

THE JINJA- KAMPALA-MPIGI CORRIDOR

PHYSICAL DEVELOPMENT PLAN

JUNE 2023

CHAPTER 6 TRANSPORT: MOBILITY AND CONNECTIVITY STRATEGY



Government of Uganda
Ministry of Lands, Housing and Urban Development

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6 Transport: Mobility and Connectivity Strategy

6.1 Introduction

6.1.1 Background

The Jinja –Kampala – Mpigi (JKM) corridor has its origins as a major transport corridor linking Uganda with Rwanda and the Democratic Republic of Congo (DRC) in the West, South Sudan in the North and with Kenya and the Indian Ocean Port of Mombasa to the East. The efficient functioning of the JKM corridor requires removing constraints leading to an expansion of trade and economic activity from lower operating costs and faster travel times.

With regard to transport and mobility, the JKM plan will take into account both the supply of transport and the demand for transport services. For most transport modes the supply needs to be improved in terms of capacity improvements for the road network, upgrading of railway lines and rolling stock, greater port cargo handling capacity and additional facilities for air transport.

With supply-side improvements, there must be a parallel effort with demand management. Demand for transport will continue to increase. However, not all the demand needs to use motorized transport. Non-motorized transport is essential in order to achieve sustainability goals. Demand for motorized transport need not imply the use of private cars. Commuter trips can be undertaken with some form of public transport from stage bus services, and BRT to MRT options such as light rail transit (LRT), heavy commuter rail (HRT) etc.

Sustainable urban mobility implies reducing the need for a trip through better urban design, as well as encouraging the use of walking and cycling by providing the appropriate infrastructure. Demand should be diverted to public transport wherever possible.

JKM corridor has a large population that will grow further. The current configuration of public transport is inefficient and partly contributes to the severe congestion at peak hours. If the JKM area is to function in a unified and connected manner it will need substantial investments in public transport.

Transport improvements in the JKM region will need to consider commuter rail that will link up all areas from Jinja, Buikwe, Mukono, Mpigi and Kampala city. The plan must provide transport links along a central axis as well as in terms of feeder routes. Reducing congestion and lost working hours would add millions of dollars per year to the economy as well as improve the quality of life.

It is well observed that foreign companies and investment are often a function of the life-style preferences of the senior management in terms of transport, accessibility, schooling etc.

Domestic aviation will grow further, and this will mean that Entebbe International Airport will reach capacity far too soon. Some airstrips such as Kimeka in Jinja and Kajjansi in Wakiso will have to be upgraded to serve domestic and regional demand (i.e., Kenya, Rwanda, Tanzania, South Sudan and DRC) and thus alleviate the pressure on Entebbe.

6.1.2 Transport Sector Vision, Policies and Objectives

Vision 2040 is Uganda's long-term strategic plan for spatial and non-spatial development as devised by the National Planning Authority (NPA) issued in 2010. Its stated objectives are to Achieve 'A Transformed Ugandan Society from a Peasant to a Modern and Prosperous Country within 30 years'.

Vision 2040 also outlines quantified development targets that will act as indicators of the achievement of middle-income status. One such target is increasing the share of standardised paved roads from 4% of the total network of roads to 80% by 2040.

6.2 Research Methodology

The research underpinning this strategy applied a mixed-method research design. That is, both qualitative and quantitative research methods were used to gather and analyse the data. Existing literature in form of official documents such as Vision 2040, National Development Plans, National Transport Master Plan (2009-2023), Greater Kampala Metropolitan Area Strategic Development Framework, Draft National Physical Development Plan, Draft National Transport and Logistics Policy, National Non-Motorised Transport Policy, Multimodal Transport Master Plan for Greater Kampala, Kampala Physical Development Plan, District Development Plans (Mpigi, Wakiso, Buikwe, Mpigi, Mukono and Jinja Districts) was also reviewed.

Face-to-face interviews with key informants and officials from various government agencies and organisations were carried out. These key informants include the Ministry of Works and Transport (MoWT), the Transport Licensing Board, Districts, municipalities, town councils, Kampala Capital City Authority (KCCA), new cities such as Jinja, Uganda Road Fund, Uganda National Road Authority (UNRA) and Uganda Railways Corporation (URC). Interviews were also carried out with private transport operators such as Pioneer Easy Bus (PEB), Awakula Ennume Bus Company, minibus taxi associations as well as association of commercial cycle taxi operators (Boda Boda Associations)

6.3 Road Subsector

Within the Jinja –Kampala- Mpigi (JKM) Corridor that covers Kampala Capital City Authority (KCCA), Wakiso, Mpigi, Mukono, Buikwe and Jinja, the construction and maintenance of roads also follows the same national transport governance structure that has been described before. Statistics indicate that KCCA has a total road network of 1,030km compared to 1,564km in Wakiso, 937.8km in Mpigi, 1,470.2 in Mukono and 1632.1km in Buikwe.

JKM accommodates over 50 percent of Uganda's total urban population and generates over 60 percent of the country's gross domestic product (GDP). Currently, four (4) of the largest urban centres in Uganda are located in the JKM region. That is Kampala city with a population of approx. 1,500,000, Nansana Municipal Council with 366,000, Kira Municipal Council with 317,000 and Makindye Ssabagabo Municipal Council with 283,000.

As the most urbanised and most productive region in the country, JKM should have the best and most efficient infrastructure including modern roads and railway systems to improve its competitiveness and foster economic growth. However, the current transport system in the region is characterized by low and insufficient paved road density, increased road accidents as well as incessant traffic jams, especially on the arterial roads leading to Kampala city centre.

KCCA which is the most urbanized area in the KJM region has about 57 percent of its road network paved. This is followed by Jinja district with 24 percent of paved roads, Wakiso with 15 percent, and Mpigi with 13 percent, see Table 1 below.

Table 1: Road Network in JKM Districts

Districts	Total Area by Sq Km	Population	Total road network	% of paved roads
KCCA	195	1.5Million	1,030	57
Wakiso	2,807.75	2,007,700	1,564	15
Mpigi	1,041.13	251,512	937.8	13
Mukono	2,986.47	599,817	1,470.2	NA
Jinja	767.8	499,941	1,238	24
Buikwe	1,209	422,771	1,632.1	NA

Source: Five-Year Development Plans for Districts in the JKM region

Most of the urban roads in the Jinja-Kampala-Mpigi (JKM) corridor as well as Greater Kampala are not paved. For example, Nansana, which is the second largest urban centre in Uganda and in the region after Kampala city has only 6 percent of its entire road network of 1,041km paved. Further still, the percentage share of paved roads in Kira town is 16 percent, 9 percent in Makindye Ssabagabo, 11 percent in Mukono, 32 percent in Entebbe and 30 percent in Jinja town, see Table 2).

Several roads in Kampala are also not paved and this has adversely affected the city's ability to foster economic growth, create wealth and alleviate poverty. Also, in Kampala, which is the core urban region of the Jinja – Kampala – Mpigi (JKM) conurbation/corridor, most roads were constructed in the 1960s for only 100,000 vehicles per day. Today, over 400,000 vehicles use the same roads, causing unnecessary travel delays, especially during the morning and evening peak hour periods.¹

Table 2: Road Network in Municipal and Town Councils in JKM Region

Urban Centre/Town	District	Area Coverage Square Kilometre (Sq Km)	Population	Total Road Network KM	% of paved road
KCCA	KCCA	195	1.5 million	1,030	57
Nansana MC	Wakiso	293.63	366,000	1041.46	6
Kira MC	Wakiso	98.83	317,000	293.24	16
Makindye Ssabagabo MC	Wakiso	84.734	283,000	390.2	9
Jinja MC	Jinja	29	76,000	300	30
Mukono MC	Mokono	210	163,000	80.8	11
Entebbe MC	Wakiso	56.2	69,000	135	32
Njeru MC	Buikwe	NA	69,000	790	4.2
Buikwe TC	Buikwe	NA	NA	NA	NA

¹ World Bank, 2017

Lugazi MC	Buikwe	NA	114,000	251	8.4
Mpigi TC	Mpigi	151	35,663	232	6

Source: *Five-Year Development Plans for Districts in the JKM region*

According to a recent KCCA Survey Report, commuters and travellers in Greater Kampala lose over 24,000 man hours each day due to traffic jams caused mainly by the increased use of private cars and continued dependence on low-capacity systems, such as the 14-seater minibus taxis (Matatus) and commercial motorcycles (Boda Bodas).

A recent enterprise survey conducted by the World Bank revealed that 15 percent of business firms in the Greater Kampala/GKMA considered high transportation costs and traffic jams as a severe constraint to their operations (World Bank, 2017). The survey further revealed that 'traffic congestion is particularly troublesome for medium and large firms in the tradeable sector, which rely on the transportation of goods around and outside of the city'.

Deficiencies in the existing road network in the JKM region including greater Kampala have resulted in the relocation of some key economic activities including industries to areas such as Wakiso, Mukono, Jinja and Mpigi. Decentralisation is a good way to mitigate congestion. However, it must be done in a planned and organized manner based on JKM planning objectives. The JKM plan will try to capture these changes and provide a planning framework that is less ad-hoc. This relocation is visible as one travels along key national roads linking Kampala with several regional towns. Most industries have also been established along arterial road sections such as Kampala-Jinja, Kampala-Mityana, Kampala-Bombo and Kampala-Mpigi. Linear development is a market-driven response. However, a more efficient spatial outcome is possible.

Over 2.2 million people use the poorly maintained road network and inefficient transport system each day in the GKMA region and beyond. Also, over 50 percent of the people working in Kampala live in Wakiso (World Bank, 2017). Today, Wakiso district has the largest concentration of people in Uganda but with one of the lowest paved road densities in the country.

Paved road densities are a critical indicator of the level of access to paved roads among citizens in the country. Due to the high concentration of people as well as the emergence of respiratory diseases as a result of dust and other sources of air pollution in cities and towns, these urban paved road densities must be increased.

Between 2002 and 2011, firm concentration in Kampala's Central Business District (CBD) declined from 65 percent of firms and enterprises to 55 percent, due in part to an increase in production costs caused by poor road infrastructure as well as incessant traffic jams (World Bank, 2017).

The dispersal of economic activities in the JKM region has increased the cost of providing physical infrastructure such as roads and prevented firms from enjoying benefits associated with agglomeration such as economies of scale.

6.4 Non-Motorised Transport (NMT)

6.4.1 Key NMT Modes

Non-Motorised Transport (NMT) comprises key transport modes such as walking, cycling, animal-drawn carts, pack animals and carts, wheelbarrows, wheelchairs, human-powered tricycles, canoes and non-motorised boats. In Uganda, NMT involves mostly walking and cycling. NMT is also popular in both rural and urban areas.

Increasing motorization combined with some inadequately maintained infrastructure has made NMT unsafe in many parts of the country. Most accident victims are often pedestrians and cyclists. In 2016, 40 percent of the people killed in road accidents were pedestrians and 10 percent were cyclists (United Nations, 2018).

Realising the benefits of NMT, more and more cities in Uganda are now designing programmes and projects to accommodate the needs of pedestrians and cyclists. Cases in point are Kampala and USMID municipalities such as Jinja, Entebbe, Masaka, Mbarara, Fort Portal, Gulu and Mbale.

Also, in 2012 Uganda introduced its new NMT policy. Among the stated objectives of this policy are a) An increase in the recognition of walking and cycling in transport, planning, design and infrastructure provision; b) Provision of safe infrastructure for pedestrians and cyclists; c) Resources for walking and cycling is being mainstreamed in agencies, and improvement in regulation and enforcement to enhance safety for pedestrians and cyclists.

Very few roads have so far been constructed with pedestrian and cycling facilities. Most urban and national roads also lack safe pedestrian walkways, crossings and footbridges.

Demand and supply of non-motorized transport facilities

In Kampala, over 50 percent of the trips are made by walking. Even among the high-income Ugandans, over 45 percent of all trips are still made by walking (MoWT, 2012). According to UBOS (2016), about 65% of urban dwellers walk to work every day. It is further stated that walking trips in Kampala are as high as 70% of the total trips made (UNHS, 2010).

Findings from a traffic survey conducted in 2019 in selected towns including a few towns in the JKM corridor such as Entebbe, Jinja and Mpigi also revealed that walking constitutes the majority of trips made in urban centres with about 50% to 63% modal share. This is followed by commercial motorcycle Boda Boda with about 20% and minibus taxis with about 11%, (see Table 3). Although most trips are made by walking, there is a lack of pedestrian and cycling facilities on most roads in the surveyed towns.

Table 3: Modal Share in Towns outside Kampala, %

	Private Car	Minibus Taxi	Boda Boda	Bus	Walk	Other
Yumbe	3	10	20	4	51	12
Mbarara	8	20	21	0	50	1
Gulu	8	12	20	0	55	5
Hoima	10	10	25	0	51	4

Mbale	3	18	30	2	46	1
Entebbe	5	10	20	1	60	4
Jinja	10	15	20	2	50	3
Arua	10	10	25	5	50	0
Tororo	13	30	40	1	8	8
Kotido	3	10	12	10	60	5
Fort Portal	7	5	30	3	45	10
Mpigi	4	10	20	0	62	4
Zigoti	3	8	26	0	54	9
Buyende	3	15	20	0	60	2
Kyamuhungo	3	3	30	1	60	3
Uganda	6	12	24	2	51	5

Source: COWI Transport Survey 2019

Responding to new mobility demands, the government reviewed and updated the road design manuals to conform to international standards as well as address road safety challenges in 2010. Best practices in implementing NMT were also identified for implementation in Uganda.

Numerous changes introduced by the government in transport planning and policy formulation have also resulted in great improvement in pedestrian facilities, especially along the national roads and in some urban areas including Kampala. Virtually all roads that have been rehabilitated or upgraded under the USMID programme in towns such as Jinja, Mbale, Arua, Lira, Soroti, Masaka, Entebbe, Mbarara, Fort Portal, Hoima and Gulu have pedestrian facilities including walkways and well-designed pedestrian crossings.

Challenges faced by NMT

NMT users are faced with the challenge of poor road maintenance, which leads to erratic and dangerous behaviour of drivers as they search for the smoothest ride and avoid potholes, gullies and runoff deposits. When the carriageways are particularly uncomfortable vehicles move onto the shoulders on either side of the road. This affects pedestrian movement. Most urban and national roads have also been constructed without consideration for pedestrian and cyclist facilities.

Rising number of road accidents. In 2016, over 40 percent of the people killed in road accidents in Uganda were pedestrians (United Nations, 2018). Most pedestrian facilities were also constructed without consideration for universal design standards. For example, some footbridges do not have ramps that can be used by wheelchair users.

To note also is the lack of safe parking facilities for bicycles in most towns and cities. Experience from developed country cities such as Maastricht, Stockholm, London and Rome shows that more people will use bicycles for various journeys if safe parking facilities are provided especially at the train stations and bus stations.

Uganda's paved road density is also one of the lowest in the world. Most urban, rural and national roads are not paved, and this serves as a major obstacle to providing pedestrian and cyclists lanes. Also, without approved NMT guidelines, it is difficult for most local governments and road agencies such as the

Uganda Road Fund (URF) and Uganda National Road Authority (UNRA) to implement the already existing national NMT policy.

Undulating landscape or hilly topography is also a key challenge faced by the NMT users and promoters in the JKM corridor. Cities such as Kampala are located in valleys and hilly areas which discourages people from walking and cycling.

Opportunities available or fostering NMT

Kampala is now a pioneer and role model city for other towns in promoting NMT. Over 1.95 kilometres of pedestrian walkways have been constructed under a pilot project covering Namirembe road and Luwum Street in Kampala city centre. Also, under the KIIDP road rehabilitation programme, several Kilometers of pedestrian walkways have been constructed in various parts of Kampala. KIIDP is being financed by the World Bank.

Figure 1: Kampala Non-Motorised Transport (NMT) pilot project



Source: COWI/AS

KCCA is also in the process of constructing 128 kilometres of walkways under the Kampala city roads rehabilitation project (KCRRP). KCRRP is a five-year US\$288 million project that will be funded by the African Development Bank as part of the city's programme to rehabilitate and upgrade various roads.

Some key towns in the JKM corridor such as Jinja and Entebbe have benefited from the USMID project, which is funded by the World Bank in the 14 secondary cities. Besides, the creation of new cities by the government in 2020 (such as Jinja and Entebbe as well as Wakiso) provides numerous opportunities for promoting NMT in the JKM corridor.

It is further expected that government will come up with new guidelines on the operationalization of these newly created cities. These new guidelines are likely to improve service delivery as well as set new standards for providing key infrastructures such as roads and pedestrian facilities.

6.5 Railway Subsector

6.5.1 Current Railway Network

When the Uganda railway was developed in 1896 from Mombasa to Kampala and later to Kasese, Pakwach, Gulu and other towns, it offered both freight and passenger services (URC,2019). Passenger railway services were offered in areas such as Port Bell-Luzira, Nalukolongo, Nakawa, Namanve and Katwe. However, railway transport including passenger railway services declined in terms of freight volume and passenger ridership since the late 1980s. The performance of the passenger railway system was also affected by the introduction of Structural Adjustment Policies (SAPs) in Uganda.

Under the SAPs, government funding to the railway sector was reduced substantially. Besides, a large part of the Ugandan railway network became disused and abandoned. In some areas, the railway infrastructure was vandalised. Even when the railway sector was privatised, under the Rift Valley Railway concession, both freight traffic and passenger railway services did not improve.

In 2017, after numerous years of under-performance, the Rift Valley Railways (RVR) concession, was cancelled. In January 2018, Uganda Railways Corporation (URC) took over the operations of the freight and passenger railways services.

Given that the Meter Gauge Rail line in Uganda is old, the largest proportion of the network is largely dilapidated and out of use. Of the 1280km route length overall, only approximately 267km (21%) is operational i.e.

- > Malaba-Tororo-Kampala, 252km (Part is Jinja-Kampala through the JKM corridor) and
- > Kampala-Portbell, 9km
- > Kampala-Nalukolongo, 6km

The other non-operational lines include:

- > Kampala (Nalukolongo)-Kasese, 328km (Part of which falls in Wakiso)
- > Jinja-Mbulamuti-Busembatia, Mbulamuti-Namasagali, 171km (Part of Jinja rail Network)
- > Industrial branches to Jinja Port and Tororo Cement Factory, 10km

Figure 2 and Figure 3 show the key events in Uganda's railway industry including changes in management and the conception of the SGR Railway project.

Figure 2: Key events in the development of Uganda Railway Network – 1

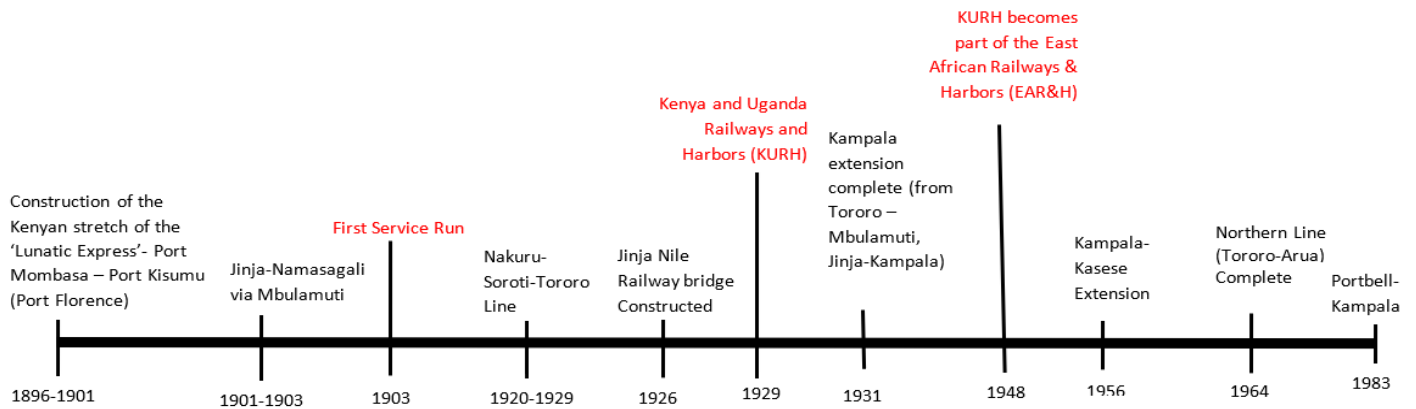


Figure 3: Key events in the development of Uganda Railway Network - 2

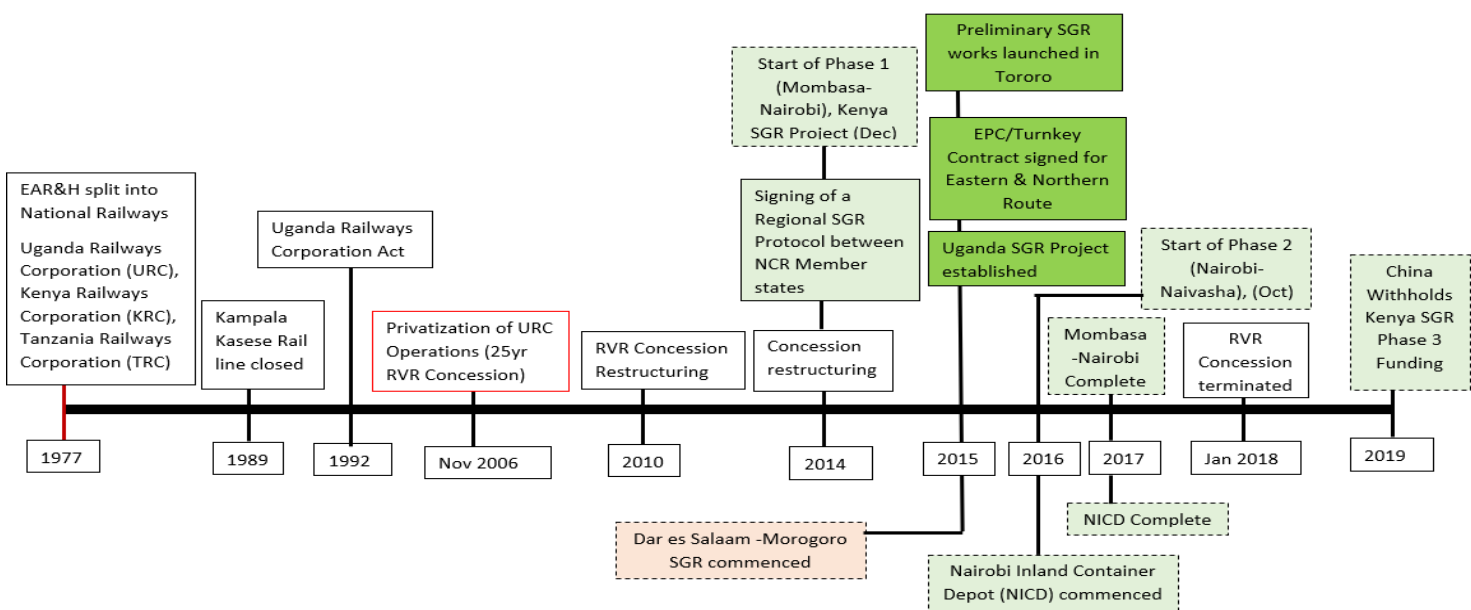
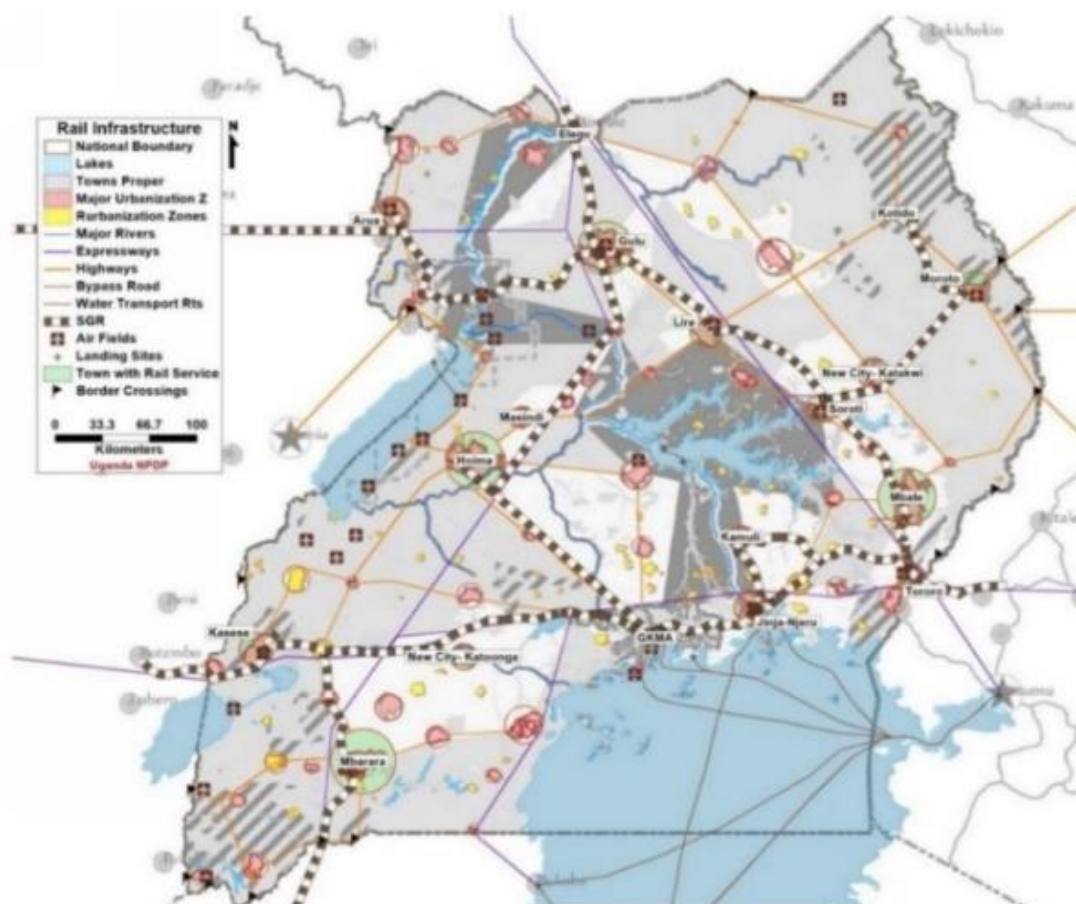


Figure 4: Railway Operations and Traffic



Railway operations and traffic

Under the SAPs, government funding to the railway sector was reduced substantially. Besides, a large part of the Ugandan railway network became disused and abandoned. In some areas, the railway infrastructure was vandalised. Even when the railway sector was privatised, under the Rift Valley Railway concession, both freight traffic and passenger railway services did not improve.

Traffic in recent years never reached the baseline target foreseen in the RVR concession of 217.3 million ton*Km. The highest in recent years was 166.17 million ton*km in 2015. The situation quickly degraded in 2017 when the concession was clearly at risk and traffic in 2018 was 14% of the 2015 level and production (ton*km) just 23%.

Table 4: Uganda Railways Traffic evolution

	2018	2017	2016	2015	2014	FY 2012/13	FY 2010/11	FY 2009/10	FY 2008/09
Number of trains	2.631	3.043	5.102	3.792	4.474	NA	NA	NA	NA
Tons (,000)	112,8	355,3	368, 9	818, 5	682, 8	686,6	675,5	542,1	588,1
Ton*Km (million)	38,05	70,05	125,6	166,17	136,42	154,2	153,5	124,6	134,4

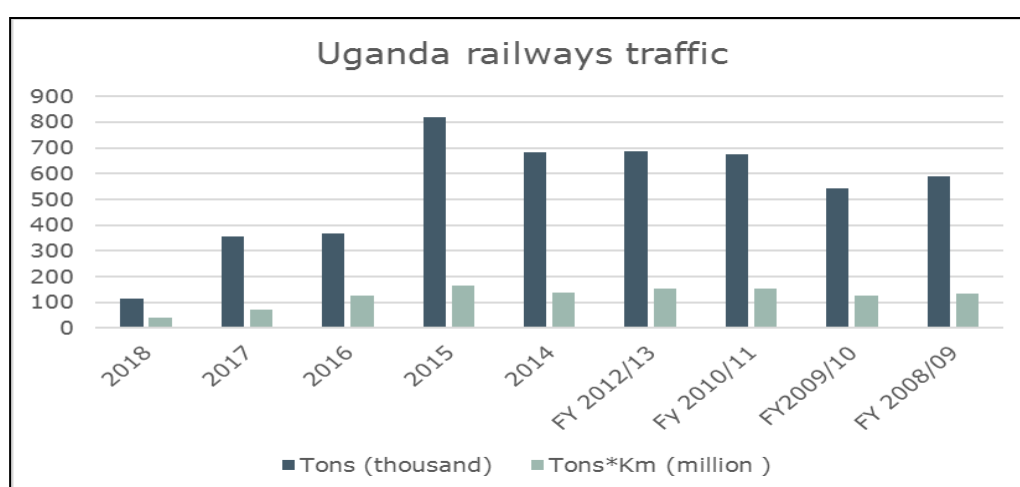
Source: URC and RVR

The Consultant has estimated² that 8.684 million tonnes of cargo (import + export + through traffic) circulated along the corridor Malaba-Kampala in 2017.

From the statistics above (assuming that all was import or export traffic), rail share in the corridor was just 4% in 2017. At its peak in 2015, when we estimate 7.577 million tons, rail share was 10.8%. (Rail share is calculated here only on import/export traffic. Considering domestic traffic, it would be much lower).

Since the takeover URC has struggled unsuccessfully so far to maintain and recover the railways custom base, see Figure 5.

Figure 5: Uganda Railways Traffic, latest years trend



Source: URC and RVR

Some of the reasons for this are:

- > Uncertainties have negatively affected the perception of some customers;
- > The aftermath of the takeover has coincided with the introduction of SGR in Kenya which has added more uncertainty to shippers;
- > After the takeover shippers have to deal with two railway companies (KRC and URC) instead of just one (RVR) which adds complexity and more paperwork;
- > From the last months of concession up to now there has been an acute shortage of cash available to invest in maintenance which has reduced the overall capacity;
- > Litigation between RVR and the GoU has stranded some equipment that remains non-operational;
- > URC relies on KRC for key operational aspects such as telecommunications and the availability of mainline locomotives.

On the positive side, after the concession takeover, URC has been able to reopen the route to Port Bell and ferry traffic to Mwanza which is experiencing encouraging results (Table 5).

Table 5: Southern Route/Ferry (tonnes)

	2019(Jan-May)	2018
Imports	15.989,44	24.151,84
Exports	9.088,48	12.617,50

Source: Uganda Railways Corporation (URC)

Table 6: Breakdown per commodity NTK

	2017		2016		2015		2014	
	NTK (,000)	%	NTK (,000)	%	NTK (,000)	%	NTK (,000)	%
Conventional	9.581,3	13,6%	22.512,5	17,9%	37.055,2	22,3%	40.402,2	29,6%
Container	60.055, 2	85,5%	95.007,3	75,7%	110.457,9	66,5%	79.614,6	58,4%
Oils and liquids	570,8	0,8%	8.058,7	6,4%	18.648,7	11,2%	16.401,9	12,0%
Total	70.207, 3	100,0%	125.578,5	100,0%	166.161,8	100,0%	136.418,8	100,0%

Source: Uganda Railways Corporation (URC)

As shown in Table 6, the type of cargo that has reduced most is oils and liquids, with throughput in 2017 being just 3% of what was transported two years before. Conventional cargo throughput in 2017 was 25% of 2015 and container reduction was more moderate in comparison, with throughput in 2017 being 54% of that of 2015. It is key to note that in 2014 less than 60% of throughput was containers while the share in 2017 was 85%.

Table 7 below shows URC's main customers for the period after the concession takeover. Grain importers dominate e.g. customers like Bakheresa and Grain Bulk handlers.

Table 7: Uganda Railways Corporation's Main Customers

	Feb.17-June.18		July.18-Feb.19	
	Tons delivered	%	Tons delivered	%
Akhom Ltd		0,0%	3.188,0	2,6%
Ati freight (Bidco)	892,9	2,0%	5.614,4	4,6%
Bakheresa Grain Milling Co. Limited	25.463,1	57,4%	7.644,1	6,3%
Fol Logistics		0,0%	3.382,7	2,8%
Gain Company Limited		0,0%	1.257,8	1,0%
Grain Bulk Handlers (Maganjo)		0,0%	1.737,7	1,4%
Grain bulk Handlers -Engano Millers		0,0%	6.308,9	5,2%
Grain bulk handlers Limited	4.940,0	11,1%	43.473,5	35,8%

	Feb.17-June.18		July.18-Feb.19	
	Tons delivered	%	Tons delivered	%
Grain Bulk- Kengrow Industries Limited		0,0%	2.321,6	1,9%
Gsm Tanzania Limited		0,0%	5.000,7	4,1%
Kapeshwar	1.536,9	3,5%	1.302,1	1,1%
Multiple	1.760,9	4,0%	1.390,2	1,1%
Prime fuels (Bidco)	896,0	2,0%	5.466,8	4,5%
Roofings	328,0	0,7%	1.586,5	1,3%
Samuel Othieno		0,0%	2.016,0	1,7%
Seroma Cement Limited		0,0%	3.545,0	2,9%
Spedag Inerfreight	3.204,0	7,2%	2.685,4	2,2%
Tanzania Railway Limited-WFP		0,0%	20.480,0	16,9%
Ugacof		0,0%	1.056,9	0,9%
Umoja Hardware Limited		0,0%	1.935,5	1,6%
JD International	1.928,9	4,4%		0,0%
Mukwano Group	1.663,7	3,8%		0,0%
Enterprises Ltd	659,0	1,5%		0,0%
Planet foods	497,1	1,1%		0,0%
Embassy forwarders	416,0	0,9%		0,0%
Royal Mabati	145,0	0,3%		0,0%
TOTAL	44.331,4	100,0%	121.393,9	100,0%

Source: URC

Operational performance

Commercial speed has been kept between 20 and 21 Km/h during the studied period. However, travel time between Malaba and Kampala has increased from 18.5 hours in 2014 or 2016 to almost 24 hours in 2017, remaining above 20 hours in 2018 and 2019 (Table 8).

Table 8: Commercial Speed and travel time between main stations

Commercial speed (Km/h)	2019 (Jan-May)	2018	2017	2016	2015	2014
	21,02	21,47	20,80	21,00	20,20	21,22
Average travel time between main stations(hrs)						
MLB-TOR	0:55	1:00	1:35	1:03	1:17	1:15
TOR-JJS	9:10	10:12	11:38	10:17	11:52	10:42
JJS-KLA	11:39	9:08	10:28	7:19	7:38	6:50
KLA-PBL	0:23	0:24	-	-	-	-

MMLB = Malaba; TOR= Tororo; JJS= Jinja; KLA = Kampala; PBL= Port Bell (Source: URC)

Productivity performance has on average been radically impacted by the substantial reduction in traffic since 2017 as can be seen in Table 9.

Table 9: Other performance ratios

Productivity per loco (Kms /Tons*Km)	2019 (Jan-May)	2018	2017	2016	2015	2014
MTR(NTK)	56,35	6.556,32	12.949,17	0,44	265,35	433,90
36(NTK)	5.967,20	4.025,60	-	15.947,20	45.356,00	-
62(NTK)	49.551,29	227.312,41	1.320.847,75	1.536.687,33	1.782.771,50	1.479.965,57
73(NTK)	1.184.599,04	2.934.629,10	1.828.635,46	2.635.881,66	3.231.419,31	2.735.229,48
82(NTK)	-	-	-	-	-	164.235,01
Turnaround time wagons (days)	23,05	29,58	19,17	15,54	13,55	13,90

Source: URC

Wagon turnaround had been more than one month (32-24 days) on the route Mombasa/Kampala from 2010 to 2013, to be reduced to about half in 2014/15. The improved turnaround has been kept up to 2016 when time has increased again to almost one month.

Passenger traffic

A commuter passenger service was started in December 2015 between Namanve and Kampala station (12km) with four stops at Makerere University Business School, Nakawa Interfreight, Kireka and Bweyorere at Namboole stadium. The service is operated by one locomotive and five coaches with a sitting and standing capacity of 120-150 persons per coach.

The service started as a pilot project funded by the Government of Uganda as a Public Service Obligation through Kampala Capital City Authority. Over the period from December 2015 to December 2018, the ridership is estimated to have mounted to 942,982 passengers. The train schedule is represented below:

Trip	From	To	Departure	Arrival
1	Namanve	Kampala	7:00am	7:45am
2	Kampala	Namanve	5:30pm	6:15pm
3	Namanve	Kampala	6:40pm	7:25pm
4	Kampala	Namanve	7:50pm	8:35pm

Operational and ridership statistics from 2018 and 2019 (partial) are shown in Table 10 below.

Table 10: Commuter train traffic

	2019(Jan-May)	2018
Daily scheduled trains (times)	4,00	4,00
Number of coaches in scheduled trains	5,00	5,00
Capacity per train (number of passengers)	750,00	750,00

Origin / destination scheduled trains	4,00	4,00
Total services (annual) including non-scheduled or special trains	NA	821,00
Total passenger (annual)	180.485,00	438.783,00

Source: Uganda Railways Corporation (URC)

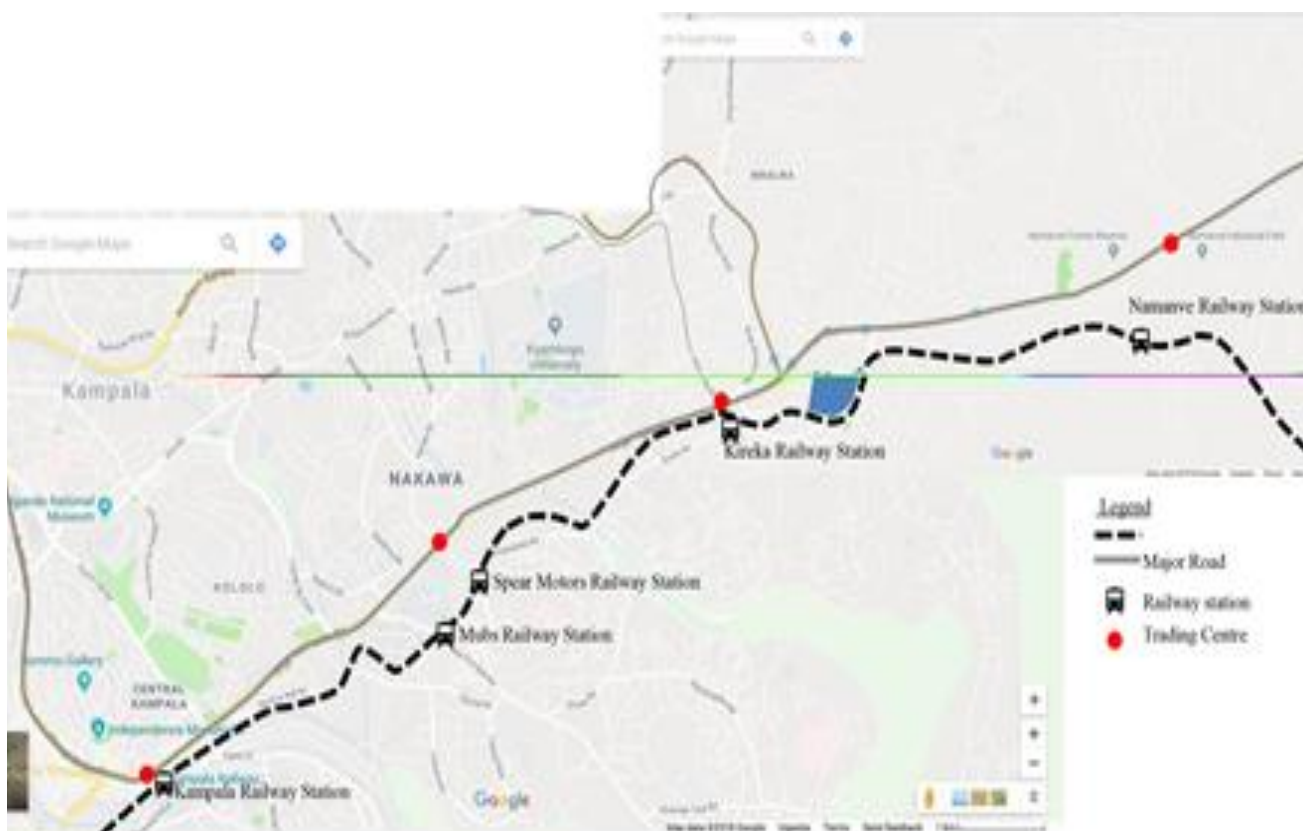
Commuter service is proving to be a major success and is welcomed by passengers. Site inspection made by the Consultant’s team showed that the service operated timely and that standards of service and tidiness on board were quite good. On the downside, however, infrastructure at most stops was minimal to non-existent and depending on the season and time, there is excessive crowding.

At the time of writing this report (May 2019), URC was tendering a feasibility study for the expansion of passenger services in the Greater Kampala Metropolitan Area with EU funding.

Revival of passenger railway transport

Passenger train services were reintroduced under a pilot project in December 2015. Eighteen months of operation resulted in a monthly ridership of 34,575 commuters. UCR is operating at over 80% of the capacity of 120-150 persons per coach. The project is funded by the Government under a Public Services Obligation through Kampala Capital City Authority (KCCA).

Figure 6: Passenger Railway Services in the JKM region



On the Kampala-Namanve route, several halt points (train stations) exist, but they are not properly connected to other modes of transport such as minibus taxis and stage buses.

Figure 7: Dilapidated Namanve passenger railway station in Mukono district



Source: COWI A/S

Table 11: Train Timetable for Kampala-Namanve Route

Trip	From	To	Departure	Arrival
1.	Namanve	Kampala	7.00am	7.45am
2.	Kampala	Namanve	5.30pm	6.15pm
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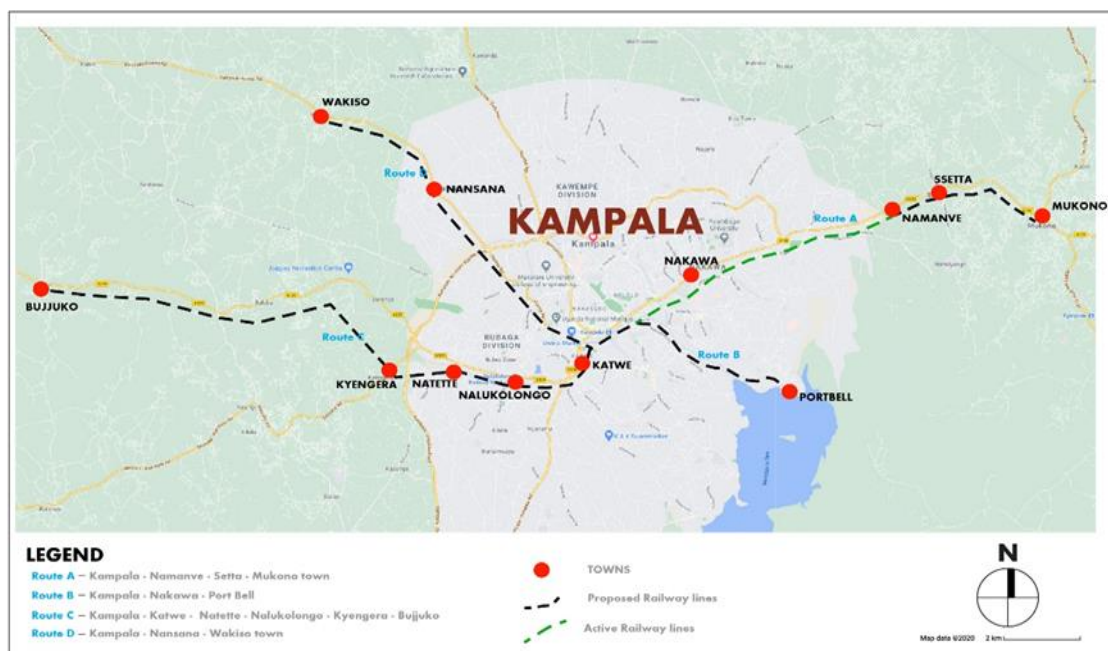
Source:URC, 2015.

Over the period from December 2015 to 2018, ridership was estimated at 942,982 passengers. During the same period, total revenue collection was Shs978.49 Million, which represents 15% of the total operational cost of the service, at a fee of Shs1,000 between the stations and the halts and Shs1,500 between Kampala and Namanve.

URC also has the plan to extend passenger railway services in various parts of the JKM region including areas such as Mukono town (Mukono district), Bujukko (Wakiso District), Nsangi (Mpigi district), Wakiso town, Port Bell and Nalukolongo.

Figure 8: Proposed extension of Passenger Railway services in the JKM region

EXTENSION OF PASSENGER RAILWAY SERVICES IN THE GKMA



Major railway transport problems and issues

Since the collapse of the state-owned bus companies in the late 1990s, the transit sector has continued to be dominated by informal transport operators such as minibuses and motorcycle Boda Bodas.

Such systems do not require professional knowledge and skills, and this has undermined efforts to train more transport experts and managers. In short, the managerial skill gaps faced by the public transport sector are a result of several factors and this has adversely affected the sustainability and development of the public transport industry in the country.

Capacity building within government agencies and systems is also important in meeting the professional expertise required at institutional and individual levels within government authorities. This should involve reskilling city officials and those of key agencies, such as the Police and Transport Licensing Board through executive programs and developing university-educated professionals. The focus of training for existing city officials should be to develop awareness, skills and a deeper understanding of the requisite issues in urban transport, management and planning of cities. For the training and skill-building program to be beneficial, Municipal Governments should be mandated to establish a dedicated agency for urban transport and identify officials to be recruited and send them for further training.

Therefore, the need to recapture the market for railways, address its cost structure, focus on remunerative business and Identification of alternative sources of revenue (e.g. from propriety) remain a challenge

Railway transport governance and regulations

Currently, all existing and planned Railway networks in Uganda fall under the management of the Uganda Railways Corporation. This complies with Uganda's Railways Corporation Act (1992).

The Act establishes Uganda's Railways Corporation whose objectives are: *"the construction, operation and maintenance of railway, marine and road services both in and outside Uganda for the carriage of passengers and goods"* (section 3).

In addition, URC may provide, among others, logistics services: *"Functions of the corporation: (...) to store goods whether or not the goods have been or are to be carried by the corporation; to consign goods on behalf of persons other than the corporation from any place within or outside Uganda to any other place whether within or outside Uganda; to provide clearing and forwarding services"*.

URC has strict control from the Ministry. The Minister's stamp is required for the determination of charges, fares or tariffs, budget approval, sale or rent land or URC engagement in new undertakings, and borrowing. The Minister also nominates URC board members and the Managing Director.

"The corporation shall operate and conduct its undertaking in accordance with sound commercial principles". However (...) "cheap transport shall be provided by the corporation to assist agricultural, mining and industrial development of Uganda". (Section 29). However, the Act envisages that the Corporation should not be required by Government to provide services at a loss (Section 38).

This act gives the mandate of construction, operation and maintenance of railways solely to the Uganda Railways Corporation. Specifically, the same stipulates that 'no rail transport services shall be provided; and no rail shall be constructed for the carriage on it of passengers or goods for reward, within Uganda, by any person other than the corporation, except on industrial estates for industrial purposes only' (Section 37).

Issues arising:

- > In spite of its name, URC's domains of activity are not only railways, but marine and, at least theoretically, road transport services as well. However, it has exclusive rights to operate rail transport within Uganda, but its services may be provided in concurrence with marine and road services;
- > The act enshrines URC as the owner of railway property and operator though under tight control from the Ministry in many business decisions;
- > The Act does not properly set a framework for any PPP arrangement for the provision of services. Thus, no regulatory functions are stated. In fact, the RVR concession contract was not sustained by URC Act but by other Uganda laws and it was the Concession agreement that gave URC the powers to monitor the Concessionaire;
- > The Act does not on give URC capacities in planning railways. It is understood that this is restricted to the Government (Ministry of Transport). This is reflected by the fact that the planning and project preparation of the SGR network has been assigned to a specialized unit outside the URC organogram under the direct authority of the Minister of Works and Transport.

Standard Gauge Railway (SGR) Project and other investment opportunities in the railway sector

In June 2013, the first infrastructure Summit of the Presidents of Kenya, Rwanda and Uganda held in Uganda put in place mechanisms for fast-tracking the development of the Standard Gauge Railway (SGR) system linking Rwanda and Uganda to the port of Mombasa to enable the faster socio-economic transformation of the East and Central Africa Economies.

These led to the signing of the Tripartite Agreement for the development and operation of a Standard Gauge Railway between Mombasa-Kampala-Kigali with branch lines to Kisumu (Kenya) and Pakwach/Gulu-Nimule (Uganda) between the Republics of Kenya, Rwanda and Uganda in August 2013. The Republic of South Sudan acceded to the agreement in May 2014 extending the line to Juba.

To enable the development and operationalization of a Seamless Railway network from Mombasa to Kigali and Juba, the Summit of the Northern Corridor Integration Projects vide the 3rd Joint Communiqué directed the Partner States to develop a Standard Gauge Railway Protocol for the development and operations of the Standard Gauge Railways. The Protocol was signed by Kenya, Uganda, South Sudan and Rwanda in May 2014.

The overall objective is to jointly develop and operate a modern, fast, reliable, efficient and high-capacity railway transport system as a seamless single railway operation among the nations of East Africa.

The SGR follows the route of the old rail line which apparently traverses through the Districts along the corridor.

In 2013, a Tripartite Agreement was signed between the Republics of Kenya, Rwanda and Uganda for the joint development and operation of a Standard Gauge Railway between Mombasa-Kampala-Kigali with branch lines to Kisumu (Kenya) and Pakwach/Gulu-Nimule (Uganda). The regional SGR was conceived as one of the 14 Northern Corridor Integration Projects with specific objectives of:

- 1 Expediting economic growth and development of the Parties by reducing the cost of doing business and increasing the region's competitiveness (in so doing attracting Foreign Direct Investment);
- 2 Enhancing spatial development along the SGR corridor;
- 3 Enhancing efficient and cost-effective movement of freight and passengers in the region to accelerate trade and services;
- 4 Sustaining the development of other transport infrastructure and adopting new technologies to enhance economic development.

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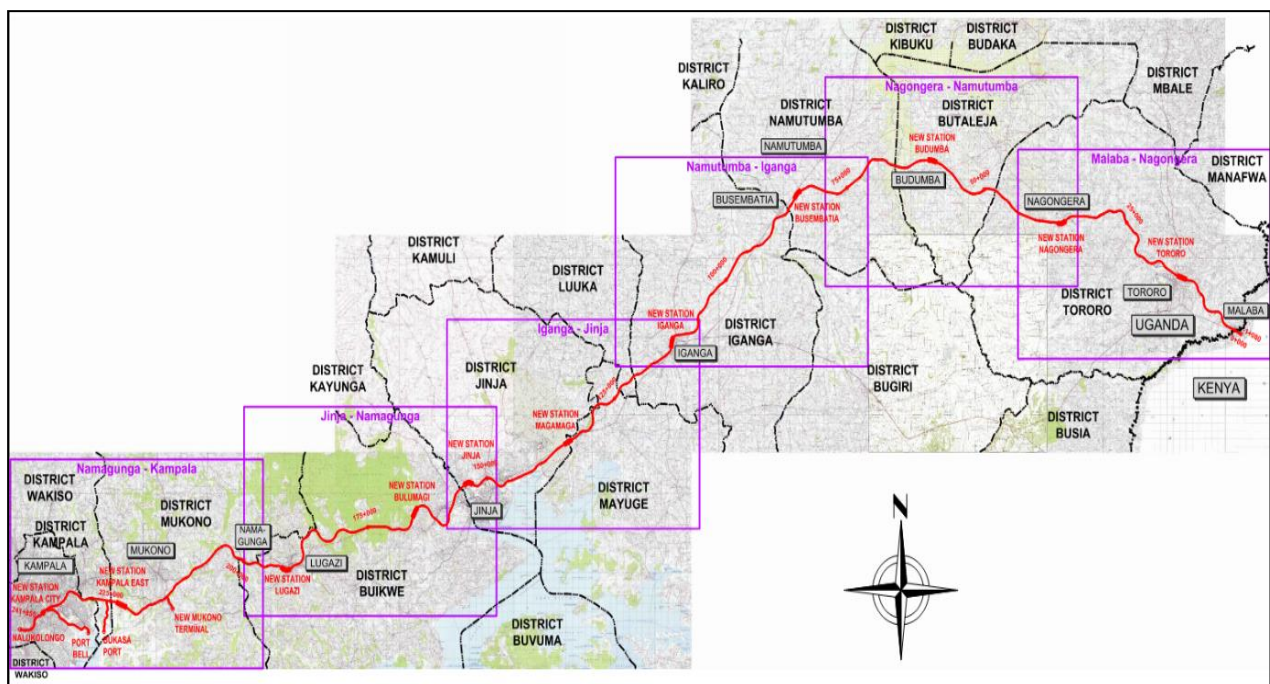
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- 4 Sustaining the development of other transport infrastructure and adopting new technologies to enhance economic development.

Figure 9: Proposed Stations along the Eastern Line along the JKM PDP Corridor



Source: Gauff 2014

The Planned **Standard Gauge Railway** Network is subdivided into two; the mainline SGR; a mixed service for main freight and limited passengers, and the **Light Rail Transit** mainly for urban passenger transit. The total SGR cost is estimated at USD 12.8 billion while LRT is estimated at one billion.

Figure 10: The SGR Light Rail Transit (Overlay of the existing MGR and planned SGR lines)

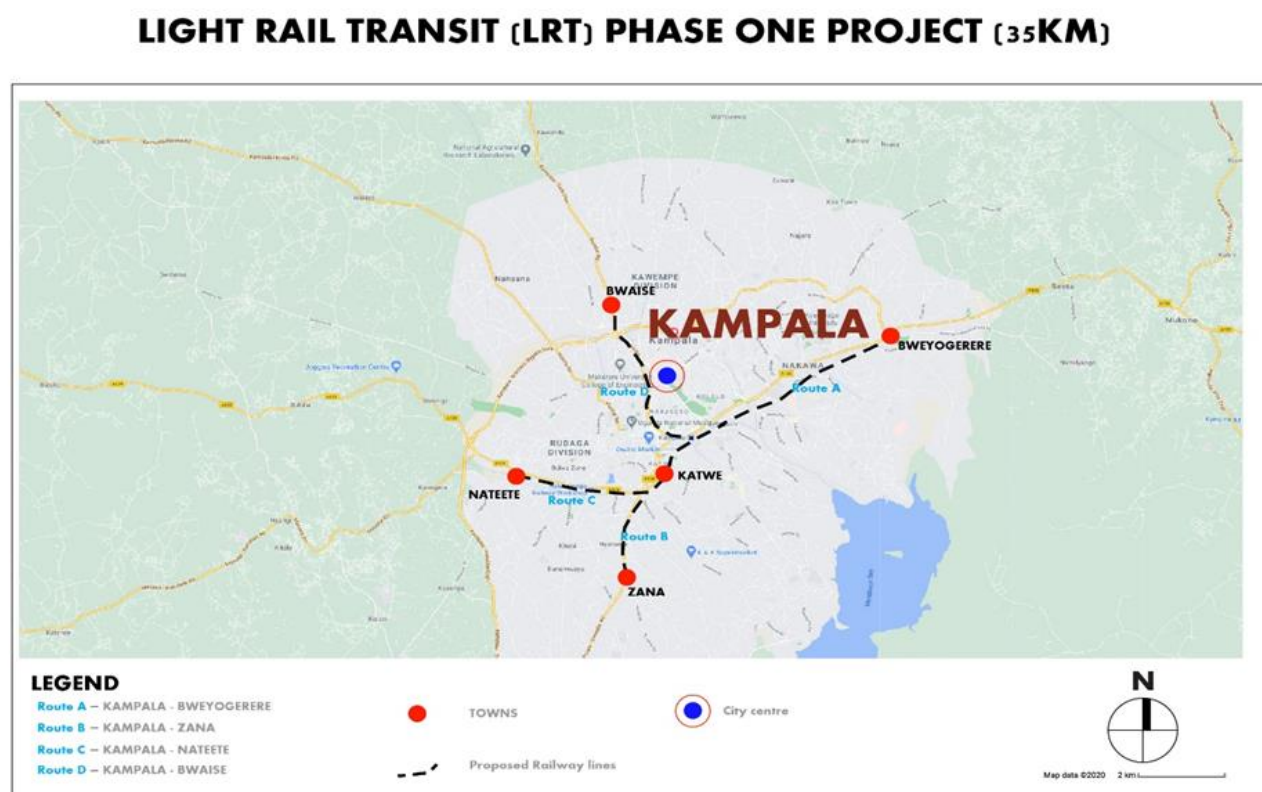


In 2015, a Memorandum of Understanding was signed between the GoU and a Chinese Contractor to carry out a pre-feasibility study for Light Rail Transit covering the Greater Kampala Metropolitan Area.

Figure 10 &

Table 12 show the proposed conceptual routes for the first phase of the project covering a total route length of approximately 40km. A combination of Two-way same side layout, middle road arrangement and elevated alignment are proposed for the different lines i.e. for Line WE & Line NS from the railway station to the terminal; Line NS (Sections between Manblue and Mulago); Line NS (Sections between Wandegeya to the Kampala Railway Station) respectively.

Figure 11 Proposed Light Rail Transit (LRT) Project Routes



Source: SGR, 2016

Table 12: Conceptual routes for Phase I of the SGR-GKMPA LRT

Route	Start Station	End Station	Route Length	via
Line WE - East Section	Kampala	Namanve	12	Nakawa, Banda, Kireka, Bweyogerere
Line WE - West Section	Kibuye	Kyengera	7	Katwe, Kibuye, Ndeeba, Nalukolongo and Natete
Line NS - North Section	Kampala	Kawempe (Ttula)	9	Nakivubo, Bat Valley, Wandegeya, Mulago, Kubiri and Kalerwe
Line NS - South Section	Kampala	Kajjansi	12	Kibuye, Najjanankumbi, Zana, Seguku, Lubowa and Lweza

The project was estimated to cost approximately USD 1bn6, of which the cost for the purchase of rolling stock is USD 0.114bn. The fundraising plan is yet to be agreed upon by the GoU. Traffic forecasts assumed that LRT would come into operation in 2024.

6.6 Aviation Subsector

6.6.1 Key Airports and Air Strips

In the entire corridor, we have the Entebbe International Airport, Entebbe, Wakiso District, Kajjansi Airstrip, Kololo Airstrip, Namulonge, Kakira Airstrip and Jinja Airstrip. There are several helipads at various installations such as Hospitals, and security agencies.

Figure 12: Entebbe International Airport



Source: COWI A/S

Entebbe International Airport (EIA) is by far the largest and most important airport in Uganda. Traffic at Entebbe airport is mainly international (99%) and has since 2008 until 2018 developed by an average of 6.5% annually. In general, air traffic in East Africa is growing and Entebbe airport is following this development as shown in the below Table 13.

Table 13: Annual Passengers (Million) in Selected East African Airports

Passengers	2015	2014	2008	2014 - 2015	2008 - 2015
Airport	MPPA	MPPA	MPPA	Growth in %	ACGR %
Addis Abeba	7,74	6,93	3,33	11,7	12,8
Nairobi	6,48	6,39	4,75	1,4	4,5
Dar es Salaam	2,49	2,48	1,54	0,4	7,1
Entebbe	1,52	1,45	1,00	4,8	6,2
Mombasa	1,23	1,37	0,89	-10,2	4,7
Kilimanjaro	0,78	0,77	0,52	1,3	6,0
Kigali	0,64	0,57	0,28	12,3	12,5
Total	20,88	19,96	12,31	4,6	7,8

Source: Flightglobal

The civil Aviation Authority (CAA) was established in 1991 with the main objective of promoting the safe, regular, secure and efficient use and development of civil aviation inside and outside Uganda. CAA acts as a rather independent organisation and carries out the following functions:

- > Advisory role to Government in relation to civil aviation policy matters and international conventions and other functions as deemed necessary by the Minister responsible for aviation;
- > Regulation of safety, security and doing business in air transport;
- > Management and development of major airports within the country;
- > Provision of air traffic and navigation centres.

International air transport is increasing in terms of passengers, whereas domestic air traffic has been decreasing until 2015. The latest data on domestic air traffic shows an increase, however, it is still a very limited in number of passengers. In 2018 the total number of passengers between Entebbe airport and the up-country domestic and regional airports were 27,000 in total – all departing and arriving passengers. Total traffic numbers registered on the CAA owned domestic and regional airports were in total 31,600 in 2018, meaning that there are a few flights between the upcountry airports.

Cargo traffic is at a rather constant level. Please refer to the below tables covering the traffic at Entebbe International Airport (EIA).

Kajjansi Airfield is an airfield serving Kajjansi, a town in the Central Region of Uganda. The airfield is approximately 20 kilometres (12 mi) northeast of Entebbe International Airport, Uganda's largest airport, and 16 kilometres (9.9 mi) south of central Kampala.

Kajjansi is in the southern portion of the Kampala conurbation. The runway is east of the Kampala-Entebbe road, bordering marshland near the shore of Lake Victoria.

Figure 13: Kajjansi Airstrip



Source: COWI A/S

The airfield is owned and operated by Mission Aviation Fellowship (MAF), an international Christian humanitarian relief and development organisation. In the mid-2010s, the Christian engineering charity Engineering Ministries International (EMI) redeveloped the office building of the airfield. The new office building became the headquarters of both MAF Uganda and EMI East Africa.

Jinja Airfield is located in the eastern Uganda district of Jinja and is approximately 90 kilometres east of Entebbe International Airport. It is a small civilian and military airport in Uganda. It serves the town of Jinja in Jinja District, Busoga, Eastern Region.

Kololo/Kampala Airport was a small civilian and military, city airport, that served the city of Kampala. The airport now serves as Independence Park and has no scheduled airline service. The airport is not administered by the Uganda Civil Aviation Authority. It was constructed in 1936 with possibly the last use of the airstrip by fixed-wing aircraft being in the mid-1970s, any aviation use would be restricted to rotary-wing aircraft

Airport operations, traffic and governance

The Uganda Civil Aviation Authority (UCAA) is the government agency responsible for licensing, monitoring, and regulating civil aviation matters with its head offices at Entebbe International Airport. It is administered by the Uganda Ministry of Works and Transport. In July 2019, the President of Uganda signed The CAA Amendment Act 2019. The Parliamentary Act changed the name of the agency to Uganda Civil Aviation Authority.

The agency was created by an Act of Parliament in 1994 as a state agency of the Ministry of Transport, Housing and Communication. As of October 2016, it was under the Ministry of Works and Transport.

The mandate of the UCAA is to coordinate and oversee Uganda's aviation industry, including licensing, regulation, air search and rescue, air traffic control, ownership of airports and aerodromes, and Ugandan and international aviation law. It also represents Uganda in an international capacity within the aviation

community and all other aviation matters. As of October 2016, the UCAA managed Entebbe International Airport and 13 other airports.

As of October 2016, the CAA works with an administrative and operational structure of six directorates: (1) Directorate of Airports and Aviation Security (2) Directorate of Air Navigation Services (3) Directorate of Safety, Security & Economic Regulation (4) Directorate of Finance (5) Directorate of Human Resources & Administration (6) Directorate of Corporate Affairs.

In September 2019, UCAA was awarded an international aviation award in air safety following an outstanding performance in the *Universal Security Audit Programme*, conducted in 2017, by the International Civil Aviation Organization (ICAO). Uganda scored 81.8 percent in the audit, compared with the global average of 73 percent and the African and Indian Ocean (APII) states average of 58 percent, according to ICAO.

In October 2019, the International Trade Council recognised the Uganda Civil Aviation Authority with the Government Agency of the Year Going Global Award 2019, in the Aviation Category. The award is in recognition of infrastructure improvement, staff training, customer care, support of tourism and facilitation of agricultural exports through Entebbe International Airport.

Air Transport regulatory framework

In order to achieve the potential contribution of air transport to the economy, it is crucial to have in place an enabling regulatory framework for the air industry to respond to demand and at the same time to ensure safe, secure, regular and efficient air transport services to and from and within Uganda.

The principal, air transport sector legislation in Uganda is the Civil Aviation Authority Act (Cap.354). The Act was made in 1991 to provide for the establishment of the Civil Aviation Authority (CAA) its duties, powers and management and other related matters. Accordingly, the CAA is an autonomous body established under the Act for the regulation of air transport in Uganda. CAA reports to the Ministry of Works and Transport (MoWT) and its principal objective under the Act is to promote the safe, regular, secure and efficient use and development of civil aviation inside and outside Uganda.

The main functions of CAA under the Act include advising the GoU on policy matters concerning civil aviation generally. The Act gives CAA specific responsibilities such as licensing air transport; establishment, maintenance, development, operation and ownership of aerodromes; registration of aircraft; safety regulation of civil aviation; air traffic control (ATC); certification of operators of aircraft, licensing of private aerodromes among others. CAA is also responsible for regulation and standards management of air safety and security. Therefore, the broad mandate of CAA under the Act is, sufficient to allow CAA effectively regulate air transport to achieve the GoU objectives.

GoU recognises the need for the separation of airport management from regulatory and safety activities in line with international obligations. This separation has according to NITMP been accepted in principle by GoU, but separate accounts have to be prepared well in advance as the quality of regulatory and safety services performed mustn't be impaired by financial constraints.

Within the CAA management structure, the separation has already been provided for, without the need to amend the air transport sector legislation. The NITMP also envisages the involvement of the private sector in airport operations. Within the current air transport legal framework, GoU can allow specialised activities to be carried out by the private sector, and this is already done. This includes, e.g., duty-free shops in EIA, provision and distribution of fuel for aircraft, some cargo activities etc. The highest form of

private involvement can be done by way of long-term concession under the existing legal framework since CAA is categorized under Class 1 of the Schedule to the PERD Act. In other words, it is an enterprise to be wholly owned by the GoU without divesting any of its shares to any other person apart from the state. Therefore, there is currently sufficient regulatory framework to allow private sector participation in the air transport sector and for CAA to retain its regulatory mandate given also that there is in place the PPP legislation and adequate PPDA legislation following the amendment of the PPDA Act in 2011.

While it is the case that the existing air transport regulatory framework is deemed sufficient, the CAA has recognised that in order for the air industry to respond to demands, and at the same time ensure safe, secure, regular and efficient air transport services, it is necessary to have regulations in place to implement the provisions of the CAA Act. Accordingly, the Minister of Transport upon recommendation of CAA has in the duration of this TA so far put in place a number of Regulations mainly focusing on safety, security and overall regulation of the sector. These Regulations include the Civil Aviation (Aerodromes) Regulations, 2014; the Civil Aviation (Personnel Licensing) Regulations 2014; the Civil Aviation (Approved Training Organisations) Regulations, 2014; the Civil Aviation (Safety Management) Regulations, 2014; the Civil Aviation (Approved Training Organisations) Regulations, 2014; the Civil Aviation (Air Navigation Services) Regulations, 2014; and the Civil Aviation (Security) Regulations, 2017.

Major air transport problems and issues

Funding and management capacity besides sustainability are among the major challenges for the aviation industry. With more acceptable funding levels, institutional capacity, training and upgrades are possible to be done.

Safety measures to enhance security at the airport infrastructure are relatively well managed but more sophistication is required at all airports and airfields. This goes hand in hand with securing international certifications for standard operation.

Ugandan airspace has not suffered that many accidents may be partly because of low carriers and aeroplanes in place. But a few have been registered to turn fatal indeed, both of jet and rotary planes. The navigation systems need upgrades together with capacity building and training.

The other are environmental concerns or noise and air pollution. The airspace carbon emissions ought to be maintained at acceptable levels to curb air pollution. This could be done by allowing efficiently propelled aircraft into the airspace. Since there are few planes this is not much of a problem but as with increased traffic, this must be managed well.

Environmental ecosystem protection is required as most are located on the shores of Lake Victoria and wetlands, hence proper waste management is required to protect the ecological system.

Domestic infrastructure development and improvements to acceptable standards are required to warrant commercial flights internally.

Licensing of domestic operators, and their capacity to adhere to acceptable standards has been a challenge. The cancellation of the operating licence of some domestic air operators in the past on their ability to meet required standards is still a challenge.

The lack of airports or airstrips in the towns along the corridor coupled with access to the existing airports poses a challenge. The recent Entebbe expressway development has eased traffic flow to

Entebbe airport but connectivity to it from the city remains a challenge. Probably this would ease with the Kampala flyover projects in the offing and completion of the KNBP project.

Revival of Uganda Airlines and its impacts

Uganda Airlines was first formed in 1975 as the first national carrier of Uganda. It had a fleet made up of 15 aircraft that had operations in Africa, Europe and the Middle East. In 2001, it suffered from financial challenges leading to its collapse and liquidation. Air Uganda started to operate again with regional operations in 2007, however, it was closed by shareholders in 2014.

In 2018, the Uganda government had taken steps in the direction to revive the country's national carrier, aiming:

- > to reduce the cost of air transport;
- > to increase connectivity to/from Uganda;
- > to support opportunities for the economy in the areas of tourism, agriculture, energy;
- > to meet the demand for air transport.

As of October 2019, Uganda Airlines flew to seven destinations (Nairobi, Mombasa, Dar-es-Salaam, Mogadishu, Kilimanjaro, Bujumbura and Juba). Uganda Airlines is planning to include 9 more routes (Kinshasa, Zanzibar, Asmara, Hargeisa, Lusaka, Harare, Johannesburg, Djibouti and Addis Ababa) in its destinations.

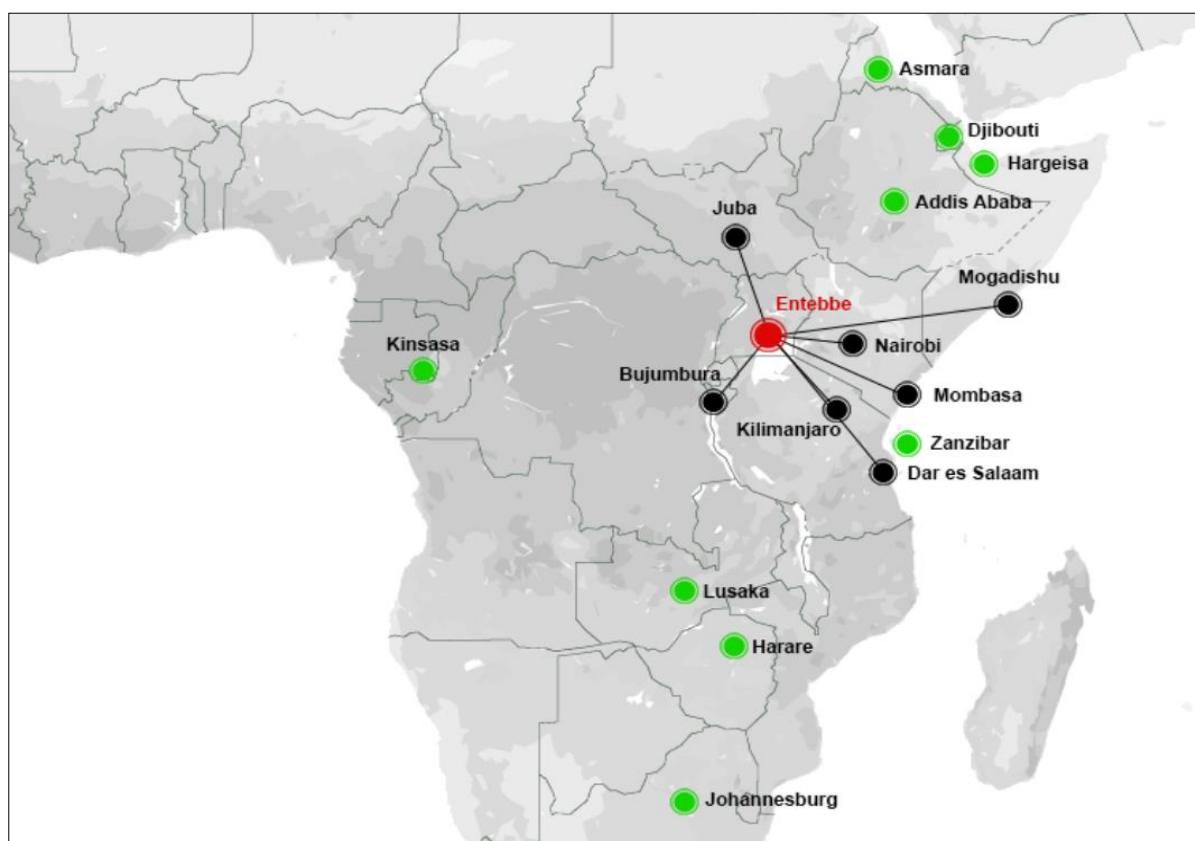
Table 14: Entebbe Airport Weekly Schedule Details (November 2019)

Origin	Destination	Country	Weekly Frequency	Distance (km)	Duration (min)
Entebbe	Nairobi	Kenya	14	524	75
Entebbe	Juba	South Sudan	10	548	85
Entebbe	Dar-es-Salaam	Tanzania	6	1080	110
Entebbe	Mogadishu	Somalia	4	1455	143
Entebbe	Mombasa	Kenya	3	919	110
Entebbe	Kilimanjaro	Tanzania	3	647	75
Entebbe	Bujumbura	Burundi	2	512	75

Source: CAA

Currently, Uganda Airlines services 4 CRJ900-type aircraft in total, each configured with 76 seats in a 2-class configuration after two more CRJ900s were added to the airline's fleet in October 2019. In 2020 and 2021, the airline expanded its fleet by introducing 2 Airbus A330-type aircraft which have 220 to 260 seats each.

Figure 14: Uganda Airlines Destinations (Flights to green-coloured destinations to start in the near future)



Future investments and opportunities for air transport sector development

In January 2015, then Minister of Works and Transport Abraham Byandala unveiled a 20-year plan to increase international airports from one to five and regional airports from two to three; and improve six existing local airports. The plan also calls for the improvement of Entebbe International Airport at a cost of US\$200 million.^{[3][11]} Another \$200 million will be needed to complete the upgrades to the other airports.^[12]

Modernisation plans: 2015-2033

In February 2015, the Government of South Korea, through the Korea International Cooperation Agency, gave the Government of Uganda (GOU) a grant of UGX:27 billion towards the modernisation of the airport. In the same month, the GOU began a three-phase upgrade and expansion of the airport to last from 2015 until 2035. The entire renovation budget is approximately US\$586 million.

Phase I - 2015 to 2018

- > The estimated cost of US\$200 million, borrowed from the Exim Bank of China;
- > Relocation and expansion of the cargo terminal;
- > Construction of new passenger terminal building;
- > Modernizing and improving existing passenger terminal building;
- > Renovation and rehabilitation of "Runway 12/30" (the old runway), was expected to conclude in February 2019 but is ongoing.

Phase II - 2019 to 2023

- > The estimated cost of US\$125 million, not yet sourced;
- > Relocation and expansion of fuel storage facilities;

Phase III - 2024 to 2033

- > The estimated cost of US\$160.5 million, not yet sourced;
- > Building a new multi-story car park;
- > Construction of a new control tower
- > Strengthen and reseal current runways.

Expansion of departure and arrival lounges

In April 2016, a UGX:42.6 billion project to expand the departure and arrival lounges was launched. The work were carried out by Seyani Brothers Limited and funded by the Civil Aviation Authority of Uganda. This work was separate from the large expansion partially funded by the government of South Korea and People's Republic of China.

Entebbe International Airport is located in southern Uganda, 35 km south of the capital, Kampala. Currently, 17 airlines operate out of the airport. In 2015, a three-phase major development project to accommodate the increasing passenger numbers was announced for this airport.

On-going Phase 1 expansion works at Entebbe International Airport are part of the Civil Aviation Authority's implementation of a 20-year master plan which covers the period from 2014 to 2033. 200 Million USD expansion works include a new cargo centre with a capacity of 100,000 tonnes per year, an expansion of the passenger terminal with 20,000 m², a new apron, runway and taxiway upgrades which are being undertaken by China Communication Construction Company (CCCC).

This expansion and development programme is financed by a loan from Chinese EXIM bank and the project was contracted back in October 2014, the project will increase the total capacity of EIA from today 1.9 to 3.0 million annual passengers.

As of October 2019, the overall expansion and upgrade works of the airport stand at 56%. 75% of the work for the new Cargo Centre complex has been completed. 72% rehabilitation works of Apron 1 have been completed whereas 84% of the Cargo Apron is completed.

Some 85% of rehabilitation works for the runway have been completed. Phase 1 expansion works are expected to be completed in 2021.

Figure 15: Location of Entebbe International Airport



Figure 16: New Cargo Facility Construction (March 2019)



Figure 17: Apron 1 – Expansion Works (February 2018)



6.7 Inland Waterways Subsector

6.7.1 Key Ports and Landing Sites

There are two main Ports in Uganda on Lake Victoria, Jinja and Port Bell, plus several Landing Sites. Sites, requiring almost no infrastructure, can be established and disappear in a matter of months. With little or no weather forecasts or rescue facilities available to the vessels on the lake, there is now a move to instigate and set up a centralised communication system with rescue vessels. This is dependent on external financing from African Development Bank which is in place and has been drawn down and is still in the development phase.

Marine legalisation is slow in moving, a 2014 bill is in parliament covering vessel HSE requirements and registration, the latter of which is underway.

Generally little or no investment has been made in recent times to the extent that when systems fail due to lack of maintenance they are simply abandoned, left to the local population to muddle along or await private investment to step in.

The two corresponding landing sites have a basic level of infrastructure including a pier, bollards, mooring and in some cases lighting and some nav aids but not all.

However, the majority of the 'landing sites' have minimal or zero infrastructure but do facilitate the transport of merchandise and personnel by small boats, canoes etc and in many cases are nothing more than fishing landing sites.

Port Bell; is a small industrial centre in the greater metropolitan Kampala area, in Uganda. Port Bell has a rail link and a railroad ferry wharf used for International traffic across Lake Victoria to Tanzania and Kenya.

Bukasa Inland Port is a planned inland port and is located along the northern shores of Lake Victoria, on approximately 500 acres (202 ha) in the neighbourhood of Bukasa, Kira Town in Wakiso District. When fully functional, the port is expected to occupy a bigger land area. Efforts to secure more land are underway. It's a Natural/artificial harbour at the moment.

When completed the inland port is designed to handle up to 5.2 million tonnes of freight annually. The port will facilitate the movement of goods from the Tanzanian ports of Dar es Salaam and Tanga, via rail to the port of Mwanza on Lake Victoria. Barges would then bring the cargo over the lake to Bukasa. This would reduce Uganda's near-total dependence on the port of Mombasa, Kenya.

Two German financial institutions agreed to lend US\$48 million towards the construction of this port. The Uganda government will contribute US\$8.5 million to this project.

As of February 2018, *GAUFF Engineering Company*, a German firm that is performing the consultancy work for the construction of the port, is finalising the master design of the development. In July 2018, dredging of the swamps commenced. The physical construction of the administration unit and the shipping facilities called Roll-on/Roll-off (RoRo) commenced in June 2019, and is to last until April 2022. More development and expansion will continue until 2030. Construction of the initial phase is expected to last three years.

In February 2019, the National Environment Management Authority of Uganda (NEMA), approved the construction of this inland port. Construction will be phased.

Phase I

The first phase will involve the construction of the port, administration jetty, free trade zone, shunting yard, a two-berth multipurpose terminal and a two-berth Roro terminal.

Phase II

The second phase, expected to be complete by 2030, will extend the multipurpose terminal by additional two berths to a total quay length of 540 metres (1,772 ft).

Phase III

The third phase, to be completed by 2040, will extend the quay length of the multipurpose terminal to 960 metres (3,150 ft). All three phases will require the dredging of Lake Victoria.

Most activities of the fish trade take place at landing sites which act as both collection and trading centres for fish. Lake Victoria has several landing sites which act as centres for fishing activities. Lake Victoria has Kasenyi and Kigungu in Wakiso District, Katosi and Ssenyi in Mukono District, Masese and Wairaka in Jinja District, and Gaba in Kampala district.

Table 15: List of Other Ports, Road Bridges and Landing Sites

	landing site / Port	Lake / river	District
1	Katebo	Lake Victoria	Mpigi
2	Nakiwogo	Lake Victoria	Wakiso
3	Jinja Port	Lake Victoria	Jinja
4	Masese	Lake Victoria	Jinja
5	Veron Shipyard	Lake Victoria	Jinja
6	Bidco pier	Lake Victoria	Jinja
7	FDC Waterman	Lake Victoria	Jinja
8	Kiyindi	Lake Victoria	Buikwe

Figure 18: Kisenyi Landing Site



Source: COWI A/S

Figure 19: Veron Shipyard during construction of the 350 ton UNRA ferry



Source: COWI A/S

Veron Shipyard; This site is within 8km of the Jinja Port. JGH Marine, a Danish company with offices in Nairobi is building a 350T RoRo vessel which will be launched on airbags. It is the sole shipbuilding company of any consequence in Uganda. Supported by Trademark E Africa and RVO of the Netherlands, if confidence grows a 1000 T boat is planned.

Figure 20: Bidco Palm Oil jetty



Source: COWI A/S

Bidco Oil of Uganda. Bidco operates a privately owned 200 m long jetty which is used to receive crude palm oil from the Kalangala Island Plantation. It receives 2 tanker vessels per week each of 450 T tank capacity, one of which also carries 500 tons of fertilizer above deck.

FDC/Waterman/Fish Landing Site Jinja; This is a large fish landing Site and market, demarcated into two main operators separated by a fence: FDC which Is a quasi-Association of fishermen and Waterman which is a private company. Nearby within a 1 km radius are 3 fish fillet export processing plants including Lake Bounty and the now defunct Gomba Fishing Industries Ltd. Fish handling facilities such as landing shade and washing slabs are in place and hygiene is better observed here than at the Masese landing site and based on the proximity of the fish processing factories; this is a major fish landing site and bulking centre.

Figure 21: Fish landing sites



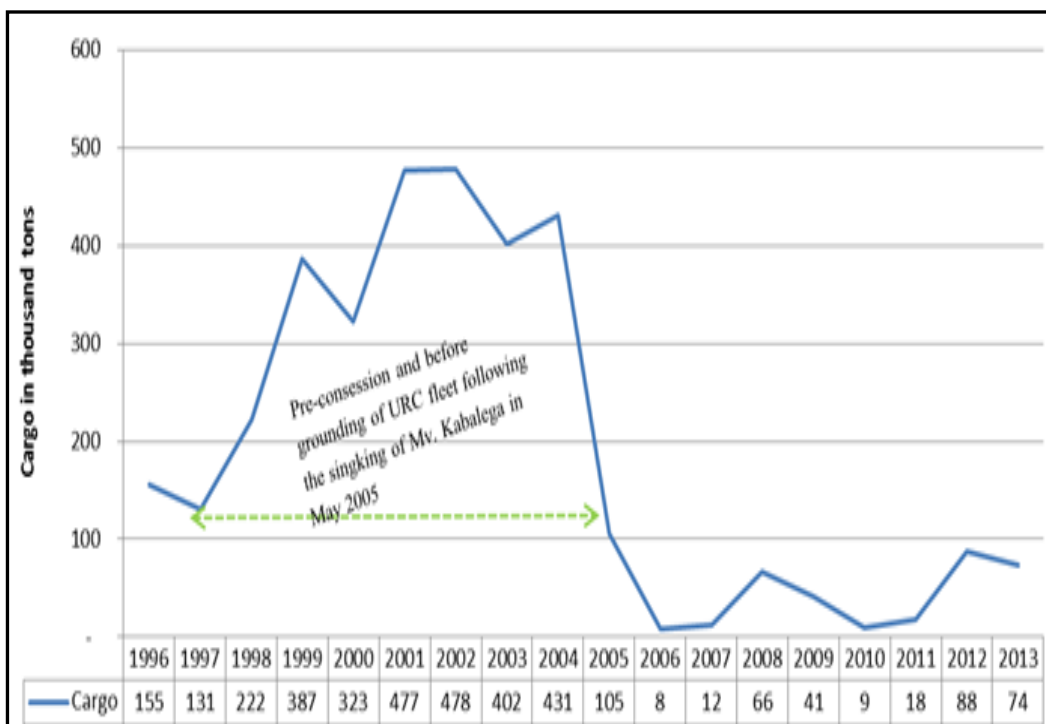
Source: COWI A/S

Inland Waterways Operations and Traffic

Historical Traffic data for Port Bell

Below freight tonnage statistics (Source URC) show a historical trend of cargo movement on Lake Victoria over two decades from the mid-1990’s to 2013. Note the sharp drop in 2004–05 when URC services were concessioned to Rift Valley Railways which neglected the multimodal service and in the same period followed a series of vessel accidents leading to the collapsed traffic.

Figure 22: Historical Data URC Port Bell



Source: UBOS.

Traffic data for Port Bell Mwanza 2018 -19

In the year June 2018 – June 2019 since Lake Victoria Wagon ferries resumed inter-modal rail/water operations on 26th June 2018 with MV Umoja making a maiden voyage. Since then, the MV Umoja made 23 voyages while the MV Kaawa made 41 voyages, in total handling imports of 42,333 T received into the country while exports were 23,921 T through Mwanza to Tanzania, making a total of 66,255 T during the financial year 2018/19.

Table 16: Lake Victoria Freight Statistics June 2018/June 2019

Month	Imports (Ton)	Exports (Ton)	Grand Total (Ton)
18-Jul	4,858.00	1,345.80	6,203.55
18-Aug	3,996.00	2,131.00	6,127.00
18-Sep	3,000.00	3,238.00	6,238.00
18-Oct	4,833.96	1,771.00	6,605.02
18-Nov	2,355.26	2,419.20	4,774.46
18-Dec	4,908.62	1,712.50	6,621.12
19-Jan	5,110.52	2,438.00	7,548.52
19-Feb	2,885.00	710.68	3,595.68
19-Mar	1,614.00	1,765.80	3,379.94
19-Apr	4,686.60	2,420.00	7,106.60
19-May	1,693.32	1,754.00	3,447.32
19-Jun	2,392	2,216	4,608.12
Total	42,333.28	23,921.98	66,255.33

Source: URC.

The other traffic is generally for transportation between the ports, landing sites and islands along the lake. Mainly residences, tourists and fishermen. The other is crude palm oil transported by Bidco.

Inland Water Transport Governance and Regulation

The framework for the proposed maritime law is a long time in coming but is documented in a final draft of a bill before parliament dated 2014. The Act based on 'The Inland Waterways Transport' bill will cover the following:

- > To register and license ships, the proprietary interest in the ships and the terms of engagement of seafarers and other matters;
- > To provide for the prevention of collisions on in the inland waterways, the safety of life and navigation of inland waters, the regulation of load lines, the carriage of bulk and dangerous cargoes, unsafe ships and to regulate in the waterways and passenger ships;
- > To define the liability of ship owners in respect of wrecks and salvage. The liability of ship owners and others in the inquiries and investigations into maritime casualties;

- > In respect of the environment to prevent pollution from ships, protection of marine ecosystems and marine security;
- > Consolidate the law relating to shipping and other maritime matters.

The concept of vessel registration dates back over a century but it is questionable if in the 21st century it is up to date and thus the need for a new bill.

There is a process of registration by MoWT of all boats on inland waters in the country currently ongoing.

A researcher at the School of Law at Makerere University published a paper relating to Maritime Law and Accidents in Uganda and the conclusions are as follows:

It is clear from the above research study on Legal Protection Against Marine Accidents in Uganda that the law governing water transport is obsolete and that there is a need for the formulation of a strong water transport policy in order to deal with the many accidents occurring on Uganda's water bodies. The revision of the Safety regulations in maritime administration and harmonisation of the water transport laws is also wanting. Also, issues of funding for transport intervention are woefully inadequate and require substantial growth, especially in the water transport sector.

The major laws relating to water transport in Uganda are the Lake Victoria Transport Act, 2007, the Inland Water Transport (Control) Act, Cap 348, the Vessels Registration Act, Cap 349, the Uganda Railways Corporation Act, cap 331, the Ferries Act, Cap 355, the Fish Act, Cap 197, the Rivers Act Cap 357. The laws are described as disjointed and under the responsibility of numerous institutions, not harmonised and contradictory as well as archaic. However, the government, through the Ministry of Works and Transport has procured consultancy services for improving Water Transport Legislation in Uganda. The Contract was signed on 22nd February 2014. It is hoped that after the completion of the project, the government will implement the recommendations in order to boost the water transport industry.

The institutions monitoring water transport in Uganda face several challenges. They include:

- > Prevailing perceptions particularly that water transport is slow;
- > Old fashioned and is a transport mode for the poor;
- > The institutional bias of the sector creates the illusion of water transport as an unviable mode of transport;
- > The lack of safety standards to be followed by institutions;
- > Environmental concerns like oil spills;
- > Noise pollution and import of invasive species;
- > Lack of integrated planning and poor infrastructure;
- > The poor navigational aids and inadequately trained or unqualified crew.

These challenges are all a result of obsolete laws which are not respected by the institutions. It is hoped that modernisation of the water transport sector, improved laws and regulations and improved funding for the sector will revive this industry.

Similarly, the management of maritime transport is disjointed, haphazard, rudimentary and based on the individual preferences of owners. The forms of management are determined by vessel owners themselves. This attitude has exacerbated the number of marine accidents in the country. Also, causes of marine accidents are attributed to outdated laws that do not provide for safety standards and regulations for vessel manning, overloading, incompetent and unqualified crew, use of old boats, outdated navigational charts and absence of navigation aids, backward sailing practices, untrained boat builders among others.

It has been noted from this research study that most marine accidents in Uganda involve small vessels. Over the last fifteen years, only one accident has occurred involving MV Kabalega and MV Kaawa in 2005. Therefore, it is pertinent that the government gives priority to small vessels by providing safety standards, boat building standards, adopting policies to incorporate these standards and passing legislation to enforce the standards.”

Inland Water Transport Problems and Issues

- > Poor access infrastructure to the lake ports - Pont Bell and the port of Jinja are connected to the Mombasa — Kampala main railway line (meter gauge railway). The port of Kisumu is also connected to this line, albeit through a branch line. However, all three of the rail connections are currently not functioning, as the rail and lake services were deemed uneconomic by the private concessionaire RVR and were thus halted. Subsequently, encroachment issues arose as people started building houses on the derelict rail line. On the southern side of the lake, the port of Mwanza South is connected to the central corridor meter gauge rail network. Musoma port has no railway connection, but there is a railway track within the yard area to load/offload and shunt rail wagons. The other ports are only accessible by roads, which are typically in a poor condition.
- > Competition from improved accessibility of the towns around the lake is undermining the transport services on the lake - The road network around Lake Victoria has gradually developed, through capacity and quality improvements of the highways and the introduction of more efficient One Stop Border Posts (OSBPs). The continuous improvement of the roads has reduced the competitive position of the transport services on the Lake on some routes. Additionally, the SGR projects in Kenya may further undermine the competitiveness of lake transport in the long term, as the SGR will provide a direct rail connection between the port of Mombasa and Kampala.
- > Regular services are required at all ports to ensure accessibility - Sedimentation in the lake results in a periodic need for regular dredging at nearly all ports on the lake. Additionally, water hyacinth and “floating islands” periodically clog up the ports, hampering the movement of vessels in and out of the ports.
- > Adequate infrastructure and equipment are not available or dilapidated - Generally, the existing port infrastructure is outdated and in poor condition, as the breakup of the EARHC in 1977 resulted in a decline in investments in infrastructure. Additionally, adequate cargo handling equipment is lacking in the ports, as the primary role of the port — acting as an extension of the EAC rail network — resulted in port designs focused on RoRo operations for the wagon ferry operations. Hence, all handling operations are carried out through manual labour, for which day labourers are hired.

- > Lake navigability and maritime safety are not yet sufficiently addressed - While all registered ships on Lake Victoria are provided with radio communication systems, none of the lake ports is provided with formally structured maritime assistance services of any kind. This implies that no general weather synopsis, storm or other navigational warnings are given to ships departing from any of the lake ports. The Lake Victoria Basin Commission Secretariat, in partnership with the EAC Partner states, is planning a Maritime Rescue Coordination Centre in Mwanza North, funded by the African Development Bank. The plots have been already acquired. Navigation aids were installed and surveys have been made at the ports of Mwanza, Kisumu and Port Bell, though updated and reliable navigational charts are not available. Besides the lack of marine assistance services, the lake lacks landfall lights, beacons, buoys, leading lines or other facilities that delineate headlands, ship routes, known dangers (including wrecks) or the fairways and approaches to ports.
- > Global best practice systems are not perfectly imitable on Lake Victoria - Similar areas include the coastal waters of the Baltic, Adriatic, and Aegean seas. These areas all envelop a multitude of islands, thus resulting in the need for short to medium-range passenger and cargo ferry systems, like the Lake Victoria case. However, as Lake Victoria is not directly accessible from the Sea, importing vessels poses an issue. Additionally, the lake ports lack large shipbuilding facilities, thus limiting the size of vessels that can be constructed at the ports; it is noted that the Chinese firm Mango Tree Group has developed a large shipbuilding facility at a site in Kawuku (Wakiso district), therewith counteracting the construction limitations on Lake Victoria. However, due to a lack of specialised shipbuilding capabilities, high-end vessels still need to be constructed abroad. Vessels can subsequently be disassembled and transported to Lake Victoria, where they can be reassembled; this elaborate process results in increased costs of introducing new vessels, thus negatively impacting the viability of projects. These challenges limit the imitability of implemented network solutions of otherwise similar cases.
- > Need for an integrated and harmonious lake transport development plan - Development plans must be carried out at the lake level. As the lake presents a closed transport system, developments in one port will need to be implemented in parallel to similar developments in the other lake ports to become successful. Additionally, there should be a focus on key projects; the introduction of new competing large-scale port projects, such as Bukasa port, may reduce the viability of the development of the current ports. Hence, such projects may substantially reduce the private sector's appetite for becoming involved in developing the current ports.
- > Domestic passenger traffic - The passenger and vehicle transport between the islands and the mainland requires a proper solution. There are many landing sites, which are mainly used for fishing and market activities. These sites require a safe and healthy setup. In order to serve the passenger flows between the islands and the mainland, RoRo facilities and ferry services should be introduced and maintained on several strategic high-volume routes.

Bukasa Port Project and Other Investment Opportunities

In order to counteract these key issues, several developments are ongoing and planned. The following main Lake Victoria infrastructure, cargo transport, and passenger transport developments have been identified.

Lake Victoria Transport Program — Under the Lake Victoria Transport Program, which is to be (partially) funded by the World Bank and the European Union, rehabilitation and improvement works are scheduled on all the major lake ports and their connecting infrastructure. Additionally, technical assistance towards the implementation of lake safety and navigability measures is included in the program.

Bukasa Port (Uganda) — The Bukasa port project comprises the development of a new port in Kampala, near the existing Port Bell. The port project is partially funded by the Government of Germany and is currently in the preliminary design phase, for which a consultant has been procured. Additionally, a high-level financial and economic assessment has been completed. The port development is aimed at enabling the accommodation of the expected future cargo volumes on Lake Victoria. The port is to be developed in two phases; the first phase will provide an annual cargo capacity of 2.3 million tons, whereas the second phase will add an annual capacity of 5.2 million tons. While it seems that a draft preliminary design has been completed, such a design has not been made available to MTBS for the purpose of this study.

Termination of RVR concession contract

Due to RVR's failure to meet contractual obligations, Kenya and Uganda have recently started the process of terminating RVR's contract. In Kenya, the Nairobi High Court finalised the process by granting the order to terminate on the 31st of July 2017. Uganda expects to finalise the termination process by September 2017. The termination of the RVR contracts entails that the rail and rail-wagon ferries revert to the URC and KRC in Uganda and Kenya, respectively.

Revival and expansion of the rail-wagon ferry system — Following stakeholder consultations, MTBS understands that the URC aims to revive the rail-wagon ferry system. Thereto, design works have been completed for a replacement vessel for the MV Kabalega; the GoU is currently looking for financiers to proceed with construction works. Additionally, the URC stated that the Government of Tanzania (GoT), through the TPA and TRL, is willing to cooperate in the revival of the Lake Victoria link between Port Bell and Mwanza, as this may benefit the competitiveness of the Central Corridor route to Kampala.

Potential for PPP in Ugandan Lake Victoria cargo transport activities — Following a meeting with the URC, MTBS has come to the understanding that the URC currently envisions carrying out Port Bell operations and rail-wagon ferry operations itself. However, the URC is open to PPP structures being implemented.

Development Sites

The (UNRA) administration identified a list of future sites for development and equipment resourcing for projects as below.

Table 17: Future sites for development

Site	Development
Kiyindi Ferry Landing Sites	Facilities improvement.
Katosi Ferry	Improved road access will impact on and require upgrading of local facilities on the islands of Koome and Mamba etc.

Source: UNRA

Supply of additional ferry equipment to some of the above sites is envisaged.

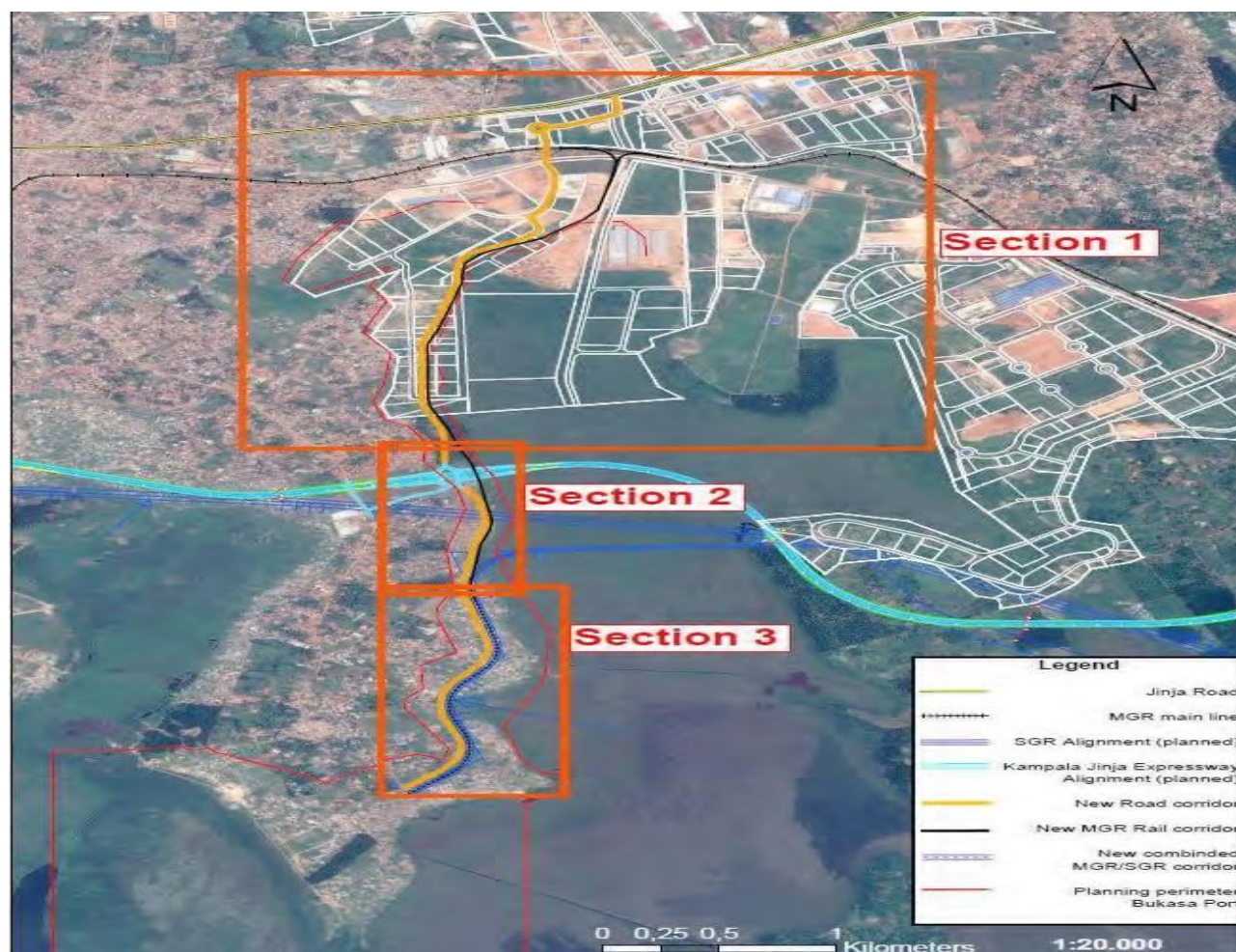
Southern Engineering is rehabilitating the MV Bukakata at the Port Bell Dry dock and JGH Marine at the Veron shipyard at Jinja is currently completing the construction of a 350T RoRo ferry for Sigulu Islands/Namayingo.

Generally, these are upgrades to facilitate the movement of the population and often with the backing of the President.

Bukasa Port and wider Consequential Action.

This port project dates from over a decade ago and was regenerated in 2014. It is located due east of Entebbe in close proximity to an expanding industrial park at Namanve (see location below). It would ultimately be linked to the Kampala Jinja Expressway and a new Standard Gauge Railway (SGR). The port zone is approx. 1.5 Km sq. a large part of which is inhabited swamp land.

Figure 23: Bukasa Port Proposed Site Location



Source: Section 1 Kampala Industrial Business Park | Section 2 Proposed Kampala Jinja Expressway and Standard Gauge Railway (SGR) Crossings | Section 3 Port Entry Corridor. Source Gauff Engineering (GAUFF)

The raison d'être of the project is to reestablish marine transportation across Lake Victoria to the ports of Kismayo in Kenya and Mwanza in Tanzania.

The throughputs of the port start at 2.4 MM T pa rising to over 9.5 MM T pa and peaking at 11.2 MM T pa by 2040.

There is slippage on the initial programme which shows freight moving through the port in 2020. A reasonable estimate would be a two-year delay.

Project phasing is as follows:

Phase I.

The first phase will involve the construction of the port, administration jetty, free trade zone, shunting yard, a two-berth multipurpose terminal and a two-berth RoRo terminal.

Phase II.

The second phase, expected to be complete by 2030, will extend the multipurpose terminal by additional two berths to a total quay length of 540 metres (1,772 ft). This phase will include the completion of the Port for a capacity of 3.0 million metric tons and the construction of a floating dock facility;

Phase III.

The third phase, to be completed by 2040, will extend the quay length of the multipurpose terminal to 960 metres (3,150 ft). All three phases will require the dredging of Lake Victoria. This phase will conclude the future extension of the port with further port basins and cargo handling capacity of up to 9.5 million metric tons (peak 11.2 million metric tons).

The estimated cost is Euro 350 MM.

For the port to receive these tonnages of freight very considerable infrastructure work is required in neighbouring Kenya and Tanzania

To achieve these objectives expansion of the ports at Kismayo (Kenya) and Mwanza (Tanzania) is required and the merchandise (part container part rail trucks) will be transported across the lake by purpose-built vessels, fabricated overseas and assembled on the lake.

In conclusion, the overriding needs are:

- > To pass and full implement the proposed bill on Maritime Legislation;
- > To finance its implications;
- > To forcibly implement the Law.

Above all, the need is to educate and urge those in the marine sector to become responsible.

6.7.2 Passenger Road Transport

Key modes of passenger road transport

The passenger transport sector in the JKM conurbation is dominated by the para-transit systems (informal transport systems) such as the 14-seater minibuses and commercial motorcycles (Boda Bodas). Transit services in the JKM region are also provided by private operators, using their own financial resources.

The pervasive use of the 14-seater minibus taxis and Boda Boda taxis by commuters and travellers in the JKM region including major towns like Kampala, Jinja, Entebbe, Nansana, Kira, Mukono, Mpigi, Njeru and Lugazi is largely a result of Structural Adjustment Policies (SAPs) that were introduced in the late 1980s and 1990s by the World Bank and International Monetary Finance (IMF) in the developing countries including Uganda.

Under SAPs, the private sector was seen as the solution to the problems associated with state capitalism as well as the direct government involvement in economic activities including public transport in the major towns. In many towns such as Kampala, Jinja, Mpigi, Mukono and Entebbe the 14-seater minibus taxis (Matatus) were promoted as an important mode of transport. Minibus taxi terminals were also established in various towns including Kampala. Kampala for example has two large minibus taxi terminals: the old and new minibus taxi parks.

Minibus taxi operators also formed associations to regulate their operations. Uganda Taxi Operators and Drivers Association (UTODA) is one of the major para-transit associations that were established in the 1990s and remained dominant until 2015 when its contract to manage minibus taxi terminals in Kampala was cancelled by Kampala Capital City Authority (KCCA). In Jinja, Minibus taxi operators also established

The collapse of UTODA in 2015 left the minibus taxi industry without a dominant para-transit association with a national character and the ability to effectively regulate the activities of the operators. A few less influential and unrecognised minibus taxi drivers' associations, however, have been established to replace UTODA such as Kampala Taxi Stages Association (KOTSA) and Uganda Transport Development Agency (UTRADA).

In the recent past, many Boda Boda associations and business organisations have also been established in the JKM conurbation and corridor to protect the interests of the operators, improve the services provided and help government regulate the industry. Examples of the Boda Boda associations include Safeboda, Uberboda and Taxify. Some of these organisations such as Uberboda and Safeboda have introduced new business ideas such as e-transport services.

Under the e-transport model, commercial motorcycle operators and passengers are required to have smartphones that are used to download apps. Through SafeBoda apps, for example, both the rider and potential passenger are able to communicate and when an order is made, the rider rushes to provide a service. Payments can be made electronically or by cash.

To reduce traffic jams and modernise the passenger transport sector, the city authorities in Kampala signed new contracts with the Pioneer Easy Bus (PEB) and Awakula Ennume to provide bus services in various parts of the city. PEB started its operation on March 12th, 2012. It operates on the Western and Eastern route zones in Kampala. Awakula Ennume also signed a five-year contract in 2011 with the city authority to operate on the Northern Corridor that covers areas like Gayaza, Kasangati, Mpererwe, Kawempe, Maganjo, Namugoona, Matugga and Nabweru.

Demand and operations of passenger transport

Between 2003 and 2019, the number of minibus taxis operating in Greater Kampala increased from 7,000 to about 20,000. The minibus taxi sector remains highly unregulated in the region with no designated routes, no designated minibus taxi stops on most city roads, no clear fare controls and no market entry restrictions.

According to the United Nations (2018), Boda Bodas operating in the GKMA region increased by 58.7 percent per year since 2007. By 2014, there were about 405,124 Boda Bodas from 15,979 motorcycles in 2007.

While Boda Boda taxis dominated the roads in the JKM corridor including areas within greater Kampala, with a 42% share of vehicle movements made in the region, they accounted for only 9% of the passenger demand. In contrast, minibus taxis, with 21% of vehicle movements, serviced 82% of passenger demand (See Table 18 below). Estimates of the modal shares in towns outside Kampala are shown below

Table 18: Modal Shares in Kampala

Type of Vehicles	% Trips	% Passengers transported
Motorcycle Taxis (Boda Bodas)	42	9
Private Cars	37	9
Minibus Taxis (Matatus)	21	82

Source: World Bank (2017).

Demand for minibuses has risen from approximately 14.5 billion passenger-km in 2005 to 151 billion passenger-km in 2019. The demand for buses has risen from 900 million to 2.8 billion passenger-km per year over the same period. The growth in demand has been estimated to be 23.3% pa. The estimated passenger distance per capita was found to have increased from 1.5 km per day to just under 10 km per day.

Most towns in the JKM corridor lack organised public transport. It is only in Kampala that some form of organised transit exists. This includes bus services and to some extent passenger railway services which were reintroduced in 2015 under public service obligation (PSO).

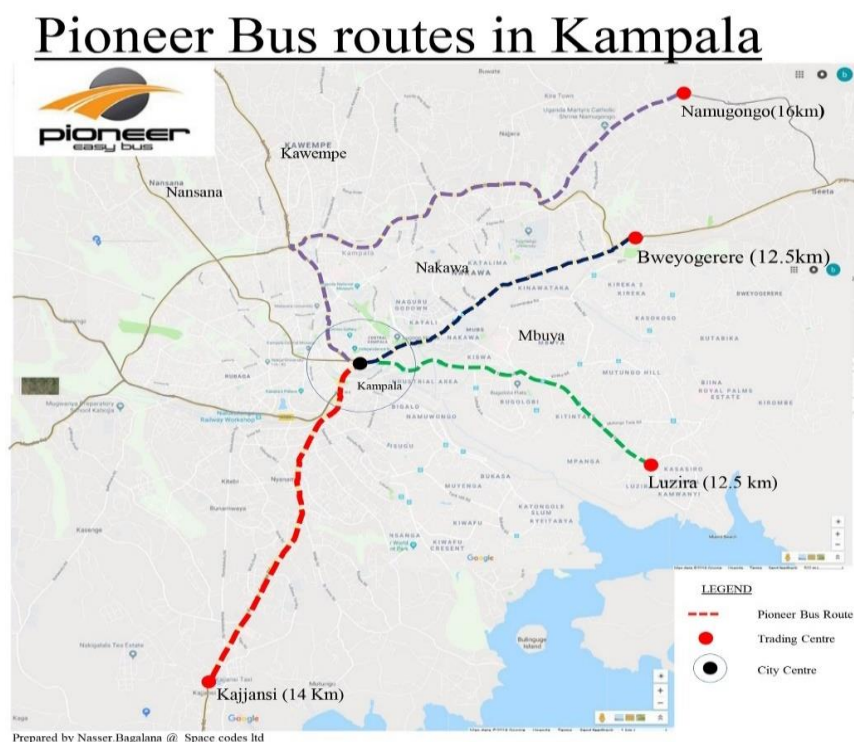
In 2010, the city authorities signed an agreement with Pioneer Easy Bus (PEB), a private bus firm, to provide bus services in Kampala. PEB started its operation on March 12th, 2012. It operates on the Western and Eastern route zones in Kampala. PEB buses operate on four routes, covering a distance of 55km: Kampala-Bweyogerere (12.5km); Kampala - Kajjansi (14km); Kampala - Luzira (12.5km); and Kampala - Namugongo (16km).

Figure 24: Pioneer Easy Bus (PEB) buses in Kampala



Source: URN

Figure 25: Pioneer Easy Bus Routes in Kampala



Source: Pioneer

PEB was required under the signed agreement with the city authority to purchase 100 buses in the first 4 months of the contract and later increase its fleet to 522 buses within 9 months of the agreement. PEB has 100 buses. Each bus carries 60 passengers, 30 sitting and 30 standing.

PEB has been unable to buy new buses and expand its operations because of the mounting debt and the failure of the city authority to provide bus lanes and other support facilities including bus stops and terminals. 81.3% (US\$ 61.5 million) of the PEB’s project funding comprised commercial bank loans that

are often associated with high-interest rates. This partly explains the financial turmoil faced by the company.

Average traffic speeds and frequency of buses have been adversely affected by the traffic jam that is experienced during the morning and evening peak hour periods. Each day, 24,000 person-hours are lost by commuters in Kampala due to traffic jams (World Bank, 2017). PEB buses operate on four routes, covering a distance of 54km. PEB buses transport 20,000 passengers each day. Bus fares range from Shs500 to Shs1000 depending on the travel distance.

Awakula Ennume, another private bus company signed a five-year contract in 2011 with the city authority in Kampala to operate in the Northern Corridor. The northern corridor covers areas and routes such as Kampala-Gayaza, Kampala-Kawempe, Kampala-Nansana, Bwaise-Nabweru, Kampala-Namugoona and Kampala-Matugga.

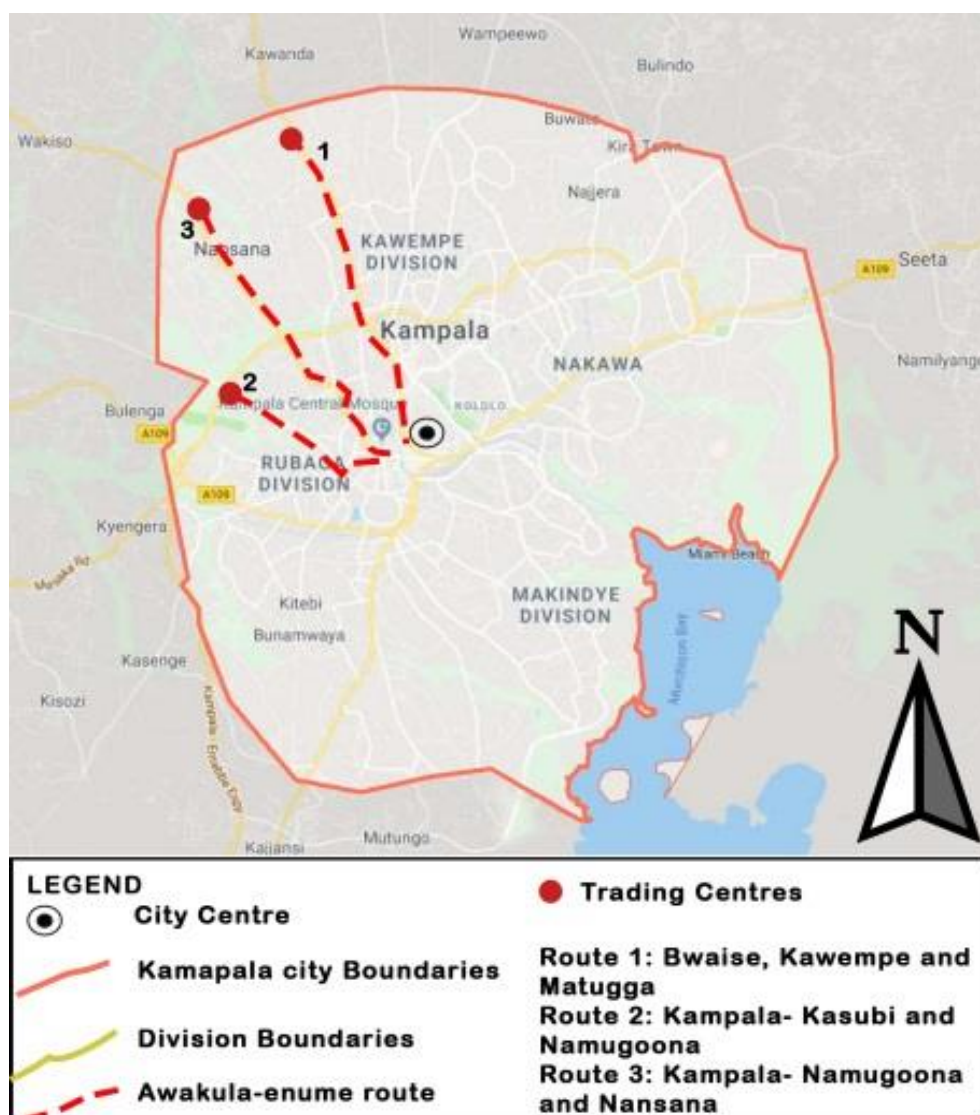
Awakula Ennume was required under the signed agreement with the city authority to import 180 buses. Today the firm has only 22 buses of different capacities. Like Pioneer Easy Bus (PEB), Awakula Ennume is also faced with several challenges including the inability to mobilise enough investible funds, lack of enough qualified bus drivers, traffic jams and competition from para-transit systems especially minibus taxis and Boda Bodas.

Figure 26: Awakula Ennume buses operating in Kampala



Source: COWI A/S

Figure 27: Awakula Ennume Bus Routes in Kampala



Source: Awakula Ennume

Governance and regulation of passenger transport

Currently, the power to regulate road passenger transport in the JKM region/conurbation is scattered and located in various state agencies such as the Transport Licensing Board (TLB), Traffic Police, city authorities such as KCCA and municipal councils, Uganda Revenue Authority (URA) and Face Technologies. These agencies are also affiliated with different ministries and coordination among them is poor and lacking in many areas (Ministry of Works and Transport, 2009; United Nations, 2018).

Uganda Revenue Authority (URA) is, for example, responsible for registering all vehicles and collecting vehicles-related tax revenue, Uganda police are mandated to enforce road traffic laws and regulations and the Transport Licensing Board (TLB) is responsible for licensing public service vehicles (PSVs) such as buses, minibuses and Boda Bodas. Face Technologies is contracted under a public-private partnership (PPP) programme by the Ministry of Works and Transport (MoWT) to issue driving permits on behalf of the Ministry of Works and Transport (MoWT).

Due to institutional fragility as well as insufficient coordination among the various regulatory agencies, the public transport sector remains one of the most poorly regulated sectors in Uganda. Overwhelmed by the large number of operators especially para-transit systems, the Government was forced to allow informal transport operators to regulate their own business activities.

Transport agencies such as the Transport Licensing Board (TLB) and Uganda Police often enforce a few road safety aspects, such as the possession of a valid driving permit, vehicles being in good mechanical condition and the load capacity of vehicles. Daily operations of public passenger transport are also largely determined by the forces of demand and supply as determined by market forces, and not by any timetable or licensing system.

While TLB is mandated under the Traffic and Road Safety Act 1998 to provide route charts (licensing and timetables) for all operators, the practice is that only the operation of long-distance (inter-state) buses is subjected to route regulation. Fares are not regulated and are generally determined by market conditions and are especially sensitive to increases in fuel prices.

Transit operators in Kampala are also required to have a permit that is provided by the city authority. Only one bus firm is for example allowed to operate on each route or in a particular zone but para-transit systems enjoy unrestricted freedom to operate on any route in the region.

Due to the lack of support infrastructure such as bus stops, bus terminals and passenger interchanges stage buses continue to operate like para-transit systems. Bus operations are also affected by the failure of the municipal authorities to provide bus lanes that would help address the challenge of mixed traffic.

Most minibus taxis and Boda Bodas are old, and their maintenance is still a big challenge because the spare parts have to be imported from where they are manufactured. Passenger transport operators are unable to renew their fleets because of the failure to mobilise enough investable funds. Transit operators have also been affected by the huge debt that was accumulated as a result of commercial bank loans secured with high-interest rates.

Transit operations are also affected by the lack of institutional leadership in the JKM conurbation including areas in greater Kampala as well as the continued existence of transport regulatory powers in various agencies and local governments including districts, Kampala Capital City Authority (KCCA), municipalities and town councils that make up the corridor.

When Pioneer Easy Bus (PEB) was introduced in 2012, some local government leaders in areas such as Mukono, Wakiso and Mpigi prevented its operations because it had only signed a contract with KCCA, which lacked powers to regulate transport activities beyond the city's administrative boundaries.

So the operations of public transit systems such as stage buses in the region may require coordination as well as a single regulatory agency, which is currently lacking (World Bank, 2017). Successful cities such as Greater Manchester, Greater London, Curitiba (Brazil), Singapore and Bogota for example have one agency coordinating metropolitan-wide transport activities.

Challenges faced by passenger road transport operators

The passenger transport sector in the JKM conurbation/corridor is faced with many challenges. One such challenge is the lack of modern bus stops and terminals that have all the facilities and services required by travellers and passengers. Local governments including municipal councils also lack clear standard

design guidelines for bus stops and bus terminals. This is important for protecting the aesthetic character of cities as well as for operational purposes.

Incessant traffic jams that are also another challenge experienced in the JKM region by the transport operators. Traffic jam in the region has caused unnecessary journey delays and affected urban productivity. KCCA estimates that about 24,000 man-hours are lost by commuters each day due to traffic jams caused by the reliance on private cars and para-transit systems such as minibuses and Boda Bodas.

Lack of an effective transport regulatory and enforcement regime. Transport regulatory agencies such as the Transport Licensing Board (TLB), the police, municipal councils and Face Technologies have been overwhelmed by the rising number of public transport vehicles especially commercial motorcycles (Boda Bodas) and Minibus taxis. Most of these agencies are not visible in many areas outside Kampala. What is also clear is that the old, centralised model that is used to regulate transport in the country is no longer viable and effective.

Noise and air pollution are all serious problems in major towns, especially Kampala. This is, in part due to the number of old and poorly maintained vehicles, especially motorcycles. Public transport systems also continue to use fossil fuels, especially diesel and gasoline. Diesel buses and minibus taxis are the biggest sources of particulate pollution.

Due to the huge initial capital investment, public transport operators in various towns of the JKM conurbation/corridor have been unable to buy new vehicles and expand their services. Also, transit operators continue to invest in transport systems that require less capital such as minibuses and Boda Bodas. Most public transport vehicles including minibus taxis and Boda Bodas are in poor mechanical condition. No legislation makes it possible for the government or municipal councils to offer financial support/subsidies to transit operators. Capital investment is clearly one issue but if services are to be operated to a high standard at affordable fares some form of public sector subsidy will likely be required, supported by a strong operating contract that is similar to those observed in role model cities such as Curitiba (Brazil) and Bogota.

Also important is the failure of the government to integrate land use and transport planning in the JKM corridor. Due to the lack of an approved physical development plan for the region, investments in the transport sector continue to be undertaken as a separate activity, leaving many areas rapidly developing areas without an efficient transport system.

Future investments and opportunities for passenger transport improvement

Several transport projects have been proposed to revitalize and modernize passenger transport in the JKM corridor and its core urban region of GKMA. Notable among them is the Bus Rapid Transit (BRT) project. A feasibility study for the project is also ready and the final report submitted in 2010. Nine (9) BRT corridors were also proposed in the GKMA, that is, Masaka road, Bombo road, Hoima road, Entebbe road, Ggaba road, Jinja road, Port Bell road, Kira road and Gayaza road.

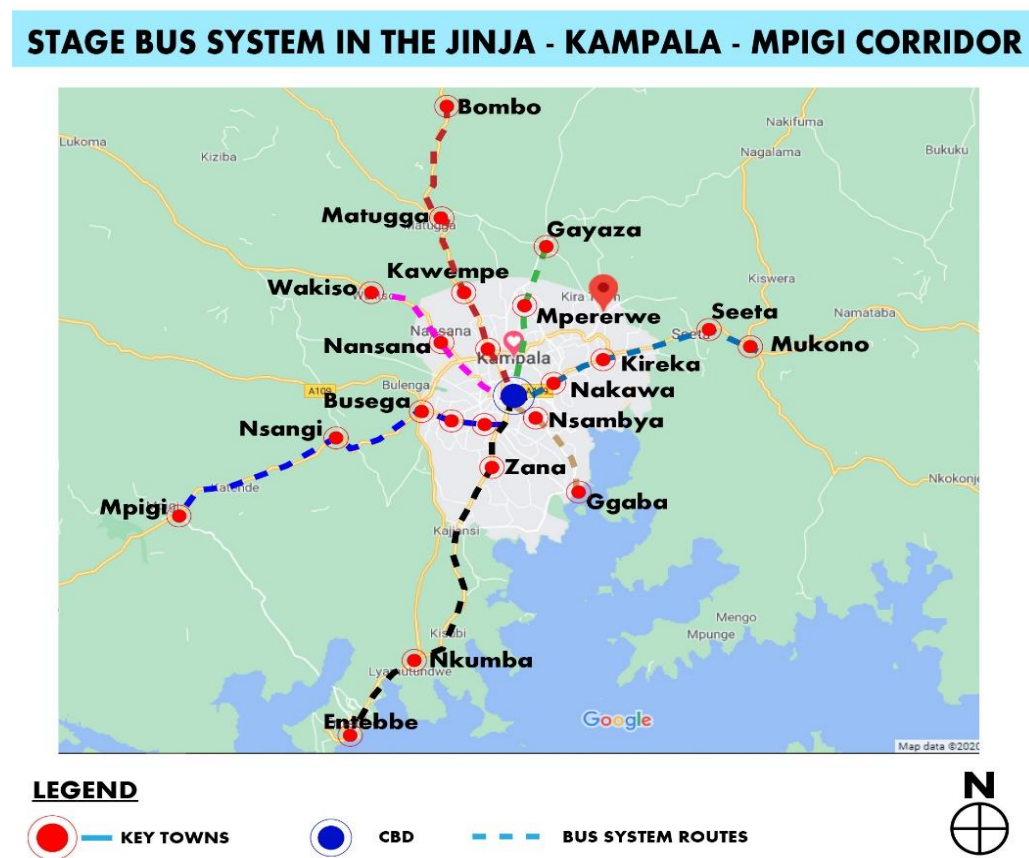
It is also recommended that a BRT pilot covering 25km with major stations in Zana (Entebbe road), Bwaise (Bombo road) and Kirea (Jinja road) be implemented as phase 1 at the cost US\$ 490 million. Based on the investment strategy to be adopted, US\$ 394million is to be spent on infrastructure, US\$ 30million on land acquisition and US\$ 66million on vehicle fleet. Most potential funders of the BRT project including the World Bank, European Union and African Development Bank have, however, stressed the need for a regional-wide transport regulatory agency which is stated as MATA (Metropolitan Area Transport Authority) in the National Transport Master Plan (2008-2023) before funding could be provided.

The Tondeka Metro bus is another flagship transit project that is being promoted by some local and foreign investors in the JKM region. Bus services will be provided in areas such as Mukono, Nsangi in Mpigi, Wakiso town in Wakiso, Matugga, Entebbe and Ggaba. It is expected that US\$ 200 million (Shs737 Billion) will be mobilised to buy 980 buses. Tondeka's fare structure is as follows: Shs1, 200 (US\$.32) unlimited daily travel; weekly card travel Shs3,500 (US\$1); and Shs 55,000 (US\$15) monthly card travel. Bus fares will be collected using radio frequency identification cards to swipe with no cash payment allowed on the bus. Bus operations are expected to start in September 2020 after the arrival of 400 buses as part of phase 1 of the project. However, the source of funding for the project is still not clear.

Table 19: Key Routes to be plied by Tondeka Metro Bus in JKM Corridor

No.	Routes	Distance
1.	Kampala -Mukono	25 Km
2.	Kampala - Nsangi	18 Km
3.	Kampala – Buloba Kiweesa	22 Km
4.	Kampala - Wakiso	21 Km
5.	Kampala - Matugga	19 Km
6.	Kampala – Entebbe International Airport	51 Km
7.	Kampala - Ggaba	12 Km

Figure 28: Proposed Tondeka Metro Bus Service in the JKM Corridor



Source: Tondeka

Table 20: Future Public Transit/Mass Transport Projects in the JKM Corridor, including GKMA Areas

Project	Areas traversed	Total Length in KM	Total Cost	Status/Progress
Bus Rapid Transit (BRT) Pilot	Kampala and Wakiso	25	US\$490Million	Mobilizing funding
Tondeka Metro Bus	Kampala, Wakiso, Mpigi and Mukono	NA	US\$200Million	Mobilizing Funding
KCCA Eco- Bus Project	Kampala	NA	US\$12Million	Securing a loan from African Development Bank

Also under a new programme to improve passenger transport in the city, KCCA intends to introduce bus services in areas that cover the Central Business District (CBD). Kampala Eco/green bus service as it is being promoted is part of a US\$228 million five-year (2020-2024) roads rehabilitation programme

(KCRRP) to be funded by the African Development Bank (AfDB). Also, under the project, US\$ 12 million will be used to purchase 80-100 seater capacity buses.

Green buses will operate on two critical routes: Route 1: covers areas such as city square, Centenary Park, Lugogo cricket ground, Kololo high secondary school, Kira road police station, Kamwokya market, Mulago hospital, Wandegeya and Watoto Church; and Route 2: will cover areas such as City Square, Watoto Church, Wandegeya, Mulago Hospital, Kamwokya Market, Ntinda, Spear Motors and Nakawa Market.

Like many other flagship projects to be implemented in the JKM corridor, the Green Bus intervention is intended to reduce the average travel time in the GKMA from 4.1 minutes per kilometre to 3.5 minutes per kilometre as recommended by the Draft Third National Development Plan (2020-2025) and Vision 2040.

6.8 Urban Passenger Road Transport

6.8.1 Public Passenger Transport Operations

Since the late 1980s and early 1990s, when Uganda embraced the Structural Adjustment Policies (SAPs), the operation and management of public passenger transport have been fully in the hands of the private sector. Passenger transport services such as the inter-city bus, minibus taxi services, long-distance bus services and commercial motorcycles (Boda Bodas) are all provided by the private operators.

Regulatory and enforcement bodies such as the Transport Licensing Board (TLB) and Uganda Police often enforce a few road safety issues, such as possession of a valid driving permit, vehicles being in good mechanical condition, speeding and the load capacity of vehicles. Daily operations of public passenger transport are also largely determined by the forces of demand and supply as determined by market forces, and not by any timetable or licencing system.

There are also no market entry controls and regulations with regard to the operation of public passenger transport in Uganda. While the Transport Licensing Board (TLB) is mandated under the Traffic and Road Safety Act 1998 to provide route charts (licensing and timetables) for all operators, the practice is that only the operation of inter-urban buses is subjected to any kind of route regulation. Fares are not regulated and are generally determined by market conditions and are especially sensitive to increases in fuel prices.

6.8.2 Transport Governance and Regulation

Currently, the power to regulate road passenger transport in the JKM region/conurbation is scattered and located in various state agencies such as the Traffic Police, city authorities such as KCCA and municipal councils, Uganda Revenue Authority (URA) and Face Technologies. These agencies are also affiliated with different ministries and coordination among them is poor and lacking in many areas (Ministry of Works and Transport, 2009; United Nations, 2018).

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6.8.3 Challenges faced by passenger Road Transport Operators

The passenger transport sector in the JKM conurbation/corridor is faced with many challenges. One of such challenges is the lack of modern bus stops and terminals that have all the facilities and services required by travellers and passengers. Local governments including municipal councils also lack clear standard design guidelines for bus stops and bus terminals. This is important for protecting the aesthetic character of cities as well as in the orderly provision of transport services.

Incessant traffic jams that are also another challenge experienced in the JKM region by the transport operators. Traffic jam in the region has caused unnecessary journey delays and affected urban productivity. KCCA estimates that about 24,000 man hours are lost by commuters each day due to traffic jams caused by the reliance on private cars and para-transit systems such as minibuses and Boda Bodas.

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Noise and air pollution are all serious problems in major towns, especially Kampala. This is, in part due to the number of old and poorly maintained vehicles, especially motorcycles. Public transport systems also continue to use fossil fuels, especially diesel and gasoline. Diesel buses and minibus taxis are the biggest sources of particulate pollution.

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No legislation makes it possible for the government or municipal councils to offer financial support/subsidies to transit operators. Capital investment is clearly one issue but if services are to be operated to a high standard at affordable fares some form of public sector subsidy will likely be required, supported by a strong operating contract that is similar to those observed in role model cities such as Curitiba (Brazil) and Bogota.

Also important is the failure of the government to integrate land use and transport planning in the JKM corridor. Due to the lack of an approved physical development plan for the region, investments in the transport sector continue to be undertaken as a separate activity, leaving many areas rapidly developing areas without an efficient transport system

6.8.4 Conclusions and Recommendations

Main Conclusions

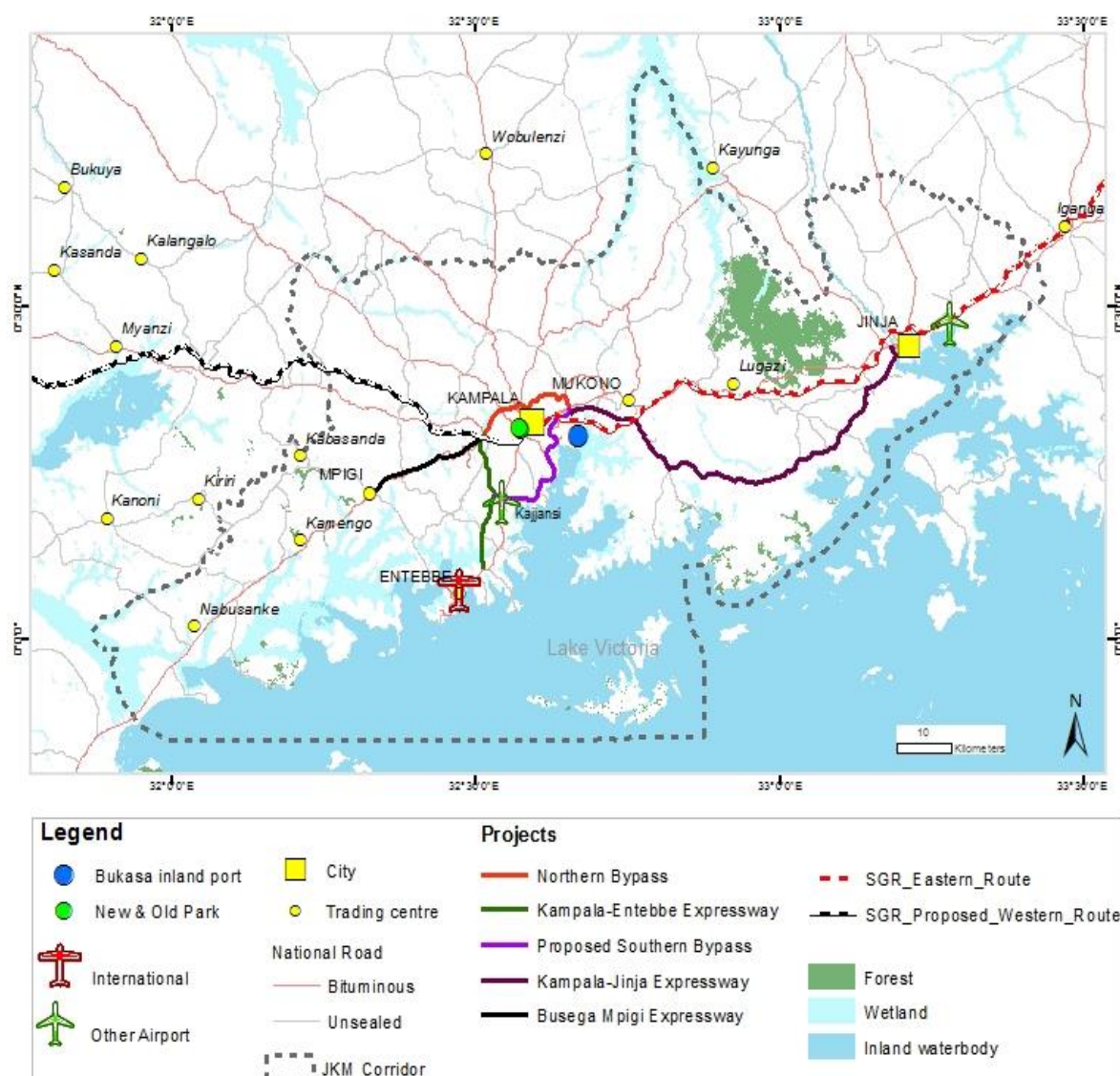
A summary of the main conclusions of our analysis is:

- > There is no comprehensive national statistical database on public transport. Without a comprehensive database, it is virtually impossible to plan and formulate feasible policies to improve the public transport industry throughout the country.
- > Traffic Congestion is probably the most visible, most pervasive and most immediate transport problem affecting Ugandan towns, especially in Kampala. It clearly affects the ability to provide effective public transport, especially stage buses. Increased use and ownership of private vehicles. Currently, Kampala's road infrastructure cannot keep pace with the very rapid rise in vehicle numbers on the roads.
- > Road accidents and fatalities. Due to the rapid growth of motor vehicles, especially motorcycles, as well as the lack of effective traffic regulatory systems, accident and mortality rates on the roads are very high.
- > Inadequate funding for public transport. Due to the huge initial investment required, public transport operators in the major towns have been unable to buy new vehicles and expand their services. Transit operators continue to invest in transport systems that require less capital such as minibuses and Boda Bodas.
- > Most public transport vehicles including minibus taxis and Boda Bodas are in poor mechanical condition. There is also no legislation that makes it possible for the government or Municipal councils to pay support for the operation of public transport services. Capital investment is clearly one issue but if services are to be operated to a high standard at affordable fares some form of public sector subsidy will likely be required, supported by a strong operating contract.
- > Lack of an effective transport regulatory and enforcement regime. Transport regulatory agencies such as the Transport Licensing Board (TLB) and Face Technologies have been overwhelmed by the rising number of public transport vehicles especially commercial motorcycles (Bod Bodas) and Minibus taxis. Most of these agencies are not visible in areas outside Kampala. What is also clear is that the old model for regulating transport in the country is no longer viable and effective.
- > Weak modal integration. The current public transport system is not integrated. Bus stops and terminals are critical in improving the attractiveness of public transport and integrating various modes of transport. Modal integration can only be effectively achieved by centralised network planning for all modes and strong regulation.
- > Low-cost recovery. The poor operating environment with bad road infrastructure, traffic congestion, low average speeds and unregulated entry to the industry has resulted in a low-cost recovery for operators.
- > Shortage of transport and logistics professionals. The public transport sector in Uganda is faced with a serious shortage of experienced and skilled managers and planners. Capacity building within government agencies and systems is also important in meeting the professional expertise required at institutional and individual levels within government authorities.
- > Environmental Air Pollution and Dependence on fossil fuels. Noise and air pollution are all serious problems in major Ugandan towns, especially Kampala. This is, in part due to the number of old and poorly maintained vehicles, especially motorcycles. Public transport systems in Uganda continue to use fossil fuels, especially diesel and gasoline. Diesel buses and minibus taxis are the biggest

sources of particulate pollution. There have been no initiatives to promote the movement to cleaner fuels.

- > Equitable transport systems. With the majority of the urban residents living in poverty, the mobility problems of the poor continue to be a major concern and a challenge faced by urban managers and decision-makers in Uganda. A well-planned reliable and regulated transport system would facilitate sustainable movement for all sectors of the community.
- > Inefficient land use patterns. Most towns and cities in Uganda are poorly planned and dominated by low-density informal settlements. Proper land use planning is critical, and it influences the operation and performance of transport systems in cities. High urban densities are also seen as critical in creating transport demand and increasing public transport ridership.
- > Need for an integrated and harmonious lake transport development plan. Development plans must be carried out at the lake level. As the lake presents a closed transport system, developments in one port will need to be implemented in parallel to similar developments in the other lake ports to become successful. Additionally, there should be a focus on key projects; the introduction of new competing large-scale port projects, such as Bukasa port, may reduce the viability of the development of the current ports. Hence, such projects may substantially reduce the private sector's appetite for becoming involved in developing the current ports. Poor access infrastructure to the lake ports - Pont Bell and the port of Jinja are connected to the Mombasa — Kampala main railway line (meter gauge railway). The port of Kisumu is also connected to this line, albeit through a branch line. However, all three of the rail connections are currently not functioning, as the rail and lake services were deemed uneconomic by the private concessionaire RVR and were thus halted. Subsequently, encroachment issues arose as people started building houses on the derelict rail line. On the southern side of the lake, the port of Mwanza South is connected to the central corridor meter gauge rail network. Musoma port has no railway connection, but there is a railway track within the yard area to load/offload and shunt rail wagons. The other ports are only accessible by roads, which are typically in a poor condition.

Figure 29: Proposed Flagship infrastructure projects in the JKM corridor



Recommendations

Based on the stated key conclusions as well as the key findings, it is recommended that:

- > New investments are made to improve the public transport infrastructure. Gradual steps must be taken to correct the current imbalance in funding and investments between road expansion projects and the improvement of the public transport network.
- > Investment in high-capacity transit systems. As urban areas develop and continue to expand both in terms of population and land coverage, a new strategy must be evaluated to invest in high-capacity systems such as stage buses, passenger railway systems, Bus Rapid Transit (BRT) systems and Light Rail Transit.
- > Consider and evaluate Public Private Partnerships (PPPs) and other funding strategies to renew and establish a new integrated public transport network in the JKM region.

- > Introduce Network Planning for Towns and Cities and Operational Support. In order to take the step toward an integrated effective public transport network, it is necessary to introduce centralised network planning for each urban area. An appropriate regulatory framework would need to be introduced and enforced to ensure the network is operating as planned. It is clear that such a system is likely to require ongoing revenue support to ensure continued effective operation. One possible source of this funding could be to reserve the revenue raised from taxing private vehicles for ongoing revenue support for the public transport network.
- > Introduce car restraint measures in cities and towns affected by traffic congestion such as Kampala. This can be in form of road tolls, congestion charges, high fuel taxes and high parking charges.
- > Adoption of a Transit-Oriented Development (TOD) strategy for the corridor. The National Transport Master Plan (NTMP) 2008-2023 outlined a plan to promote a Transit-Oriented Development (TOD) strategy in Kampala. Under the same plan, areas of more intensive land use were to be clustered in the inner metropolitan area, major mixed-use corridors and along some circumferential corridors, all in a development pattern that is movement efficient. However, little progress has thus far been made in terms of introducing TOD as a strategy to integrate land use with transport planning. Adopting a TOD strategy would help increase urban population densities, create travel demand and foster public transport use in the major urban areas.
- > Consider introducing a plan to phase out low-capacity minibuses and Boda Bodas, especially in Kampala where traffic congestion is a serious urban mobility problem. Future opportunities for the informal transport systems and low-capacity systems such as motorcycle Boda Bodas and minibuses (Matutus) in developing cities are constrained. These need to be replaced by sustainable and efficient urban transport systems. Also, under Vision2040 and the Second National Development Plan (2015-2020), there are plans to introduce mass transport systems such as BRT, Light Rail Transit (LRT) systems and stage buses in Greater Kampala. There may, however, be a residual role for minibuses to feed, in a planned and regulated manner, fixed route transit systems such as stage buses, passenger railways and the proposed Kampala Bus Rapid Transit system at the designated bus stops and stations.
- > Improve traffic management, especially in Greater Kampala. Improved traffic management is crucially needed in the major towns, as well as in Kampala, to mitigate the current traffic congestion and safety issues. Improved enforcement is also a major issue.
- > Design new roads to accommodate the needs of buses and pedestrians. Wherever feasible, new roadways should provide bus lanes to speed up public transport as well as walkways to improve safety for non-motorists. It is also important that guidelines are developed to facilitate the implementation of the national non-motorised transport policy, which was introduced in 2012.
- > Foster stakeholder participation in public transport planning and decision-making. Such an approach will enhance legitimacy, build stakeholder participation and improve the quality of decisions, making them reflect the interest of the public as a whole.
- > Poor access infrastructure to the lake ports - Pont Bell and the port of Jinja are connected to the Mombasa – Kampala main railway line (meter gauge). The port of Kisumu is also connected to this line, albeit through a branch line. However, all three of the rail connections are currently not functioning, as the rail and lake services were deemed uneconomic by the private concessionaire RVR and were thus halted. Subsequently, encroachment issues arose as people started building houses on the derelict rail line. On the southern side of the lake, the port of Mwanza South is

connected to the central corridor meter gauge rail network. Musoma port has no railway connection, but there is a railway track within the yard area to load/offload and shunt rail wagons. The other ports are only accessible by roads, which are typically in a poor condition.

- > Consider the decentralisation of some of the powers to regulate and govern public transport to local governments. Due to the rapid growth and expansion of towns and cities, as well as the increase of motor vehicle ownership and use in the country, some of the regulatory powers and functions must be transferred to districts and municipal councils where most of the transport activities are being carried out. Activities across the country, which is critical for better planning and policy formulation.
- > Establishment of modern bus terminals, interchange points and facilities in towns across the country. The establishment of modern bus terminals needs to be prioritised especially in the nine proposed cities.
- > Reduce the dependence on fossil fuels among public transport operators. Addressing the air quality and environmental challenges would require a clear strategy to promote cleaner fuels such as Compressed Natural Gas (CNG), Liquefied Petroleum Gas (LPG), ethanol and electricity.
- > Interurban Public Transport. Existing bus services operate between the towns, but operation and any potential expansion of these routes are hampered by poor infrastructure and a lack of funding. A network of routes needs to be planned and facilitated across the country. However, in order for this to happen proper integrated terminal facilities need to be provided in the urban centres, as well as the provision of better road infrastructure and a proper funding and regulatory regime. The potential role of rail services in the provision of interurban public transport also needs to be investigated.

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