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How trucking services have improved and may contribute to economic development: The case of East Africa

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WIDER Working Paper 2016/152

How trucking services have improved and may contribute to economic development

The case of East Africa

Charles Kunaka,¹ Gaël Raballand,² and Mike Fitzmaurice³

December 2016

Abstract: In East Africa, there have been numerous concerns over logistics efficiency. Among them, the regional integration of the trucking industry is perceived as a major problem. This paper utilizes a combination of unpublished data surveys and published data (mainly port data) to assess the extent of regional integration. Based on various types of data, several main messages can be drawn from the trucking industry: there has been a noticeable reduction in the price of long-distance trucking services along the Northern Corridor (the corridor from Mombasa, Kenya, to Uganda/Rwanda/Burundi/eastern DRC); the integration of trucking services is moving fast in East Africa (along the Northern Corridor), Rwanda having a three-quarters market share of foreign-owned trucks; trucking fleet characteristics and management have improved tremendously and are now comparable to those in South Africa; the facilitation of border clearance processes has played a major role in improving fleet productivity. Despite all these improvements, the performance of the Tanzanian fleet still lags behind, while benefiting from protection against foreign-owned fleets.

Keywords: trucking industry, trade facilitation, East Africa, Tanzania, Kenya

JEL classification: F15, F14, L91

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1 Introduction

An efficient and well functioning transportation and logistics system drives competitiveness, particularly in this era of tightly integrated global supply chains and cross-border trade. There has long been consensus in the literature and among policymakers on the importance of good logistics in order to make manufacturing and exports grow (Huria and Brenton 2015; Oqubay 2015; Haralambides and Londoño-Kent 2004). The regional dimension of infrastructure and trade facilitation policies is considered as an important determinant of countries' ability to connect to global value chains (Shepherd 2016).

Good logistics means efficient services, such as trucking services, freight forwarding and handling, and terminal operation, as well as those provided by a whole chain of service providers. In this regard, there is a common paradox:

- On the one hand, it is clear from experiences on the ground and the perceptions of traders and exporters/importers that efficiency in logistics services is crucial for trade growth.
- On the other hand, as mentioned by Porter (2014), research on transport services efficiency has mainly been a 'forgotten factor' in the literature on infrastructure efficiency.

Logistics services are crucial to the development of African economies. Access to regional markets is very sensitive to the efficiency of trucking services, as these are the dominant mode of transport. More efficient transport services and increasing trucking industry productivity are crucial to the development of various industries, such as horticultural products, including fresh fruit, vegetables and flowers.

Efficiency in logistics services is also crucial to regional trade integration: if trucking services are not efficient, the economic impact of infrastructure investments is limited (Teravaninthorn et al. 2009). When access is granted regionally to foreign-owned logistics firms, the export of services can grow in line with increased efficiency.

In East Africa, there have been numerous concerns over logistics efficiency (for example, Kamarudeen and Söderbom 2013 for the case of Rwanda; World Bank 2013 for Kenya; Hartmann and Asebe 2013 for East Africa as a whole). Balistreri et al. (2016) find that trade costs have become a greater barrier to trade integration than tariffs. So, even as tariffs have been abolished within the East African Community (EAC), high trade costs, of which transport is a major component, still hamper the free flow of commerce.

However, East Africa is making progress in logistics performance—at least according to the Logistics Performance Index (LPI¹). East African countries were among the most improved countries between 2014 and 2016. Kenya, Rwanda, and Uganda out-perform their income group peers.² This is mainly due to: (a) port and border post improvements, (b) transit management reforms, and (c) reduction in en-route physical checks and controls.

¹ For details on the methodology of the LPI, see <http://lpi.worldbank.org/>.

² See Figure A1 in the Annex.

With a focus on East Africa, this paper will not only assess the efficiency/inefficiency of the trucking industry in comparison with other regions of the world, but also present the various industry trends (in terms of productivity/competition/innovation) in order to supply information usually overlooked by policymakers and trade researchers. Through this lens of fleet characteristics and management, the paper will explain why there have been major price reductions along the Northern Corridor but not along the Central Corridor.

In terms of methodology, we utilize a combination of unpublished data surveys and published data (mainly port data). We present unpublished material obtained through trucking and border surveys to assess the extent of trucking services integration.

Based on these various types of data on the trucking industry, several important messages can be drawn:

- There has been a noticeable price reduction of long-distance trucking services along the Northern Corridor (the corridor from Mombasa, Kenya, to Uganda/Rwanda/Burundi/eastern DRC).
- The integration of trucking services is moving fast in East Africa (along the Northern Corridor), with three-quarters of trucks in Rwanda foreign-owned.
- Trucking fleet characteristics and management have improved tremendously and are now comparable to those of South Africa, which has the most developed market in Sub-Saharan Africa.
- The facilitation of border clearance processes has played a major role in improving fleet productivity.
- Regional harmonization of infrastructure, improvements in vehicle standards, and the facilitation of market access seem to be bearing some fruit along the Northern Corridor, as evidenced by the rapid development of larger and more efficient truck fleets (with several companies operating more than 500 trucks in this sub-region).
- However, some forms of protection remain in place, taking effect through the prohibition of cabotage, the imposition of permits, or restrictions on vehicle configurations.

Overall, transport price improvements along the Northern Corridor derive from increased competition and a reduction in border-crossing delays that previously led to increased mileage and greater traffic, which has been an incentive to investment in new fleets and an increase in professionalism.

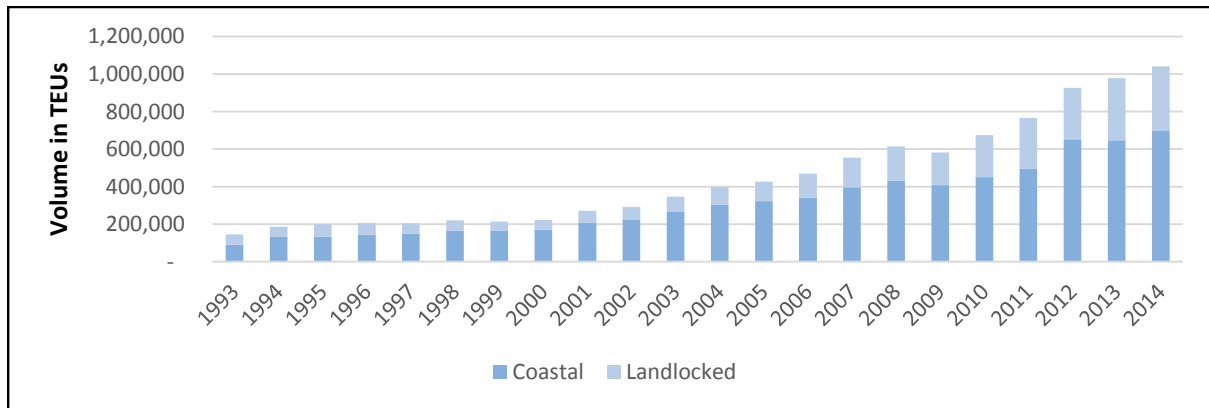
The paper is divided as follows: the next section presents the stylized facts on trade volumes and transport prices trends. Section 3 presents the characteristics of the truck fleets and the main trade facilitation reforms that have taken place in East Africa in recent years. Section 4 provides estimates of the extent of competition in the trucking industry regionally and an assessment of the remaining obstacles. The final section presents conclusions and suggests what should be done to further improve trucking efficiency in the sub-region.

2 Trade volumes and transport prices

International trade volumes of EAC countries have increased significantly in recent years. For instance, over the four-year period between 2009 and 2013, total trade increased from US\$33 billion to US\$53 billion. The increase in trade volumes was most visible in the growth in trade

flows through the main international trade gateways of the ports Mombasa and Dar es Salaam. At Mombasa the volume of traffic increased by half between 2004 and 2011, while at Dar es Salaam it doubled between 2002 and 2010 (see Figure 1). In the last decade, traffic flows have increased from over 400,000 TEUs³ to over 1 million TEUs. Even if port traffic in East Africa remains marginal compared with other regions of the world, traffic has increased dramatically in the last decade.

Figure 1: East Africa containerized trade handled at Dar es Salaam



Source: Kunaka et al. (2016).

While the coastal states of Kenya and Tanzania account for much of the growth in traffic through their ports, the growth in the volume of transit traffic to and from the landlocked countries has been just as significant. A combination of infrastructure and border management improvements has led to greater volumes being shipped faster and more efficiently to economic centres in Burundi, eastern DRC, Rwanda, and Uganda. In fact, the region is beginning to develop a regionally integrated and increasingly sophisticated logistics system with infrastructure and services connecting the seaports and container freight stations with the inland container depots (ICDs)⁴ and other customs clearance facilities. This is despite the fact that some of the infrastructure, especially off-dock facilities, was initially designed as a quick-fix solution to overcome port congestion.⁵ Off-dock facilities were initially established in 2007 in the vicinity of the ports of Mombasa and Dar es Salaam to alleviate terminal congestion but have since become established as extensions of the ports, as well as being designated to handle specific types of cargo.

In contrast to the situation in the colonial period, road transport remains by far the most important mode of transport in East Africa (see Figure 2), with a market share of over 90 per cent for the EAC region as a whole and for Tanzanian traffic (out of the port) and over 80 per cent for Zambia and DRC, despite the long distances involved. This explains why trucking services efficiency is critical to logistics efficiency and, consequently, manufacturing growth in the sub-region.

Limited capacity due to operational constraints limits the market share of the railways, the only other feasible mode, to about 6 per cent of total volumes in both the Northern and Central

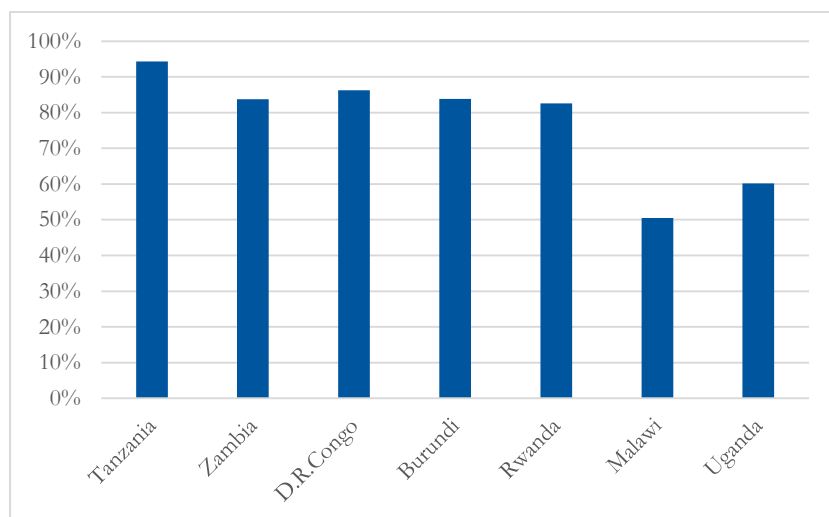
³ Twenty-foot equivalent units.

⁴ In East Africa, ICDs are secured facilities far from the port that help importers and exporters to process goods clearance. They are mainly along railway lines in East Africa.

⁵ For a more detailed presentation of the implemented reforms, especially for Dar es Salaam, see Raballand et al. (2012).

Corridors. The railways suffered from many years of low investment and poor reliability; even after concessioning, they are yet to attract traffic from the roads. However, it is expected that the new standard-gauge railway network that is under construction across the region will offer faster and more reliable services and be more competitive with road transport.

Figure 2: Road transport share of different destinations out of Dar es Salaam (2015)



Data source: Own estimates based on data from Tanzania Ports Authority.

With the rapid growth of traffic, many companies have invested in new trucks in recent years (especially in Kenya). However, in the last two or three years, traffic has not increased as before; in a competitive environment, supply being in excess of demand, prices should therefore have decreased. This has been partially true in East Africa (and is a proxy for remaining obstacles to competition in the sub-region, as will be developed later).

In recent years, there have been conflicting trends in East Africa:

- Transport prices along the Northern Corridor have gone down significantly (by 30 per cent from Mombasa to Kigali between 2011 and 2015 and by 26 per cent to Kampala during the same period).
- Transport prices along the Central Corridor have increased significantly in this same period, with an increase of 79 per cent from Dar to Kampala and 36 per cent to Kigali.⁶

It is all the more puzzling that Tanzania has had such a price increase when traffic has increased even more than in Kenya, which should have led to the same investments and trucking professionalism improvements. As we will show later, the Tanzanian industry is the most protected of the region and this probably explains at least partly why transport prices are still high despite growing traffic.

The possible impacts of improving logistics performance can be seen from the results of the East Africa Trade and Transport Facilitation Project (EATTFP) financed by the World Bank in East Africa (see Box 1 below). Financing through the project totalled US\$219 million, distributed across four project countries: Kenya, Rwanda, Tanzania, and Uganda.⁷ The project financed

⁶ Shippers Council of Eastern Africa (2015).

⁷ The amount included a partial risk guarantee of US\$60 million for the concessioning of the railway between Kenya and Uganda.

improvements to infrastructure (border posts, weighbridges); modern IT systems in the port and for trade portals and national single window systems; and the rehabilitation of vessels on Lake Victoria. It also financed policy reforms for border management in all the project countries.

One of the most effective ways to assess the impact of improvements along a trade corridor is to look at the changes in the costs incurred by the supply chains along the corridor. A supply chain approach helps to disaggregate the costs associated with each activity along the supply chain and allows for the assessment of the impact of facilitation and regulatory or investment measures (Arvis et al. 2010). Direct and indirect costs can be estimated for each activity, including the costs and time associated with the clearance of goods through a port or a border post, the cost of storage of goods in warehouses (and related opportunity costs of stock-outs and tied up capital), and the costs of mitigating the risk of unreliability in system operations. Uncertainty in delivery time can impose a significant cost on shippers of goods and is often one of the most important cost items to estimate. Using a supply chain approach in East Africa, it was established that the main cargo delays at the ports, especially Mombasa, were reduced by simplified processes, as were clearance times at border crossing points, and there were improvements to intermodal interfaces and inland clearance processes.

As argued above, most of the growth in traffic in East Africa has been accommodated by road transport. The economic analysis of the EATTFP suggested savings to the four economies where the project was implemented totalling US\$800 million in 2012 from an investment of US\$200 million. The savings were distributed as shown in Table 1.

Even though a majority of the benefits concerned the transit countries (Kenya/Tanzania), Uganda and Rwanda benefited from annual transport savings of over US\$200 million and over US\$35 million, respectively, or 3–4 per cent of total import costs.

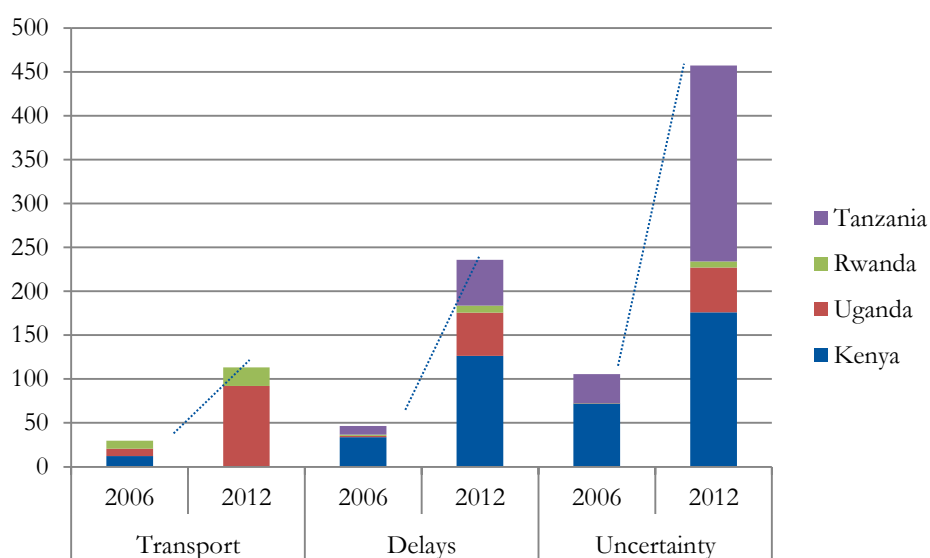
Table 1: Savings resulting from EATTFP Interventions in 2012 (in million USD)

	Transport	Delays	Uncertainty
Kenya	0	126.4	176.1
Uganda	92	49.2	50.8
Rwanda	21.2	8.1	7.2
Tanzania	0	52	223.3
Total	113.2	235.7	457.4

Source: Waithaka et al. (2014).

Reforms during EATTFP implementation have had an even greater impact on reducing uncertainty than on delays and transport costs (see Figure 3). A graphical illustration of the impacts makes it clear that whereas the benefits of the reductions in delays and uncertainty were expected initially to be felt largely in the coastal countries, Kenya and Tanzania, such benefits are also significant in the landlocked countries, Rwanda and Uganda. Still, contrary to the conventional wisdom that the benefits of regional projects should be largest in landlocked countries, the analysis clearly shows that Kenya and Tanzania, the coastal countries, have benefited much more from trade facilitation interventions.

Figure 3: Composition of logistics cost savings as a result of EATTFP



Source: Own estimates based on World Bank project monitoring data.

The analysis also shows that the return on investment from soft interventions is much larger than from any infrastructure project. The internal rate of return (IRR) for the project, if all the effects are attributed to it, is over 100 per cent. Even if only a third of the impacts are attributed to the EATTFP, the project has still brought significant benefits to the private sector in East Africa. The impact of the types of intervention supported by the project, especially on shippers and transport companies, was most visible at the border posts. At the Malaba border post, between Kenya and Uganda, a dramatic reduction in clearance times was observed. These reduced from an average of 24 hours to an average of 4 hours between December 2012 and January 2013. The reduction was due to a cocktail of measures, chief among them (i) better coordination and data-sharing between the border agencies of the two countries; (ii) mandatory pre-arrival lodgement of declarations; and (iii) the imposition of traffic and truck parking rules to decongest the Customs Controlled Zone.

Improvements in the performance of the Northern Corridor, combined with other reforms (especially the introduction of a single customs territory), have led to a reorganization of some logistics services. Especially in Kenya, Rwanda, and Uganda, the traditional trucking firms and clearing and forwarding enterprises are increasingly offering combined services, covering clearing and forwarding, storage, and transportation. Over time, in line with empirical evidence from other countries, it can be expected that some of the operators will offer even more value-adding logistics services, including packaging, labelling, and distribution.

3 Fleet characteristics and developments

Even though there remain numerous problems, trucking services efficiency has improved significantly in recent years (especially along the Northern Corridor) among Kenyan fleets, some of which are now on a par with those in South Africa.

We present in this section the results of (unpublished) trucking surveys in East Africa carried out in 2012–2013 (see Table 2 for the number of enterprises surveyed).⁸ These have generated new data, which shed new light on the road transport industry in East Africa, as presented in the rest of this chapter.

Table 2: Enterprises surveyed versus total per country

	Kenya	Tanzania	Rwanda	South Africa
Total enterprises	1,574	732	220	1,296
Total fleet	17,066	12,356	444	73,787

Note: Figures include domestic transportation.

Source: Hartmann and Asebe (2013). NP&Associates for South Africa.

The main findings are the following:

- East African fleets are catching up South African companies in terms of productivity, fleet age, use of GPS devices and tracking.
- However, in the sub-region, Tanzanian fleets still lags behind Kenyan fleets.
- The market continues to be concentrated, with a small number of companies owning a large share of the total fleet and a multitude of family-owned companies.⁹
- In terms of employment generation, direct employment of trucking services remains rather limited (since it is a capital intensive activity).

As in the more sophisticated trucking markets of the USA and Europe, the ownership of the road transport industry in East Africa is concentrated: 5 per cent of the enterprises operate 45 per cent of the truck fleet in Kenya, while that proportion is 40 per cent in Tanzania. There is a dual market, with large enterprises co-existing and competing with much smaller enterprises. In 2014 the Tanzania Transport Operators Association (TATOA) had 838 members, of which 692 (83 per cent) owned between 1 and 15 trucks and 146 (17 per cent) had 16 trucks or more. In fact, in Tanzania more than 50 per cent of the enterprises operate 7 trucks or fewer, while in Kenya a similar proportion operate 4 trucks or fewer. In Rwanda, almost 80 per cent of the enterprises operate only one truck. At the other end of the spectrum, several companies operate over 500 trucks, especially in Kenya.¹⁰

Although some enterprises are large, most road transport enterprises in East Africa are family/individual owned (see Table 3). In general, shareholding companies are rare, particularly in Tanzania, and they are mostly controlled by national enterprises. Foreign shareholding and investment is practically non-existent, largely due to the relatively low attractiveness of transportation services compared with other services that are open to foreign direct investment.

⁸ The surveys were the result of a collaboration between corridor authorities and national road transport associations (NRTAs) and increased the visibility of the NRTAs for the industry.

⁹ This is not specific to Africa, but is also a characteristic of this industry in the USA and Europe (Teravaninthorn and Raballand 2012).

¹⁰ In South Africa, 36 companies operate more than 500 trucks.

Table 3: Ownership structure of road transport enterprises in East Africa

	Kenya (%)	Tanzania (%)	Rwanda (%)
Individual/Family-owned	71	89	74
Local shareholding	16	2	16
Foreign shareholding	3	2	0
Publicly owned	1	0	0
Others	6	1	0
Not specified	3	7	11
Total n	101	117	19

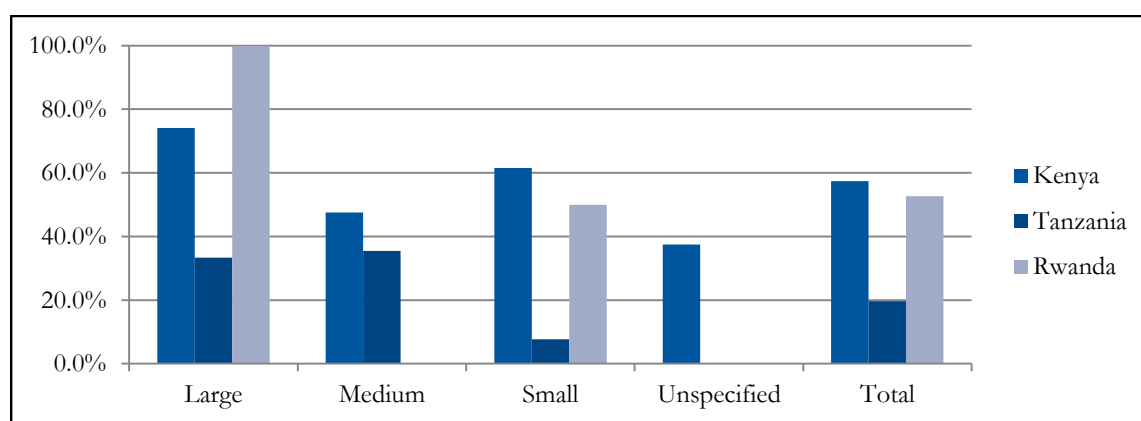
Source: Hartmann and Asebe (2013).

This should not imply that individual ownership prevents a firm from being managed professionally. The survey depicts an industry in which the top management is highly qualified¹¹, the fleet is carefully managed and maintained, employees are paid comparatively well, and modern operational techniques are used.

As an illustration of the openness to modern techniques, the level of utilization of ICT for fleet management is high, particularly in Kenya and Rwanda, and there is a high use of GPS management for large fleets (see Figure 4). It is particularly striking that half of the enterprises with fewer than 10 trucks in Kenya and in Rwanda (where they actually tend to have fewer than 7 trucks) are equipped with GPS-based fleet management systems.

The introduction of GPS devices has enabled firms to better monitor vehicle utilization and drivers' practices and has led to transport time reduction as well as better tracking of vehicles and cargo. GPS has also helped to improve the performance of other logistics services users and service providers. Shippers are able to better track and trace their shipments, while customs and other border agencies can monitor shipments of high-risk commodities, especially for transit operations.

Figure 4: Percentage of use of GPS fleet management according to fleet size



Note: Large = 100+ trucks, Medium = 11–99 trucks, Small = 1–10 trucks.

Source: Hartmann and Asebe (2013).

To some extent, the characteristics of the fleet are in line with prevailing ICT techniques, as the

¹¹ In both Kenya and Tanzania, most top managers are graduates or post-graduates and have professional experience—typically between 5 and 15 years, but frequently more.

acquisition practices of the road transport enterprises differ, as shown in Table 4: in Kenya the majority of trucks were purchased new, in Rwanda second-hand trucks are slightly in the majority, and in Tanzania an overwhelming majority are second-hand purchases. The average age of the fleet reflects those practices: 7.5 years in Kenya, 12.6 years in Rwanda, and over 16 years in Tanzania.

Table 4: Age of truck at purchase and fleet age

	New	Second-hand	Unknown	Total operated	Average age (years)
Kenya	56%	23%	21%	4,531	7.5
Tanzania	18%	80%	2%	4,322	16.2
Rwanda	38%	60%	2%	133	12.6
South Africa (cross-border fleet)	80%	20%		33,942	7

Sources: Hartmann and Asebe (2013). NP&Associates for South Africa.

As a result, the total Kenyan fleet may even perform better than the total South African fleet. In terms of fleet productivity, according to logistics performance surveys, almost one-third of the interviewed fleets operate trucks covering more than 15,000 km per month (which is more than the South African fleet record).¹²

4 Trade facilitation and public policies

Numerous public reforms have been undertaken in the last decade in East Africa to facilitate trade, with a mix of ‘hard’ measures (mainly infrastructure investments such as road rehabilitation and new border facilities) and ‘soft’ measures (simplification of processes, harmonization of rules, etc.). An example of reforms based on soft rather than hard interventions is the East Africa Trade and Transport Facilitation Project (EATTFP) (see Box 1).

¹² Around 10,000 km per month, according to Shippers Council of Eastern Africa (2015).

Box 1: The EATTFP

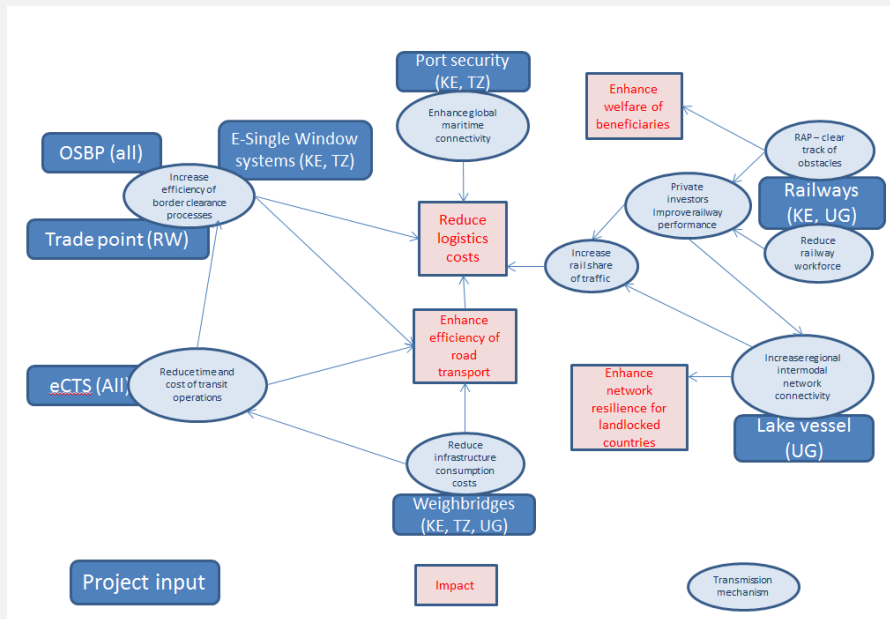
The EATTFP was developed as a response to a request by the EAC and its member countries. Following the promulgation of the EAC, it sought World Bank and African Development Bank support to enhance the regional integration agenda in East Africa. The project was conceived with three main aims:

- a) To support the improvement of the general trade environment through effective implementation of the customs union and related free market
- b) To support actions for improving the efficiency of supply chains in and out of the region as well as along the trade routes linking the main gateways to the main economic centres
- c) To support the governments of Kenya and Uganda in the joint concessioning of the Kenya and Uganda Railways.

The project was designed to reduce delays and uncertainty caused by poor transport systems and logistics. The weaknesses in logistics performance showed themselves through:

- port clearance delays
- poor infrastructure and services conditions along the main corridors
- long clearance times at border crossings
- poor general transport and transit organization
- inefficient intermodal interfaces and inland clearance processes.

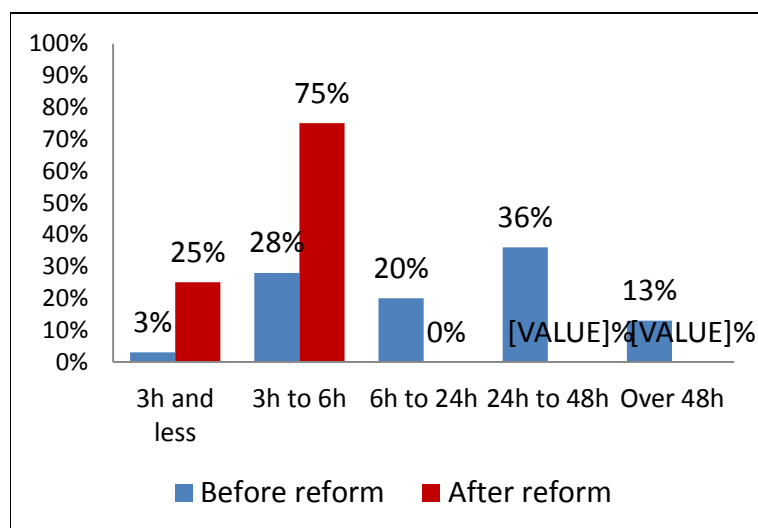
Project interventions were a mix of seemingly discrete actions, as shown below, but which all contributed to the development objective.



Why is trade facilitation so important for trucking efficiency? According to Hartmann and Asebe (2013), even though investing in infrastructure is essential, it is often not sufficient to enhance the efficiency of border management but must be accompanied by close cooperation between border agencies in one country as well as with those of the neighbouring country. In many instances this increases revenues for countries but also reduces costs for the private sector. The impacts of the interventions through the EATTFP and complementary initiatives were significant, leading to greater fleet utilization and savings in other costs running to several millions of dollars.

Government authorities have striven to reduce procedural obstacles in order to speed up clearance processes. A study by the SSATP (2013) at the Malaba border post (at the Kenya–Uganda border) found that reforms to clearance processes had resulted in a drop in average crossing times for all trucks from 24 hours to 4 hours (48 hours to 6 hours for loaded trucks) (see Figure 5), while the value of the time saved by trucking companies and traders was equivalent to US\$70 million per year.

Figure 5: Time spent at Malaba border post before and after reform



Source: SSATP (2013).

Along with the simplification of processes, one-stop border posts (OSBPs) have been set up in East Africa at major crossing points in order to reduce the number of controls and therefore border processing time.¹³ It seems that, in East Africa, border crossing times are on a downward trend (despite increased traffic).

In parallel with national reforms, the EAC (the major regional integration body) has developed regional rules in areas relevant to trucking efficiency. These are aimed at harmonizing road and vehicle standards, vehicle insurance policies, and even market access. The main legal instrument governing trucking operations is the East African Community Tripartite Agreement on Road Transport. This agreement was originally signed by Kenya, Tanzania, and Uganda in 2001; Rwanda and Burundi became parties to it on joining the EAC. The agreement is complemented by specific instruments such as axle load controls and other protocols for the two main trade routes, the Northern and Central Corridors. Taken together, the various regional or corridor instruments seem to have led to the rapid development of new and efficient truck fleets, especially on the Northern Corridor.

¹³ According to Tyson (2015), ‘most of these initiatives are directed at large-scale cross-border trade. Less is known about small-scale cross-border trade [...] [T]he key findings are that economic livelihoods have not been negatively affected for the majority of informal traders and workers – and may, in fact, have been enhanced. However, there are two major exceptions. [...] First, bribery of border officials is a significant problem at the OSBP. The findings indicate that the OSBP has not affected levels of corruption at the border and that it continues at a high level. [...] Second, the poorest of the poor are vulnerable to the policy changes. These are most commonly day laborers or casual workers without any forms of capital or self-employment whose livelihoods are dependent on manual work at the border such as portage and transportation of goods and people. As the new forms of trade are reducing this type of manual work, they are vulnerable to losing their livelihoods’.

5 Employment

Trucking surveys have enabled us to estimate the extent of employment in trucking services in East Africa (Kenya/Tanzania/Rwanda). On average, each truck has approximately 2.5 staff (one driver and one or two additional staff—usually a mechanic/second driver and, in the case of large companies, an administrative/support staff person) (see Table 6). For those three countries, there are approximately 30,000 trucks, amounting to approximately 75,000 total staff, compared with total employment in manufacturing of just over 400,000.

Table 5: Estimate of total employment generated by trucking industry

	Trucks	Drivers per truck	Employment per truck	Total employment
Kenya	17,066	1.11	2.73	46,590
Tanzania	12,356	1.18	2.23	27,554
Rwanda	444	1.11	2.77	1,230
Total	29,866			75,374

Source: Hartmann and Asebe (2013).

Trucking is becoming increasingly integrated in East Africa, and Kenyan transport services are being exported along the Northern Corridor. However, trade in transport services remains low compared with trade in goods.

6 Competition

Competition in the trucking industry, while it has been generally ignored, seems to play a major role in price determination and therefore in trade and development. Lall et al. (2009) considered the function of scale economies, market structure, and competition between transport providers as determinants of transport prices in Malawi and concluded that market structure and competition play a major role in determining prices. Teravaninthorn and Raballand (2009) demonstrated that, along the major corridors in Africa, transport prices (the prices paid by users) were high, whereas transport costs (the cost of ‘producing’ the transport) were no higher than in Europe on some corridors—the most problematic region being West Africa, where bilateral trade agreements divide the trucking market between transit countries and landlocked countries, the latter operating a ‘tour de role’ system¹⁴ that creates rents by non-transparently allocating access to freight. Finally, USAID (2012) demonstrated in the case of West Africa that trucking liberalization could save over US\$400 million in transport costs and increase the value of transit trade by around 8 per cent.

In East Africa, with rapid growth in traffic have come large fleet investments in recent years (especially in Kenya), with the result that access to freight has become even more critical to the viability of trucking operations. Kenya’s trucking industry has developed very much along the lines of the South African trucking industry and can be compared to it. Trucking in Kenya, unlike Tanzania, is not centred around cross-border trade and has a large local and regional component. Imported goods are moved by local trucking fleets from the port of Mombasa to the hinterland and the area around Nairobi.

¹⁴ Trucking companies load cargo based on approvals from the shippers’ council and/or trucking associations.

A major concentration of demand is to be found in the ports. Access to freight volumes in ports is therefore a significant factor in trucking efficiency in East Africa. That there is competition, at least in Rwanda, is clear. Although there are no publicly available data on market share breakdown among fleets, we have been able to compute them based on surveys on the ownership of trucks conducted at border posts compared with port data on cargo destinations. At the Gatuna border post (Rwanda–Uganda border), Rwandan companies operate only 20 per cent of the flows (see Table 5). However, the figure of 280 trucks a day is not the total market share market of Rwanda, since this country is a transit country for flows to Burundi and DRC. Taken from the Uganda trade diagnostic (World Bank 2013), approximately 30 trucks a day from each country transit through the Gatuna border post to Burundi and DRC. The total market for Rwanda is therefore approximately 220 trucks a day, meaning that Rwandan companies operate more than a quarter of Rwandan trade. But it also means that the bulk of Rwanda trade is transported by foreign-owned trucks (mainly Kenyan and Ugandan¹⁵).

Table 6: Average daily number of trucks crossing at the Gatuna border post by nationality¹⁶

Nationality	Trucks
Rwanda	61
Uganda	92
Kenya	87
Burundi	23
DRC	15
Tanzania	2
TOTAL	280

Source: Own trucking surveys.

From these data we can estimate the value of trucking services from Kenya to Rwanda. Based on the price of a truckload from Mombasa to Kigali (US\$4,500 in 2015 (Shippers Council of Eastern Africa 2015)) and assuming a minimal figure of 50 trucks a day¹⁷, we estimate the value of transport services from Kenya to Rwanda to be US\$50 million per annum. This compares with the total value of trade between the two countries in 2013 of US\$169 million. While not often included in official statistics, transport services are therefore a large share of the trade exchange between the countries.

Competition is less intensive along the Central Corridor. The road transport industry in Tanzania is regulated by the Transit Goods Permit System, which restricts the movement of foreign-registered vehicles through the country and therefore favours Tanzania-registered transporters. Local transporters pay only US\$10 per trailer unit for an annual Transit Permit, which is required by the Tanzania Revenue Authority (TRA) to transport cargo through Tanzania to neighbouring countries or other landlocked countries. It is also an EAC requirement that all transit trailers have the words ‘TRANSIT GOODS’ painted or stuck on the side of the chassis in large, clearly visible letters. On the other hand, foreign-registered vehicles are required to pay US\$300 per trailer unit per annum for the same Transit Permit from TRA. Moreover, most southern African

¹⁵ It is impossible to compute the market share of the various fleets, since some of them also transit to Burundi and DRC. The largest market share is held by Kenyan trucks, especially for imported goods from overseas, since they are mostly based in Mombasa port area.

¹⁶ The nationality of trucks is determined by the vehicle registration.

¹⁷ Based on observation of 87 trucks per day and assuming that the remaining transit fleet for Burundi and DRC is Kenyan owned.

countries have adopted the South African-designed Interlink trailer configuration, which means that they have to pay US\$600 per annum for a two-trailer combination. On top of this, the Tanzania National Road Agency (TANROADS)—which is opposed to these trailers coming into the country, claiming that they damage the road infrastructure—has made it a requirement that Interlink trailers must obtain an Abnormal Load Permit on entry at the border post, at a cost of US\$20 per crossing. This makes it difficult for foreign-registered vehicles to participate or compete in the Tanzania trucking industry. Moreover, foreign-registered transport companies are opposed to having the words ‘TRANSIT GOODS’ permanently on their trailers. All these measures discriminate against foreign-registered trucks and restrict competition with Tanzanian fleets along the Central Corridor.

The Tanzanian case illustrates the fact that some forms of protection remain in place in the sub-region. The most common regulations are: discriminatory prices on transit permits; different axle-load regulations¹⁸, prohibiting some trailer combinations; discriminatory road use charges for foreign-registered vehicles; taxes at borders¹⁹; prohibition of cabotage²⁰. However, thanks to increasing integration and competition in East Africa, transport prices charged to manufacturers/importers and exporters have been on a decreasing trend, which makes production and trade to/from East Africa more competitive.

7 Conclusions and recommendations

There are some positive signs regarding the trucking industry in East Africa:

- Transport quality and fleet management have rapidly improved in recent years.
- Regional integration, though not perfect, is taking place in the Northern Corridor.
- Competition has increased.
- Consequently, transport prices decreased by 30 per cent along the Northern Corridor between 2011 and 2015.

It should be emphasized that not all hard infrastructure has the same impact and that hard and soft investments may be complementary. Road rehabilitation along busy corridors is economically justified. However, creating OSBPs without changing procedures and processes will not have a major economic impact.

Since increasing trucking industry productivity is crucial to the development of various logistics-intensive industries (e.g. fresh fruit, vegetables, and flowers)²¹, these recent trends are encouraging. However, prospects for industries without smokestacks depend on even greater regional harmonization and integration. It is important for policymakers in the region to give even greater priority to the implementation of regional regulations over national and bilateral approaches in order to make trucking services even more productive, thereby facilitating the trade expansion of African countries.

¹⁸ For more information on the various types of protection in the trucking industry, see Raballand et al. (2008).

¹⁹ This mainly concerns the DRC.

²⁰ Using foreign-registered vehicles for the domestic movement of merchandise. Even in the EU, cabotage was prohibited until 1992.

²¹ Constraints along the value chain are not always related to transport issues.

Improving logistics performance in East Africa can have a transformative impact on the economic development of the region. Reductions in transport and logistics costs are expected to serve as a stimulus for the reorganization of economic activity. As a result of such reductions, a manufacturer could change the source of inputs or the destination of exports or relocate production, thereby reconfiguring the topology of their supply chains. They could also enter into the production of new products. Ultimately, therefore, improvements in transport and logistics can affect the real economy and also the spatial economy of a country or region.

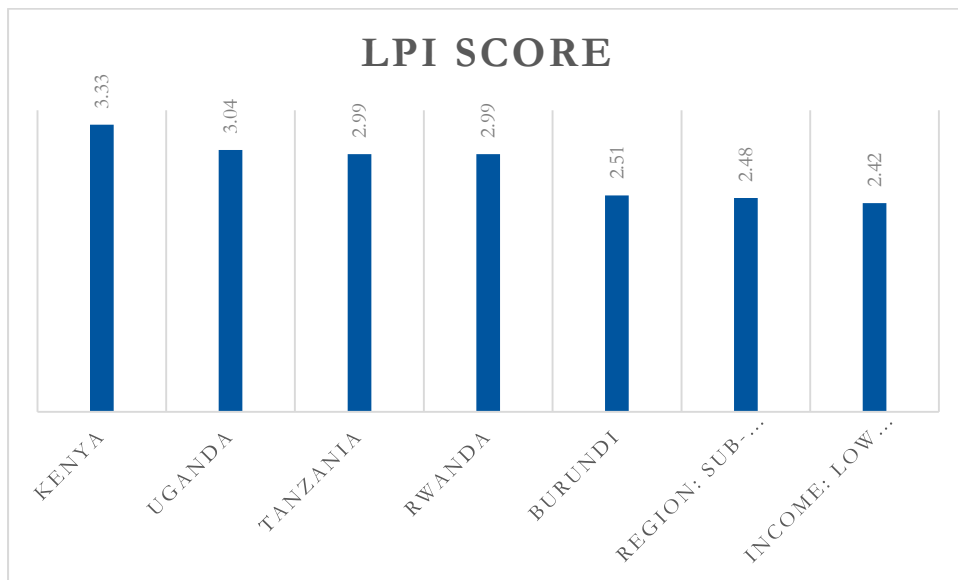
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Annex

Figure A1: LPI scores in 2016



Source: World Bank.