EAC Roads Development Programme & Transport Strategy

Summary Strategy

September 2010

1. Brief Background on Study

The East African Community contracted Africon to prepare a regional Roads Development Program and a regional Transport Strategy. The Transport Strategy covers all the transport modes with the Roads Development Program analysing the roads sub-sector at a higher resolution. The objective is to identify regional priorities for transport sector development for the medium term in line with EAC development goals.

The Strategy has a ten-year timeframe, i.e. up to 2020. However, there are large potential developments which fall towards the end of and beyond that horizon and which should be accommodated in the structure of the future transport system. Although the study reviewed and makes recommendations on transportation, policy and institutional arrangements in the region, the Strategy is biased towards physical, immovable infrastructure. Fleet issues are only considered where transport equipment may be considered as stranded (rail rolling stock and lake ferries). Although this study considers transport delays, the parallel Transport Facilitation Study focuses on the reduction of non-tariff barriers in the broader sense.

This document is the Summary Strategy. It reflects the main findings as recorded in a three-part Final Report and documented in more detail in supporting Working Papers. Its purpose is to make the study outputs accessible by means of a non-technical, non-detailed narrative supported by graphical representation.

The Summary Strategy is supported by a three-part Final Report. Part I is the Study Context & Framework, Part II the Roads Development Program and Part III the EAC Regional Transport Strategy. The detailed analyses performed are documented in a number of working papers.

2. Project Study Area

The study area comprises the five countries of the EAC as well as the surrounding area (neighbouring states and regions) to ensure that transport planning within the region is contiguous with what happens beyond the EAC borders.

2.1 Geo-Security Setting

The EAC region is delimited by the Western edge of the Rift valley and associated lakes and mountains. The Eastern edge forms the Central Kenyan highlands, an escarpment that extends to the Western rim of Lake Nyasa.

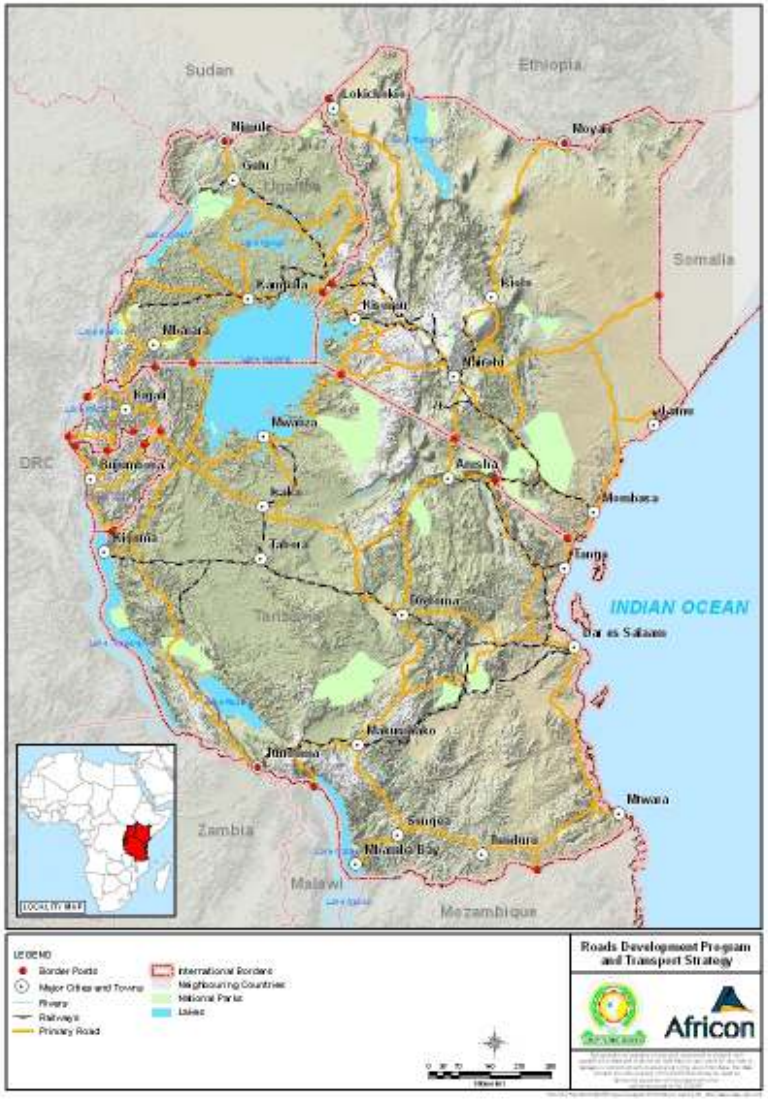
The three largest countries border Lake Victoria which historically was both part of the regional transport challenge and solution. The inhospitable North-East Kenyan lowlands is a natural barrier between the Kenyan and Ethiopian highlands and Somalia. Transport was until recently discouraged by the security situation in North-West Uganda, and still is periodically in the case of much of the Eastern DRC. The mountains and lakes on the Western rim form a physical barrier between the EAC and North-Eastern DRC. Katanga and South Kivu are shielded off by Lake Tanganyika. The Rovuma River was a transport barrier in the past but has recently been crossed by bridges in two locations.

2.2 Spatial Organisation

The EAC comprises five member states, but to obtain a sufficiently high resolution in transport planning and modeling, spatial data has to be analysed at the sub-national level. This was done at district level for the larger countries (Tanzania, Kenya and Uganda) and at provincial level for Rwanda and Burundi (where available).

External zones considered are the neighbouring countries of Somalia, Ethiopia, Sudan and the Democratic Republic of Congo. Zambia, Malawi and Mozambique are grouped together with other countries to the south to make up the 'Southern Africa' external zone. Central, Western and Northern Africa are combined into a single external zone of 'Rest of Africa', and the 'Rest of the World' represents all countries beyond Africa.

Main Geographical Features



Spatial Organisation Within & Around the EAC

2.3 International Transport Linkages

The EAC is tied into the world via marine and air transport.

The major container shipping routes around North-East Africa are between the Middle East/ South-East Asia and Europe through the Red Sea, with a thinner route around the Cape. North-South Indian Ocean routes carry relatively thin traffic. Vessel size is increasing leading to the development of hub ports. Smaller ports such as Mombasa and Dar es Salaam that cannot accommodate deep-draught, post-panamax vessels will continue to be feeder ports supporting hubs on the main East-West routes. Bulk cargo traffic is made up of resources from Africa, Australia and South America, increasingly direct towards China. Bulk cargo is very price sensitive and carried by dedicated vessels, so that the bulk shipping routes follow the cargo route.

Jomo Kenyatta International Airport (Nairobi) is the regional hub. It carries more than two thirds of the passenger traffic with neighbouring states, more than 90% of traffic with the rest of Africa and two thirds of the traffic with rest of the World (mainly Europe and the Middle East). Other significant entry points are Dar es Salaam and Entebbe, each carrying about one tenth of traffic accessing the region.

2.4 Regional Corridors

'Corridors' has become a key organising principle for transport and development. A corridor is the backbone surface transport route forming the scaffolding to which smaller, more localised access links are attached and aggregating the load off these feeder links. They are not just transport arterials, but also routes for development attracting complementary industrial and utility investments.

Major corridors linking the EAC to the rest of the Continent are the Dar es Salaam Corridor which links to the larger North-South Corridor and the Moyale-Addis Ababa Corridor. There are a further two established East-West corridors within the EAC (Northern and Central) as well as lower-trafficked North-South corridors (along Lake Tanganyika via Sumbawanga and along the Eastern shore of Lake Victoria via Sirari to Lokichokio).

EAC Regional Corridors

There are three new corridor initiatives at various stages of investigation (Lamu-Juba, Tanga-Arusha-Musoma and Songea-Mtwara), and a further route identified in this Strategy as a prospective corridor (Tororo-Gulu and beyond).

3. Main Land-Use & Settlement Features

3.1 Regional Population

The total EAC population is in the order of 125 million persons. Tanzania and Kenya each accounts for just less than 40% of the regional population, Uganda for just less than a third, and Rwanda and Burundi for the remaining fifth. The population is projected to grow at about 2.2%/ann., reaching 176 million by 2020.

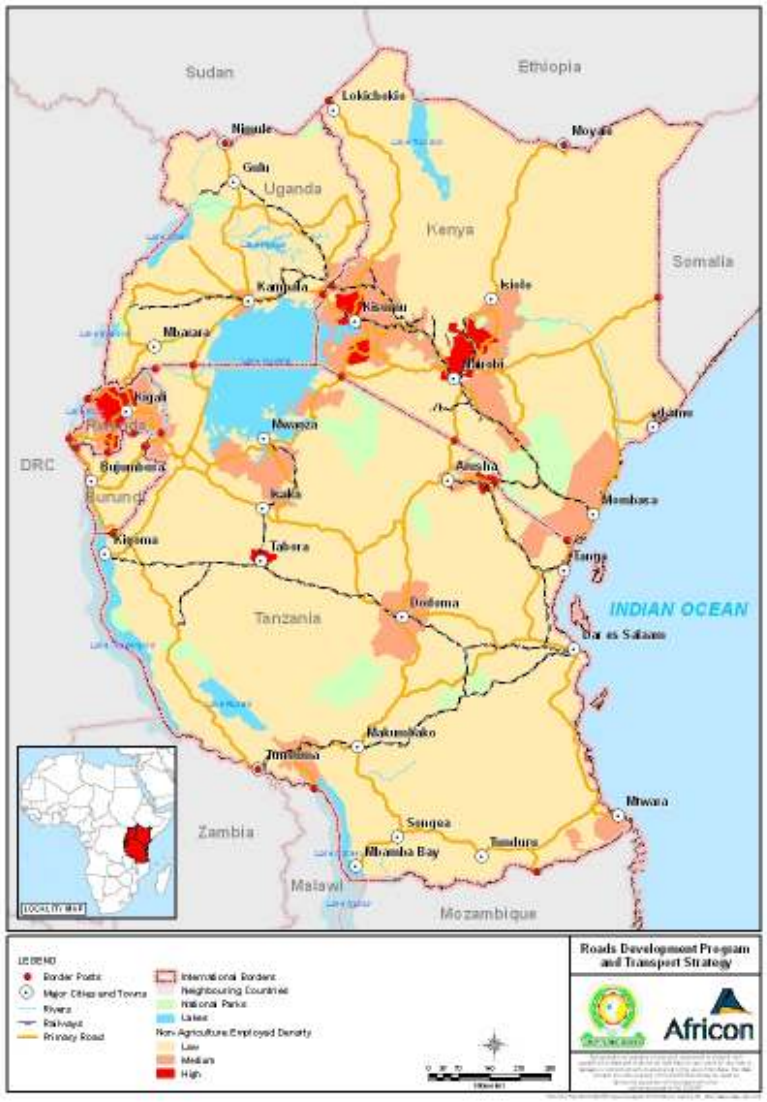
Major population concentrations are along the Northern Corridor and on the Central Corridor, especially from the South of Lake Victoria and into the Kagera Basin. There are large pockets of population in the West Nile, around Arusha and between lakes Tanganyika and Nyasa. Large parts of central Tanzania and the Turkana-Tana arch (Lamu Corridor) beyond the Kenya highlands are sparsely populated.

About two thirds of the regional population are economically active (i.e. employed or employable), one tenth of which employed in non-agriculture. The distribution of the non-agriculturally-employed population across the region follows the broad pattern of the total population, but much more condensed. Specific areas where the employment rate is low include the West Nile, the Rwenzoris and the Lake Victoria Western and Northern shores.

3.2 Land-use

The main agricultural areas are the arch around the top of Lake Victoria on the Northern Corridor, the Southern ends of the TAZARA and Sumbawanga corridors and pockets along the Central Corridor. The agricultural output is dominated by three crops, i.e. tubers, maize and bananas. The significant crops that would typically be exported are coffee and tea, and fish.

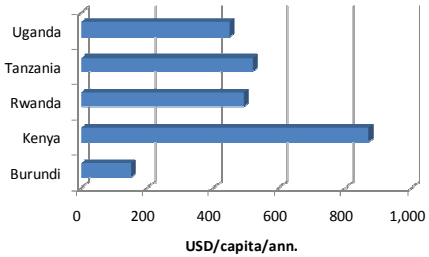
Non-Agriculture Employed



Agricultural Land-Use

3.3 Economy Size & Structure

The regional GDP in 2008 was in the order of USD 71 billion. Of this, Kenya made up somewhat more than 40%. Tanzania and Uganda together added half. Rwanda and Burundi made up the remaining tenth. In terms of GDP per capita, Rwanda, Tanzania and Uganda are at similar average income levels, whereas personal income in Kenya is three quarters higher and in Burundi, one third of the other three countries.



The services sector (including public services and tourism) dominates the regional economy, followed by agriculture at between a third and half of GDP. Industry makes up between one and two tenths of the national economies. The national economies are all classified as primary, i.e. occupied in the extraction and production of raw materials including agriculture and mining, and are likely to remain so over the timeframe of the Transport Strategy.

Existing mining in the region is concentrated in the greenstone belts south of Lake Victoria. There are commercial mineral and metals prospects on the Mtwara Corridor (coal and Uranium), Central Corridor (Gold, Nickel and Uranium) and Northern Corridor (mineral sands, soda ash and iron).

3.4 Expected Growth & Major New Developments

The EAC countries have all recently achieved quite dramatic growth rates, in most cases at or close to what could be seen as quite ambitious national development goals. The development goals countries have set for themselves provide the basis of the optimistic growth projection of economic growth of 8%/ann. The countries' actual recent growth achievements are the basis of a more conservative projection of 5%/ann.

Since the structure of the regional economies is not expected to change over the planning horizon, growth in transport demand will derive from the general, linear rate of growth. However, there are a number of individual developments mostly in the primary, extractive industries, which could contribute to step-type growth.

3.4.1 Mining Prospects

In mining, projects that will impact on the transport system would be those that generate bulk ores for export. On the Northern Corridor, there are a number of high-grade gold mining exploration and development ventures in the Ituri area of North-East DRC (Kilo-Moto, Zani-Kodo and Mongbwalu). These projects will generate some outbound traffic but their major transport requirement would be to handle the provisioning of the mines. A recent study has shown that the most feasible route would be via Gulu and the Mahagi border post.

The individual project that will have the biggest impact on the configuration of transport at the Western end of the Northern Corridor is the Mt Kodo iron ore deposit. Data on the project is scanty, but indications are that production levels could be between 25 to 50 Mtpa. This prospect still needs to be properly studied and developed, implying that its effect is only likely to realise beyond the ten-year timeframe of the Transport Strategy. However, it underscores the importance of the Ituri/West Nile nexus as a development node to be provided for in the vision for the regional transport system.

The Central Corridor is the most established mining area in the EAC, with gold and diamond mining activity concentrated in the greenstone belts South of Lake Victoria. Significant nickel deposits straddle the Tanzania-Burundi border, at Kabanga in Tanzania and Musongati and Muremera in Burundi. The economies of nickel imply that the mining output would be exported as nickel concentrate, implying that even though these are large deposits, the transport requirements would be moderate.

Major Mining Activity & Prospects

The major impacts of mining on the Central Corridor would likely be from developments in the Kivu provinces of the DRC. Collectively, these would contribute to in and outbound traffic via the EAC which cannot feasibly be evacuated Westwards through the DRC.

Beyond the EAC on the TAZARA Corridor is the Copperbelt, one of the largest global concentrations of this metal. Copper is concentrated and refined at source so that the export requirement is quite modest. In the case of the Copperbelt, export routes are legion, with options of transport (apart from Dar es Salaam) to Durban, Walvis Bay, Nacala and with the rehabilitation of the Benguela railway line nearly complete, soon also to Lobito.

There are significant coal deposits to be developed along the Mtwara Corridor, broadly distributed around Songea in South West Tanzania. The deposit is steam (thermal) coal, i.e. with a fairly low energy content, which probably defies the economics of long-distance transport. The preferred use of the resource is therefore conversion to electrical power and export in that form.

3.4.2 Petroleum Developments

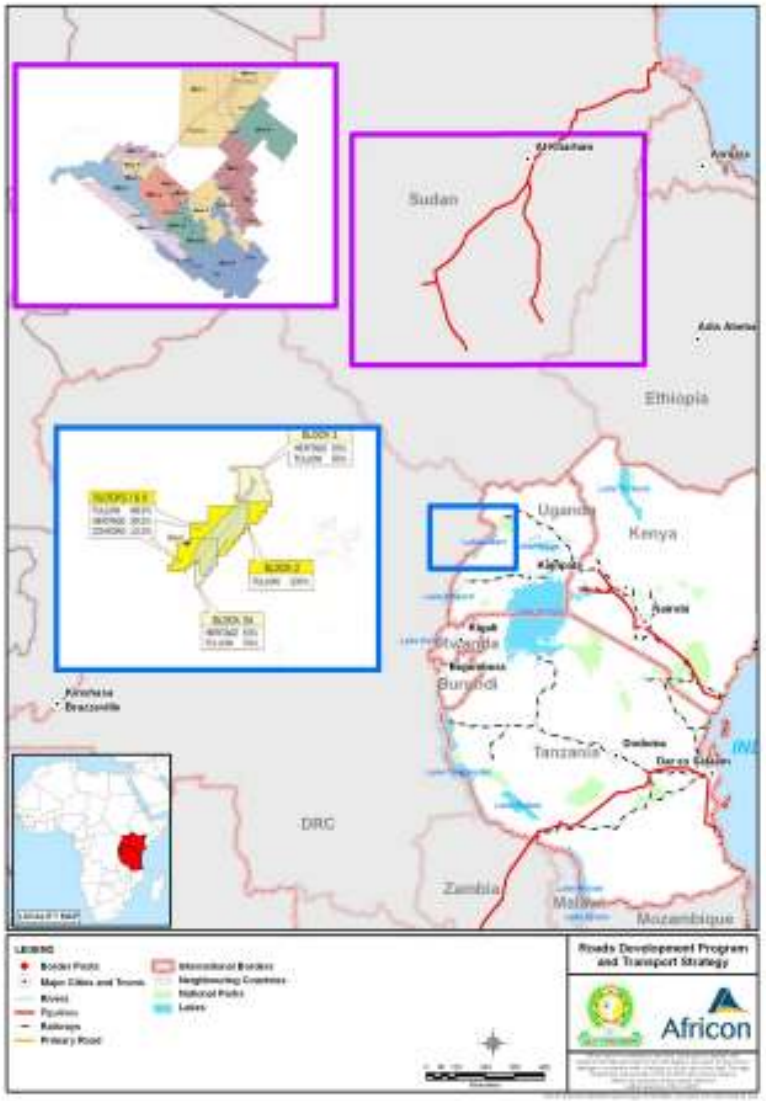
Existing oil production and recent oil finds are located towards the North-Western edge of the EAC and into Southern Sudan.

The Sudanese oil fields are in the centre of the country, straddling the possible future border between North and South Sudan. The total output is in the order of 525 000 bpd, made up of a variety of blends. All output is pumped to Port Sudan for export or Khartoum for domestic refining, in pipelines which are around 50% utilised currently. Port Sudan is located on the main East-West trade routes that pas through Suez.

The fields located south of the proposed border between North and South Sudan constitute in the order of half of the total current Sudanese production.

Further exploration and field development are taking place in three blocks in the South, but development has been held back by a

Petroleum Activity & Prospects



combination of licensing and security issues as well as negative drilling results.

In the Albertine Basin, the expectation is that production in the Uganda blocks should achieve 150 000 bpd by 2020. The DRC blocks have all been awarded for exploration, but some of these arrangements are under legal dispute and there as yet there are no indications of the likely production levels and programme.

3.4.3 Extra-Regional Political Developments

Indications are that Southern Sudan will shortly opt for independence from the North, and may align itself with the EAC. Over time, a South Sudan's transport linkages will reflect a balance of economic interests (maintaining the existing transport corridor via Port Sudan) and strategic interests in the form of appropriate alternative transport accesses to the Eastern seaboard.

Similarly, Ethiopia has an expressed interest in opening up alternative trading routes and sea accesses other than Red Sea coast, specifically to the Kenya coast.

On the EAC's Southern border, the construction of the two Unity bridges aims to overcome the historic transport barrier of the Rovuma River.barrier and to integrate and invigorate the area's economy.

4. Transport Demand

4.1 Regional Goods Trade the Driver of the Transport Strategy

This Transport Strategy focuses on 'regional' transport issues and requirements. It considers transport demand between EAC member states (intra-regional transport), between member states and their neighbours (extra-regional) and between member states and the rest of the World (international).

EAC goods trade flows amount to some 20 Mtpa. Trade between EAC member states makes up 1.0 Mtpa (5%), trade with neighbouring states another 1.0 Mtpa, with Southern Africa (SA) 1.4 Mtpa, with the rest of Africa (ROA) 2.1 Mtpa and the rest of the World (ROW) 14.6 Mtpa (73%).

The availability of statistics on regional passenger transport is poor. From the traffic surveys undertaken, it is estimated that road passenger traffic between the EAC countries amounts to some 4 mill. pax/ann. Road passenger traffic between the three most populous countries (Tanzania, Kenya and Uganda) makes up about two thirds. Passenger air traffic between the eight major airports within the EAC is about 5 mill. pax/ann. Traffic between Nairobi, Dar es Salaam and Entebbe makes up a quarter, and traffic between Nairobi and Mombasa another quarter. Rail passenger and lake ferry traffic contribute negligibly to regional passenger transport.

Transport in the region therefore comprises goods and people, each made up of regional and local transport, with the Transport Strategy focusing on the 'regional' 'goods' transport quadrant. Although modest, the impacts of purely domestic and local cross-border as well as passenger traffic are taken into account by appropriately upscaling the total demand when analysing the network capacity and condition.

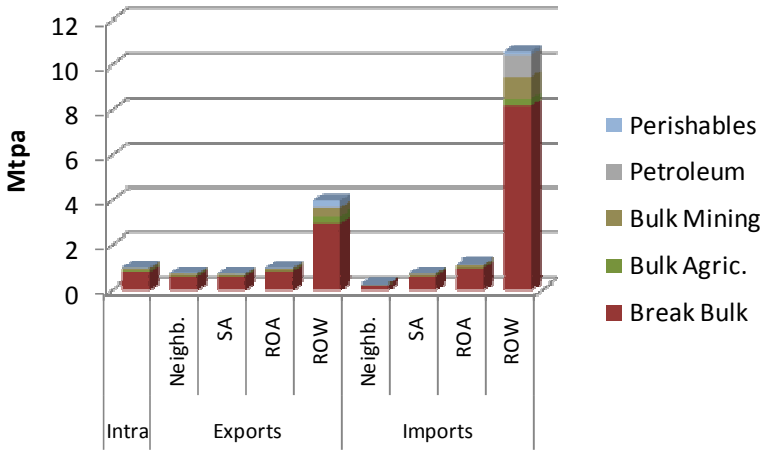
4.2 Regional Goods Trade Profile

EAC is a net importer with 2 kg of goods imported for every 1 kg exported. Trade with Southern Africa and the Rest of Africa is balanced. With neighbouring countries, EAC exports make up three quarters of trade. The overall trade imbalance derives from the rest of the World from which EAC imports 3 kg for every 1 kg exported.

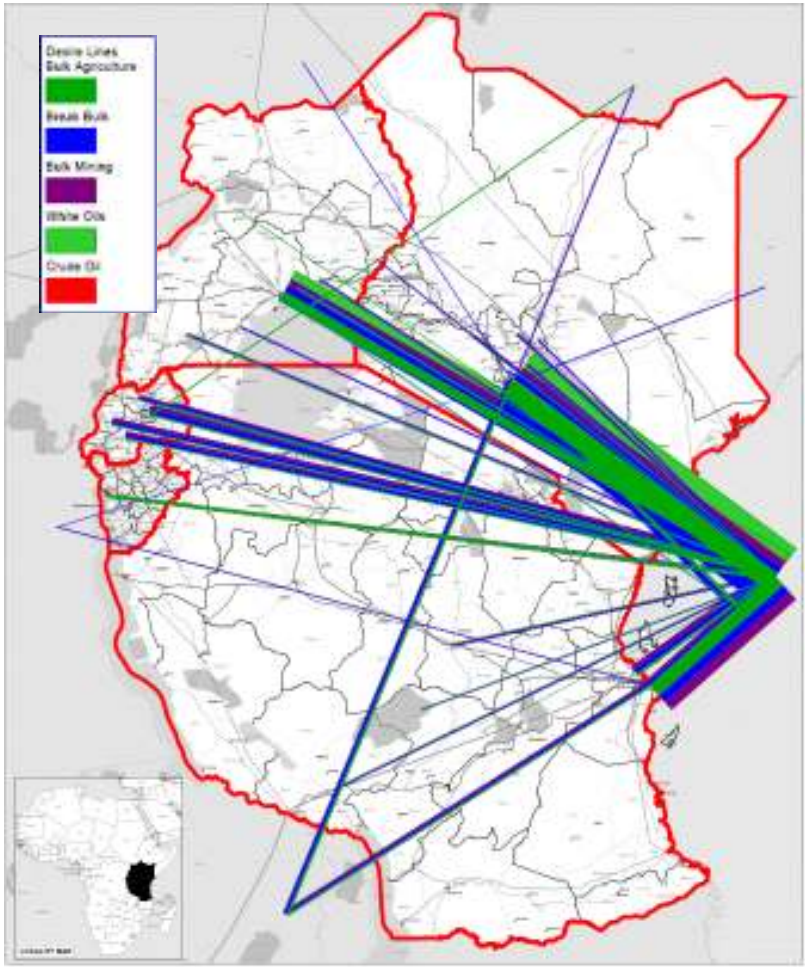
Regional trade originates from and is attracted to a handful of major centres located along the Northern Corridor, and to a lesser extent on the Central and TAZARA corridors.

Break-bulk makes up more than three quarters of the volume of trade and the other groupings between one twentieth and one tenth each. Directionally, break-bulk and bulk mining follow the overall pattern of goods trade with imports at double the volume of exports. For perishables, exports are double imports. Petroleum is mostly imported, including crude for refining in Mombasa and Ndola (via Dar es Salaam). The split between regional crude imports and products imports is practically even.

Goods Trade by Type & Direction



Relative Trade Volumes & Desire Lines



4.3 Demand Growth Scenarios & Projections

The EAC member state economies are expected to continue their robust growth, at a rate of between 5% to 8%/ann. Transport, as a derived demand, would typically be expected to grow faster than the general economy. Time series transport data is generally lacking for member states. Where multiple road traffic counts are available growth rates bunch around 0%/ann, but with a high variance. For purposes of assessing future transport requirements the traffic growth rates are assumed in the same band as for the overall economy (5%/ann. conservative and 8%/ann. optimistic).

In addition to the background growth, there are a number of specific developments in and around the EAC that will add step-wise to transport demand. The major ones include:

- South Sudan trade could go via the EAC, at similar volumes to the Burundi trade from about 2012 (optimistic) or 2015 (conservative).

- Trade to/from Ethiopia via Kenya is assumed as the same as Burundi exports (about 0.25 Mtpa) and double that for imports
- Nickel mining on the Tanzania-Burundi border would commence in 2015 (optimistic) or 2020 (conservative).
- Under either scenario, gold production should commence by 2015 in the Kodo area. Gold prospecting, mine development and production in the Kivu Provinces and Orientale in the Eastern DRC would generate traffic from 2012. Trade diversion from Ethiopia via the EAC could start by 2012.
- Coal exports from the Songea area (South-West Tanzania) are included in the background growth and not in the step growth because of the uncertainty of whether the steam (thermal) coal deposit would justify bulk export infrastructure and operations.

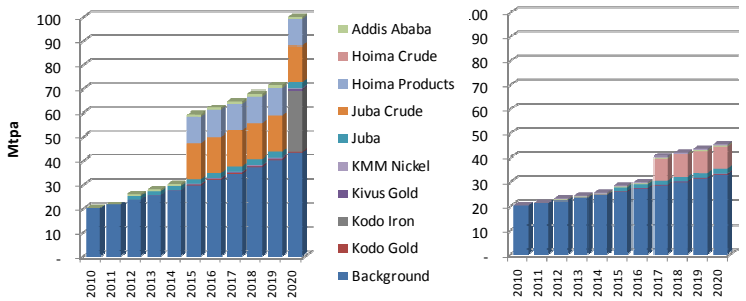
There are three paradigm-shifting potential developments towards the North-West of the EAC region. Whereas much of the optimistic background growth could be accommodated by upgrading existing infrastructure, these developments would require significant new investment in the regional transport system:

- Petroleum exports from South Sudan (North of Juba). Under the conservative transport demand scenario, it is assumed that South Sudanese crude will continue to exit via Port Sudan, and that Lake Albert output would be exported as crude. Optimistically, the Sudanese crude will exit via the EAC, probably via the Kenya coast.
- Under the optimistic scenario, crude from Lake Albert will be refined locally (Hoima) and distributed within the EAC via Kampala. Conservatively, crude will be exported.
- Mt Kodo (North-Eastern DRC) iron ore deposits would be mined by 2020 (optimistic) or not yet in the timeframe of the Transport Strategy.

Of the above paradigm-shifting developments, the ones that are the most uncertain are Mt Kodo and the South Sudan crude exports. There is still significant development work required at Mt Kodo, and the geo-political situation still has to play out before the preferred crude oil export route is known. To accommodate this uncertainty, the Transport Strategy presents 'with' and 'without' responses to these developments.

Under the conservative optimistic scenario, goods trade could increase from the current 20 Mtpa to about 75 Mtpa (excluding Mt Kodo iron ore), and to 45 Mtpa in the conservative case.

Optimistic & Conservative Goods Transport Scenarios



5. Performance of Transport System

5.1 Regional Transport Network

The major links of East Africa with the rest of the World is via the sea ports of Mombasa and Dar es Salaam, and the eight major airports of Jomo Kenyatta (Nairobi), Julius Nyerere (Dar es Salaam) and Entebbe. Other main airports which provide international and intra-regional access are Kigali, Bujumbura, Moi (Mombasa), Kilimanjaro (Arusha) and Zanzibar.

Surface transport modes provide the main transport links with neighbouring countries and within the EAC. The regional roads network (roads on corridors) comprises about 15 000 km. There are about 8 100 km of rail of which about 6 000 km is active. Pipelines contribute 2 200 km to the network, excluding the TAZAMA section in Zambia. Ports on Lake Victoria (Mwanza, Kisumu and Port Bell) and Lake Tanganyika (Bujumbura and Kigoma) complete the regional transport network.

5.2 Demand Assignment

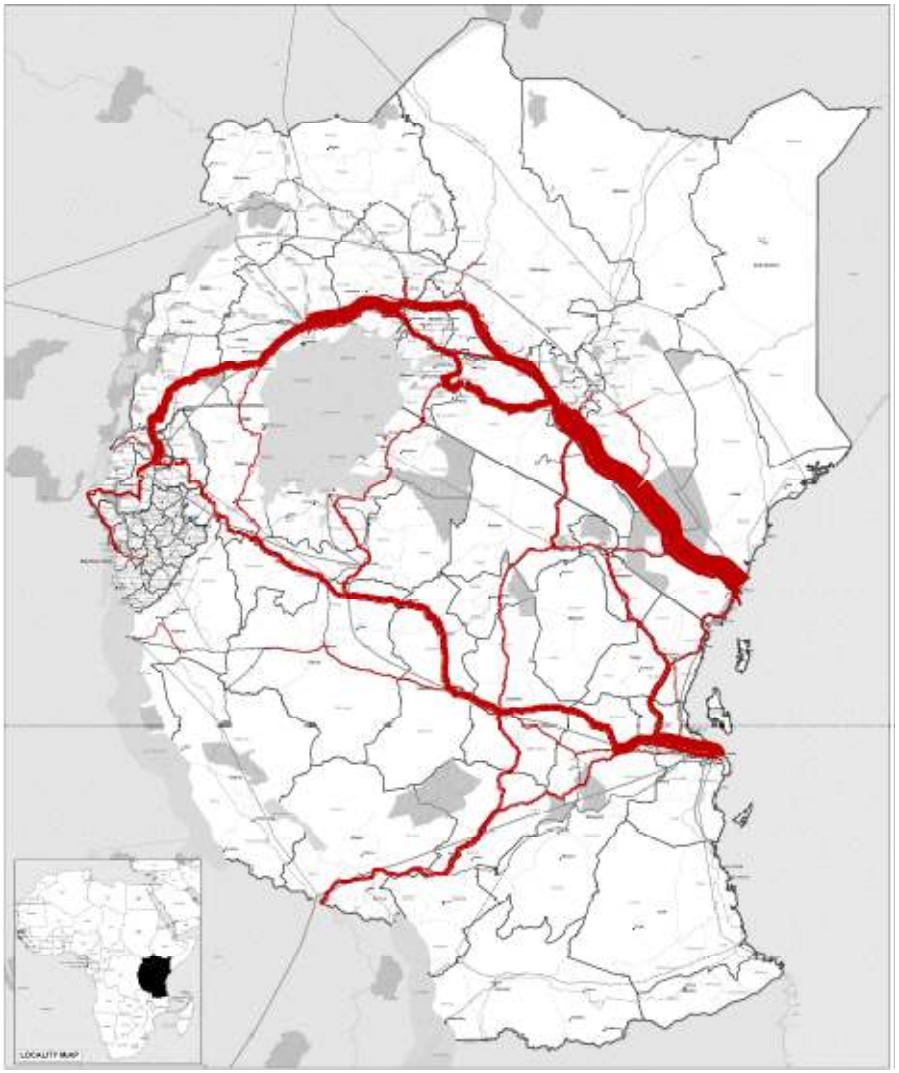
A transport demand model was developed for terrestrial freight transport in the EAC. The purpose of the model is simulate how trade assigns (i.e. distributes) over the transport network based on route and mode preferences. Preferred paths are those with the lowest relative impedance as determined by transport cost, time and behavioural factors. The results of the trade assignment process are validated with reference to the actual traffic as reported by the member states and confirmed by means of independent traffic counts.

At the overarching regional level that the model is designed for, trade assigns accurately based on direct transport cost and travel time. Minor adjustments were made to fine tune the results, and these point to areas where considerations other than purely transport issues affect the choice of transport paths. Firstly, over-and-above time delays experienced, traffic attempts to avoid border posts and would rather travel a longer distance to avoid crossing a border. Secondly, there exists a 'cordon' (Kibondo–Kobero–Rusumo) where something other than purely transport considerations shields much of the trade with Rwanda and Burundi from the Central Corridor and diverts it onto the longer Northern Corridor. This may have to do with perceived delays or other barriers in this general area. Thirdly, a similar virtual blockage in the Singida area of Tanzania contributes to explaining the fact that there is less traffic on the Central Corridor than would otherwise have been expected. Again, this is a constraint in the system which cannot be explained by the available data, and could have to do with a perceived shortcoming of the roads in this area. A smaller constraint around Taveta (possibly the road condition of this link) limits the traffic that would have transferred between the Northern and Central corridors.

5.3 Freight Distribution

The roads mode dominates by carrying 80% of the regional ton-km.

Assigned Goods Traffic



Pipelines carry 10% and rail 8%. The main East-West corridors carry the bulk of trade, with 48% on the Northern Corridor, 22% on the Central Corridor and 10% on the TAZARA Corridor. The North-South corridors carry a quarter of the trade.

5.4 Infrastructure Constraints

The following map points out where capacity constraints are experienced at present. The green bands show infrastructure that is less than 60% utilised, the brown band between 60% and 80% and the red band more than 80%. The red areas require attention already, and the brown is a warning signal for looming intervention.

The major constraints are experienced at the two gateway ports, specifically Mombasa. On the port side, Mombasa faces issues related to the lack of depth in the approach channel and alongside berths. There are also pipeline distribution constraints in the oil terminal. The berth occupancy factor (a measure of inefficiency) substantially exceeds international norms. Waiting time per ship is between two and three days.

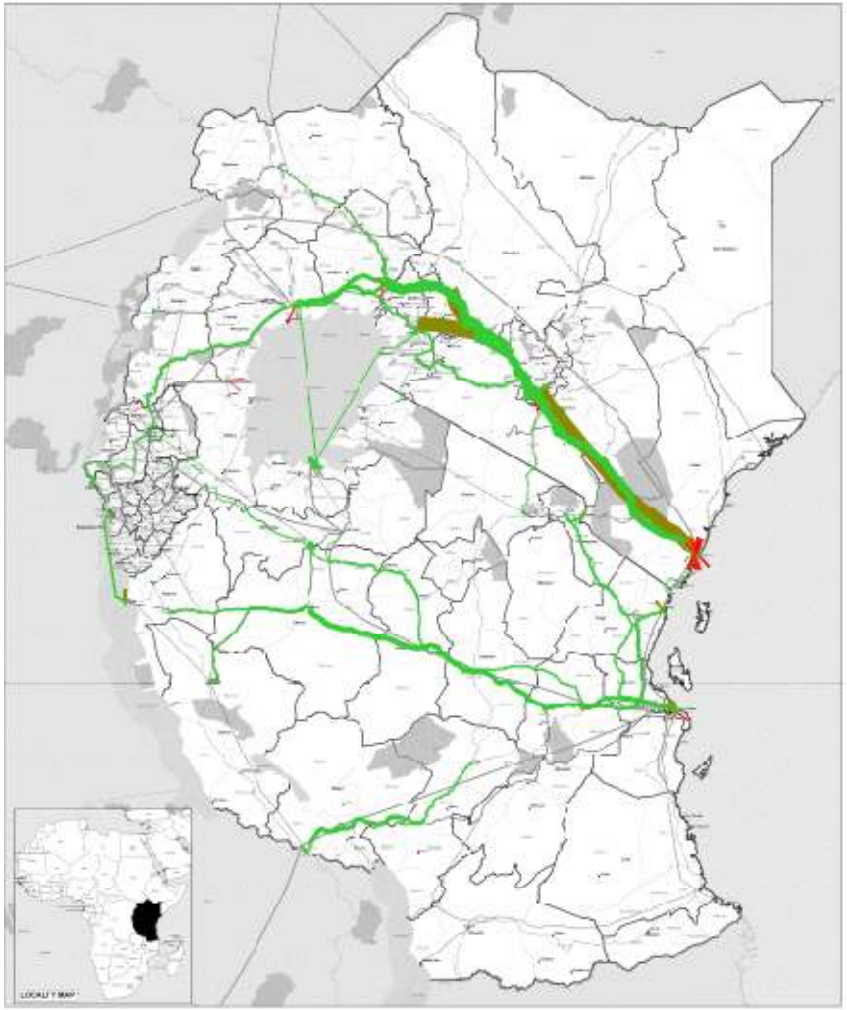
Rail transfer points in general and some border posts also display shortcomings. The Kenya Pipeline Company pipeline shows impending capacity shortage, but this is an indication of fairly tight design standard rather than an actual insufficient capacity.

5.4.1 Roads

The level of service on a road is the result of the interaction between the capacity of a roadway segment, its physical condition and the traffic it carries. Although the typical design level is higher, the roads analysis is based on LOS (level of service) 'D', i.e. a constrained flow with high passing demand and low passing capacity with flows well below the design speed limit.

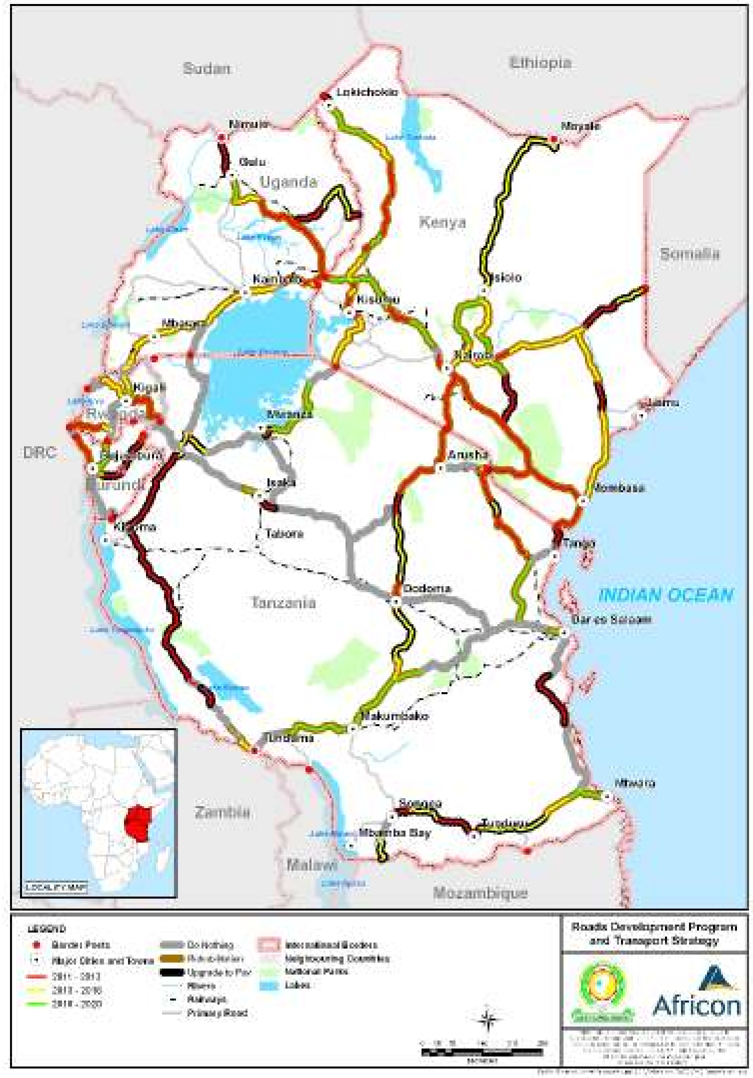
A finer analysis of roads *capacity* constraints was carried out by means of the First Order Network Assessment (FONA) process. Presently, 34% of the network operates at LOS B (good), 39% at LOS C (generally acceptable) and 16% at LOS D (the benchmark applied in this analysis).

Regional Volume vs Capacity Constraints



FONA Road Capacity Results 2020 (Optimistic Growth)

Roads Condition Technical Needs Analysis



The optimistic growth scenario would result in only slightly lower LOS, with LOS C at 35% and LOS D at 17%. The overall picture masks poor capacity results on especially the major corridors. The Northern Corridor is already at 37% LOS C and 42% LOS D, the latter projected to rise to 56% by 2020, and the Central Corridor is at 40% LOS C and 40% LOS D.

The intervention triggered when LOS falls below D is to add a lane or a passing lane, the length of which is determined by the terrain.

The LOS on the main EAC corridors compare badly with other main routes further South, specifically the N3 (Johannesburg-Durban) and N4 (Johannesburg-Maputo) corridors which were previously modeled in FONA. Although much heavier trafficked, the N3 operates at LOS A for 59% and the N4 at LOS A or B for 48% of its length.

Road *condition* was assessed using dTIMS, an asset management optimisation tool incorporating road deterioration algorithms based on HDM (Highway Design Manual) principles. Based on riding quality (roughness) and the overall condition (Visual Condition Index or VCI) of roads, each road segment was categorised as 'sound', 'warning' or 'severe'. Of the regional paved roads, about 1 000 km require immediate remedial intervention to reinstate them to functional levels, and 1 700 km are currently operating under a 'warning' state indicating a nearing need for rehabilitation due to pavement deterioration. About 27% of the network is unpaved.

Pavement performance is principally a function of the combined effects of traffic and weather, and future condition was modelled applying a pavement deterioration model. For paved roads, a rehabilitation repair action (intervention treatment) was triggered once its overall condition has deteriorated beyond the point where preventive and routine maintenance can uphold the pavement at a functional level. For gravel roads the appropriate response is to 'upgrade to paved standard'.

5.4.2 Rail

The rail infrastructure capacity was derived from standard track design parameters for each corridor, as well as operating considerations such as headway and availability of rolling stock. Currently much of the efficiency in operating the system is lost due to speed restrictions and unavailability of rolling stock.

On the Northern Corridor (RVR system), rail is performing at about 75% of its original design capacity. The major underperforming links are Jinja-Kampala and Tororo-Pakwach. Above-rail (rolling stock) capacity is only 40% of the track capacity. The Central Corridor rail (TRL) is performing at 51% of its design capacity. The major underperforming link is Kaliua-Mpanda. The TAZARA line is at 41% of its design capacity.

The major new rail projects are the KRC initiative to convert regional rail to standard gauge with resultant improvement in operating speed and capacity. A rail line is under consideration for the proposed Juba-Lamu Corridor, which could also be extended to Moyale (Ethiopia). Other rail projects include the Isaka-Kigali line and railway development in the Kagera Basin.

5.4.3 Ports

Port capacity is determined with reference to the Berth Occupancy Factor (BOF) and waiting days per ship, with a higher BOF and lower waiting days implying higher capacity.

The major sea port in the region is Mombasa on the Northern Corridor. Although there are port (approach channel) and a variety of terminal issues, it is also the port with the greatest expansion potential in the region. Except for the break-Bulk terminals, Mombasa operates at above-norm BOF, with waiting time of between two and three days.

On the Central Corridor, Port Dar Es Salaam is suffering a lag in the development and provision of new facilities, resulting mainly from physical constraints (lack of deep water berths and land space behind berths) but also administrative and financial issues. The constraints are particularly acute at the container terminal. BOF is also above international norms (except for break-bulk) and waiting time averages between three and four days.

Transport on Lake Victoria is constrained at present with only one ferry operational and with the infrastructure of most ferry stations in poor condition or non operational. In general, road links in particular and rail links around Lake Victoria have overtaken the use of the lake transport, with the exception of their use for local distribution, mostly related to the transit time incurred by the inter-modal links when using lake transport. The absence of alternative transport options around Lake Tanganyika makes lake transport there more attractive.

Significant expansions are planned at Mombasa, and to a lesser extent at Dar es Salaam. A new port is planned at Lamu. The development of Port Mtwara would depend on the feasibility of developing a rail link from Songea. As noted before, the type of coal (thermal) that would be exported from there would count against the commercial feasibility of linking the coal fields by rail to the port.

As was shown recently with the political uncertainty in Kenya, having only two medium sized ports makes the region vulnerable to events around those ports. The major options for port diversification are Lamu and Tanga. An attractive option is to have specialised ports that cater for specific (bulk) cargoes, thereby freeing up the main ports specifically to handle more containers and improving efficiencies in these ports.

The Strategy foresees the development of Lamu for crude oil and bulk mineral exports. The potential of Tanga as a relief port are limited, it being crowded in by the town and its shallow draught. With investment in machinery, lighters and tugs, the volumes of the port could be increased but not to the levels required to provide an alternative to Dar Es Salaam. Due mainly to these identified restrictions, a new port at Mwambani Bay is being investigated.

5.4.4 Pipelines

There are two main crude and petroleum products pipelines in East Africa. The KPLC system is in good condition from Mombasa to Nairobi. Hydraulic line constraints on Line 2 (Nairobi-Eldoret) and Line 3 (Sinendet-Kisumu) are presently being addressed. The TAZAMA pipeline was originally designed for products but now carries crude exclusively. It is in an aged condition and requires reinvestment.

Major new petroleum pipeline developments relate to the potential export of crude from South Sudan and the distribution of products or export of crude from Lake Albert. The potential of a refinery at Hoima has held back progress on extending the KPC Line 2 to Kampala, as exporting products from Uganda would require the line to operate in reverse.

Other projects that have been mooted are extending the KPC line towards Kigali, and developing a products line from Dar es Salaam to Mwanza. In the EAC most petroleum products are consumed by the land-locked capital cities, but for Tanzania, the port city of Dar es Salaam consumers more than half. Excluding the coastal consumption, up-country demand on the Central Corridor makes up only 15% of regional petroleum consumption.

5.4.5 Airports & Airspace

The airports assessment covered the major airports with international links. that Capacity at regional airports was assessed on the 'airside' (runways, taxiways and apron areas) and 'landside' (terminal facilities). The reference LOS is 'C' as established by IATA, i.e. a 'good level of service; conditions of stable flow, acceptable delays and good levels of comfort'.

On the Northern Corridor, Jomo Kenyatta International Airport (Nairobi) is the main regional hub. Landside facilities are undersized and perform below LOS C, which are currently being addressed by the JKIA expansion plan. There are no theoretical capacity issues on the airside, although there is inadequate airspace capacity due to outdated equipment and ATC-related issues. At Moi International Airport (Mombasa), many of the terminal facilities were operating close to the limit of their capacity, whist others were undersized. Entebbe International Airport the existing terminal and airside facilities are adequately sized. Kigali International Airport has terminal constraints. The existing airport will be replaced at Bugasero in the near future.

At Julius Nyerere International Airport (Dar es Salaam) on the Central Corridor, terminal facilities are adequately sized and the airside operates well within operating capacity ranges. Terminal capacity at Zanzibar International Airport is constrained. The terminal at Bujumbura International Airport is insufficient to handle the peak period passenger demand.

Kilimanjaro Airport (Arusha) on the Arusha Corridor has little capacity to accommodate future increases on the landside.

Airports along the Gulu Corridor was not specifically analysed, although the Strategy points out that this area could be of major importance to the region. The Uganda CAA has designated Gulu Airport as an entry and exit point to boost tourism and regional trade and is undertaking a master plan study for the airport.

Currently, air traffic and navigation services are provided by service providers in each of the partner states. In terms of the EAC Treaty, the Community has been investigating the feasibility of establishing a regional upper flight information region (UFIR) to be controlled by one upper area control centre (UACC). It was found that Implementation of the UFIR/UACC would enhance the efficiency and effectiveness of upper airspace operations for both the users and service providers.

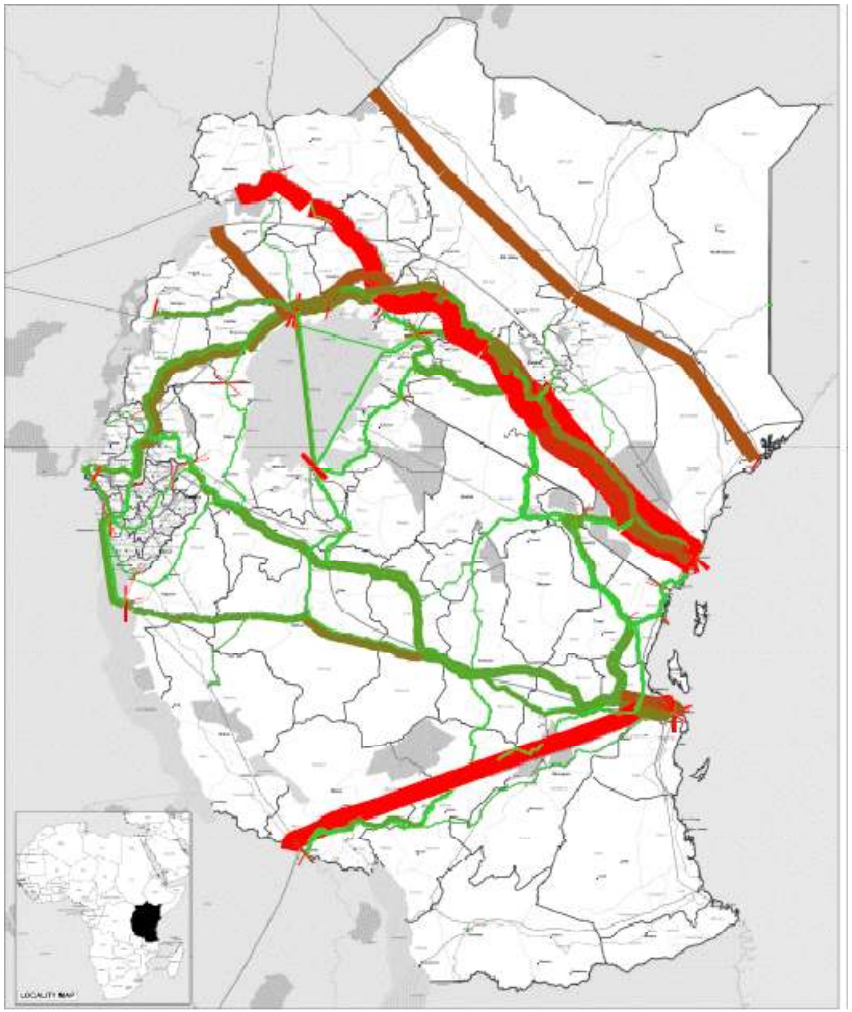
6. Projected System Evolution

6.1 Optimistic Scenario

The optimistic growth scenario would place some strain on the existing transport system. The likelihood and timing of iron ore exports from Mt Kodo are uncertain at this stage, thus without this component of demand, the system constraints are projected to be as shown below.

- Roads. The major part of the Northern Corridor (Mombasa-Nairobi-Kampala) needs to be doubled. Capacity at the Malaba border post needs to be substantially increased
- Rail. The original design capacity of the RVR network from Mombasa to Tororo needs to be reinstated. There is also the possibility of dualing the existing line

Optimistic Scenario (excluding Mt Kodo) Volume vs Capacity Constraints



- Pipelines. Pipelines are required to evacuate crude oil from Southern Sudan (probably to Lamu) and petroleum products from Hoima (to Kampala and beyond)
- Sea Ports.
    - Port Mombasa: substantial additional capacity to handle petroleum products, break-bulk (containers) and bulk mining. No further capacity is required for bulk agriculture
    - Port Dar es Salaam: substantial additional capacity for petroleum products, break-bulk and bulk mining. Capacity for crude oil and bulk agriculture remains adequate
    - Port Lamu: establish substantial crude oil export capacity.
- Rail transfer points. The handling capacity of all rail transfer points (at sea ports, lake ports and rail stations) needs to be increased
- General network impedance relief. Current initiatives to unblock the Central Corridor around Singida need to be completed. The border posts between the Kagera area and the Central Corridor as well as Taveta need to be reviewed to determine how constraints there can be relieved.

6.2 Including Mt Kodo Iron Ore Exports

Including the potential iron ore exports from Mt Kodo introduces significant additional demand that cannot be accommodated on the existing transport network, even after the modifications indicated above.

The volumes are such that the appropriate transport mode would be rail. The marine shipping point could be either Mombasa or Lamu. If Mombasa, the port would have to be expanded to handle the iron ore export stream. The RVR rail system would have to be upgraded (probably to standard gauge) along the northern Corridor from Mombasa to Tororo and from there along the Gulu Corridor to Pakwach. A new link would be required via Arua and into the DRC.

There are various rail route alternatives for the Mt Kodo output to be exported via Lamu. It could be routed via the Lamu Corridor, or via a new line directly from Nairobi, or via Mombasa. Of the three options, the first would be more than double the cost of the Nairobi-Lamu link, and that link would be double the cost of a Mombasa-Lamu link. Apart from its cost advantages, a Mombasa-Lamu link would justify increasing the capacity on the major part of the existing RVR network – which would complement the regional standard gauge plan. Over-and-above the crude oil export facility required for Southern Sudan crude, Lamu Port would additionally be developed as a single product bulk ore loading facility.

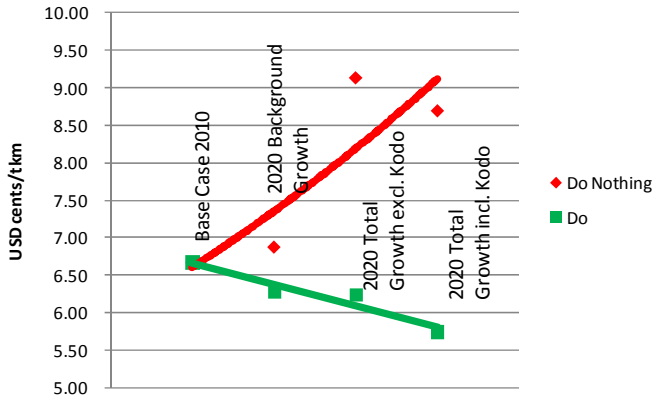
Routing Options to Lamu for Mt Kodo Exports

6.3 Benefits of Investing in Identified Areas

Intervening in the areas identified above would reduce the total direct operating cost of transport as shown below. This is achieved by the

systematic attraction and diversion of traffic to appropriate modes of which the capacity are kept ahead of demand. The figure indicates at various degrees of demand growth how the Strategy response protects the transport cost, while at the same time showing what the no-response cost increase would have been.

Impact on Transport Unit Cost



6.4 Strategic and Other Projects

It should be noted that the above list excludes a number of initiatives that have been identified as regionally important and which are being pursued by important role players in the EAC region. Many of these projects are of a 'strategic' nature. Their purpose is not purely to address present-day transport economic issues and requirements. They are motivated for their impact on changing the structure of the regional transport network, for example by providing alternative access to land-locked countries, opening up trade opportunities, supporting peace and security initiatives, stimulating development in depressed areas and other goals not captured in the transport economics paradigm underlying the previous list of headline projects. Prominent projects of a strategic nature which are not included in the list of economic projects include:

- The Lamu Corridor. There is transport merit in transferring crude to Lamu and developing the port as an export point for crude and ore. These cargoes are subject to competition from another port (crude oil) or are not yet proven.
- Developing the *Nairobi-Moyale (Ethiopia) link* on the Namanga Corridor is an objective of Kenya. The viability of this route would depend on the willingness of Ethiopia to trade along a much longer link than the alternatives offered on the Red Sea coast
- The *Arusha Corridor* has been promoted as an alternative access route to Uganda. There are relatively low traffic levels between the Central and Northern corridors at present. To/from Dar es Salaam, the Central Corridor would compete well with an Arusha Corridor, and to/from Mombasa, the Northern Corridor would remain the preferred routing
- Although there are strategic considerations supporting it, the recorded transport demand in the Rwanda/Burundi area alone would not be sufficient to support the *Isaka-Kigali railway* and associated branch developments. The existing Central Corridor rail system provides adequate capacity for the demand identified in this study, and (although in need of repair) also does not need to be converted to standard gauge.
- *Rail ferries* are historically an integral part of the transport system. Around Lake Victoria, a portfolio of other transport solutions has developed. This situation does not apply to Lake Tanganyika where lake transport is likely to remain an important part of the transport options.

7. Project Identification & Prioritisation

7.1 Project Long-List

Projects to consider in the regional Transport Strategy were nominated by regional stakeholders (some 160 projects) and identified by means of technical analysis by the study team. Projects include infrastructure (physical) projects in the form of studies, preparation for construction

and actual works, as well as non-physical projects covering policy, institutional aspects and capacity building.

7.2 Screening & Prioritisation

An EAC specific was developed to prioritise projects, i.e. a multi-criteria analysis assessment based on the development directives of the region.

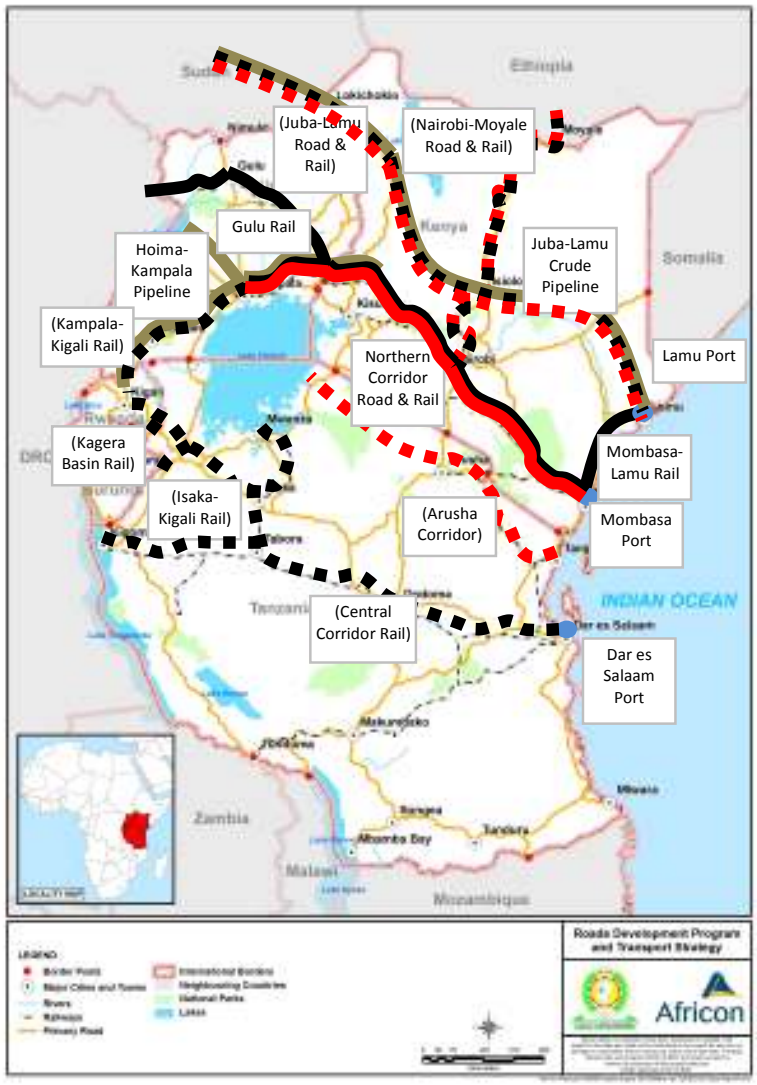
Projects on the long list were initially screened to ensure that they fall within the EAC and matched the intervention focus areas identified in the technical analysis. A next screening ensured that projects comply with the region's spatial integration criteria (i.e. are located in regional corridors).

The short list was then prioritised. The first test was for the absolute economic impact, for which projected trade volumes was used as proxy. Projects associated with higher trade flows (tpa) were scored higher than projects with lower flows. The second test was for 'value-for-money', i.e. impact in relation to the cost of the project (USD/t). The impact and VFM measures were given the same weight. It should be noted that multi-sector studies such as corridor investigations were not subjected to the impact and VFM tests, but placed on the short list directly.

Since the roads projects were developed by means of more detailed analysis, there is a target commencement date for each one. For roads therefore, there is a priority relevant to other transport projects, as well as an ideal date for the intervention.

The Strategy is biased towards initiatives that make sense in terms of the impact and VFM tests. In many cases, projects that are also strategically important are prioritised following this approach; but ones that do not have good economic (as well as strategic) prospects fall to the bottom of the list.

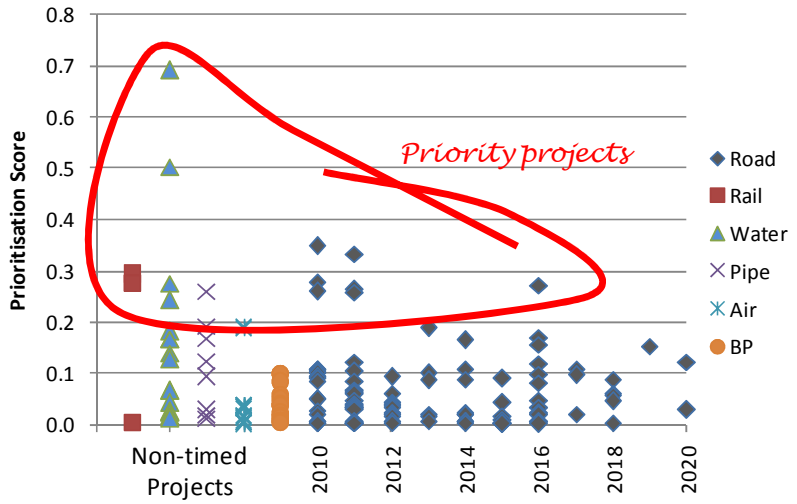
Key Interventions Required



7.3 Prioritisation Results

The maximum prioritisation score that can be achieved is "1" and the lowest "0". The highest priority projects cover the water (ports), road and rail sectors.

Summary Project Prioritisation



The priority projects (from the highest importance down, for priority scores above 0.2) are:

- Mombasa Port dredging
- Mombasa to Voi: road capacity upgrade
- Mombasa to Voi: road rehabilitation
- Voi to Kitui road intersection: capacity upgrade
- Lamu Port development for mining bulk
- Mombasa to Kampala standard gauge railway line
- Tororo to Pakwach standard gauge railway line
- Kodo to Arua to Pakwach standard gauge railway line
- Mombasa to Lamu standard gauge railway line
- Kitui road intersection to Athi River: capacity upgrade
- Bugiri to Jinja: road capacity upgrade
- Voi to Athi River: road rehabilitation
- Mombasa Port second container terminal.

8. Strategy Budget

The budget for all the interventions identified in the Transport Strategy amounts to USD 23.2 billion. Of this, 50% is for projects on the Northern Corridor and 16% on the Gulu corridor. Rail makes up 54% and roads 26%.

There is no pre-determined funding envelope. The investment required per priority band as shown below allows the EAC to pick off the most important projects up to the allowable budget:

Investment by Priority Band (USD mill.)

Priority	Road	Rail	Water	Pipe	Air	BP	Multi	Total	Exclude
Studies	3	0	2	1	44		16	65	65
>0.3	83	-	101	-	-	-	1	185	185
>0.2	168	11,025	1,512	1	-	-	-	12,707	1,182
>0.1	340	-	219	1,481	193	-	1	2,233	853
>0.0	5,349	1,504	112	641	280	89	-	7,976	7,976
Total	5,943	12,530	1,946	2,124	517	89	17	23,166	10,261
Exclude	5,943	1,505	1,346	844	517	89	17	10,261	

Packing the projects into prioritised bands shows that USD 185 mill. of projects fall in the top band and USD 12.7 bill. in the second band.

The budget includes the upgrading of the RVR rail to standard gauge from Mombasa to Kampala, from Tororo to Packwach and beyond, and from

Mombasa to Lamu. It also includes the construction of the Juba-Lamu pipeline and the development of the Lamu port for both crude oil and bulk mining exports. Given the uncertainties surrounding all of these projects, excluding them from the budget would leave a total budget of USD 10.3 bill. – USD 185 mill. in the top priority band and USD 1.2 bill. in the next band. However, if the RVR standard gauge plan is not carried out, the existing line would have to be rehabilitated, at an estimated cost of USD 2.2 bill.

The complete projects short list is attached to this Strategy.

9. Strategy Implementation

9.1 Policy & Institutional Reform

The Transport Strategy is based on understanding the regional transport demand and strategic transport requirements, and the identification of projects responding to these needs. It also entails outlining the environment required to foster implementation, specifically the transport policy and institutional arrangements.

The policy principles proposed are those developed under a recent initiative of the Eastern and Southern Africa (ESA) region of which the EAC is a member. The key principles are to pursue increased regional integration up to the point where member states engage in joint regional initiatives, based on a transport and development corridor approach. The transport sector should be operated according to good commercial practice, encouraging competition where possible and regulating non-competitive parts. Users should contribute financially to the services received. Transport decisions should be made on rational economic grounds with the aim of reducing the total transport cost, i.e. to the user, transport providers and others.

To implement this policy, the EAC should play a co-ordinating and facilitating role. Specialist technical committees will meet to set the agenda for each mode at the regional level. Regional safety and technical regulators will oversee each mode, building on initiatives such as CASSOA. National commercial regulators will supervise the efficiency, financial performance and service standards of monopoly infrastructure providers. Regional licensing boards (market entry regulators) will issue rights to those transport service providers providing regional services in the liberalised market, as already conceptualised in the form of the JTC on Roads Transport and the JCA for aviation. There will be specialist regional agencies for search and rescue and accident investigation.

There are two corridor management agencies in place on the two major regional corridors (NCTTCA and CCTFA). These bodies are established under multi-lateral agreements, and should be more closely aligned with the EAC that has the same mandate of facilitating cross-border trade and integration.

9.2 Preparation and Funding

Although there are some exceptions where master plans and feasibility studies have been carried out, the projects identified and prioritised under this Strategy are generally concepts only. They need to be properly prepared for funding and implementation.

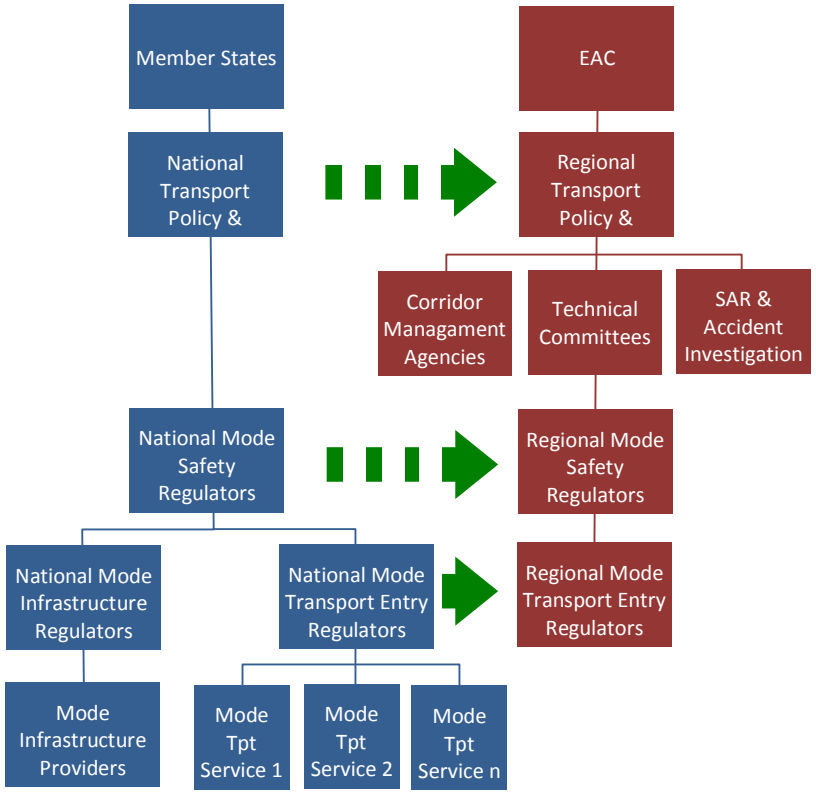
Many of the projects identified under this Strategy coincide with member states' own priorities and are likely to be developed (prepared and funded) by them. However, the EAC should monitor progress and act as project developer of last resort where member states are unable to mobilise a regionally important project.

9.2.1 Project Preparation

Project preparation entails developing a project to the extent that potential investors, operators and other role players are sufficiently interested in the project to commit resources to bringing the project to fruition. It entails preparing the enabling environment (policy, institutional, legislative), defining the project (pre-feasibility), detailed feasibility and design and contract preparation. Regional (cross-border) projects require particular attention and coordination between parallel political, administrative and legal systems. Projects that are public in nature would be funded from governments' capital budgets. Projects

that have commercial potential require further preparation in the form of project structuring and transaction support.

Evolution of the Regional Transport Institutional Structure



There are various project preparatory facilities (e.g. PPIAF, IPPF). Under the ESA initiative (refer Policy & Institutional) the intention is to establish a basic in-house project preparation capacity. It is likely to be on office housed in COMESA, responsible to develop the regional project stream, prepare projects in the initial phases and then outsource preparation to more established preparation facilities. EAC is a member of the ESA initiative and should participate in this Programme Finance Facility (PFF).

9.2.2 Potential Funding

As the name suggests, the PFF will also have a mandate to package regional projects for funding. The PFF will monitor available funding across the spectrum of national, concessionary donor and commercial sources. It will consider the appropriate blending (i.e. share of commercial funding required) and match the project characteristics (sector, location, size) with the available funds and finance instruments.

Although there are grey areas, there are two types of project: those that can essentially pay their own way and those that cannot. In the EAC context, projects in the first category include ports, airports and pipelines. Although providing a public service, these are already fairly well-ringfenced financially and institutionally with a commercial revenue stream. Projects in these sub-sectors should mostly be in a position to access non-concessionary funding.

Although rail has similar characteristics (ringfenced, revenue stream) it has suffered from years of neglect and has to be redeveloped on a large scale. Following the ESA policy guideline, below and above rail investments should be separated, with below-rail accessing concessionary funding.

Of all the sub-sectors, roads is the area that has the most development externalities and the most limited experience of non-public financing. For roads, the challenge is to gradually introduce the concept of user charging, and to leverage commercial funding off such revenue.

Although the appropriate funding portfolio needs to be determined on a project-by-project basis, applying the above principles to the top priority projects would point to a funding mix as shown below. Excluding the RVR standard gauge plan and Lamu developments, the public share of the USD 12.9 bill. priority projects would be USD 505 mill.

Public Share of Budget for Priority Projects

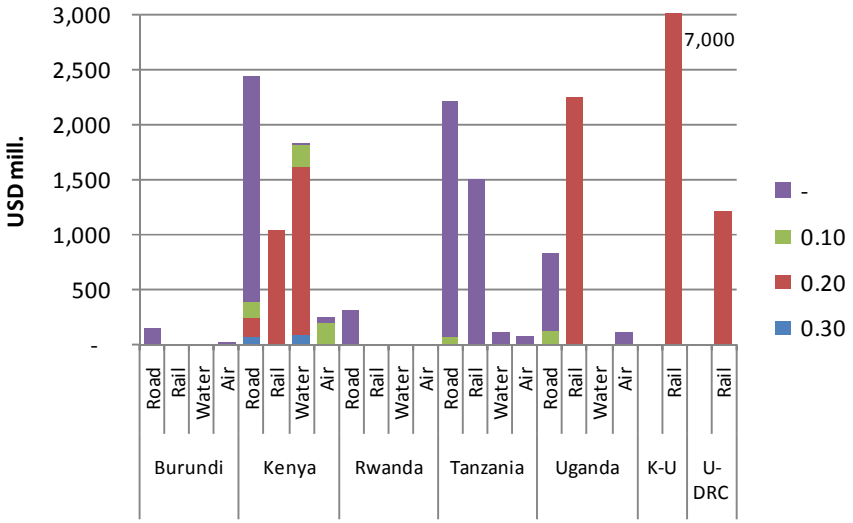
	Including Std Gauge & Lamu				Excluding Std Gauge & Lamu			
Item	Road	Rail	Water	Total	Road	Rail	Water	Total
>0.2	252	11,025	1,613	12,890	252	-	1,113	1,365
Public%	90%	75%	25%		90%	75%	25%	
Public USD	227	8,269	403	8,899	226	-	278	505

9.3 Roles & Responsibilities

There are five project packages that should each be taken forward as follows:

- *Package 1: Regional Institutional and Sector Management Projects.* Many of these projects are multi-sectoral (e.g. infrastructure planning guidelines and standards, review of regional training capacity, liberalisation of regional transport). Regional institutions need to be created (safety regulators, sub-sectoral transport licensing entities, search & rescue coordinating agency, transport accident investigation authority). In the roads sub-sector specifically, projects include formulating a classification system for roads of regional importance, a common regional approach to road management systems and roads data and a regional overload control strategy. The EAC is responsible to guide and avail funding for these projects.
- *Package 2: Planning Projects of Regional Importance.* These are projects which are already on the cards but which need to be investigated further. They include the Lamu corridor studies, the development of the regional rail standard gauge plan, and understanding the Uganda oil prospects and implications. All of these investigations need to progress up the project preparation chain. The major issue is proving up the demand (market) for these projects. There already is champion for each of these initiatives. The EAC should monitor developments and participate to promote regional interests.
- *Package 3: Strategic Projects.* There are projects that have already developed an identity like the Package 2 projects, but unlike the Package 2 projects, are not economic priorities. These 'strategic' projects include the Isiolo-Moyale route (road and rail), the choice of principal connection to Juba (i.e. via Lokichokio or Nimule) and the Isaka-Kigali railway. They are also owned by a principal. The EAC should monitor these projects, but is not required to play a leading role.
- *Package 4: Corridor Promotion.* As the region integrates more fully, 'countries' as organising principle will make way for 'corridors', i.e. transport routes not artificially carved up by national borders. moves towards increased integration. By far the most significant one is the Northern Corridor, followed by the Central Corridor. The corridor agencies were created by multi-lateral agreement between member states, but having such a parallel regional arrangement duplicates the role of the EAC and these agencies should therefore become agencies under the EAC structure. In turn, it should be the EAC's duty to properly resource them.
- *Package 5: Infrastructure Projects.* Most of the projects in the Strategy relate to the planning, upgrading or construction of infrastructure projects. These types of projects should in time be executed under the auspices of corridor-based organisations, not country-based ones. However, in the medium term, they will still be promoted by national agencies (roads agencies and road funds, rail companies/concessions, ports authorities and airports authorities).

Infrastructure Projects Share by Sub-Sector and Country



9.4 Next Steps

The actions to put the Strategy into practice are:

- Endorsement of the Strategy by member states and the EAC, including the direction proposed, projects identified and roles and responsibilities
- Matching of the Strategy against the funding available from the EAC and member states, and shortening the list of priorities to match the available funding. This will include an assessment on a project-by-project basis of funding that could be leveraged by own funds.
- Actively participating in the establishment of the ESA Programme Funding Facility and submitting the prioritised projects that do not already have champions to the PFF for further preparation.

No.	Project Title	Cost					Screen		Impact Test		VFM Test		Total Score	Dates		Sector	Corridor	Type
		Feasib.	Det. Design	Works	Other	Total Cost	Strategy	Integration	000 ton	Impact Score	$/t	VFM Score		Start	End			
Inst1	Develop and implement regional roads classification system, including road design specifications and a signage strategy	-	-	-	0.500	0.500	1	1	Study	-	Study	Study	Study			Road	None	Study
Inst10	Review regional training institutions, including for aviation and marine transport services	-	-	-	0.500	0.500	1	1	Study	-	Study	Study	Study			Multi	None	Study
Inst11	Develop regional technical guidelines and standards for planning and operation of infrastructure of regional importance, including feasibility and funding approaches (road, rail, ports and airports)	-	-	-	4.000	4.000	1	1	Study	-	Study	Study	Study			Multi	None	Study
Inst2	Develop regional OLC strategy, with the participation of the member states	-	-	-	0.500	0.500	1	1	Study	-	Study	Study	Study			Road	None	Study
Inst3	Design and establish a regional Road Management System (excl. data collection)	-	-	-	1.500	1.500	1	1	Study	-	Study	Study	Study			Road	None	Study
Inst4	Audit and update national transport policies to be in compliance with regional transport policy (as developed by ESA Tripartite)	-	-	-	2.000	2.000	1	1	Study	-	Study	Study	Study			Multi	None	Study
Inst5	Implement regional approach to transport liberalisation and establish licensing entities for road transport (Technical Committee of the Tripartite Agreement on Road Transport), aviation (JCA) and rail	-	-	-	3.000	3.000	1	1	Study	-	Study	Study	Study			Multi	None	Study
Inst6	Establish and empower regional safety regulators, including aviation (CASSOA), maritime/inland waterways (under the auspices of the Joint Committee on Inland Waterways) and rail	-	-	-	3.000	3.000	1	1	Study	-	Study	Study	Study			Multi	None	Study
Inst7	Appropriately amend the Protocol for Sustainable Development of Lake Victoria Basin by incorporating the terms and conditions of Tripartite Agreement on Inland Waterways	-	-	-	0.250	0.250	1	1	Study	-	Study	Study	Study			Water	None	Study
Inst8	Establish and empower regional transport accident investigation authority	-	-	-	1.500	1.500	1	1	Study	-	Study	Study	Study			Multi	None	Study
Inst9	Establish and empower regional Search & Rescue coordinating agency	-	-	-	1.000	1.000	1	1	Study	-	Study	Study	Study			Multi	None	Study
Pi 4	Dar es Salaam - Mwanza products line	1.000	-	-	-	1.000	1	1	Study	-	Study	Study	Study			Pipe	Central	Study
P3	Tanga/Mwambani Port (diversification)	-	-	1.000	-	1.000	1	1	Study	-	Study	Study	Study			Water	Arusha	Study
COM220	Regional implementation plan for upper and lower airspcae CNS/ATM	-	-	-	0.750	0.750	1	1	Study	-	Study	Study	Study			Air	Regional	Study
COM210	Great Lakes railway study	-	-	-	0.300	0.300	1	1	Study	-	Study	Study	Study			Rail	Central	Study

No.	Project Title	Cost					Screen		Impact Test		VFM Test		Total Score	Dates		Sector	Corridor	Type
		Feasib.	Det. Design	Works	Other	Total Cost	Strategy	Integration	000 ton	Impact Score	$/t	VFM Score		Start	End			
COM211	Lukuga dyke study	-	-	-	0.300	0.300	1	1	Study	-	Study	Study	Study			Water	Central	Study
COM213	CNS/ATM implementation	-	0.800	42.500	-	43.300	1	1	Study	-	Study	Study	Study			Air	None	New
COM161	Development study on the Lamu corridor	-	-	-	0.500	0.500	1	1	40,000	0.88	80.00	1.00	0.94			Multi	Lamu	Study
Po4.1	Lamu Port	1.000	-	-	-	1.000	1	1	40,000	0.88	40.00	0.50	0.69			Water	Northern	Study
Po1.1	Mombasa Port dredging to 15m	-	-	100.000	-	100.000	1	1	45,344	1.00	0.45	0.01	0.50			Water	Northern	Upgrade
RdCap02	Mombasa to Voi: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.222	9.636	-	9.858	1	1	29,847	0.66	3.03	0.04	0.35	2010	2013	Road	Northern	Upgrade
RdCon01	Mombasa to Voi: Rehabilitation	-	1.654	71.846	-	73.500	1	1	29,847	0.66	0.41	0.01	0.33	2011	2015	Road	Northern	Rehabilitation
COM20&24	Mombasa – Kampala (standard gauge)	-	-	6,525.000	-	6,525.000	1	1	26,590	0.59	0.00	0.00	0.29			Rail	Northern	Upgrade
RdCap03	Voi to Kitui Rd Intersection: Capacity Upgrade - 1 lane per direction (Estimated: 40% of link length)	-	0.424	18.406	-	18.830	1	1	24,467	0.54	1.30	0.02	0.28	2010	2014	Road	Northern	Upgrade
Po4.4	Lamu Port mining bulk	-	-	500.000	-	500.000	1	1	25,000	0.55	0.05	0.00	0.28			Water	Northern	New
RSG8	Mombasa-Lamu	-	-	1,035.000	-	1,035.000	1	1	25,000	0.55	0.02	0.00	0.28			Rail	Coastal	New
RSG1	Kodo - Arua - Pakwach (standard gauge)	-	-	1,215.000	-	1,215.000	1	1	25,000	0.55	0.02	0.00	0.28			Rail	Gulu	New
COM22	Tororo – Pakwach (standard gauge)	-	-	2,250.000	-	2,250.000	1	1	25,000	0.55	0.01	0.00	0.28			Rail	Gulu	Upgrade
RdCap05	Kitui Rd Intersection to Athi River: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.219	9.531	-	9.750	1	1	23,287	0.51	2.39	0.03	0.27	2016	2019	Road	Northern	Upgrade
RdCap04	Kitui Rd Intersection to Athi River: Capacity Upgrade - 1 lane per direction (Estimated: 40% of link length)	-	0.473	20.541	-	21.014	1	1	23,265	0.51	1.11	0.01	0.26	2011	2015	Road	Northern	Upgrade
RdCap27	Bugiri to Jinja: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.008	0.335	-	0.343	1	1	8,893	0.20	25.95	0.32	0.26	2010	2012	Road	Northern	Upgrade
Pi 5.1	Juba - Lamu Crude Oil Pipeline feasibility	1.000	-	-	-	1.000	1	1	15,000	0.33	15.00	0.19	0.26			Pipe	Northern	Study
RdCon02	Voi to Athi River: Rehabilitation	-	2.665	115.775	-	118.440	1	1	23,265	0.51	0.20	0.00	0.26	2011	2015	Road	Northern	Rehabilitation

No.	Project Title	Cost					Screen		Impact Test		VFM Test		Total Score	Dates		Sector	Corridor	Type
		Feasib.	Det. Design	Works	Other	Total Cost	Strategy	Integration	000 ton	Impact Score	$/t	VFM Score		Start	End			
COM135	Mombasa Port second container terminal	0.700	-	1,011.765	-	1,012.465	1	1	21,980	0.48	0.02	0.00	0.24			Water	Northern	Upgrade
Pi 1.1	Hoima-Kampala products line feasibility	1.000	-	-	-	1.000	1	1	11,000	0.24	11.00	0.14	0.19			Pipe	Northern	Study
COM1	Design and construction of second parallel runway and associated taxiways at Jomo Kenyatta International Airport	-	-	42.600	-	42.600	1	1	16,935	0.37	0.40	0.00	0.19			Air	Northern	New
RdCon03	Nairobi and Surroundings: Rehabilitation	-	0.529	22.991	-	23.520	1	1	16,648	0.37	0.71	0.01	0.19	2013	2017	Road	Northern	Rehabilitation
A1	JKIA terminal expansions	-	-	150.000	-	150.000	1	1	16,935	0.37	0.11	0.00	0.19			Air	Northern	New
Po1.4	Mombasa Port Soda Ash: 2 new loaders	-	-	1.000	-	1.000	1	1	10,516	0.23	10.52	0.13	0.18			Water	Northern	Upgrade
RdCap35	Masaka and Surroundings: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.015	0.659	-	0.674	1	1	8,351	0.18	12.39	0.15	0.17	2016	2019	Road	Northern	Upgrade
Po1.5	Mombasa Port Mbaraki Coal Terminal (new bridges)	-	-	1.300	-	1.300	1	1	10,516	0.23	8.09	0.10	0.17			Water	Northern	Upgrade
Po4.2	Lamu Port oil terminal	-	-	100.000	-	100.000	1	1	15,000	0.33	0.15	0.00	0.17			Water	Northern	New
Pi 5.2	Juba - Lamu Crude Oil Pipeline	-	-	1,280.000	-	1,280.000	1	1	15,000	0.33	0.01	0.00	0.17			Pipe	Northern	New
RdCap50	Dar Es Salaam (Surroundings) to Mlandizi: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.114	4.956	-	5.070	1	1	13,387	0.30	2.64	0.03	0.16	2014	2017	Road	Central	Upgrade
RdCap28	Jinja and Surroundings: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.028	1.216	-	1.244	1	1	9,766	0.22	7.85	0.10	0.16	2016	2019	Road	Northern	Upgrade
RdCon12	Dar Es Salaam and Surroundings: Rehabilitation	-	0.441	19.159	-	19.600	1	1	13,387	0.30	0.68	0.01	0.15	2019	2022	Road	Central	Rehabilitation
COM138	Develop study on the Tanga (Mwambani)- Arusha-Musuma-Kampala Corridor, Port and Rail Links	-	-	-	0.500	0.500	1	1	6,408	0.14	12.82	0.16	0.15			Multi	Arusha	Study
COM137a	Dar es Salaam Port dredging of channel	-	-	13.000	-	13.000	1	1	12,127	0.27	0.93	0.01	0.14			Water	Central	Upgrade
COM134	Mombasa Port Oil Terminal (replace Kipevu oil terminal and relocate to Dongo Kundu)	1.500	2.000	100.000	-	103.500	1	1	11,464	0.25	0.11	0.00	0.13			Water	Northern	New
RdCon14	Isaka and Surroundings: Rehabilitation	-	0.457	19.843	-	20.300	1	1	10,868	0.24	0.54	0.01	0.12	2020	2023	Road	Central	Rehabilitation
Pi 1.2	Hoima-Kampala products line	-	-	200.000	-	200.000	1	1	11,000	0.24	0.06	0.00	0.12			Pipe	Northern	New
RdCon13	Nzega to Isaka: Upgrade to Paved						1	1						2011	2015	Road	Central	Upgrade

No.	Project Title	Cost					Screen		Impact Test		VFM Test		Total Score	Dates		Sector	Corridor	Type
		Feasib.	Det. Design	Works	Other	Total Cost	Strategy	Integration	000 ton	Impact Score	$/t	VFM Score		Start	End			
RdCap47	Moshi and Surroundings: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.866	37.634	-	38.500			10,860	0.24	0.28	0.00	0.12					
RdCap29	Kampala and Surroundings: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.019	0.828	-	0.847	1	1	6,408	0.14	7.56	0.09	0.12	2016	2019	Road	Arusha	Upgrade
RdCon08	Jinja to Kampala: Rehabilitation	-	0.318	13.801	-	14.118	1	1	9,572	0.21	0.68	0.01	0.11	2010	2013	Road	Northern	Upgrade
RdCap15	Molo to Naivasha: Capacity Upgrade - 1 lane per direction (Estimated: 40% of link length)	-	0.813	35.307	-	36.120	1	1	9,766	0.22	0.27	0.00	0.11	2014	2018	Road	Northern	Rehabilitation
RdCon04	Naivasha to Nakuru: Rehabilitation	-	0.399	17.320	-	17.718	1	1	9,527	0.21	0.54	0.01	0.11	2010	2013	Road	Northern	Upgrade
RdCon05	Nakuru to Londiani: Rehabilitation	-	0.832	36.128	-	36.960	1	1	9,630	0.21	0.26	0.00	0.11	2017	2021	Road	Northern	Rehabilitation
RdCap16	Molo to Eldoret: Capacity Upgrade - 1 lane per direction (Estimated: 40% of link length)	-	0.680	29.560	-	30.240	1	1	9,224	0.20	0.31	0.00	0.10	2011	2015	Road	Northern	Rehabilitation
RdCap21	Eldoret to Kitali: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.358	15.546	-	15.904	1	1	9,060	0.20	0.57	0.01	0.10	2010	2013	Road	Northern	Upgrade
RdCon07	Tororo to Jinja: Rehabilitation	-	0.205	8.909	-	9.114	1	1	8,744	0.19	0.96	0.01	0.10	2010	2013	Road	Northern	Upgrade
RdCap33	Masaka to Kampala: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	1.427	61.993	-	63.420	1	1	9,024	0.20	0.14	0.00	0.10	2013	2017	Road	Northern	Rehabilitation
BP01	Malaba Ke Border Post upgrade (large)	-	0.148	6.411	-	6.558	1	1	8,351	0.18	1.27	0.02	0.10	2010	2012	Road	Northern	Upgrade
BP02	Malaba Ug Border Post upgrade (large)	-	-	5.000	-	5.000	1	1	8,021	0.18	1.60	0.02	0.10			BP	Northern	Upgrade
BP05	Katuna Ug Border Post upgrade (large)	-	-	5.000	-	5.000	1	1	8,021	0.18	1.60	0.02	0.10			BP	Northern	Upgrade
BP06	Gatuna Rw Border Post upgrade (large)	-	-	5.000	-	5.000	1	1	7,978	0.18	1.60	0.02	0.10			BP	Northern	Upgrade
RdCap38	Kakitumba: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	-	5.000	-	5.000	1	1	7,978	0.18	1.60	0.02	0.10			BP	Northern	Upgrade
RdCon06	Londiani to Tororo: Rehabilitation	-	0.129	5.605	-	5.734	1	1	8,050	0.18	1.40	0.02	0.10	2016	2019	Road	Northern	Upgrade
RdCap26	Tororo to Buriri Rd: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	1.899	82.521	-	84.420	1	1	8,744	0.19	0.10	0.00	0.10	2017	2021	Road	Northern	Rehabilitation
		-	0.134	5.832	-	5.966	1	1	7,959	0.18	1.33	0.02	0.10	2010	2012	Road	Northern	Upgrade

No.	Project Title	Cost					Screen		Impact Test		VFM Test		Total Score	Dates		Sector	Corridor	Type
		Feasib.	Det. Design	Works	Other	Total Cost	Strategy	Integration	000 ton	Impact Score	$/t	VFM Score		Start	End			
RdCap39	Kigali to Biumba: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.125	5.430	-	5.555	1	1	7,703	0.17	1.39	0.02	0.09	2012	2015	Road	Northern	Upgrade
Pi 2.1	Kampala - Eldoret products line feasibility to confirm impacts of L Albert products	0.250	-	-	-	0.250	1	1	2,597	0.06	10.39	0.13	0.09			Pipe	Northern	Study
RdCap44	Bujumbura to Gitega: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.024	1.033	-	1.056	1	1	5,492	0.12	5.20	0.06	0.09	2010	2012	Road	Central	Upgrade
RdCap23	Bungoma to Eldoret: Capacity Upgrade - 1 lane per direction (Estimated: 40% of link length)	-	0.325	14.137	-	14.463	1	1	8,056	0.18	0.56	0.01	0.09	2010	2013	Road	Northern	Upgrade
RdCap34	Masaka to Mbarara: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.281	12.219	-	12.501	1	1	7,949	0.18	0.64	0.01	0.09	2010	2013	Road	Northern	Upgrade
RdCon10	Katuna to Biumba: Rehabilitation	-	0.677	29.423	-	30.100	1	1	7,978	0.18	0.27	0.00	0.09	2015	2018	Road	Northern	Rehabilitation
RdCon09	Kampala to Kabale: Rehabilitation	-	3.591	156.009	-	159.600	1	1	7,949	0.18	0.05	0.00	0.09	2014	2018	Road	Northern	Rehabilitation
RdCon11	Biumba to Kigali: Rehabilitation	-	0.488	21.212	-	21.700	1	1	7,703	0.17	0.35	0.00	0.09	2018	2021	Road	Northern	Rehabilitation
RdCon57	Kalema to Arusha: Rehabilitation	-	1.191	51.729	-	52.920	1	1	7,775	0.17	0.15	0.00	0.09	2013	2017	Road	Namanga	Rehabilitation
RdCon56	Kalema to Arusha: Upgrade to Paved	-	1.071	46.529	-	47.600	1	1	7,709	0.17	0.16	0.00	0.09	2011	2015	Road	Namanga	Upgrade
RdCap45	Arusha and Surroundings: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.062	2.704	-	2.766	1	1	6,408	0.14	2.32	0.03	0.09	2010	2012	Road	Arusha	Upgrade
BP13	Kobero Bu Border Post upgrade (small)	-	-	2.000	-	2.000	1	1	5,918	0.13	2.96	0.04	0.08			BP	Central	Upgrade
BP14	Kabanga Tz Border Post upgrade (small)	-	-	2.000	-	2.000	1	1	5,918	0.13	2.96	0.04	0.08			BP	Central	Upgrade
RdCap46	Arusha to Moshi: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.087	3.784	-	3.871	1	1	6,408	0.14	1.66	0.02	0.08	2016	2019	Road	Arusha	Upgrade
RdCon23	Muyinga to Kanazi: Rehabilitation	-	0.425	18.475	-	18.900	1	1	5,918	0.13	0.31	0.00	0.07	2011	2014	Road	Central	Rehabilitation
COM137b	Dar es Salaam Port Inland Container Depot	-	-	25.000	-	25.000	1	1	5,866	0.13	0.23	0.00	0.07			Water	Central	New
P2.4	Dar es Salaam Port Container Terminals (B13 & B14)	-	-	30.000	-	30.000	1	1	5,866	0.13	0.20	0.00	0.07			Water	Central	New
RdCon37	Kasulu to Nyakanazi: Upgrade to Paved	-	3.512	152.588	-	156.100	1	1	5,769	0.13	0.04	0.00	0.06	2011	2015	Road	Sumbawanga	Upgrade
RdCon20	Bujumbura and Surroundings: Rehabilitation	-	0.756	32.844	-	33.600	1	1	5,492	0.12	0.16	0.00	0.06	2018	2021	Road	Central	Rehabilitation
RdCon21	Bujumbura to Gitega: Upgrade to Paved						1	1						2012	2016	Road	Central	Upgrade

No.	Project Title	Cost					Screen		Impact Test		VFM Test		Total Score	Dates		Sector	Corridor	Type
		Feasib.	Det. Design	Works	Other	Total Cost	Strategy	Integration	000 ton	Impact Score	$/t	VFM Score		Start	End			
		-	0.866	37.634	-	38.500			5,492	0.12	0.14	0.00	0.06					
RdCon22	Gitega to Muyinga: Upgrade to Paved	-	1.481	64.320	-	65.800	1	1	5,368	0.12	0.08	0.00	0.06	2011	2015	Road	Central	Upgrade
RdCon30	Chalinze to Tanga: Rehabilitation	-	1.607	69.794	-	71.400	1	1	5,282	0.12	0.07	0.00	0.06	2018	2022	Road	Coastal	Rehabilitation
BP19	Sirari Tz Border Post upgrade (small)	-	-	2.000	-	2.000	1	1	4,096	0.09	2.05	0.03	0.06			BP	Sirari	Upgrade
BP20	Isebania Ke Border Post upgrade (small)	-	-	2.000	-	2.000	1	1	4,096	0.09	2.05	0.03	0.06			BP	Sirari	Upgrade
RdCap12	Athi River and Surroundings: Capacity Upgrade - 2 lane per direction (Estimated: 50% of link length)	-	0.147	6.392	-	6.539	1	1	4,098	0.09	0.63	0.01	0.05	2010	2012	Road	Namanga / Northern	Upgrade
RdCap13	Kajiado to Arusha: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.150	6.528	-	6.678	1	1	4,098	0.09	0.61	0.01	0.05	2010	2012	Road	Namanga	Upgrade
BP15	Namanga Tz Border Post upgrade (large)	-	-	5.000	-	5.000	1	1	3,982	0.09	0.80	0.01	0.05			BP	Namanga	Upgrade
BP16	Namanga Ke Border Post upgrade (large)	-	-	5.000	-	5.000	1	1	3,982	0.09	0.80	0.01	0.05			BP	Namanga	Upgrade
RdCon46	Kisii to Kisumu: Rehabilitation	-	1.578	68.562	-	70.140	1	1	4,259	0.09	0.06	0.00	0.05	2016	2020	Road	Sirari	Rehabilitation
RdCon44	Mwanza and Surroundings: Upgrade to Paved	-	0.265	11.495	-	11.760	1	1	4,082	0.09	0.35	0.00	0.05	2011	2014	Road	Sirari	Upgrade
RdCon45	Mwanza to Kisii (Kenya Border): Rehabilitation	-	2.259	98.121	-	100.380	1	1	4,104	0.09	0.04	0.00	0.05	2018	2022	Road	Sirari	Rehabilitation
RdCon58	Arusha to Nairobi: Rehabilitation	-	2.353	102.227	-	104.580	1	1	3,982	0.09	0.04	0.00	0.04	2012	2016	Road	Namanga	Rehabilitation
P2.3	Dar es Salaam Port SPM to accommodate white and black oils import	-	-	32.000	-	32.000	1	1	3,771	0.08	0.12	0.00	0.04			Water	Central	New
RdCon62	Himo to Tanga: Upgrade to Paved	-	0.567	24.633	-	25.200	1	1	3,739	0.08	0.15	0.00	0.04	2015	2018	Road	Arusha	Upgrade
RdCon61	Himo to Tanga: Rehabilitation	-	2.419	105.101	-	107.520	1	1	3,741	0.08	0.03	0.00	0.04	2011	2015	Road	Arusha	Rehabilitation
RdCap40	Kigali to Kibungu: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.150	6.514	-	6.664	1	1	3,406	0.08	0.51	0.01	0.04	2012	2015	Road	Central	Upgrade
BP23	Tunduma Tz Border Post upgrade (large)	-	-	5.000	-	5.000	1	1	3,275	0.07	0.66	0.01	0.04			BP	TAZARA	Upgrade
COM149	Construction of new cargo apron, parking area and access road at Moi International Airport	0.116	0.438	7.738	-	8.292	1	1	3,249	0.07	0.39	0.00	0.04			Air	Northern	New
BP11	Rusumo Rw Border Post upgrade (large)	-	-	5.000	-	5.000	1	1	3,099	0.07	0.62	0.01	0.04			BP	Central	Upgrade
BP12	Rusumo Tz Border Post upgrade (large)	-	-	5.000	-	5.000	1	1	3,099	0.07	0.62	0.01	0.04			BP	Central	Upgrade

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		Feasib.	Det. Design	Works	Other	Total Cost	Strategy	Integration	000 ton	Impact Score	$/t	VFM Score		Start	End			
RdCon15	Nyamahale to Kigali: Rehabilitation	-	1.455	63.225	-	64.680	1	1	3,406	0.08	0.05	0.00	0.04	2011	2015	Road	Central	Rehabilitation
RdCap52	Midpoint Sumbawanga Corridor: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.014	0.608	-	0.622	1	1	1,772	0.04	2.85	0.04	0.04	2012	2015	Road	Sumbawanga	Upgrade
COM2	Airside pavements rehabilitation and new drainage works at Moi International Airport	-	-	22.260	-	22.260	1	1	3,249	0.07	0.15	0.00	0.04			Air	Northern	Rehabilitation
COM148	Expansion of terminal facilities at Moi International Airport	-	-	30.000	-	30.000	1	1	3,249	0.07	0.11	0.00	0.04			Air	Northern	New
BP21	Horohoro Tz Border Post upgrade (large)	-	-	5.000	-	5.000	1	1	2,955	0.07	0.59	0.01	0.04			BP	Coastal	Upgrade
BP22	Lunga-Lunga Ke Border Post upgrade (large)	-	-	5.000	-	5.000	1	1	2,955	0.07	0.59	0.01	0.04			BP	Coastal	Upgrade
RdCon43	Biharamulu and Surroundings: Upgrade to Paved	-	1.055	45.845	-	46.900	1	1	3,141	0.07	0.07	0.00	0.04	2012	2016	Road	Sirari	Upgrade
RdCap43	Bubanza to Bujumbura to Rumonge: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.062	2.689	-	2.751	1	1	2,628	0.06	0.96	0.01	0.03	2016	2019	Road	Central / Sumbawanga	Upgrade
COM6	Entebbe International Airport - Master Plan Study	-	-	-	0.400	0.400	1	1	1,299	0.03	3.25	0.04	0.03			Air	Northern	Study
COM8	Entebbe International Airport - Feasibility study on fuel pier	0.400	-	-	-	0.400	1	1	1,299	0.03	3.25	0.04	0.03			Air	Northern	New
RdCon32	Vanga to Mombasa: Rehabilitation	-	1.002	43.518	-	44.520	1	1	2,955	0.07	0.07	0.00	0.03	2011	2015	Road	Coastal	Rehabilitation
RdCon31	Tanga to Vanga: Upgrade to Paved	-	1.008	43.792	-	44.800	1	1	2,955	0.07	0.07	0.00	0.03	2011	2015	Road	Coastal	Upgrade
RdCon38	Makamba and Surroundings: Upgrade to Paved	-	0.321	13.959	-	14.280	1	1	2,696	0.06	0.19	0.00	0.03	2011	2014	Road	Sumbawanga	Upgrade
COM9	Entebbe International Airport - Structural evaluation of all airside pavements	-	-	-	0.500	0.500	1	1	1,299	0.03	2.60	0.03	0.03			Air	Northern	Study
Pi 2.2	Kampala - Eldoret products line	-	-	200.000	-	200.000	1	1	2,597	0.06	0.01	0.00	0.03			Pipe	Northern	New
RdCon34	Iringa to Mbeya: Rehabilitation	-	4.130	179.410	-	183.540	1	1	2,587	0.06	0.01	0.00	0.03	2020	2024	Road	Tazara	Rehabilitation
RdCap41	Bujumbura to Kayanza: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.037	1.607	-	1.644	1	1	1,810	0.04	1.10	0.01	0.03	2010	2012	Road	Central	Upgrade
Po8	Mwanza Port dredging and upgrading	-	-	4.300	-	4.300	1	1	2,046	0.05	0.48	0.01	0.03			Water	Central	Upgrade
RdCap51	Mbeya and Surroundings: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.120	5.218	-	5.338	1	1	2,016	0.04	0.38	0.00	0.02	2014	2017	Road	Tazara	Upgrade
RdCon17	Cyangugu to Butare: Rehabilitation	-	1.408	61.172	-	62.580	1	1	2,160	0.05	0.03	0.00	0.02	2012	2016	Road	Central	Rehabilitation

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		Feasib.	Det. Design	Works	Other	Total Cost	Strategy	Integration	000 ton	Impact Score	$/t	VFM Score		Start	End			
COM223	Upgrading of Bujumbura port	-	-	5.000	-	5.000	1	1	1,898	0.04	0.38	0.00	0.02			Water	Central	Upgrade
COM140	Kigoma Port upgrading	0.600	-	5.000	-	5.600	1	1	1,898	0.04	0.34	0.00	0.02			Water	Central	Upgrade
RNG4	Rehabilitate Dar es Salaam - Tabora - Kigoma/Mwanza (narrow gauge)	-	-	2,119.000	-	2,119.000	1	1	2,000	0.04	0.00	0.00	0.02			Inst	Central	Rehabilitation
RdCap42	Bujumbura to Kayanza: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.125	5.434	-	5.559	1	1	1,810	0.04	0.33	0.00	0.02	2016	2019	Road	Central	Upgrade
BP07	Kanyaru Bu Border Post upgrade (small)	-	-	2.000	-	2.000	1	1	1,553	0.03	0.78	0.01	0.02			BP	Northern	Upgrade
BP08	Akanyaru Rw Border Post upgrade (small)	-	-	2.000	-	2.000	1	1	1,553	0.03	0.78	0.01	0.02			BP	Northern	Upgrade
RdCon35	Vwawa and Surroundings: Rehabilitation	-	0.772	33.528	-	34.300	1	1	1,816	0.04	0.05	0.00	0.02	2014	2017	Road	Sumbawanga	Rehabilitation
RdCon19	Bujumbura to Ngozi: Rehabilitation	-	1.011	43.929	-	44.940	1	1	1,810	0.04	0.04	0.00	0.02	2017	2021	Road	Central	Rehabilitation
RdCap48	Dodoma to Arusha: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.198	8.589	-	8.787	1	1	1,707	0.04	0.19	0.00	0.02	2010	2013	Road	Namanga	Upgrade
RdCap11	Nairobi to Thika: Capacity Upgrade - 2 lane per direction (Estimated: 50% of link length)	-	0.603	26.183	-	26.786	1	1	1,753	0.04	0.07	0.00	0.02	2012	2016	Road	Namanga	Upgrade
RdCon36	Sumbawanga to Kasulu: Upgrade to Paved	-	7.985	346.915	-	354.900	1	1	1,772	0.04	0.00	0.00	0.02	2013	2017	Road	Sumbawanga	Upgrade
RdCon52	Iringa to Dodoma: Rehabilitation	-	0.709	30.791	-	31.500	1	1	1,680	0.04	0.05	0.00	0.02	2016	2019	Road	Namanga	Rehabilitation
RdCon53	Iringa to Dodoma: Upgrade to Paved	-	2.867	124.534	-	127.400	1	1	1,680	0.04	0.01	0.00	0.02	2014	2018	Road	Namanga	Upgrade
RdCon18	Bubanza to Cyangugu: Rehabilitation	-	0.728	31.612	-	32.340	1	1	1,555	0.03	0.05	0.00	0.02	2012	2016	Road	Central	Rehabilitation
Pi 3.1	Kampala - Kigali/Bujumbura products line feasibility	1.000	-	-	-	1.000	1	1	1,000	0.02	1.00	0.01	0.02			Pipe	Northern	Study
COM141	Development of port infrastructure at Port Bell	0.500	-	5.000	-	5.500	1	1	1,412	0.03	0.26	0.00	0.02			Water	Central	Upgrade
RdCon54	Dodoma to Kalema: Rehabilitation	-	0.576	25.044	-	25.620	1	1	1,464	0.03	0.06	0.00	0.02	2013	2017	Road	Namanga	Rehabilitation
RdCon55	Kalema and Surroundings: Upgrade to Paved	-	2.630	114.270	-	116.900	1	1	1,464	0.03	0.01	0.00	0.02	2015	2019	Road	Namanga	Upgrade
COM13	Entebbe International Airport - Strengthening of Apron 4	0.068	0.180	4.500	-	4.748	1	1	1,299	0.03	0.27	0.00	0.02			Air	Northern	Rehabilitation
BP03	Busia Ke Border Post upgrade (large)	-	-	5.000	-	5.000	1	1	1,281	0.03	0.26	0.00	0.02			BP	Northern	Upgrade
BP04	Busia Ug Border Post upgrade (large)	-	-	5.000	-	5.000	1	1	1,281	0.03	0.26	0.00	0.02			BP	Northern	Upgrade

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		Feasib.	Det. Design	Works	Other	Total Cost	Strategy	Integration	000 ton	Impact Score	$/t	VFM Score		Start	End			
COM11	Entebbe International Airport - Construction of an overlay on runway 17/35 and its associated taxiways	0.225	0.600	15.000	-	15.825	1	1	1,299	0.03	0.08	0.00	0.01			Air	Northern	Rehabilitation
COM12	Entebbe International Airport - Rehabilitation of runway 1/30, its associated taxiways, Apron 2 and Apron 3	0.360	0.960	24.000	-	25.320	1	1	1,299	0.03	0.05	0.00	0.01			Air	Northern	Rehabilitation
COM17	Entebbe International Airport - Construction of fuel pier and relocation of fuel farm	0.375	1.000	25.000	-	26.375	1	1	1,299	0.03	0.05	0.00	0.01			Air	Northern	New
BP29	Gisenyi Rw Border Post upgrade (small)	-	-	2.000	-	2.000	1	1	899	0.02	0.45	0.01	0.01			BP	Central	Upgrade
Po6	Kisumu Port upgrading	-	-	5.000	-	5.000	1	1	993	0.02	0.20	0.00	0.01			Water	Northern	Upgrade
Pi 3.2	Kampala - Kigali/Bujumbura products line	-	-	440.000	-	440.000	1	1	1,000	0.02	0.00	0.00	0.01			Pipe	Northern	New
RdCon16	Kigali to Ruhengeri: Rehabilitation	-	0.926	40.234	-	41.160	1	1	853	0.02	0.02	0.00	0.01	2015	2019	Road	Central	Rehabilitation
RdCap10	Thika to Fort Hall: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.146	6.338	-	6.484	1	1	598	0.01	0.09	0.00	0.01	2016	2019	Road	Namanga	Upgrade
RdCap09	Fort Hall to Nyeri: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.187	8.104	-	8.290	1	1	598	0.01	0.07	0.00	0.01	2010	2012	Road	Namanga	Upgrade
BP17	Moyale Ke Border Post upgrade (small)	-	-	2.000	-	2.000	1	1	492	0.01	0.25	0.00	0.01			BP	Namanga	Upgrade
RdCon39	Tororo to Lira: Rehabilitation	-	2.570	111.670	-	114.240	1	1	628	0.01	0.01	0.00	0.01	2013	2017	Road	Gulu	Rehabilitation
BP25	Nagpal Ke Border Post upgrade (small)	-	-	2.000	-	2.000	1	1	450	0.01	0.23	0.00	0.01			BP	Sirari	Upgrade
BP27	Nimule Ug Border Post upgrade (small)	-	-	2.000	-	2.000	1	1	450	0.01	0.23	0.00	0.01			BP	Gulu	Upgrade
A5	Kigali Airport interim terminal upgrade	-	-	10.500	-	10.500	1	1	539	0.01	0.05	0.00	0.01			Air	Northern	Upgrade
RdCap01	Mombasa to Kilifi: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.144	6.253	-	6.397	1	1	455	0.01	0.07	0.00	0.01	2010	2012	Road	Coastal	Upgrade
RdCon60	Isiolo to Moyale: Upgrade to Paved	-	7.670	333.230	-	340.900	1	1	492	0.01	0.00	0.00	0.01	2014	2018	Road	Namanga	Upgrade
RdCap49	Dar Es Salaam (Surroundings) to Lindi: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.034	1.468	-	1.502	1	1	350	0.01	0.23	0.00	0.01	2012	2015	Road	Coastal	Upgrade
RdCon51	Lockichokio to Sudan Border: Upgrade to Paved	-	0.624	27.096	-	27.720	1	1	450	0.01	0.02	0.00	0.01	2011	2014	Road	Sirari	Upgrade
RdCon50	Lodwar to Lockichokio: Rehabilitation	-	2.032	88.268	-	90.300	1	1	450	0.01	0.00	0.00	0.00	2016	2020	Road	Sirari	Rehabilitation
RdCon49	Kitale to Lodwar: Rehabilitation						1	1						2014	2018	Road	Sirari	Rehabilit

No.	Project Title	Cost					Screen		Impact Test		VFM Test		Total Score	Dates		Sector	Corridor	Type
		Feasib.	Det. Design	Works	Other	Total Cost	Strategy	Integration	000 ton	Impact Score	$/t	VFM Score		Start	End			
		-	2.759	119.881	-	122.640			450	0.01	0.00	0.00	0.00					ation
RdCon40	Lira and Surroundings: Rehabilitation	-	0.671	29.149	-	29.820	1	1	363	0.01	0.01	0.00	0.00	2014	2018	Road	Gulu	Rehabilitation
RdCap22	Kakamega to Eldoret/Bungoma Rd: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.190	8.254	-	8.444	1	1	324	0.01	0.04	0.00	0.00	2010	2012	Road	Sirari	Upgrade
RdCon41	Gulu and Surroundings: Rehabilitation	-	0.558	24.222	-	24.780	1	1	317	0.01	0.01	0.00	0.00	2018	2022	Road	Gulu	Rehabilitation
RdCap25	Kitale and Surroundings: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.097	4.205	-	4.302	1	1	283	0.01	0.07	0.00	0.00	2010	2012	Road	Sirari	Upgrade
RdCap24	Kakamega to Kitale: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.198	8.620	-	8.818	1	1	283	0.01	0.03	0.00	0.00	2012	2015	Road	Sirari	Upgrade
RdCon29	Lindi to Dar Es Salaam: Upgrade to Paved	-	2.489	108.112	-	110.600	1	1	294	0.01	0.00	0.00	0.00	2011	2015	Road	Coastal	Upgrade
RdCon48	Kakamega to Kitale: Rehabilitation	-	0.822	35.718	-	36.540	1	1	283	0.01	0.01	0.00	0.00	2015	2019	Road	Sirari	Rehabilitation
RdCon33	Mombasa to Matondoni: Rehabilitation	-	2.325	100.995	-	103.320	1	1	274	0.01	0.00	0.00	0.00	2015	2019	Road	Coastal	Rehabilitation
BP09	Mutukula Tz Border Post upgrade (small)	-	-	2.000	-	2.000	1	1	212	0.00	0.11	0.00	0.00			BP	Central	Upgrade
BP10	Mutukula Ug Border Post upgrade (small)	-	-	2.000	-	2.000	1	1	212	0.00	0.11	0.00	0.00			BP	Central	Upgrade
RdCap19	Kakamega to Kisumu: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.231	10.024	-	10.254	1	1	238	0.01	0.02	0.00	0.00	2010	2012	Road	Sirari	Upgrade
RdCon47	Kisumu to Kakamega: Rehabilitation	-	0.888	38.592	-	39.480	1	1	238	0.01	0.01	0.00	0.00	2011	2015	Road	Sirari	Rehabilitation
RdCon74	Malindi to Garissa: Upgrade to Paved	-	1.150	49.950	-	51.100	1	1	236	0.01	0.00	0.00	0.00	2011	2015	Road	Lamu	Upgrade
A6	Bujumbura Airport terminal expansion	-	-	18.000	-	18.000	1	1	220	0.00	0.01	0.00	0.00			Air	Central	Upgrade
COM27	Landslide rectification works on the railway line between Mlimba and Makambako	-	-	108.420	-	108.420	1	1	220	0.00	0.00	0.00	0.00			Rail	TAZARA	Rehabilitation
COM26	Installation of new telecoms and signalling systems on the Tazara Railway system	0.930	-	1,395.000	-	1,395.930	1	1	220	0.00	0.00	0.00	0.00			Rail	TAZARA	Rehabilitation
A7	Kilimanjaro Airport terminal expansion	-	-	7.500	-	7.500	1	1	192	0.00	0.03	0.00	0.00			Air	Central	Upgrade
COM4	Construction of new taxiway and resurfacing of apron at Kilimanjaro International Airport	0.600	-	11.400	-	12.000	1	1	192	0.00	0.02	0.00	0.00			Air	Arusha	Rehabilitation
RdCon24	Nyakanazi to Biharimulo: Upgrade to Paved	-	1.134	49.266	-	50.400	1	1	165	0.00	0.00	0.00	0.00	2015	2019	Road	Central	Upgrade

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		Feasib.	Det. Design	Works	Other	Total Cost	Strategy	Integration	000 ton	Impact Score	$/t	VFM Score		Start	End			
RdCon75	Malindi to Garissa: Rehabilitation	-	1.229	53.372	-	54.600	1	1	156	0.00	0.00	0.00	0.00	2015	2019	Road	Lamu	Rehabilitation
RdCon25	Mtwara to Masasi: Rehabilitation	-	1.786	77.594	-	79.380	1	1	145	0.00	0.00	0.00	0.00	2016	2020	Road	Mtwara	Rehabilitation
RdCon42	Gulu to Sudan Border: Upgrade to Paved	-	1.701	73.899	-	75.600	1	1	76	0.00	0.00	0.00	0.00	2011	2015	Road	Gulu	Upgrade
RdCap53	Masasi and Surroundings: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.014	0.595	-	0.608	1	1	35	0.00	0.06	0.00	0.00	2012	2015	Road	Mtwara	Upgrade
RdCon59	Nairobi to Isiolo: Rehabilitation	-	2.986	129.734	-	132.720	1	1	64	0.00	0.00	0.00	0.00	2015	2019	Road	Namanga	Rehabilitation
RdCon26	Masasi to Tunduru: Upgrade to Paved	-	2.520	109.480	-	112.000	1	1	35	0.00	0.00	0.00	0.00	2014	2018	Road	Mtwara	Upgrade
RdCon27	Tunduru to Songea: Upgrade to Paved	-	4.694	203.907	-	208.600	1	1	33	0.00	0.00	0.00	0.00	2012	2016	Road	Mtwara	Upgrade
A8	Zanzibar runway	-	-	22.800	-	22.800	1	1	11	0.00	0.00	0.00	0.00			Air	None	New
A4	Zanzibar terminal expansion	-	-	30.000	-	30.000	1	1	11	0.00	0.00	0.00	0.00			Air	None	New
RdCon28	Mbamba Bay and Surroundings: Upgrade to Paved	-	0.898	39.002	-	39.900	1	1	6	0.00	0.00	0.00	0.00	2014	2018	Road	Mtwara	Upgrade
RdCap14	Narok to Nairobi: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.270	11.728	-	11.998	1	0	16,648	0.37	1.39	0.02	-	2010	2013	Road	Northern / Narok Tributaries	Upgrade
RdCap31	Kampala to Masindi: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.074	3.220	-	3.294	1	0	3,908	0.09	1.19	0.01	-	2010	2012	Road	Masindi Tributary	Upgrade
RdCap36	Mbarara and Surroundings: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.023	1.018	-	1.042	1	0	698	0.02	0.67	0.01	-	2010	2012	Road	Kabatoro Tributary	Upgrade
RdCap17	Kericho to Narok: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.343	14.895	-	15.238	1	0	6,865	0.15	0.45	0.01	-	2010	2013	Road	Narok Tributaries	Upgrade
RdCap20	Kisumu and Surroundings: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.214	9.314	-	9.528	1	0	2,402	0.05	0.25	0.00	-	2010	2012	Road	Kisumu/Bugiri Tributary	Upgrade
RdCap30	Kampala to Hoima: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.031	1.363	-	1.394	1	0	298	0.01	0.21	0.00	-	2010	2012	Road	Hoima Tributary	Upgrade
RdCap18	Kisii and Surroundings: Capacity Upgrade - 1 lane per direction (Estimated: 40% of link length)	-	0.522	22.686	-	23.209	1	0	2,402	0.05	0.10	0.00	-	2010	2013	Road	Sirari / Narok Tributaries	Upgrade

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		Feasib.	Det. Design	Works	Other	Total Cost	Strategy	Integration	000 ton	Impact Score	$/t	VFM Score		Start	End			
RdCap07	Thika to Garissa: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.171	7.437	-	7.609	1	0	711	0.02	0.09	0.00	-	2010	2012	Road	Garissa Namanga Tributaries	Upgrade
RdCap08	Fort Hall to Embu to Isiolo: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.388	16.871	-	17.259	1	0	237	0.01	0.01	0.00	-	2010	2013	Road	Garissa Namanga Tributaries	Upgrade
RdCap06	Garissa to Kitui Rd Intersection: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.150	6.516	-	6.666	1	0	1,076	0.02	0.16	0.00	-	2011	2014	Road	Garissa Namanga Tributaries	Upgrade
RdCon65	Taveta to Voi: Rehabilitation	-	1.040	45.161	-	46.200	1	0	5,668	0.13	0.12	0.00	-	2012	2016	Road	Taveta / Voi	Rehabilitation
RdCon73	Kitui to Northern Corridor: Upgrade to Paved	-	2.284	99.216	-	101.500	1	0	1,037	0.02	0.01	0.00	-	2012	2016	Road	Kitui Northern Tributary	Upgrade
RdCon70	Garissa to Somalia Border: Upgrade to Paved	-	3.150	136.850	-	140.000	1	0	235	0.01	0.00	0.00	-	2012	2016	Road	Garissa	Upgrade
RdCap37	Mbarara to Kabatoro: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.124	5.402	-	5.526	1	0	698	0.02	0.13	0.00	-	2013	2016	Road	Kabatoro Tributary	Upgrade
RdCon69	Kitui to Garissa: Rehabilitation	-	2.287	99.353	-	101.640	1	0	290	0.01	0.00	0.00	-	2013	2017	Road	Garissa	Rehabilitation
RdCon71	Soroti to Moroto: Upgrade to Paved	-	4.253	184.748	-	189.000	1	0	9	0.00	0.00	0.00	-	2014	2018	Road	Moroto Gulu Tributaries	Upgrade
RdCon64	Taveta and Surroundings: Upgrade to Paved	-	0.076	3.284	-	3.360	1	0	5,668	0.13	1.69	0.02	-	2015	2018	Road	Taveta / Voi	Upgrade
RdCon66	Thika to Kitui: Rehabilitation	-	0.747	32.433	-	33.180	1	0	711	0.02	0.02	0.00	-	2015	2019	Road	Garissa	Rehabilitation
RdCon72	Soroti and Surroundings: Rehabilitation	-	0.126	5.474	-	5.600	1	0	69	0.00	0.01	0.00	-	2015	2018	Road	Moroto Gulu Tributaries	Rehabilitation
RdCon68	Embu to Isiolo: Rehabilitation	-	1.162	50.498	-	51.660	1	0	237	0.01	0.00	0.00	-	2015	2019	Road	Garissa	Rehabilitation
RdCon63	Himo to Taveta: Rehabilitation	-	0.252	10.948	-	11.200	1	0	5,297	0.12	0.47	0.01	-	2016	2019	Road	Taveta / Voi	Rehabilitation
RdCap32	Kampala to Hoima: Capacity Upgrade - 1 lane per direction (Estimated: 50% of link length)	-	0.322	13.982	-	14.304	1	0	225	0.00	0.02	0.00	-	2016	2020	Road	Hoima Tributary	Upgrade
RdCon67	Kitui to Embu: Rehabilitation	-	1.238	53.782	-	55.020	1	0	469	0.01	0.01	0.00	-	2018	2022	Road	Garissa	Rehabilitation
224	International Airport in Rwanda	-	-	0.500	-	0.500	1	0	539	0.01	1.08	0.01	-			Air	Northern	New
14	Entebbe International Airport - Apron 1 - Construction of rigid pavement and rehabilitation of vehicle corridor	0.641	1.708	42.700	-	45.049	1	0	1,299	0.03	0.03	0.00	-			Air	Northern	Rehabilitation