technical and financial capabilities				
To Improve institutional and human resources capacity for land, water and air transport system	Sign 2 numbers of Performance Based Maintenance contract	Sign 4 numbers (cumulative) of Performance Based Maintenance contract	Sign 6 numbers (cumulative) of Performance Based Maintenance contract	Sign 8 numbers (cumulative) of Performance Based Maintenance contract	Sign 10 numbers (cumulative) of Performance Based Maintenance contract
To Improve institutional and human resources capacity for land, water and air transport system	Develop 2 Business Plans for airports	Develop 4 (cumulative) Business Plans for airports	Develop 6 (cumulative) Business Plans for airports	Develop 8 (cumulative) Business Plans for airports	
To Improve institutional and human resources capacity for land, water and air transport system	Conduct a study for diversifying the financing sources for road maintenance and development management	Commence the design work for establishment of a National Reference Lab			
To Improve institutional and human resources capacity for land, water and air transport system	Establish of a separate emergency work management unit in RTDA	Allocate of at least 6% of funds from GoR for emergency work and disaster management			
To Improve institutional and human resources capacity for land, water and air transport system	Develop an effective M&E system with, database, standard template and Objectively Verifiable Indicators	Develop an appropriate accident investigation and management System;	Continue developing an appropriate accident investigation and management System;		

To Improve institutional and human resources capacity for land, water and air transport system	Seek Cabinet Approval of Axle Load Control Policy and Strategy	Develop of Safety Standards and Establishment of annual safety auditing system			
To Improve institutional and human resources capacity for land, water and air transport system	Design Trauma Centres at Rusizi and Rubavu				
To Improve institutional and human resources capacity for land, water and air transport system	Conduct Feasibility Study for the Development of low-cost Toll Roads: RN4 from Musanze to Rubavu				
To Improve institutional and human resources capacity for land, water and air transport system	Conduct Study on alternative fuel and fuel efficient engine for motor vehicles	Develop postgraduate research facilities in higher education institutions of Rwanda			
Policy action Description	**Policy action 2013/14**	**Policy action 2014/15**	**Policy action 2015/2016**	**Policy action 2016/2017**	**Policy Action 2017/2018**
To improve integration and social equity in transport infrastructure and service	Take initiative for preferential treatment and provide incentives for companies employing women labourers and supervisors for road construction and maintenance	Take initiative for preferential treatment and provide incentives for companies employing women labourers and supervisors for road construction and maintenance	Take initiative for preferential treatment and provide incentives for companies employing women labourers and supervisors for road construction and maintenance	Take initiative for preferential treatment and provide incentives for companies employing women labourers and supervisors for road construction and maintenance	Take initiative for preferential treatment and provide incentives for companies employing women labourers and supervisors for road construction and maintenance
To improve integration and social equity in transport infrastructure and service	Take initiative for preferential treatment and provide incentives for companies run by a woman in transport sector	Take initiative for preferential treatment and provide incentives for companies run by a woman in transport sector	Take initiative for preferential treatment and provide incentives for companies run by a woman in transport sector	Take initiative for preferential treatment and provide incentives for companies run by a woman in transport sector	Take initiative for preferential treatment and provide incentives for companies run by a woman in transport sector
To improve integration and social equity in transport infrastructure and service	Provide Incentive for Bus/Taxi operators for ensuring access for disable and infirm passengers	Provide Incentive for Bus/Taxi operators for ensuring access for disable and infirm passengers	Provide Incentive for Bus/Taxi operators for ensuring access for disable and infirm passengers	Provide Incentive for Bus/Taxi operators for ensuring access for disable and infirm passengers	Provide Incentive for Bus/Taxi operators for ensuring access for disable and infirm passengers
To improve integration and social equity in transport infrastructure and service	Initiate programs for reserving parking facilities for disables in all parking lots	Initiate programs for reserving parking facilities for disables in all parking lots	Initiate programs for reserving parking facilities for disables in all parking lots	Initiate programs for reserving parking facilities for disables in all parking lots	Initiate programs for reserving parking facilities for disables in all parking lots
To improve integration and social equity in transport infrastructure and service	Ensure special provisions in all tender documents for large capital projects incorporate HIV prevention activities, Gender equality and access to transport for disables and infirm	Ensure special provisions in all tender documents for large capital projects incorporate HIV prevention activities, Gender equality and access to transport for disables and infirm	Ensure special provisions in all tender documents for large capital projects incorporate HIV prevention activities, Gender equality and access to transport for disables and infirm	Ensure special provisions in all tender documents for large capital projects incorporate HIV prevention activities, Gender equality and access to transport for disables and infirm	Ensure special provisions in all tender documents for large capital projects incorporate HIV prevention activities, Gender equality and access to transport for disables and infirm

Policy action Description	Policy action 2013/14	Policy action 2014/15	Policy action 2015/2016	Policy action 2016/2017	Policy Action 2017/2018
To develop an efficient and sustainable air transport service for Rwanda	Upgrade safety and security system of air transport services	Upgrade safety and security system of air transport services	Upgrade safety and security system of air transport services	Upgrade safety and security system of air transport services	Upgrade safety and security system of air transport services
To develop an efficient and sustainable air transport service for Rwanda	Take initiatives to ensure full ICAO compliance	Take initiatives to ensure full ICAO compliance	Take initiatives to ensure full ICAO compliance	Take initiatives to ensure full ICAO compliance	Take initiatives to ensure full ICAO compliance
To develop an efficient and sustainable air transport service for Rwanda	Invest in RwandAir to help the airline expand its routes network in Africa, Asia and Europe and build Kigali to an air transport and logistics hub for the region	Invest in RwandAir to help the airline expand its routes network in Africa, Asia and Europe and build Kigali to an air transport and logistics hub for the region	Invest in RwandAir to help the airline expand its routes network in Africa, Asia and Europe and build Kigali to an air transport and logistics hub for the region	Invest in RwandAir to help the airline expand its routes network in Africa, Asia and Europe and build Kigali to an air transport and logistics hub for the region	Invest in RwandAir to help the airline expand its routes network in Africa, Asia and Europe and build Kigali to an air transport and logistics hub for the region
To develop an efficient and sustainable air transport service for Rwanda	Support RwandAir to purchase wide body aircrafts to enter the European Tourist market and to build cargo capacity to meet the export demand of the nation	Support RwandAir to purchase wide body aircrafts to enter the European Tourist market and to build cargo capacity to meet the export demand of the nation	Support RwandAir to purchase wide body aircrafts to enter the European Tourist market and to build cargo capacity to meet the export demand of the nation	Support RwandAir to purchase wide body aircrafts to enter the European Tourist market and to build cargo capacity to meet the export demand of the nation	Support RwandAir to purchase wide body aircrafts to enter the European Tourist market and to build cargo capacity to meet the export demand of the nation
Policy action Description	**Policy action 2013/14**	**Policy action 2014/15**	**Policy action 2015/2016**	**Policy action 2016/2017**	**Policy Action 2017/2018**
To transform Rwanda into a Regional Freight Logistics Hub	Conduct Feasibility Study and Detailed design of 5 Additional One Stop Border Posts at Akanyaru, Rusizi, Gatuna, and Rubavu Border Posts	Develop E-Freight exchange service			
To transform Rwanda into a Regional Freight Logistics Hub	Conduct Feasibility study and detailed design of 4 Truck Stops/Roadside Stations				
To transform Rwanda into a Regional Freight Logistics Hub	Conduct feasibility Study for the Development of Agro-logistics and Multi-Service Centers				
To transform Rwanda into a Regional Freight Logistics Hub	Conduct Feasibility Study for the Development of Regional logistic centers in Kigali and bonded ware houses in Goma and Bukavu				
To transform Rwanda into a Regional Freight Logistics Hub	Conduct feasibility study for Off-dock Container Deports at Mombasa and Dar Es Salaam	Take Regional initiatives to expand the capacity of sea ports			