Resolving the unresolved non-tariff barriers in the East African Community

Second and final report

September 2017

Acknowledgments

This final report is one of the outputs of the "**Resolving the unresolved non-tariff barriers in the East African Community**" project financed by the United Kingdom's Department for International Development (DFID) through the East African Research Fun (EARF). We are grateful for their support and comments. This report has been prepared with input provided by:

University of Sussex

Prof L. Alan Winters (project leader)

Prof Jim Rollo

Dr Peter Holmes

Mr Andreas Eberhard

Institute of Development Studies

Dr Dirk Willenbockel

CUTS

Mr Clement Onyango

Ms Rosebela Oiro

Mr Boniface Othieno Owino

Overseas Development Institute

Dr Max Mendez-Parra (deputy project leader)

Dr Neil Balchin

Ms Linda Calabrese

All views expressed in this report are those of the authors alone and do not necessarily reflect DFID, University of Sussex, IDS, CUTS, ODI or EARF views. The responsibility for any potential errors remains with the authors.

This document is an output from a project funded by the UK Department for International Development (DFID) through the Research for Evidence Division (RED) for the benefit of developing countries. However, the views expresses and information contained in it is not necessarily those of or endorse by DFID, which can accept no responsibility for such views or information or for any reliance placed on them.

Contents

Acronyms

AEO	Authorised Economic Operator
AVE	Ad Valorem Equivalent
CET	Common External Tariff
CGE	Computable General Equilibrium
CPI	Consumer Price Index
DFID	Department for International Development
DRC	Democratic Republic of Congo
EABC	East African Business Council
EAC	East African Community
EACS	East African Community Secretariat
EALA	East African Legislative Assembly
EU	European Union
fob	free on board
GDP	Gross Domestic Product
GTAP	Global Trade Analysis Project
IRR	Internal Rate of Return
MTIC	Ministry of Trade, Industry and Cooperatives
NCTO	Northern Corridor Transport Observatory
NCTTCA	Northern Corridor Transit and Transport Coordination Authority
NMC	National Monitoring Committee
NTB	Non-Tariff Barrier
OSBP	One-Stop Border Post
RoEAC	Rest of EAC
RoW	Rest of World
SCT	Single Customs Territory
SPS	Sanitary and Phytosanitary
TMEA	TradeMark East Africa
TPCI	Trade Poverty Constraint Index
UK	United Kingdom
UNCTAD	United Nations Conference on Trade and Development
WTO	World Trade Organization

Executive summary

This report presents all the findings of the second stage of the Resolving the Unresolved Non-Tariff Barriers in the East African Community. Consequently, it will not discuss further the work done during Stage 1. References for this work can be found in the respective report and the policy briefs prepared.

This report presents three main elements. First, it describes the existing non-tariff barriers (NTBs) by assessing their nature, time to be resolved and other characteristics. Second, it attempts to measure and quantify the costs of the trade and logistics NTBs in the East African Community (EAC). Third, it assesses the effects of the removal of these NTBs on trade, production, income, employment and prices.

Nature of the NTBs

The first task for our team was to analyse existing NTBs. The main points are highlighted below.

- NTBs can be classified into four broad categories: tax-like measures; quality and safety standards; import bans; and customs and trade facilitation measures.
- Up to June 2016, the highest share of NTBs resolved in the EAC were customs and trade facilitation measures (45% of total resolved NTBs). The highest share of unresolved NTBs is made up of tax-like measures (40% of total unresolved NTBs).
- Up to June 2016, the large majority of tax-like and quality and standards resolved NTBs reported to the EAC Secretariat (EACS) had been raised by Tanzania, accounting for 33% of the list of resolved NTBs. In the same timeframe, Kenya had raised the majority of resolved import bans.
- The breadth of discrimination of NTBs can vary. NTBs can discriminate against a specific country, a product or a brand or if they impose costs on all goods. Around half of resolved and unresolved NTBs discriminate across all imports.
- NTBs discriminating against a particular country have proved easier to solve, and they represent 53% of all solved NTBs.
- NTBs can also be divided into 'resource-using' and 'rent-creating'. Resource-using NTBs are prevalent among both resolved and unresolved NTBs.
- Up to June 2016, NTBs affected Kenya and Uganda relatively more than they did Rwanda, Tanzania and Burundi. Tanzania generated the largest number of NTBs, followed closely by Kenya.

NTB resolution mechanisms

The research looked at the way NTBs are addressed and resolved by the EAC Partner States.

- In terms of time to resolve the different types of NTBs, those related to customs and trade facilitation measures have generally taken the longest time to resolve, with resolution taking, on average, close to 10 months.
- We identify three main types of barriers, according to the resolution needed: barriers that require unilateral action from one government, barriers that require concerted action by Partner States and barriers that can be eliminated through improved trade facilitation.
- The EAC has different types of mechanisms to address these barriers, starting from dialogue between countries and interested parties, which can be escalated to the regional level if resolution is more complex.

Transport and trade times and costs

Research conducted on existing NTBs highlighted the fact that the list of existing NTBs often varies, as old NTBs are resolved and new NTBs appear. Therefore, it was decided that the research would focus on a coherent portfolio of transport-related NTBs, as these would make the research results relevant even if the list of NTBs changed throughout the course of the research.

With respect to the times and costs of NTBs, the report presents the findings of interviews and surveys among transporters, forwarders and manufacturers in Kenya, Tanzania and Uganda.

- The majority of stakeholders felt transport costs had decreased within the EAC in the previous five years. However, they attributed this to the fall in the price of petrol.
- Weighbridges remain one of the outstanding problems in the EAC. Although they have been reduced in number, there are still issues associated with the calibration of scales and procedures to deal with non-compliance. Moreover, many transporters felt they were disguised roadblocks and represented fertile ground for corruption.
- There was general agreement that trucking prices had fallen since 2013. The fall ranges between 30% and 40% on the route from Mombasa to Kampala.
- The fall in the price of oil explains a large part of this drop. However, some companies identified a fall in profits, which can be associated with increased competitive pressure in the sector.
- On average, trucks should arrive in Kampala in two to four days. Delays explain any variation in this time.
- On a typical day, three to six hours are spent waiting at weighbridges and on other delays.
- Based on interviews, it was estimated that overall transit times between Mombasa and Kampala increase by 7.1 hours because of weighbridges, 20.7 hours because of delays at the border between Kenya and Uganda and 36.7 hours because of policy roadblocks and other unforeseen circumstances. This implies that, of the 5.6 days trucks currently spend in transit, 2.6 days are lost because of trade facilitation barriers.
- Crews are given an allowance to cover multiple costs (excluding petrol). Around 40% is used to pay for road fees, levies, bribes and fines for traffic offences. Another 10% is paid on parking fees, some of them associated with delays generated at the border.
- This suggests that 50% of the allowance is used to cover NTBs. Assuming a 10% profit margin and considering the transport price revealed by firms, these NTBs account for almost 7% of the transport cost.
- Transit times are spread evenly among waiting times (weighbridges, border controls, roadblocks), stopping for personal reasons (resting, eating) and moving time.
- On the route between Mombasa and Kampala, the time is spread evenly between clearing at Mombasa, transit and the inland container depot at Kampala.
- Fuel accounts for more than 70% of the annual and operating costs of the Northern Corridor.
- Although weighbridges address multiple policy objectives (e.g. they control damage to road surface), firms assign a relatively high disruption incidence to their multiplicity.
- In terms of specific NTBs, the report finds:
    - **Weighbridges:** Based on the calculation of *ad valorem* equivalents (AVEs), weighbridges imply an additional cost of between 0.16% and 0.86% of the price of the product depending on the product under consideration.
    - **Border delays:** If border delays are eliminated, there could be a reduction of 20 hours in transport times on average. This is equivalent to an additional cost in the range of between 0.49% and 2.51% in transport depending on the product.
    - **Other delays (e.g. traffic, roadblocks):** Calculations suggest these delays may increase transport costs in a range of 1.17% to 6.05%. However, this considers mostly unidentifiable costs, which suggests incidence may be smaller.
    - **Bribes:** There is a potential $35 cost per trip associated with bribes. This represents between 0.16% and 0.81% of the cost of transport depending on the product considered.

- **Road usage fees:** The $50 road usage fee charged by Uganda represents one of these fees. This fee represents between 0.23% and 0.81% of additional transport costs depending on the product considered.
- **Improved infrastructure:** If speeds can be double, through better infrastructure, allowing trucks to circulate at 50 km/h, this will imply a reduction of nearly 35 hours in the transit time between Mombasa and Kampala. This would imply a reduction of transport costs of between 0.84% and 4.3% depending on the product considered.

- A cost-benefit analysis of the reduction of NTBs is necessary. Infrastructure improvements present large benefits but with significant investment costs. Other measures (e.g. a reduction of border delays and weighbridges and the elimination of bribes) may generate larger benefits per unit of investment.

The economic effect of the elimination of NTBs

This report estimates the effects that the removal of NTBs will have on output, trade, employment, income and prices using a computable general equilibrium (CGE) model. Six different scenarios are considered, representing each one NTB. In addition, a general scenario assuming an aggregated effect is considered. Also, using the Trade Policy Constraint Index (TPCI), the report assesses the likely effects on poverty reduction of the elimination of NTBs.

- If the NTB removals are applied in a discriminatory fashion to EAC imports of EAC origin only, aggregate welfare gains are moderately positive for all EAC Partner States. The total intra-EAC trade volume rises by up to 13%, but since the baseline shares of trade with EAC partners in EAC countries' total exports and imports are generally small, the macroeconomic effects triggered by this trade expansion remain modest for all EAC members.
- The real gross domestic product (GDP) of Kenya, Uganda and Rwanda rises by around 0.5%, and consumer welfare by 0.3–0.4%. For Tanzania, the EAC country with the lowest EAC shares in its total trade, the GDP effects (less than +0.3%) and consumer welfare effects (less than 0.2%) are noticeably lower. The effects on the functional distribution of income and on the sectoral structure of production and employment remain likewise small in all EAC countries.
- The picture changes profoundly when the NTB reduction measures are extended to the intra-EAC road transport of imports from the rest of the world. Under a comprehensive implementation of the transport-cost-reducing NTBs in this study, the real GDP impacts range from +2.8% for Kenya to +1.7% for Rwanda.
- Similarly, the consumer welfare gains range from +2.2% (Kenya) to 1.5% for Rwanda. The differences in the welfare and GDP gains by country are largely determined by cross-country differences in the baseline imports–GDP ratio. This ratio is highest for Kenya (55%) and lowest for Rwanda (26%).
- A closer look at the simulated impacts on the functional distribution of income reveals that skilled workers gain slightly more than unskilled workers in all EAC Partner States: the skills premium as measured by the relative wage of skilled to unskilled labour rises by 0.6% in Uganda, 0.5% in Kenya, 0.3% in Tanzania and 0.2% in Rwanda.
- Prices also observe significant variation by sector, with significant falls in mining, refined petrol, transport and textiles. This contributes to generate important generalised price reductions of up to 2.8% in the generalised scenario. However, it is expected that prices for consumers will fall in any scenario.
- The elimination of all NTBs may have a maximum combined poverty reduction of between 5.3% in Kenya and 3.7% in Rwanda. This assumes the complete elimination of NTBs and that the groups that benefit from the price reduction also benefit from the income increase. The elimination of NTBs may reduce poverty by between 0.3% and 0.5%.
- Although employment effects may be small, a significant reduction in the transport and logistics NTBs may reduce the prices paid by the poorest. For example, the elimination of barriers may reduce the purchase price for unskilled workers in Tanzania by almost 2% in sensitive products such as textiles.

- Based on assessment of the constraints affecting the capacity of households to seize the opportunities arising from trade and to protect themselves from any negative effects, the poor in Kenya and Rwanda are better equipped to benefit from the removal of NTBs but are also among those who could be more negatively affected.
- However, the elimination of NTBs is expected to change substantially the set of constraints in existence. Consequently, the poor of Burundi or Uganda may see some of these constraints lifted. This will help them benefit from further future trade liberalisation.
- Complementary policies should be designed and implemented to secure the protection of those negatively affected both in the countries that benefit directly from the reduction of NTBs and in those where the reduction of NTBs will expose them to future shocks.
- The improvement of road infrastructure to double travel speeds is expected to have the largest effects in terms of poverty reduction. However, this will be very costly. Other policies can be adopted with larger effects relative to the investment made. In this sense, it appears that reducing border delays and the number of weighbridges are more accessible and rapid to implement.

1. Introduction

Since the launch of its Common Market, the East African Community (EAC) has achieved considerable success in eliminating the non-tariff barriers (NTBs) affecting its trade flows. Through the reporting and monitoring mechanism put together by the Partner States, more than 100 NTBs have been eliminated cumulatively. However, NTBs remain an issue, with 25 issues (divided into 19 NTBs and 6 complaints reported as NTBs) still affecting trade flows. Some of these NTBs are hard to solve, or resurface after having been solved. In addition, there are questions as to how these barriers affect transport times and costs, and what would be the impact of their elimination on the East African population.

The project Resolving the Unresolved Non-Tariff Barriers in the East African Community aims to add to the base of knowledge on these issues. It intends to quantify the effects of a selection of the NTBs reported as affecting goods in transit in the EAC and to evaluate the impact of their removal.

Stage 1 of the project analysed the various unresolved NTBs reported through the EAC NTB Monitoring Mechanism and to rank them according to their likely impacts on trade, production, incomes and, ultimately, poverty in affected countries in the region. Following this initial discussion, it was then agreed that the project would adopt a portfolio approach, focusing on NTBs linked to trade facilitation and transport. This was decided in order to make more efficient data collection by focusing on a particular category of NTBs. Moreover, it allows to understand more comprehensively the transport costs affecting trade and measure the identified NTBs in the broader context of similar barriers.

During Stage 1, we analysed resolved and unresolved NTBs according to their type, origin and breadth, the findings of this analysis are shown in Annex II. This report summarises the work completed during Stage 2. The first task was to look at resolved and unresolved NTBs and understand the main trends in terms of origin, type and resolution methods and times. We also looked at the NTB reporting and monitoring mechanisms, to assess whether these are appropriate in light of the NTBs that currently affect the region. We also identified a need to increase understanding on what constitutes an NTB, to ensure all NTBs are correctly identified and reported. This was performed by interviewing different stakeholders in the transport and manufacturing sectors in the region.

The next phase involved the collection of data related to the times and costs associated with the identified and un-identified NTBs related to transport in the Regional Monitoring Committee. Section 3 looks at the main qualitative results of the interviews to stakeholders. In this stage, the analysis focused exclusively on the times and costs of certain identified NTBs. Sections 4 and 5 then discuss the findings in terms of transport times and costs, and the potential poverty impact. In the case of transport costs, the analysis provides a disaggregation of the these in the main corridors, with the aim of providing a quantification of the identified and non-identified NTBs. This was done by calculating ad valorem equivalents (AVEs) of the different NTBs affecting costs. Section 5 aims to quantify the economy-wide effects of the NTBs identified. This include an assessment of the effect of these NTBs in prices, employment, income and poverty in the region. On the one hand, a computable general equilibrium (CGE) model was used to identify the main effects in key economic variables. On the other hand, using the Trade Poverty Constraint Index (TPCI), we identified how the removal of NTBs could affect poverty reduction in each of the countries. Section 6 concludes and provides some policy recommendations.

2. NTB Resolution methods and main causes

The regular reporting and stock-piling of NTBs that affect inter-regional trade is an integral part of the NTB Monitoring Mechanism. Unfortunately, the decision-making process that leads to an NTB's inclusion on

the monitoring list is far from clear. This also applies to the way NTBs are resolved and how this is then verified. For example, an important share of the NTBs that are part of the inventory list (resolved and unresolved) appears to comprise complaints rather than actual NTBs. These complaints often relate to failure to implement agreements reached at the regional level. In fact, anecdotal evidence suggests these complaints often emerge as a result of delays in the communication chain between decision-making agencies and customs officials on the ground. Resolving an NTB that arises as a result of the failure of an agency to adequately communicate a decision to officials on the ground will arguably require much smaller efforts than resolving an NTB that emanates from existing policies or arises owing to vested interests. Based on the information available, it is possible to separate NTBs into three broad categories according to the complexity of the institutional decision-making process leading to their removal. Each of these categories is considered.[1]

NTBs requiring unilateral elimination by the NTB imposing government

Most of these NTBs stem from regulations imposed by one Partner State over one or more of the others. As discussed earlier, these NTBs usually amount to non-application of the Customs Union and Common Market regulations by one or more Partner States.

Examples include:

- 'Burundi charges entry fee for vehicles from other Partner States.' This NTB was resolved by abolishing the entry fee (EACS, 2014).
- 'Imposition visa to Burundians entering Tanzania.' Tanzania removed the fees (EACS, 2014).
- 'Requirement for certificates of analysis for goods destined for export to Rwanda and Burundi.' This NTB was resolved when Rwanda and Burundi eliminated the requirement fee (EACS, 2014).

Given their nature, the resolution of these NTBs is therefore relatively simple: once the issue is raised at the Regional Monitoring Committee level, the imposing country has the responsibility to eliminate the regulations in breach of the single market principles. To this end, countries frequently engage in bilateral discussions on how to address specific issues, often in response to explicit directions from the Forum.

NTBs eliminated by trade reform and improved trade facilitation

These NTBs may involve the implementation of new systems, the adoption of new policies and in some cases revisions to existing legislation, regulations and/or directives. At times, this may therefore require parliamentary approval, calling for more lengthy processes that build the required consensus. Some examples of such NTBs include:

- 'Delays at the ports of Mombasa and Dar es Salaam, which affect imports and exports through the ports.' In order to address this issue and improve their procedures, the ports of Mombasa and Dar es Salaam are implementing national single window systems (EACS, 2014).
- 'Lack of interface within the customs' systems in the Revenue Authorities in Partner States' (caused by Burundi). Burundi customs systems are now interfaced with other Partner States' systems (EACS, 2014).

NTBs eliminated through concerted action from Partner States

The elimination of these NTBs entails work to be conducted at the regional level, in agreement with other Partner States and often with the work of the EAC institutions. For example, EACS (2016) reported that non-harmonised road tolls were being addressed at the regional level, with the EAC in charge of undertaking studies of the principles for road user charges. Similarly, for charges on milk exports, the Sectoral Council on Trade, Industry, Finance and Investment urged Partner States to forward the charges on dairy products to the EAC to enable the Secretariat to harmonise charges (ibid.). Specific examples include:

[1] In addition to the three groups identified here, there is a fourth type of NTB – those that reflect complaints rather than actual barriers. For example, one of the NTBs listed was that the Government of Uganda restricted employment in the non-governmental organisation sector to Ugandans only – which was denied by the Ugandan government (EACS, 2014). A similar situation happened in Kenya, where harassment of informal businessmen from Tanzania by Kenya immigration officials was reported. The Kenyan authorities denied this claim (EACS, 2014).

- ‘Varying application for axle load specification.’ The EAC Axle Load Bill was enacted into law in May 2013 and is awaiting approval by Heads of State (EACS, 2014).
- ‘EAC Standards Bureaus have varying procedures for issuance of certification marks, inspection and testing.’ This has been eliminated through mutual recognition of quality marks by Partner States (EACS, 2014).

Each of these resolutions methods requires different times, according to the procedures to be followed. There is no simple procedure, but rather a dialogues and agreement between Partner States is required.

2.1. The NTB resolution mechanisms and its constraints

The NMCs escalate reported NTBs to the EACS through the EAC Directorate of Trade. The EACS then forwards these quarterly reports to the EAC Coordination Committees and the EAC Trade, Industry and Investment Committee for discussion and decision-making (EAC and EABC, 2016). The EABC is then responsible for disseminating the information on NTBs’ elimination progress to members. The EABC also has the duty of producing the annual business climate index, which gives information on the progress of the NTBs’ elimination.

Instances of NTBs resolution in the reporting process

The EAC passed the East African Community Elimination of Non-Tariff Barriers Act (2015) to provide a legal framework for monitoring and addressing NTBs in the region. This Act provides for three mechanisms for resolving reported NTBs. The first mechanism relies on mutual agreements among concerned Partner States to eliminate a reported NTB. The second mechanism involves implementation of the EAC Time-Bound Programme for the Elimination of Identified/Reported NTBs. The third mechanism utilises regulations, directives, decisions or recommendations made by the Council of Ministers of the EAC.

Mutual agreement is often given the first priority in resolving reported NTBs. The concerned Partner States are encouraged to hold a discussion and agree on a strategy to eliminate the reported NTBs (EALA, 2015). The challenge with this mechanism is that Partner States may not agree on the best strategy to eliminate an NTB. Although mutual agreement seems to be the fastest way to resolve NTBs, discussions may sometimes take a long time to be concluded, thereby worsening the persistence of NTBs and their impacts on trade.

A Partner State can also initiate elimination of an NTB through the Time-Bound Programme by presenting a written notification to the country responsible for the NTB. The NMC of the responsible country is expected to investigate the reported NTB to identify its impact, as well as the required time and the challenges that might be experienced in the process of eliminating the reported NTB. However, reports indicate that NMCs are weak in some countries owing to lack of skills/capacity to evaluate the impact of NTBs and determine an appropriate solution (MTIC, 2016). This challenge is exacerbated by insufficient information or delays in dissemination of information concerning changes in import/export procedures and requirements in the region. If the responsible country fails to resolve a reported NTB, the Secretary-General convenes a meeting between the concerned states to resolve it.

If the reported NTBs cannot be resolved through mutual agreement or the Time-Bound Programme, they have to be escalated to the Council of Ministers. The Council may make a directive or a decision concerning the best way to resolve a reported NTB. Alternatively, it can escalate the reported NTB to the EAC Committee on Trade Remedies for guidance. A major challenge with this mechanism is that directives such as a recommendation by the Council to the Summit to impose a sanction on non-complying parties may not be implemented as a result of political goodwill (Mathieson, 2016). Therefore, a legally binding mechanism that provides for sanctions that can be imposed by the Council should be adopted to ensure compliance.

NTBs and complaints reported to the EAC Secretariat

Almost a third of the NTBs reported were resolved in less than three months, which constitutes a very short period of time. Although the resolution of NTBs may be affected by the degree of political will in the imposing countries, NTBs normally require time to be resolved. The various stages involved in the resolution of specific barriers require bilateral and internal negotiations in the affected and imposing countries. This might indicate that the NTBs that are resolved quickly might be closer to complaints raised against improper application of the single market regulations than to real NTBs.

Many of the NTBs reported may require simple administrative actions to be resolved. For example, during the 21st regional forum on NTBs (June 2016), Tanzania confirmed that the Rail Development levy would no longer be applied. However, customs officers have not been properly informed about the change. This suggests that the NTB, in reality, was simply a complaint about the existing procedure or the result of a lack of information. Examination of other NTBs that were resolved in relatively short time periods also reveals the presence of multiple cases of 'complaints' that affected a single firm in a particular country.

As at June 2016, there were about six complaints reported as NTBs out of the 26 NTBs reported to the EAC. For example, Kenya complained that Rwanda, Tanzania and Uganda did not provide adequate information on the change of export procedures. This led to an increase in the cost of doing business in Kenya. The accused countries agreed to interrogate the evidence provided by Kenya and report back in the next meeting. Additionally, Tanzania complained that Rwanda and Uganda did not give preferential treatment to rice originating from Tanzania as per the EAC rules of origin, thereby denying them market entry.

The presence of complaints within the NTB Reporting Mechanism diverts resources and time away from the resolution of real NTBs that have remained unresolved for years – for example that affecting beef exporters into Uganda. These complaints should be handled through a different mechanism that allows for a more direct and fast approach. As discussed earlier the solution through bilateral mechanisms is encouraged, but it may require for some further streamlining.

2.2. What are the main causes of NTBs?

When NTBs arise in the EAC, they can be reported through NMCs or through a specific website. Tanzania and Uganda also have put in place a phone-based reporting system, through which individual users can report NTBs directly to the national authorities. Partner States then try to identify those NTBs that can be easily resolved through amicable talks and bilateral meetings. Only those NTBs that cannot be resolved quickly are escalated to the NMCs level. However, as highlighted earlier in this section, these tend to deal primarily with complains about the operation of the different institutions and regulations rather than true NTBs.

These systems have challenges of their own. For the phone-based system, some users reported that its practicality in daily operations is limited. Supposing a lorry driver encounters problem with a weighbridge and gets delayed, (s)he will worry about resolve the problem on the ground, and call the transport company to notify the delay. During this time, it is unlikely that the driver will perceive reporting the NTB as a priority. Additionally, when reporting an NTB through any system (phone-based or otherwise) one is required to present documentary evidence. While this is a sensible requirement, some people might not be able to collect all the necessary evidence before submitting the claim. This is especially true in the case of informal payments and other illegal actions.

For this project we have conducted interviews with government and private sector (see Section 3 for a detailed description) to identify the main causes of NTBs. We have also tried to identify whether there are NTBs that go unreported. This section describes our findings.

Inadequate infrastructure as a cause of NTBs

One of the causes that emerged in various forms is the inadequate level of infrastructure to support free movement of goods and services. During our interviews, many have pointed out how weighbridges along the Central and Northern Corridor are not properly calibrated, and could therefore assign different weights to the same cargo. This, together with the issue of cargo shifting on the axles, raises suspicions of the cargo being in excess of the legal limit, and forces lorry drivers to interrupt or delay their journey, hence increasing cost and time of transport. Moreover, transporters highlight that, unless there is evidence that their cargo has been tampered, there is no need to weigh lorries several times. This is particularly true in the case of lorries carrying cargo in-transit, which is weighted and sealed at the port of origin.

Another issue emerging from our interviewees is the inadequacy of the Central Corridor, which is the corridor connecting Rwanda, Burundi and Democratic Republic of Congo (DRC) to the Port of Dar es Salaam, passing through Tanzania. Despite having vastly improved over the recent years, the Central Corridor remains a difficult route for transporters. The Corridor lacks facilities for drivers to rest, and some stretches are surrounded by the forest, which makes it unsafe to drive at night.

Customs procedures have improved, but can still generate delays

Certain procedures to deal with goods-in-transit remain cumbersome. Some interviewees reported that the issuance of transit bonds (or transit permits) is subjected to the exit of another cargo in transit at the border. This means that for any company there can be a limited number of shipments in transit at one given time. Delays at the border (which should be streamlined for this type of cargo) generate a bottleneck at the port as a new bond will not be released until the other in-transit cargo is cleared at the border. This increases the waiting times at the port and increases the transporters costs in terms of penalties paid to the shipping lines for not returning the containers in due time.

In addition, procedures associated with clearing goods at customs could generate considerable delays. For example, we were informed that in some instances the customs officer who inspects a truck has to be the same as the one recording the information in the customs system. If this official cannot input the information him(her)self (e.g. due to personal circumstance, sickness or others), the lorry and its cargo are not allowed to continue the journey, until the same officer returns and records the information in the system. This lead to delays and related costs such as additional parking, fines from the shipping lines, truck rent, etc.

Finally, many perceived that trade facilitation is not working for all producers and traders in the same way. Large firms have access to more resources to secure that their cargo are treated more promptly.[2] Smaller firms, however, are more exposed to delays and higher costs. Therefore, interventions need to consider how to facilitate trade in particular for the small and medium traders, producers or firms.

Lack of coordination among government agencies

Several of our interviewees highlighted how one government agency would allow one good to be imported, only to find another agency forbidding entry of the same good on the basis of different regulations. This is exacerbated when there are authorities with similar or overlapping mandates. For example, the Tanzanian Bureau of Standards deals with standards and safety issues, but the Tanzania Food and Drugs Authority deals with food safety. The mandate of these two agencies can overlap, thus causing confusion among producers and importers.

Many reported how local government often apply fees for different reasons (environmental, parking fees, transit permits etc.). While applying these fees might be under the local government's mandate, this highlights a lack of coordination between the objectives at national and local levels.

Lack of clear implementation mandate

This brings us to a key challenge in the way the Common Market Protocol is being implemented in the Partner States. Government agencies existed before the EAC Customs Union and Common Market, and had mandates of their own. These could range from raising revenues, ensuring customers protection, or enforcing the respect of environmental standards. With the establishment of the EAC Common Market and Customs Union, agencies were confronted with the mandate of implementing the new regional commitments without clear instructions and in the face of at times conflicting objectives. For example, revenue authorities were requested to raise domestic revenues while at the same time implementing the new customs regulations to facilitate trade. Both of these two objectives could often be conflicting. In addition, customs officers need re-training in order to change their 'mind-sets' to ensure that the facilitation of trade was mainstreamed as a key objectives in daily operations.

According to the Treaty for the Establishment of the East African Community, regional organs, institutions and laws take precedence over national ones on matter of implementation of the EAC. Consequently, in order to strengthen regional integration efforts, Partner States will not only need to continue their efforts to translate regional into domestic regulations, but will also have to make sure that their ministries, departments and agencies embed over-arching regional objectives into their own. This will also require increasing the awareness of staff to regional objectives through targeted training and sensitisation initiatives.

Need for enhanced sensitisation

Interviews highlighted that there are many obstacles to trade that constitute NTBs, but are not reported as such. In some instances, this is due the fact that the private sector does not consider the reporting mechanisms as an effective tool for the removal of barriers. Other times, however, obstacles to trade are

[2] Some firms resort to a clearing agent to deal with any unforeseen circumstances and avoid delays.

perceived as an integral part of doing business in the region and are not seen as outright breaches to EAC regulations. Therefore, sensitisation is required to make the EAC citizens aware of their rights and of the tools they have to ensure that these rights are respected.

2.3. Concluding remarks

Interviews highlighted that there are many obstacles to trade that constitute NTBs, but are not reported as such. In some instances, this is because the private sector does not consider the reporting mechanisms as an effective tool for the removal of barriers. Other times, however, obstacles to trade are perceived as an integral part of doing business in the region and are not seen as outright breaches to EAC regulations. Therefore, sensitisation is required to make the EAC citizens aware of their rights and of the tools they have to ensure that these rights are respected.

It is important to have a separate reporting and resolution mechanism for complaints, using a more straightforward consultation process at the bilateral level. This would be more economical for the concerned parties, given that the resources channelled into addressing complaints would be redirected into dealing with actual NTBs, which are both resource- and time-consuming.

The EAC should improve the capacity of NMCs to investigate reported NTB complaints and develop appropriate solutions through training/capacity-building programmes. This will help prevent cases of complaints being reported as NTBs, as well as facilitating a reduction in the emergence of new, or a persistence of existing, NTBs. Additionally, an efficient and effective mechanism for communicating information on changes in importing/exporting rules/procedures in EAC Partner States should be developed. This may help in reducing or eliminating the information asymmetries that lead to the emergence of new complaints in the EAC. The mechanism that will deal with actual NTBs needs to be augmented by bringing in trade and regulatory specialists who can identify additional unreported issues that affect trade among EAC Partner States.

Finally, the most common causes of NTBs mostly refer to trade facilitation issues. however, one main cause of NTBs is the presence of inadequate infrastructure. While costly, infrastructure improvement could probably go a long way to improve transport and trade flows in the region. This is discussed in Section 4.

3. Qualitative Analysis

Extensive data collection was undertaken for this project. This included the collection of secondary data on trade and transport flows, as well as primary data collected through interviews and an online questionnaire. This section describes the main findings. Annex III provides detailed information about the data collection process and additional results.

3.1. Summary of preliminary interviews

Trade facilitation efforts have made trade flows smoother, but challenges still exist: The interviewees noted how the region had improved in terms of trade facilitation. Several initiatives have been put in place to make trade flows in the region easier. However, some issues still affect the performance of many of these initiative, as discussed below.

Single Customs Territory: The introduction of the Single Customs Territory (SCT) allows for faster clearance of goods imported into the region, as these are cleared at the point of entry (in Mombasa) for the final destination. Goods transiting to Rwanda or Uganda can now be cleared at the point of entry by staff of the Rwanda Revenue Authority or Uganda Revenue Authority stationed in Mombasa. However, several issues still affect this:

- The SCT regime does not apply to goods originating in the region, which need to go through the normal procedure.
- There is been limited implementation owing to the cost of posting staff outside the home country and to limited understanding of customs officers of the SCT.

Authorised Economic Operators: In 2014, the EAC introduced Authorised Economic Operators (AEOs). This framework allows certain businesses that comply with customs laws and regulations to benefit from preferential treatment in the clearance of goods. While this is seen as a positive step, several interviewees complained about the limited implementation of the programme, with only a handful of firms receiving AEO status. Moreover, some complained that AEOs still requested security payments, while this should not be the case.

Weighbridges: According to our interviews, the presence of weighbridges remains one of the outstanding problems in the EAC. While many noted that the number of weighbridges had reduced, especially on the Central Corridor, many problems persist.

- Some interviewees complained about the calibration of weighbridges, which often indicate different weights for the same cargo. When cargos are found to be non-compliant at weighbridges, either because of calibration issues or because the cargo inside the container has shifted, officers will ask to open the container to check or rebalance the cargo. When sealed containers are opened, this creates a problem for the driver and the transporter as the transit cargo, for example, no longer can benefit for the correspondent provisions. .
- The introduction of in-motion weighbridges has partially reduced issues related to time. However, these are not precise and often indicate different weights. Cargo found to be non-compliant has to be weighed again on a stationary weighbridge.

Standards: Despite efforts towards harmonisation, standards remain a problem. Interviewees noted how the presence of multiple agencies causes coordination challenges. For example, in the case of Tanzania, the Tanzania Bureau of Standards and the Tanzania Food and Drugs Authority have overlapping mandates. In addition to this, the infrastructure to test standards is not up to speed with current needs, as some border posts do not have the required laboratories and testing facilities.

The state of infrastructure causes delays: Many interviewees pointed to the poor state of infrastructure in the East African region as a cause of delays. For example, bumps and potholes force traffic to slow down. Poorly calibrated weighbridges delay traffic and slow down both compliant and non-compliant cargo.

Interviewees noted that infrastructure on the Northern Corridor had improved considerably but the Central Corridor still presented some challenges. For example, one Tanzanian transporter noted how the Central Corridor had very few resting places and other facilities for drivers. This means drivers are forced to stop in certain places, get little rest and often have to reduce driving hours. There are also limited options to repair trucks on this route.

Transport times have decreased, and so have transport costs: All interviewees agreed that there had been a general reduction in transport times, mostly because of the trade facilitation measures mentioned above. Many interviewees noted how transport companies had lowered charges compared with a few years ago. However, many felt this could be the result of cheaper transport fuel and to general slowdown in demand (many said transporters had trucks parked idle because there was not enough cargo to transport).

New NTBs are still arising, and old ones resurface: Many said some NTBs were hard to eliminate, and some old ones tended to resurface. One interviewee noted that customs duties were an important source of revenue for countries in the East African region. Therefore, it comes as no surprise that there may be some reticence in eliminating NTBs that could generate rents (see Section 2). Many stated that cargo was often thoroughly checked, and this did not help in smoothing trade flows.

Some other interviewees felt some NTBs persisted as their resolution might not be cost-effective. There are some border crossings that are open only for a certain number of hours during the day. Some said this was the case with some smaller border crossings, where limited traffic flows meant opening the border 24/7 did not make economic sense for the government, but the private sector reported this as an NTB.

3.2. Stakeholders interviews: Kampala, Uganda

Error! Reference source not found. presents a description of each of the interviews. They provide interesting insights into the operation of the transport sector and the main and barriers faced. Key findings from these interviews inform the findings presented in the next two sections, and are used to measure the NTBs in the next section. However, it is useful here to highlight some additional points coming from the interviews:

- One manufacturer provided an overview of the manufacturing sector. The company was producing iron and steel products, but high transport costs, increased competition and higher tariffs in the region mean they have reoriented their production towards products that make intensive use of domestically available inputs. This has helped them reduce transport costs.
- Traders and manufacturers have noted a decrease in transport costs and times in the past five years (this is interesting as it does not match with the answers provided in the questionnaire).[3] Some attribute this to lower transit times resulting from better infrastructure, lower congestions at ports, etc. However, some interviewees believed the cost reduction owed only partly to a reduction in transit times, and had more to do with lower oil prices, a less favourable global environment and a weaker economy with lower demand for goods. This has also contributed to less congestion at main ports and therefore to shorter dwell times.
- One informant mentioned that in recent years the customs clearance process had become stricter. All shipments have to be declared at the port of entry, and there is very little room for amendments after goods have been declared. Delays at the port are thus more likely because goods cannot move until exact and full declaration has been made. In the past, cargo would be allowed to leave the port of Mombasa before the declaration had taken place. Delays can be very costly as there are demurrage charges that can apply by shipping line or trucking company (200–300 per day).
- Some manufacturers identified some key issues that still needed to be resolved. These include the following:
    - Weighbridges have become disguised roadblocks and are a fertile ground for corruption. Although there has apparently been an improvement, with a reduction in the number of weighbridges and the implementation of 'moving weighbridges', they have resurfaced as a main problem.
    - Borders are still hard to cross and the different rules of origin and their varying applications mean that trade within the region is severely restricted.
    - Taxes and SPS rules are not harmonised across the region.
    - General issues exist around overlapping free trade agreements and special raw materials list that allow countries to import goods circumventing the EAC Common External Tariff (CET) and thus attaining a competitive edge.
    - Manufacturers and traders complain about the clearing system. Despite some improvement, the process is still uncertain and this influences clearing times. Some traders report that up to 80% of shipments face some kind of delay.
- The findings of these interviews highlighted the importance of understanding the cost structure of the transport sector, in order to be able to identify where the reduction in transport costs has been achieved and where further reduction is possible. For this reasons, interviews were organised with trucking companies in Mombasa, Kenya.

3.3. Interviews with trucking companies: Mombasa, Kenya

The interviews aimed to understand the cost structure of the transport sector, and ultimately to determine its competitiveness. In particular, the interviews helped us shed a light on the way the transport system works and also how it prepares for and responds to unforeseen circumstances. This also helped explain the behaviour of company managers and lorry drivers. Questions aimed to understand the costs incurred by these companies (including fuel, salaries, etc.), the return on investment and how companies dealt with other types of expenses, such as repairs when trucks break down, bribes and unexpected fines or other unforeseen charges. The main findings of these interviews fed into the analysis presented in Section 4.

However, there are some findings that are worth highlighting separately:

- There was general agreement that trucking prices have fallen since 2013. The fall has ranged between 30% and 40% on the route from Mombasa to Kampala.

[3] There could be a number of reasons for differences, including the anonymity of the online questionnaire, but also the small size of the sample under consideration.

- A large part of this fall is explained by the fall in the price of oil. However, some companies identified a fall in profits, which could be associated with increased competitive pressure in the sector.
- On average, trucks should arrive to Kampala in two to four days. The variation may be explained by the existence of delays.
- On a typical day, three to six hours are spent on waiting at weighbridges and in other delays.
- Trucks tend to be operated by a driver and an assistant. However, trucks are normally driven only for 12 hours. The remaining time is allocated to rest.
- Crews are given an allowance to cover multiple costs (excluding petrol). Around 40% is used to pay for road fees, levies, bribes and fines for traffic offences. Another 10% is for parking fees, some of them associated with delays generated at borders.
- This suggests that 50% of the allowance is used to cover NTBs. Assuming a 10% profit margin and considering the transport price revealed by firms, NTBs account for almost 7% of the transport cost.

4. Impact of the reduction in transit times and costs

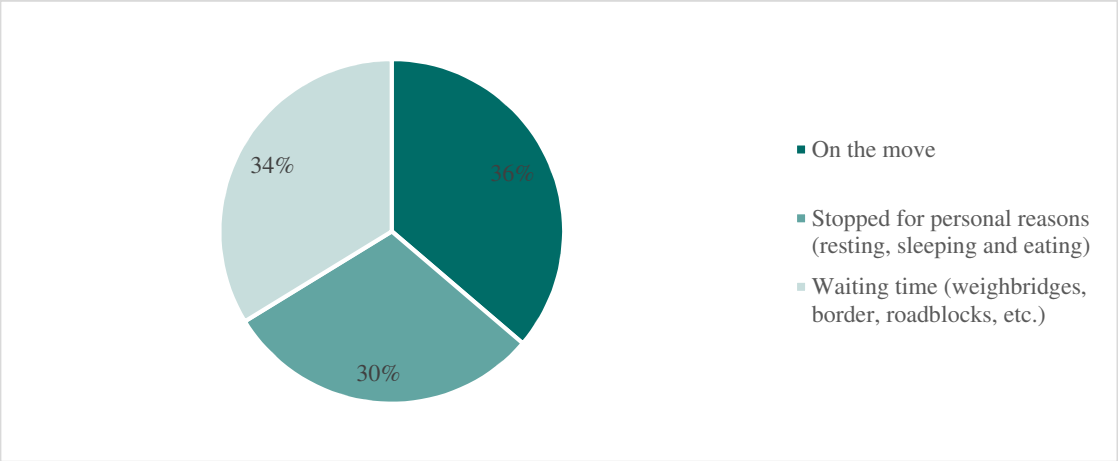
4.1. Transport times in the EAC

Improvements in trade facilitation along the EAC's Northern and Central Corridors, which link the region's hinterland with the ports of Dar es Salaam and Mombasa, have been at the forefront of the regional integration agenda. Customs procedures have been simplified and to a large extent harmonised between Partner States. An SCT was piloted for a range of products to speed up the clearance of goods at their arrival in Mombasa or Dar es Salaam and reducing the need for costly anti-smuggling measures such as bond payments on transit goods. In addition, several One-Stop Border Posts (OSBPs) have been established in recent years to minimise border crossing times and an agreement has been reached to reduce the number of weighbridges along the corridors.

Data gathered through several interviews with private sector stakeholders (see Section 3) confirm that these efforts have yielded good results. For instance, several respondents highlighted that, in the past, a container arriving at the port of Mombasa would take 20+ days to be delivered in Kampala; it takes about 10 days at present. Similarly, a company moving goods within the region can now expect goods to take five to seven days between Nairobi and Kampala and two to three days between Kampala and Kigali. This compares favourably with the 10 and 7 days, respectively, that it took to ship goods between these cities five years ago. Respondents attributed these declines in import/export times mostly to speedier customs clearance, introduction of the SCT and greater port efficiency.

These improvements notwithstanding, stakeholders also stressed that NTBs related to trade facilitation continued to be pervasive in the region, particularly along the transport corridors. For instance, despite acknowledging that the waiting time at some weighbridges had fallen recently following the adoption of in-motion technology in 2015, respondents almost unanimously agreed that weighbridges continued to severely constrain the flow of transit cargo on the trade corridors. Moreover, most respondents talked of a lack of implementation of top political commitments, such as of the agreed reduction in weighbridges and of police roadblocks, which were widely seen as a breeding ground for corruption. Interviewed truck drivers estimated that over a third of the overall cargo transit time on the Northern Corridor could be attributed to waiting time lost at weighbridges, borders and roadblocks (see Figure 1).

Figure 1: Distribution of cargo transit time on the Northern Corridor

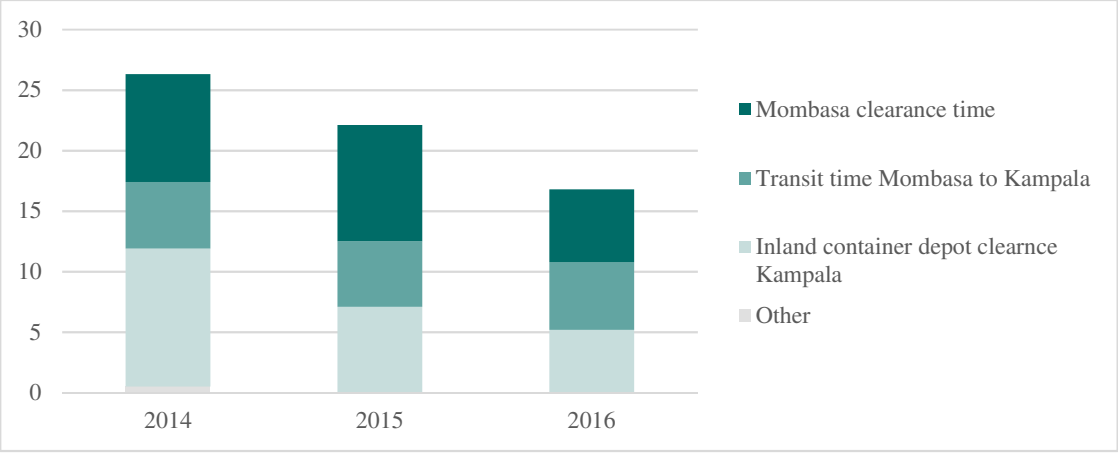


Source: Interviews with truck drivers conducted by CUTS

Overall, the interviews thus seemed to suggest trade facilitation efforts had been particularly successful at the customs clearance stage, but that achievements in terms of reducing cargo transit times on the major trade corridors had been less impressive. Data gathered from companies' performance monitoring systems corroborate this view. Figure 2 shows that, over the past three years, clearance times for imports with Kampala as their final destination have declined strongly both at the port of Mombasa and at the inland container depot in Kampala, while *en route* transit times have remained stagnant at around five to six days. Future trade facilitation efforts will thus need to target lower transit times through the removal of specific barriers that persist along the trade corridors, such as a reduction in the number of weighbridge and police roadblocks, and through continued improvements in hard infrastructure, as better roads can considerably reduce transit times.

These figures seem to contrast with the information gathered from cargo transporters operating in Mombasa. These companies claim that transport times for Mombasa to Kampala are between two and four days. These firms seem to have considered exclusively the time to take the cargo from origin to destination, without taking into account other time associated with clearing customs either at origin or at destination.

Figure 2: Time required to transport goods from Mombasa to Kampala along the Northern Corridor (days)



Source: Performance monitoring systems of freight forwarders

Considering returns, a truck requires more than two weeks to take cargo and return to its origin in Mombasa. This generates penalties from shipping companies associated with the longer time that containers are kept by truck companies. Forwarders must return containers to shipping lines in less than 15 days counting from

the time the cargo is unloaded from the vessel. Given the long time that it takes to clear customs in Mombasa, by the time the truck leaves the port it has already taken five days.

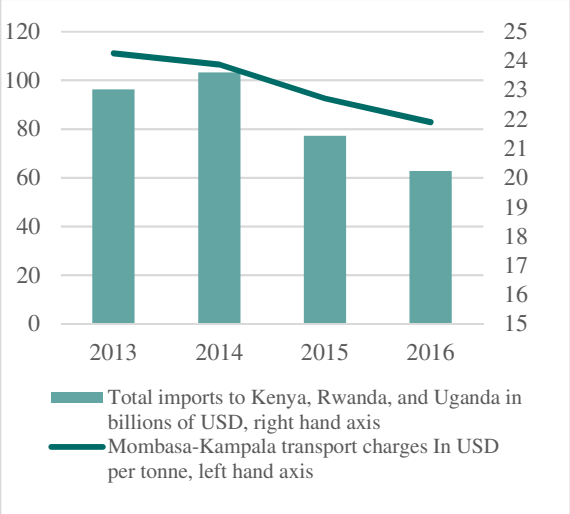
In addition to this, some forwarders expressed concerns about the system of bonds that apply to transit cargo circulating in Kenya. Forwarders are allowed a limited number of containers in transit. In order to be able to get cargo in Mombasa released to travel to Kampala, for example, another cargo in transit must have left Kenya. This means a limited number of transit bonds are given to forwarders. The effect of this is problematic, as any delay in transit or at the Kenyan–Uganda border generates a backlog of cargo in Mombasa. This increases costs, as fees and penalties to the shipping lines increase when the containers are not released.

4.2. Transport costs

Combining the information from qualitative interviews with other sources of data,[4] it is possible to estimate the evolution of annual revenue, operating costs and profit margins in operating a single cargo truck in recent years and hence to shed light on the competitive nature of the EAC's transport sector.

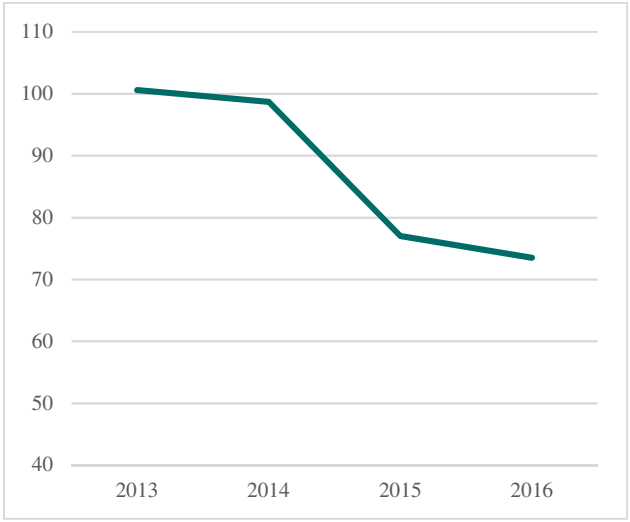
Interviewed freight forwarders and manufacturing firms stressed that, overall, charges to import a container into Kampala through the port of Mombasa had declined significantly over the previous five years, from $4,000–4,500 to $3,000–3500, including clearance, port and transport charges (excluding sea freight charges). This reduction was by and large attributed to a decline in the cost of inland transport on the Northern Corridor. Data from the Northern Corridor Transport Observatory confirm that the price trucking companies charged to ship a container from Mombasa to Kampala had declined by over 30% between 2013 and 2016, as Figure 3 illustrates.[5]/[6] . Lower prices were a reflection of lower fuel prices (Figure 4) and lower demand for transport services owing to a slowdown in imports.

Figure 3: Imports and transport charges and imports



Source: Interviews with truck drivers conducted by CUTS, Northern Corridor Transport Observatory and respective central banks of each country

Figure 4: Fuel prices in Mombasa (US$ per litre)



Source: Energy Regulatory Commission of Kenya

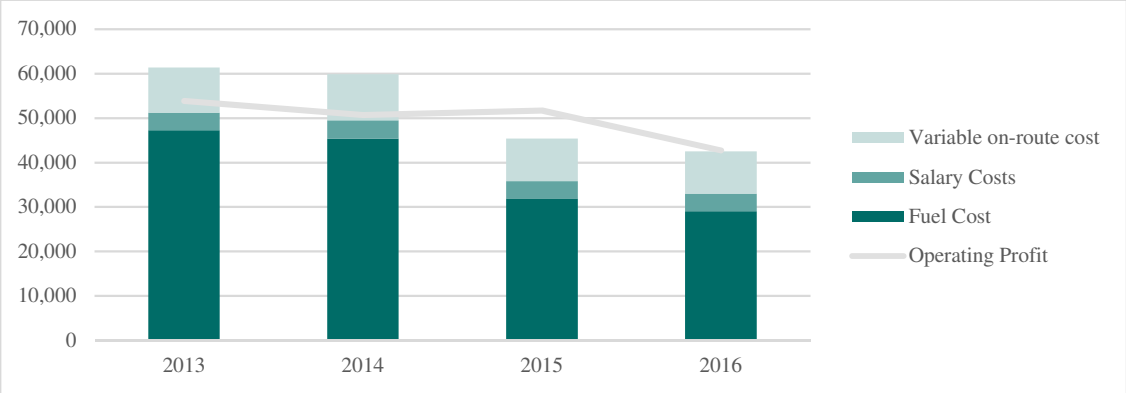
Between 2013 and 2016, total operating costs of a truck fell by 26% (in nominal US$), as Figure 5 shows. Yet this did not lead to an increase in truck owners' profits, with the annual pre-tax operating profit of a new truck remaining relatively constant at around $51,000 –54,000 between 2013 and 2015, and even declining in 2016 to about $42,000. This decline in 2016 reflects a reduction in demand for transport services

[4] The majority of these are official sources, such as respective central banks, energy regulatory commissions and the Northern Corridor Transit and Transport Coordination Authority.
[5] Prices assume a container of a maximum allowable weight of 27t under the EAC's axle weight regulations.
[6] The Northern Corridor Transport Observatory is an online platform that monitors improvements along the Northern Corridor (http://top.ttcanc.org)

owing to lower imports into Uganda. Therefore, according to these estimates, the cargo transport industry in the EAC seems to operate in a relatively competitive environment, with cost savings being passed-through entirely to clients of transport companies.[7]

Truck owner interviews confirmed the reduction in the demand for transport services on the Northern Corridor. Several truck owners stressed that profit margins had recently come under pressure, with some companies having to sell part of their trucking fleet to companies based in Dar es Salaam. However, this shift in capacity between corridors does not appear to have stemmed from increased competitiveness along the Central Corridor. Data from the Central Corridor Transport Observatory show that the current per kilometre trucking price is more than 50% higher between Dar es Salaam and Kampala than that between Mombasa and Kampala. Unsurprisingly, all interviewed cargo owners in Kampala expressed a strong preference for using the Northern Corridor when importing goods.

Figure 5: Annual cost and operating profits in the trucking industry of the Northern Corridor (US$)



Note: Figures based on operating a single new semi-trailer truck with a driver and an assistant on the Mombasa–Kampala route at maximum capacity (27 tonnes per trip)

Source: Authors' own calculations based on interview data and several secondary sources

Figure 5 also reveals the scope for further reduction in transport costs. Most of the transport cost is related to fuel costs. Although these costs are very sensitive to variations in the international price of oil, it is unlikely that a further significant reduction in transport costs can be achieved without addressing the fundamental factors in these fuel costs. This includes the low average speeds at which trucks and lorries have to circulate in many parts of the Northern Corridor, which means their engines operate under very inefficient regimes.

This suggests that, to continue reducing transport costs, improved infrastructure that increases circulation speeds should be considered. Not only is fuel use likely to fall as a result of the more efficient operation of engines, but also it is possible that investment requirements may drop as a result of a higher rotation of trucks. Moreover, the likelihood of incurring penalties and fees as a result of delays, as explained before, is expected to be minimum if travel times can be reduced further.

4.3. Potential impact of improved trade facilitation on transport costs

Transport times on the EAC corridors are still very high. In 2016, it took a semi-trailer truck about 5.6 days on average to cover the 1,200 km distance between Mombasa and Kampala. The same distance would take around two days in Europe, assuming travel speeds of 60–80 km per hour. Based on interviews conducted for this study, it is estimated that overall transit times between Mombasa and Kampala are increased by 7.1 hours as a result of weighbridges, 20.7 hours as a result of delays at the border between Kenya and Uganda and 36.7 hours as a result of policy roadblocks and other unforeseen circumstances. This implies that, of the 5.6 days trucks currently spent in transit, 2.6 days are lost as a result of trade facilitation barriers.

[7] A recently published World Bank study that compares trucking industries across Sub-Saharan Africa also finds that trucking services on the Northern Corridor are supplied relatively competitively (Teravaninthorn and Raballand, 2016).

The pecuniary costs related to this journey are also high. A truck driver currently receives an allowance of about $250 for a trip between Mombasa and Kampala to pay for expenses. Interviews with truck drivers revealed that almost 20% of this allowance was required to pay for extraordinary fines and bribes. Reducing these high levels of transit times and transit costs could thus result in significant decreases in the final cost of transport, particularly as recent cost savings in the trucking industry have been almost entirely passed-through to clients in the form of lower trucking prices. Considering the prices for trucking detailed earlier, this implies that bribes and fines represent around 3% of the transport cost in the corridor.

In order to estimate the potential cost saving impact of a reduction in transit times and other transit costs, we considered three scenarios. Annex VI provides a detailed description of how these were obtained. Scenario 1 stipulated a reduction in outbound transit times from the current 138 hours to 96 hours and one-third lower payments for bribes and fines. Scenario 2 was more ambitious and considered a further reduction in outbound transit times to three days and a halving of expenses for bribes and fines. Scenario 3 assumed a maximum reduction in transit times (outbound and return) to 58 hours[8] as well as the elimination of all expenses for bribes and fines.

Table 1 summarises the potential cost savings implications of each of these scenarios relative to the baseline case. The last row provides the maximum potential reduction in transport costs assuming a competitive transport sector. This is calculated by estimating the price differential between the baseline price and the price that would result in the same return on investment for the owner of a semi-trailer as in the baseline scenario but with lower transit times and costs. Scenario 3 implies that elimination of all NTBs encountered on the route between Mombasa and Kampala could lead to a reduction of 23% in the overall transport price per tonne. Figure 6 summarises the findings.

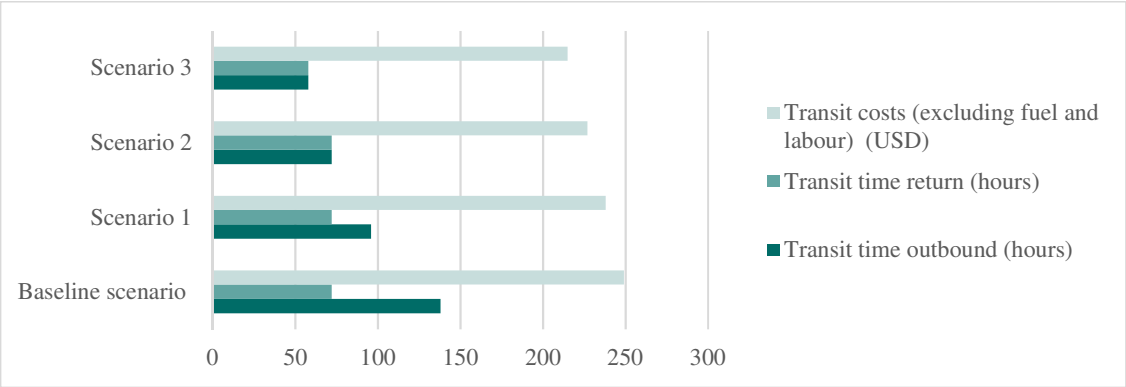
Table 1: Potential cost saving of a reduction in transit times and transit costs

	Baseline scenario	Scenario 1	Scenario 2	Scenario 3
Transit time outbound (hours)	138	96	72	58
Transit time return (hours)	72	72	72	58
Transit costs per tonne (excluding fuel and labour) (US$)	249	238	227	215
Maximum possible reduction in transport costs per tonne (relative to baseline scenario)		-9.6%	-15.8%	-22.7%

Note: The baseline scenario is based on data collected during interviews, and refers to 2016 data

[8] This was calculated on the basis of a 12-hour working day with an average trucking speed of 40km/h with minimum en-route stops and no delays at the border.

Figure 6: Potential cost saving of a reduction in transit times and transit costs



This section shows that improvements in trade facilitation in the EAC have not been felt equally along the logistics chain: while there are evident improvements in the speed of customs clearance and the handling of cargo at ports and terminal depots, the transportation of goods along the EAC's main corridors is still very costly.

This shows that increased effort to address the remaining trade facilitation issues along the EAC's main corridors could have a large impact in terms of reducing overall transport costs. The fact that the trucking industry is operating in a relatively competitive environment makes the case for more trade facilitation and improvements in infrastructure on the corridors even stronger, as any cost reduction would be expected to be passed-through in the form of lower prices for trucking services. Using recently collected data from EAC transporters, it is estimated that transport price per tonne could fall by as much as 23% from current levels, if transit time and transit cost are reduced to a minimum.

4.4. Building scenarios

The data collected was used to estimate the cost savings that could be attained by the removal of a series of specific NTBs and to calculate NTB respective ad valorem equivalents (AVEs) for a range of sectors. This section provides a step-wise summary of the methodology followed as well as key results obtained in calculating these NTB specific AVEs by sector.

A detailed baseline scenario was constructed depicting the key characteristics of the transport sector operating along the EAC's Northern Corridor assuming a standard semi-trailer with a capacity of up to 27 tonnes as the unit of analysis and defining the route between Mombasa Port and Kampala as our reference route. To this end, three levels of data were compiled. First, it was necessary to collect data on the typical characteristics of the semi-trailers used in the EAC in terms of their cost, life expectancy, and fuel efficiency. Second, the operating nature of the transport sector had to be established with information on the cost charged by the industry to hire a semi-trailer, salary structure of truck drivers and truck assistants, and the cost of fuel. Third, the characteristics of the Northern Corridor were needed in terms of average transit time for trucks, average border crossing times, and pecuniary cost involved when operating on the Corridor. Table A4 in Annex VI summarizes this data and provides the respective sources for each of the variables used in our analysis.

The data was then used to estimates the key operating variables for the EAC's trucking industry which we present in table 2. We estimated that, at current EAC transit times, a newly acquired truck operating at full capacity is able to service the route between Mombasa and Kampala 38 times a year. This implies an average of 3-4 trips per months, which is in line with responses from our qualitative interviews. With a price of US$ 2,237 per round trip, a truck currently generates a yearly revenue of US$ 85,201. Total operating cost (excluding depreciation) amount to US$ 45,700. The resulting annual pre-tax cash flow is thus US$ 39,500, implying that it takes 3.8 years to recover the cost of our reference truck valued at US$ 150,000. This corresponds well with information gathered in qualitative interviews, which suggests that under normal circumstances cost recovery is achieved in 3-4 years.

Table 2: Key operating variables of the Northern Corridor trucking industry

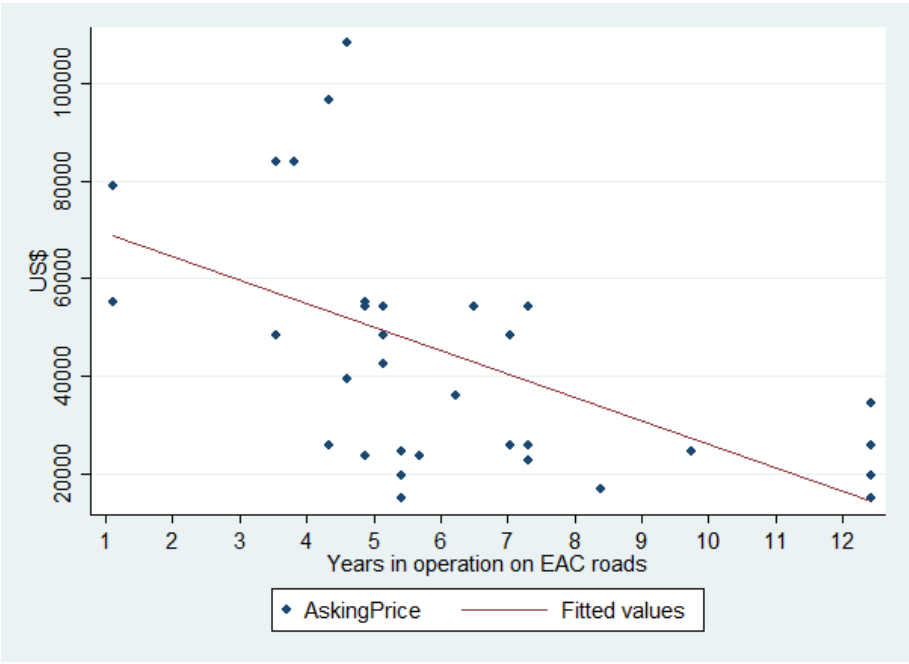
	Baseline Scenario
Number of round trips per year	38.1
Price per round trip	2,237
Yearly revenue	85,200.52
Yearly fuel cost	32,255.31
Driver Salary	3,960.56
Annual en-route cost	9,484.22
Annual Pre-Tax Cash Flow	39,500.44
IRR*	24.85%

**IRR is based on an initial investment for a semi-trailer of US$150,000 with a resale value of US$ 95,631 after ten years of operation on the Northern Corridor (see table 1).*

*** This is calculated as the maximum possible reduction in transport costs per tonne (relative to baseline scenario)*

We also estimated the annual user cost of capital. Assuming a linear relationship between the price of a truck and its age as described above, we find that for each year a semi-trailer operates on EAC roads, it depreciates by US$ 5,437 in value, as illustrated in Figure 7. This corresponds to an annual depreciation rate of 3.6%, which implies that the value of initially new truck would have fall from US$ 150,000 to US$ 95,631 after ten years in operation.[9][10] The annual return on investment of a truck sold after ten years thus becomes 24.9%, which aligns well with returns on physical capital that have been reported to often exceed 20% in Sub-Saharan Africa (e.g. Grimm et al., 2011; Siba 2015; Bigsten et al., 1998).

Figure 7: Depreciation of trucks operating on EAC roads



By and large total operating costs currently incurred by a truck in the EAC are driven by fuel expenses, which account for 71% of total annual cost. En-route costs which include expenses for bribes and extra-official fines contribute only 21% of total cost, followed by salaries representing 9% of costs. Measures intended to reduce direct pecuniary costs while trucks are in transit are thus unlikely to make a large difference in reducing overall costs. For example, even if en-route costs were to fall by 50%, total operating costs would only decline by around 10%, all other things equal. A greater impact on costs savings would

[9] We assume a lifecycle of ten years because it is the truck owner's expected lifespan of our reference truck (i.e Mercedes Actor/Axor) without incurring major expenses for repairs.

[10] The regression line depicted in figure 13, has an intercept of US$ 86,600 which is significantly less than the cost of US$ 150,000 for a new truck. The explanation for this is that many trucks in the EAC are imported as used trucks and not as new trucks. The intercept of US$ 86,600 can thus be interpreted as the average value of semi-trailers imported to the EAC, including both new and used trucks.

come from efforts that would result in a more efficient use of invested capital (i.e the trucks). A reduction in overall transit times, for instance, would allow truck owners to increase the number of round trips per year and to lower profit margins demanded on each trip. Of course, the extent to which these per-trip profit margins would come under pressure due to lower transit times depends on the market structure of the EAC's trucking industry. However, comparing the evolution of trucking prices against recent market developments, we found evidence for a relatively competitive market structure among truckers operating on the Northern corridor.

Establishment of six different NTB specific trade facilitation scenarios

The baseline scenario was compared to six different scenarios each considering the elimination of a different NTB. The same work to leisure ratio (i.e. total resting time for each hour of work) as in the baseline scenario was assumed. This implies that the reduction in en-route delays does not only reduce total transit times directly but also indirectly due to less resting time needed while en-route. Each scenario is described in turn. Table 3 provides a summary of how each scenario compares numerically to the baseline scenario.

- Scenario 1 – No Border: A Baseline Time and Traffic Survey was conducted at Malaba Border Post in 2016, reporting an average customs processing time of 14.49 hours. This scenario assumes the elimination of all delays occurring at the border between Kenya and Uganda due to customs. This would result in a decline of total transit times on the Northern Corridor by 20.7 hours (i.e. 14.5 hours due the elimination of delays and 6.2 hours due to a reduction in resting time).
- Scenario 2 – No Weighbridges: Stakeholder interviews revealed that truck drivers can expect up to 10 weighbridges between Mombasa and Kampala (five and two fixed weighbridges in Kenya and Uganda, respectively, and three mobile weighbridges placed randomly on the route). We assume 30 minutes per weighbridge. This allows for the smaller crossing times for weigh in motion weighbridges (e.g. Mariakani and Webuye) that have recently been confirmed in GPS surveys conducted by the NCTTCA and somewhat higher for static weighbridges. The scenario assumes the elimination of all delays occurring due to the existence of weighbridges, which would result in a decline of total transit times on the Northern Corridor by 7.1 hours (i.e. 5 hours due the elimination of delays and 2.1 hours due to a reduction in resting time).
- Scenario 3 – No Other delays: In interviews truck drivers could not account for a large portion of transit times. An elimination of these types of unaccounted delays would reduce total transit times between Mombasa and Kampala by 36.8 hours (i.e. 25.7 hours due the elimination of delays and 11.0 hours due to a reduction in resting time).
- Scenario 4 – Improved Infrastructure: Interviews with truck drivers revealed that on average only 48 hours of the 134-hour trip between Mombasa and Kampala is spent actively driving. This implies an average driving speed of 24.1 kilometres per hours. This scenario assumes improvements in infrastructure which would bring average driving speeds to 50 kilometres per hour. This would result in a reduction of total transit times by 36 hours.
- Scenario 5 – No Bribes: On each return trip between Mombasa and Kampala truck drivers spend US$ 34.5 on bribes and extra-official bribes, which truck drivers need to cover from their trip allowance. Eliminating these expenses would thus allow truck drivers' allowance to decline from the current US$ 250 to US$ 215.5.
- Scenario 6 – No Road Usage Fee: Kenyan truckers are obliged to pay a road usage fee of US$ 50 when entering Uganda which needs to be paid out of truck drivers' allowance. Eliminating this expense would allow trip allowances to be cut by the same amount.

Table 3: The impact on transit time and transit cost of six different NTB trade facilitation scenarios

	Baseline Scenario	Scenario 1 - No Border	Scenario 2- No Weighbridge	Scenario 3 -No other delays	Scenario 4 - Better Infrastructure	Scenario 5 - No Bribes	Scenario 6 - No Road Usage Fee
Total Transit	134.0	113.3	126.9	97.2	98.0	134.0	134.0

Driving Time	48.6	48.6	48.6	48.6	23.4	48.6	48.6
Resting	40.2	34.0	38.1	29.2	29.4	40.2	40.2
Border Crossing	14.5	0.0	14.5	14.5	14.5	14.5	14.5
Weighbridge	5.0	5.0	0.0	5.0	5.0	5.0	5.0
Other	25.7	25.7	25.7	0.0	25.7	25.7	25.7
Resting time for each hour of work	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Truck Driver Allowance	249.0	249.0	249.0	249.0	249.0	215.5	199.0
Implicit average speed when driving	24.1	24.1	24.1	24.1	50.0	24.1	24.1
Number of round trips per year	38.1	41.9	39.3	48.8	45.2	38.1	38.1

To monetize the cost implications of these different NTB scenarios, we calculated the price differential between the baseline price and the price that would result in the same IRR of 24.9% for the owner of a semi-trailer as in the baseline scenario but with the reduction in transit times and costs considered in each of the scenarios above. Hence, we assumed that any improvements in efficiency due to improvements in trade facilitation are passed on to consumers of trucking services in form of lower prices, whereas annual returns on invested capital remain the same. Given the competitive nature of trucking services on the Northern Corridor, this assumption does not strike us as unrealistic. Table 4 reports the respective cost savings for consumers of trucking services that would be attained under each scenario. The greatest savings would come from the elimination of unaccounted delays (scenario 3), followed by improvements in infrastructure (scenario 4) and the elimination of delays at the border (scenario 1). Table 4 also shows that the trade facilitation measures targeting the reduction of direct pecuniary costs such as bribes or road user fees have a much smaller impact than those measures reducing delays and allowing for more efficient trucking operations.

Table 4: Estimating cost savings across six NTB trade facilitation scenarios

	Scenario 1 - No Border	Scenario 2- No Weighbridge	Scenario 3 - No other delays	Scenario 4 - Better Infrastructure	Scenario 5 - No Bribes	Scenario 6 - No Road Usage Fee
Number of round trips per year	41.9	39.3	48.8	45.2	38.1	38.1
Price per round trip required to keep IRR of baseline scenario	2134.3	2201.6	1987.4	2058.4	2203.5	2187
Cost Savings*	4.59%	1.58%	11.16%	7.98%	1.50%	2.24%
* This is calculated as the difference between the baseline price and the new price.						

In Annex VI we present detailed information about the AVEs estimated.

4.5. A review of NTBs

Based on interviews and the online questionnaire, it has been possible to identify the incidence of some of the NTBs highlighted by the EAC Regional Monitoring Committee.

4.5.1. Weighbridges

Based on interviews, firms assign a relatively high level of disruption to weighbridges. On the one hand, they notably increase transport times: weighbridges and other blockages can consume up to six hours of a normal transit day. Transport costs are not linearly proportional to transport times, which will have implications for the transport cost we can calculate. For example, the time spent in the weighbridge or other blockage may represent up to 8% of transport costs.

On the other hand, given that weighbridges are used to ensure vehicles are not excessively heavy and damage the transport infrastructure, it is not possible to consider their complete elimination, beyond this theoretical

exercise. This puts a limit on the actual cost we can assign to the weighbridges. In fact, the barrier is associated with the repetition of similar weighbridges and not by the measure in itself.

However, a more precise estimation of the cost of the weighbridges based on the calculation of AVEs suggests that they imply an additional cost of between 0.16% and 0.86% of the price of the product depending on the product under consideration.

4.5.2. Border delays

Delays at borders are a frequent source of complaints of transporters in the region. Multiple factors can explain these. One of them, as highlighted by the EAC NTB Regional Monitoring Committee, is lack of coordination related to border crossing operation times. However, other factors may increase the time taken to clear customs at borders and to deal with all the paperwork and procedures.

The introduction of an OSBP in Busia has simplified procedures and notably reduced crossing times at borders. It has streamlined the process and contributed to a general reduction in transit times. However, as highlighted by one interviewee, Busia does not deal with all types of cargo; some cargo needs to cross by means of other crossings.

The costs associated with these delays can be serious. However, it is virtually impossible to assume their complete elimination as long as borders controls continue to be necessary. Assuming that these border controls and, consequently, the border delays are eliminated, there could be reduction of 20 hours in transport times on average. This is equivalent to additional transport costs of between 0.49% and 2.51% depending on the product.

4.5.3. Other delays

In addition to weighbridges and border delays, police roadblocks constitute a major source of delays. Also, excessive traffic in certain areas means trucks take diversions that increase transport times and fuel consumption. Based on interviews with firms, the elimination of these delays could imply a reduction of 35 hours in the transport time between Mombasa and Kampala.

Considering the price for trucking on the route, calculations suggest that these delays may increase transport costs by between 1.17% and 6.05%. These are thus a potentially large source of transport costs. However, the fact that this considers mostly unidentifiable costs suggests that incidence may also be smaller than we suggest here.

4.5.4. Bribes

Unlike weighbridges and delays, the impact of bribes on transport costs is not related to additional transport time. These payments are frequently made to avoid paying a fine or penalty generated by wrong conduct or fault by the driver or firm. Consequently, they should not be considered an NTB.

However, many of these bribes are associated with strict and inflexible application of the norms by officials. Also, bribes can be preferable to facing the increased times and costs associated with paying fines and penalties. Companies are often faced with the need to make these payments to secure the delivery of their cargo.

Assuming the most lenient interpretation of these NTBs and based on the cost identified by stakeholders, bribes are associated with a potential $35 cost per trip. This represents between 0.16% and 0.81% of the cost of transport depending on the product considered.

4.5.5. Road usage fee

Trucks are frequently required to pay road charges applied at the national and local level. They work as additional taxes on the products that increase transport and, eventually, production costs. The EAC NTB Regional Monitoring Committee has already identified them as a source of NTBs in the region.

The $50 road usage fee charged by Uganda represents one of these fees. Interviewees highlighted this as an additional cost without a visible service. This fee is has to be paid every time a non-Ugandan truck enters

into the country. It represents between 0.23% and 0.81% in additional transport costs depending on the product considered.

4.5.6. Improved infrastructure

Finally, as we have mentioned, infrastructure needs to improve to increase speeds and reduce fuel consumption and transport times. Current average speeds are about 25 km/h. This is less than a third of the typical average speed of trucks in the EU.

Doubling speeds, through better infrastructure, allowing trucks to circulate at 50 km/h, will imply a reduction of nearly 35 hours in the transit time between Mombasa and Kampala. This can imply a reduction in transport costs of between 0.84% and 4.3% depending on the product considered.

4.5.7. Final observations

Adding all these NTBs allows us to obtain a general measure of their impact on the transport of the region. A general reduction and elimination of these NTBs would imply reductions in transport costs of between 3% and 15.7% depending on the product considered.

However, we must be cautious here. First, some of the NTBs cannot be eliminated outright (e.g. weighbridges) as they address other relevant policy issues. Second, others may require serious policy commitments and their elimination may be very difficult (e.g. border delays). This suggest that the real general costs of these NTBs in the region may be smaller.

Other NTBs may be eliminated or substantially reduced. Elimination of road fees and a focus on infrastructure constitute concrete areas for improvement, and the figures calculated indicate the potential gain in terms of a reduction in transport costs.

5. The impact of reducing NTBs in the EAC

We analysed the effect of the removal of the NTBs by applying two methodologies. First, we used a CGE model to assess the effect on prices, output, employment and incomes of the removal of the NTBs, using the AVEs of the NTBs calculated in the previous section. The CGE model was calibrated using these values. Certain measures, such as weighbridges, will not themselves constitute NTBs. However, their duplication may increase trade costs without generating additional benefits. It was not possible to determine the optimal number of value for these type of measures. Therefore, we assumed their complete elimination just for the sake of calculation of the maximum impact of the removal. However, this should not be understood as a pledge for their complete elimination.

In addition, we applied the Trade Poverty Constraint Index (TPCI) (Bottini et al., 2017) to identify the depth of the barriers affecting poverty in the region. The TPCI was developed originally as part of a previous project financed by the UK Department for International Development (DFID) and this constitutes one of its most recent applications. The aim of the index is identify how the constraints affecting the poverty response may change as a result of the removal of the NTBs in the region in each of the countries analysed.

5.1. Introduction to the CGE analysis

The analytical framework is the GLOBE model, a global multi-region and multi-sector CGE trade model widely used in regional economic integration analysis.[11] General equilibrium models consider all sectors in an economy simultaneously and take full account of economy-wide resource constraints and spill-over effects across markets for individual goods and services. CGE models track the full circular flow of income in an economy from (i) income generation through productive activity, to (ii) the primary distribution of

[11] See Willenbockel (2012, 2013, 2014) for recent applications with a focus on Eastern Africa.

that income to workers, owners of productive capital and recipients of the proceeds from land and other natural resource endowments, to (iii) the redistribution of that income through taxes and transfers and to (iv) the use of that income for consumption and investment.

Trade increases economic welfare by reducing prices, raising incomes and providing a better allocation of resources. However, in addition to tariffs, multiple NTBs introduce frictions in this process, which can limit the gains.

Our results on the elimination of transport and logistics NTBs and other related measures on the economies of the EAC countries include an assessment using a CGE model of trade effects, gross domestic product (GDP), welfare, employment and prices.

5.2. Simulation analysis

The analysis considers two sets of seven NTB reduction scenarios related to the intra-EAC road transport of imported goods:

- S1: The elimination of border delays;
- S2: The elimination of weighbridge stops;
- S3: The elimination of other delays related to road transport;
- S4: Road infrastructure improvements (enabling a doubling of travel speeds);
- S5: The elimination of bribes and fines;
- S6: The elimination of road user charges;
- SAll: A simultaneous implementation of all these measures.

Section 4 provides a detailed characterisation of these NTBs.

The first set of simulations (Section 5.3) assumes that these NTB removals are applied in a discriminatory fashion to EAC imports of EAC origin only, while the second set (Section 5.4) assumes that the NTB removals apply to within-EAC road transports of EAC imports from the whole world.

Table 5: AVEs of NTB reductions by scenario and commodity

(Reductions on imports to Uganda in percent of baseline transport-cost-inclusive import price)

	S1	S2	S3	S4	S5	S6	SAll
Cereals	-1.0	-0.3	-2.4	-1.7	-0.3	-0.5	-6.3
Vegs Fruits	-1.0	-0.3	-2.3	-1.7	-0.3	-0.5	-6.1
O Agriculture	-1.1	-0.4	-2.6	-1.9	-0.4	-0.5	-6.8
Mining	-2.5	-0.9	-6.1	-4.3	-0.8	-1.2	-15.8
Sugar Prd	-0.9	-0.3	-2.3	-1.6	-0.3	-0.5	-5.9
O Food Prd	-1.0	-0.4	-2.5	-1.8	-0.3	-0.5	-6.5
Beverages	-0.9	-0.3	-2.2	-1.6	-0.3	-0.4	-5.8
Textiles	-1.9	-0.6	-4.6	-3.3	-0.6	-0.9	-11.8
Refined Petrol	-1.3	-0.4	-3.2	-2.3	-0.4	-0.6	-8.2
Chemicals	-1.0	-0.3	-2.4	-1.7	-0.3	-0.5	-6.2
Metal Prd	-0.6	-0.2	-1.5	-1.1	-0.2	-0.3	-3.8
NM Mineral Prd	-1.0	-0.4	-2.5	-1.8	-0.3	-0.5	-6.5
Wood Paper Prd	-0.9	-0.3	-2.1	-1.5	-0.3	-0.4	-5.4
O Manufacturing	-1.0	-0.4	-2.5	-1.8	-0.3	-0.5	-6.5

Similar to tariffs, international transport costs drive wedges between the price received by producers and the price paid by users of imported goods. Like cuts in tariff rates, reductions of transport costs as a result of NTB removals reduce these wedges and thus reduce the prices facing importers. Therefore, it is

analytically convenient and common practice to measure the price wedges resulting from NTBs by their so-called AVEs. Table 5 shows estimates of the AVEs for the selected NTBs on imports to Uganda provided by Eberhard-Ruiz (2017) and presented in the previous section. For instance, these estimates suggest that the joint presence of the NTBs addressed by measures S1–S6 raise the price of textile imports to Uganda paid by users by 11.8% relative to the price received by textile producers in the country of origin. An *ad valorem* tariff of 11.8% imposed by Uganda on textile imports would drive an equivalent price wedge between producer and user prices.

The following simulation analysis assumes further that the baseline AVEs for imports to Tanzania and Kenya (Rwanda and RoEAC+) are 25% higher (lower) than the AVEs for imports to Uganda reported in Table 5.

The Global Trade Analysis Project (GTAP) database and thus the GLOBE model take explicit account of transport margins associated with international trade flows and support a separate identification of air, water and ground transport margins. Thus, the NTB reductions are directly modelled as reductions in the ground transport margin parameters of the model.[12]

5.3. NTB reductions on intra-EAC imports only

5.3.1. Macroeconomic effects

A first set of simulations assumes that the NTB reduction measures are applied to intra-EAC imports only. The immediate impact is a drop in intra-EAC import prices that stimulates intra-EAC trade flows. In the SAll scenario, the total intra-EAC trade volume rises by 13%. Figure 8 displays the impacts on aggregate intra-EAC imports by destination country and intra-EAC exports by origin country. Since the baseline shares of trade with EAC partners in EAC countries' total exports and imports are generally small (Table 6), the macroeconomic effects this trade effect triggers remain moderate for all EAC members (Tables 7 and 8).

As the foreign-transport-cost-inclusive border prices for merchandise imports of EAC partner origin drop for all EAC members while the additional export demand from EAC partners simultaneously exerts upward pressure on (fob) export prices, all EAC countries enjoy a noticeable terms of trade improvement (Figure 9). That is, for all EAC Partner States, the aggregate index of import prices paid drops relative to the index of export prices received.

These terms of trade improvements translate into aggregate welfare gains, as the effective amount of real imports received per unit of exports sent abroad increases. The terms of trade gains are most pronounced for Rwanda and Uganda, because these countries have far higher EAC shares in total imports than Kenya and Tanzania (Table 6). Tanzania gains least because its EAC baseline share in both total imports and total exports is small. Kenya likewise has a very small EAC share in total imports but has at the same time the highest EAC destination share in its total exports; indeed, Kenyan exports to the EAC account for nearly 65% of total intra-EAC baseline trade. Thus, Kenya gains little via cheaper imports but benefits most among the EAC partners via higher exports. In contrast, Rwanda with its small 1.5% EAC export share gains little on the export side, but enjoys the largest drop in its aggregate import price index.

[12] A side remark for expert CGE modellers: an alternative specification in which the NTB shocks were implemented in a more stylised form as reductions in iceberg transport costs was also implemented and led to very similar results for the macro aggregates.

Figure 8: Impact on Intra-EAC trade volumes – SAll scenario

(Percentage changes)

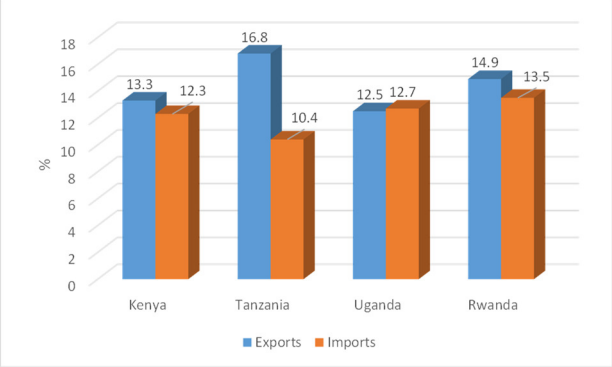
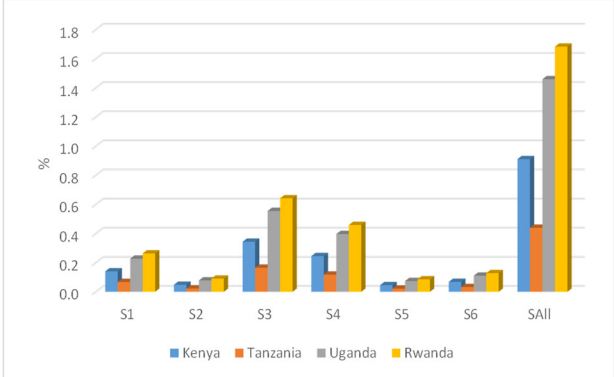


Figure 9: Impacts on terms of trade



The rank order of the aggregate welfare gains reported in Table 7 closely follows the rank order of the terms of trade gains in Figure 8. The Hicksian equivalent variation is a monetary indicator of the impact on private consumer welfare. It measures the hypothetical amount by which baseline household consumption expenditure would have to be topped up in the absence of the NTB removals in order to reach the same utility level as in the absence of the NTB removals. In short, the equivalent variation translates the welfare effect into an equivalent household income change.

Table 6: Aggregate trade flows by origin and destination – baseline 2011

(Trade flows in US$ million; EAC4 shares in percent)*

		Exporting country/region						EAC4 share in total imports	Share in total intra-EAC4 imports
		Kenya	Tanzania	Uganda	Rwanda	RoEAC	RoW		
Importing country	Kenya		146.1	119.7	10.4	11.0	15268.5	1.8	16.9
	Tanzania	356.9		36.8	1.7	3.1	9243.6	4.1	24.2
	Uganda	564.0	23.5		7.9	7.5	3740.3	13.7	36.5
	Rwanda	130.9	53.8	178.8		6.9	1039.3	25.8	22.3
	RoEAC	368.4	42.3	196.1	6.6	79.6	19913.6	3.0	
	RoW	6963.2	5170.4	3625.3	1351.6	19612.7			
EAC4 share in total exports		12.5	4.1	8.1	1.5	0.1			
Share in total intra-EAC4 exports		64.5	13.7	20.6	1.2				
Net EAC4 exports		775.4	-172.0	-260.0	-343.5				

Note: EAC4: Kenya, Tanzania, Uganda, Rwanda.

The equivalent variation focuses exclusively on utility derived from current private consumption and does not take account of impacts on government consumption and on real investment (which affects future consumption possibilities). Therefore, Table 7 also reports the impacts on real absorption – that is, the total amount of domestically produced and imported final good and services available for private consumption, public consumption and investment – as a wider welfare measure. However, it can be seen that the proportional changes for the two welfare measures are very similar. Even under a joint removal of all the NTBs considered here (SAll scenario), the aggregate welfare effects remain well below 0.5% for all EAC countries. Table 8 reports the changes in GDP and real exports and imports.

Table 7: Aggregate welfare impacts

	S1	S2	S3	S4	S5	S6	SAll
	Hicksian equivalent variation *(in percent of baseline household expenditure)*						
Kenya	0.04	0.01	0.10	0.07	0.01	0.02	0.28
Tanzania	0.02	0.01	0.06	0.04	0.01	0.01	0.16
Uganda	0.06	0.02	0.14	0.10	0.02	0.03	0.37
Rwanda	0.06	0.02	0.14	0.10	0.02	0.03	0.38
	Real absorption *(Percentage change)*						
Kenya	0.03	0.01	0.08	0.06	0.01	0.02	0.22
Tanzania	0.02	0.01	0.05	0.04	0.01	0.01	0.14
Uganda	0.06	0.02	0.16	0.11	0.02	0.03	0.43
Rwanda	0.06	0.02	0.15	0.10	0.02	0.03	0.39

Table 8: Real GDP and aggregate trade volumes

	S1	S2	S3	S4	S5	S6	SAll
	Real GDP *(Percentage changes)*						
Kenya	0.07	0.03	0.19	0.13	0.02	0.04	0.51
Tanzania	0.04	0.01	0.09	0.06	0.01	0.02	0.25
Uganda	0.07	0.03	0.18	0.13	0.02	0.04	0.50
Rwanda	0.07	0.02	0.17	0.12	0.02	0.03	0.47
	Aggregate Real Imports *(Percentage changes)*						
Kenya	0.13	0.04	0.32	0.22	0.04	0.06	0.86
Tanzania	0.05	0.02	0.12	0.08	0.02	0.02	0.32
Uganda	0.24	0.08	0.58	0.41	0.08	0.11	1.57
Rwanda	0.31	0.10	0.75	0.53	0.10	0.15	2.03
	Aggregate Real Exports *(Percentage changes)*						
Kenya	0.10	0.03	0.24	0.17	0.03	0.05	0.64
Tanzania	0.00	0.00	0.01	0.01	0.00	0.00	0.01
Uganda	0.04	0.01	0.11	0.08	0.01	0.02	0.27
Rwanda	0.09	0.03	0.21	0.15	0.03	0.04	0.57

Table 9 reports the impacts on real wages for skilled and unskilled labour and on the returns to other primary factors. For workers and capital income recipients, the welfare gains from lower intra-EAC NTB barriers manifest themselves in the form of an increase in the purchasing power of their factor income as the consumer price index drops relative to wages and capital returns.

Table 9: Effects on functional income distribution

(Percentage changes in factor returns normalised by the country's CPI)

		S1	S2	S3	S4	S5	S6	SAll
Land	Kenya	-0.06	-0.02	-0.14	-0.10	-0.02	-0.03	-0.38
	Tanzania	0.02	0.01	0.05	0.03	0.01	0.01	0.14
	Uganda	0.11	0.04	0.26	0.18	0.03	0.05	0.71
	Rwanda	0.09	0.03	0.22	0.15	0.03	0.04	0.60
Unskilled labour	Kenya	0.05	0.02	0.12	0.09	0.02	0.02	0.34
	Tanzania	0.04	0.01	0.10	0.07	0.01	0.02	0.29
	Uganda	0.08	0.03	0.20	0.14	0.03	0.04	0.56
	Rwanda	0.06	0.02	0.15	0.11	0.02	0.03	0.41
Skilled labour	Kenya	0.06	0.02	0.14	0.10	0.02	0.03	0.39

	Tanzania	0.04	0.01	0.10	0.07	0.01	0.02	0.28
	Uganda	0.08	0.03	0.19	0.14	0.03	0.04	0.53
	Rwanda	0.07	0.02	0.17	0.12	0.02	0.03	0.45
Capital	Kenya	0.06	0.02	0.15	0.11	0.02	0.03	0.42
	Tanzania	0.04	0.01	0.10	0.07	0.01	0.02	0.28
	Uganda	0.08	0.03	0.21	0.15	0.03	0.04	0.58
	Rwanda	0.05	0.02	0.13	0.09	0.02	0.02	0.35
Natural resources	Kenya	-0.12	-0.04	-0.30	-0.22	-0.04	-0.06	-0.84
	Tanzania	0.04	0.01	0.11	0.07	0.01	0.02	0.31
	Uganda	0.04	0.01	0.10	0.07	0.01	0.02	0.25
	Rwanda	-0.01	0.00	-0.02	-0.01	0.00	0.00	-0.03

The resulting effects on the functional distribution of income via relative factor price effects are unremarkable. For example, under the SAll scenario, the reported real wage effects imply that the *relative* wages of skilled to unskilled workers drop by 0.05% in Kenya, 0.01% in Tanzania and 0.03% in Uganda, and rise by 0.04% in Rwanda. In other words, the wage gaps between skilled and unskilled workers remain virtually unchanged. The same conclusion applies to effects on the wage/capital–return ratios. The negative effects on land and natural resource rents in Kenya arise as a result of the mildly contractionary impact on Kenyan agricultural and mining activities (Table 9). Section 5.3.2 further discusses the inter-sectoral reallocation effects that drive these relative factor price changes. Annex IX presents some sectoral results for the SAll scenario.

5.4. NTB reductions on EAC imports from all regions

5.4.1. Macroeconomic effects

We now turn to the second set of scenarios, which assumes that the NTB reduction measures are extended to the intra-EAC road transport of imports from the rest of the world. Given that imports of non-EAC origin strongly dominate imports of EAC origin in all EAC countries, it is not surprising that the terms of trade and welfare gains from the reduction in trade costs are considerably larger in this case (Table 10). The differences in the welfare gains by country are in this case determined largely by cross-country differences in the baseline imports–GDP ratio. This ratio is highest for Kenya (55%) and lowest for Rwanda (26%).

Table 10: Aggregate welfare impacts

	S1	S2	S3	S4	S5	S6	SAll
	Hicksian equivalent variation *(in percent of baseline household expenditure)*						
Kenya	0.3	0.1	0.8	0.6	0.1	0.2	2.2
Tanzania	0.3	0.1	0.7	0.5	0.1	0.1	1.9
Uganda	0.3	0.1	0.6	0.4	0.1	0.1	1.7
Rwanda	0.2	0.1	0.6	0.4	0.1	0.1	1.5
	Real absorption *(Percentage change)*						
Kenya	0.3	0.1	0.8	0.5	0.1	0.2	2.0
Tanzania	0.3	0.1	0.6	0.5	0.1	0.1	1.7
Uganda	0.3	0.1	0.6	0.5	0.1	0.1	1.7
Rwanda	0.2	0.1	0.6	0.4	0.1	0.1	1.6

The rank order of the impacts on GDP under full implementation of the NTB reduction measures (Table 11, SAll column) is likewise governed by the aggregate import–GDP ratios. The real GDP of Kenya – the EAC member with the highest aggregate import penetration rate – rises by 2.8% in the SAll scenario, whereas GDP for Rwanda – the EAC member with the lowest import penetration rate – rises by a still sizeable 1.7% relative to the baseline.

Table 11: Impact on real GDP and aggregate trade volumes

	S1	S2	S3	S4	S5	S6	SAll
	Real GDP *(Percentage changes)*						
Kenya	0.4	0.2	1.1	0.8	0.1	0.2	2.8
Tanzania	0.4	0.1	0.9	0.6	0.1	0.2	2.3
Uganda	0.3	0.1	0.7	0.5	0.1	0.1	1.9
Rwanda	0.3	0.1	0.6	0.5	0.1	0.1	1.7
	Aggregate real imports *(Percentage changes)*						
Kenya	0.8	0.3	1.9	1.3	0.3	0.4	5.1
Tanzania	0.6	0.2	1.5	1.1	0.2	0.3	4.0
Uganda	0.8	0.3	2.0	1.4	0.3	0.4	5.4
Rwanda	1.0	0.3	2.5	1.8	0.3	0.5	6.8
	Aggregate real exports *(Percentage changes)*						
Kenya	0.1	0.0	0.3	0.2	0.0	0.1	0.8
Tanzania	0.0	0.0	0.1	0.1	0.0	0.0	0.2
Uganda	0.0	0.0	-0.1	-0.1	0.0	0.0	-0.3
Rwanda	0.1	0.0	0.3	0.2	0.0	0.1	0.8

The deeper theoretical explanation for the difference in the macroeconomic export response is that in an aggregate sense Uganda's import demand is slightly less price-elastic than Rwanda's import demand. As the import demand elasticities differ by commodity group, this indicates that on average Uganda's import composition is characterised by a higher share of commodities with relatively low price elasticities.

Table 12 shows the impacts on factor prices relative to the Consumer Price Index (CPI) and thus indicates how the recipients of different types of factor income participate in the aggregate welfare gains. All factor prices except natural resource rents in Kenya and Uganda rise in real terms. Skilled workers gain slightly more than unskilled workers in all EAC Partner States. In the SAll scenario, the skill premium as measured by the relative wage of skilled to unskilled labour rises by 0.6% in Uganda, 0.5% in Kenya, 0.3% in Tanzania and 0.2% in Rwanda. This indicates that on balance the inter-sectoral reallocation effects triggered by the NTB reductions pull resources slightly more in the direction of sectors with a higher skill intensity. The effects on the factor price relation between capital and unskilled labour are less clear-cut and range from +0.8% in Uganda to -0.2% in Rwanda under the SAll scenario. With the exception of Rwanda, agricultural land rents rise less than the rewards to labour. The following section further explores impacts on the domestic structure of production effects that explain these relative factor price changes.

We present in Annex IX some sectoral results for the SAll scenario.

Table 12: Effects on functional income distribution

(Percentage changes in factor returns normalized by the country's CPI)

		S1	S2	S3	S4	S5	S6	SAll
Land	Kenya	0.2	0.1	0.4	0.3	0.1	0.1	1.1
	Tanzania	0.1	0.0	0.1	0.1	0.0	0.0	0.4
	Uganda	0.0	0.0	0.1	0.1	0.0	0.0	0.2
	Rwanda	0.3	0.1	0.8	0.6	0.1	0.2	2.2
Unskilled labour	Kenya	0.4	0.1	1.0	0.7	0.1	0.2	2.5
	Tanzania	0.4	0.1	0.9	0.6	0.1	0.2	2.4
	Uganda	0.3	0.1	0.7	0.5	0.1	0.1	1.8
	Rwanda	0.3	0.1	0.6	0.5	0.1	0.1	1.7
Skilled labour	Kenya	0.5	0.2	1.1	0.8	0.2	0.2	3.0
	Tanzania	0.4	0.1	1.0	0.7	0.1	0.2	2.7
	Uganda	0.4	0.1	0.9	0.6	0.1	0.2	2.4

	Rwanda	0.3	0.1	0.7	0.5	0.1	0.1	1.9
Capital	Kenya	0.4	0.1	1.1	0.8	0.1	0.2	2.8
	Tanzania	0.3	0.1	0.9	0.6	0.1	0.2	2.3
	Uganda	0.4	0.1	1.0	0.7	0.1	0.2	2.6
	Rwanda	0.2	0.1	0.6	0.4	0.1	0.1	1.5
Natural resources	Kenya	0.0	0.0	-0.1	0.0	0.0	0.0	-0.1
	Tanzania	0.1	0.0	0.3	0.2	0.0	0.1	0.7
	Uganda	-0.3	-0.1	-0.8	-0.6	-0.1	-0.2	-2.2
	Rwanda	0.0	0.0	0.1	0.1	0.0	0.0	0.2

5.5. Assessing the effects on poverty in the EAC

So far, we have explored the effects of the removal of all and each particular NTB on key macroeconomic variables, prices and employment. This provides, per se, a general assessment of how the removal of these NTBs will affect the main poverty determinants. However, it is useful to provide an additional qualification of these effects, related to how the removal of NTBs may be related to the transmission mechanism which may lead to change in poverty.

NTBs are likely to act as a constraint on the transmission of the poverty effects of trade policy. The higher the NTBs, the lower will be the effects of trade on prices and incomes. The removal of NTBs will not only have effects on poverty but also make the transmission of the poverty determinants easier.

The TPCI (Bottini et al., 2017)[13] can be used to help shed light on these dynamics, by identifying which constraints are more likely to have a first, second and third order impact and, further, how they interact with scope and structure:

- For any given level of constraint, and for a given structure of the economy in EAC countries, the bigger the size of the NTB reduction the bigger will be the impact on either poverty or poverty alleviation – where of course the net effect depends on the characteristics of the individual or household.
- For any given level of constraints and for a given size of NTB reduction, the bigger the share of the producing sector affected in the EAC country, or the bigger the share of consumption goods affected, and the greater the elasticities of supply and/or demand, the bigger will be the effect on poverty.
- For a given size of NTB reduction and a given structure of the economy of the EAC country, the bigger the size of the constraint the smaller will be the effect on either poverty or poverty alleviation.

In the first instance, the impact on poverty of the NTB reduction will derive from the trade-induced changes in prices and how these then affect producers and consumers. As discussed above, the extent of the impact will depend on the constraints to poverty alleviation. The TPCI is derived from a wide range of international sources, designed to measure these constraints, and does so separately by creating an index with regard to opportunities and one with regard to shocks. Each version of the index has three dimensions in order to capture the fact that the impact on poverty will have direct effects through changes in prices (D1), medium-run effects arising from structural change (D2) and longer-run growth effects (D3).

Table 13 gives the summary results for the EAC countries across a range of years for which data were available. We give the results for the overall index (TPCI) and for the three dimensions. We focus on the first dimension because the greatest impact on poverty is likely to occur as a result of reductions in prices following the reductions in NTBs. In terms of index interpretation:

- **Opportunities:** The smaller the score on the index, the bigger the constraint and the harder it will be to seize the opportunities for any given process of trade liberalisation.
- **Shocks:** The smaller the score on the index, the less likely it is that shocks (e.g. lower prices) will be transmitted to producers and consumers and the more likely it is that these will be protected from

[13] See Annex IX for further references

the negative shock. Hence, the bigger the score on the index, the larger the negative impact on poverty.

Table 13: The Trade Poverty Constraint Index

		Opportunities			Shocks		
		2008	2011	2014	2008	2011	2014
Burundi	TPCI	33.2	37.4	35.9	15.9	18.8	19.3
	D1	16.9	21.9	25	29.2	36.8	41.1
	D2	23.7	25.11	22.3	18.6	19.4	16.8
	D3	63.7	64.5	60.4	N/A	N/A	N/A
Kenya	TPCI	42	44.7	47.9	21.6	24.7	28.1
	D1	24.8	34	39.3	43.3	53.6	59.6
	D2	26.5	27.5	30.2	21.6	20.6	24.6
	D3	74.61	75..0	74.2	N/A	N/A	N/A
Rwanda	TPCI	N/A	52.5	54.1	N/A	29.4	31.9
	D1	N/A	45.5	50.9	N/A	54.5	62.1
	D2	N/A	36.8	36.6	N/A	33.7	33.6
	D3	N/A	75.2	74.8	N/A	N/A	N/A
Tanzania	TPCI	39.9	42.6	43.4	22.2	22.3	23.2
	D1	22.5	30.9	29.8	41.8	46.1	46.3
	D2	N/A	N/A	N/A	24.9	20.9	23.4
		71.5	71.3	73.7	N/A	N/A	N/A
Uganda	TPCI	39.2	44.2	42.5	21.8	23	22.5
	D1	23.1	33.3	32.3	43	44.6	43.5
	D2	24.9	28.4	27.0	22.4	24.3	24.0
	D3	69.6	70.8	68.2	N/A	N/A	N/A

Source: See Bottini et al. (2017)

Looking at the first dimension of the index (D1) in the shared columns and focusing first on the ability of the poor to seize opportunities, we see that the index score is consistently lowest for Burundi and is highest for Rwanda and Kenya. This suggests there are greater opportunities for poverty alleviation arising from trade liberalisation for Burundi than in the other countries. It is also interesting to note that in all countries the index rises over time, reflecting reductions in these constraints. Two of the elements within this first dimension use information from the World Bank, World Development Indicators on road quality, and on the quality of port infrastructure. Hence, this reduction is consistent with the fall in transport costs and times found by Eberhard-Ruiz and Calabrese (2017) and TradeMark East Africa (TMEA) (2017). The converse applies when considering the ability of the poor to protect themselves from shocks. Here, we see that the shocks are likely to be bigger for Rwanda and Kenya, and in good part this draws on the same logic as earlier. The better the quality of the, for example, transport infrastructure, the more likely it is that the first order shocks will be bigger for those affected negatively by the increase in imports.

To some degree, these trade-induced changes in prices as a result of NTB reductions can be seen in the simulated CGE results, which show, for example, quite marked changes in sugar prices across the EAC countries and reductions in cereals prices in all countries except for Uganda. Note, however, that the CGE results capture the longer-run effects taking into account changes in production, employment and wages across the EAC economies. From the poverty constraint perspective, these medium- and longer-run factors are captured in the overall TPCI, which is given in the first column for each country. Once again, it is Burundi where we see the biggest constraints to seizing the opportunities; conversely, though, the shocks may therefore be smaller.

The higher dimensions (D2 and D3) suggest the long-term effects of the removal of NTBs.. In the five countries, the constraints to taking advantage of the opportunities for further poverty reduction are in general low. As a result of being landlocked, Burundi, Rwanda and Uganda appear to have higher constraints to using trade to generate structural change (D2) which in turn can lead to further poverty reduction. However, removal of the NTBs should reduce these indexes, preparing the terrain for further poverty reductions.

On the shocks side, only D2 is calculated. This shows that Uganda, Kenya and Tanzania would be the most negatively affected in its economic structure as a result of the elimination of NTBs. These effects will be smaller in Rwanda and Burundi as a result of the distance. The existing NTBs provide protection to some sectors that may prove to be essential for their survival. While the removal of NTBs may have immediate effects on the coastal countries, it will reduce the constraints affecting the transmission of the negative shocks.

Trade and logistics costs limit the benefits of trade for the economies of the EAC. The CGE results suggest that these barriers could cost the EAC economies between 1.7% (Rwanda) and 2.8% (Kenya) of GDP and inevitably reduce the trade potential of the EAC. In addition, they have direct effects on households. Although aggregate employment effects may be small, a significant reduction in the transport and logistics NTBs may reduce the prices paid by the poorest. For example, the elimination of these barriers may reduce the purchase price for unskilled workers in Tanzania by almost 2% in sensitive products such as textiles. Clearly too, for those working directly in the transport and logistics sectors the changes will have a more significant direct impact.

Based on assessment of the constraints affecting the capacity of households to seize the opportunities arising from trade and to protect themselves from any negative effects, the poor in Kenya and Rwanda are better equipped to benefit from the removal of NTBs but are also among those who could be more negatively affected. It is important to note however, that these impacts are likely to fall differentially on different groups of poor. Hence, it is more likely that cheaper imports will benefit consumers in these countries, but that competing producers are more likely to be negatively affected. Of course some individuals may be both consumers and producers in which case the net effects become more ambiguous. This serves to underline the complex channels leading to poverty.

However, elimination of NTBs is expected to change substantially the set of constraints in existence. Consequently, the poor of Burundi or Uganda may see some of these constraints lifted. This will help them benefit from further future trade liberalisation, and as above may in turn have a bigger impact on those negatively impacted.

Consequently, complementary policies should be designed and implemented to secure the protection of those negatively affected both in the countries that benefit directly from the reduction of NTBs and in those where the reduction of NTBs will expose them to future shocks.

The improvement of road infrastructure in order to double travel speeds is expected to have the largest effects in terms of poverty reduction. However, it is very costly. Other policies can be adopted with larger effects relative to the investment made. In this sense, it appears that reducing border delays and the number of weighbridges are more accessible and rapid to implement.

6. Conclusions and policy recommendations

This report summarises and draw conclusions on extensive research conducted on the impact of NTBs in the EAC. This research goes beyond existing analysis as it reviews the existing NTBs in detail but also looks at their real impact on transport times and costs, and the potential impact of poverty. The research addresses the following questions:

- What types of existing NTBs are there? How are resolved and unresolved NTBs different?
- Are some NTBs closer to complaints about the inadequate implementation of regulations already agreed at the EAC level?
- What are the main causes of NTBs?
- What is the more appropriate resolution mechanism for each type of NTBs?

- How do these NTBs affect transport times and costs?
- Is there a link between the reduction of NTBs and transport costs?
- What is the poverty impact of reducing or eliminating these NTBs?

This section looks at the main conclusions drawn from our research.

6.1. Existing NTBs and resolution mechanisms

The EAC has made decisive advances in the elimination of NTBs affecting trade within the region. The report analysed the different types reported of the formal NTB resolution mechanism and found the most common was linked to customs and trade facilitation. The most common type of unresolved NTBs was tax-like measures, possibly because these involve some type of rent and are therefore more difficult to eliminate. Some NTBs had been addressed several times, implying that some resurface.

Looking at the average time needed to address NTBs, we found that NTBs related to customs and trade facilitation measures had generally taken the longest time to resolve, with resolution taking, on average, close to 10 months. Around a quarter of the NTBs were resolved in less than three months, suggesting they were complaints, whose resolution required simple administrative acts, rather than actual NTBs. We also found that NTBs that involved all countries in the region were generally resolved in the shortest timeframe – less than four months when the NTB was applied by all countries and less than seven months when it affected all countries. This is perhaps because of the greater scope for regional intervention to address these barriers.

Looking at the ways NTBs are addressed brought some interesting insights. We identified the following types:

- NTBs requiring unilateral elimination by the NTB imposing government;
- NTBs eliminated by trade reform and improved trade facilitation;
- NTBs eliminated through concerted action from Partner States.

In addition to these, we noted that some NTBs are strictly speaking of complaints arising from the inadequate application of existing regulations. All these call for revised reporting mechanisms that assign priorities based on the NTBs' potential impact on the economy, but also on the difficulty of their resolution. In fact, there should be two separate mechanisms: one to deal with complaints, which should be for very fast resolution; and another regard to new NTBs for which there is currently no agreement or procedure and, which may require the participation of specialists to identify areas where integration needs further work. There should also be more space for actors other than the private sector (e.g. researchers) to raise these issues.

We identified many obstacles to trade that constitute NTBs but are not reported as such. In some instances, this is because the private sector does not consider the reporting mechanisms an effective tool for the removal of barriers. Other times, obstacles to trade are perceived as an integral part of doing business in the region and not seen as outright breaches of EAC regulations. Sensitisation is required so EAC citizens are aware of their rights and of the tools they have to ensure these rights are respected.

Finally, the work has identified that, while trade processes and systems are still among the leading causes of NTBs, inadequate national and regional infrastructure can also lead to barriers to trade. Addressing these is crucial to reduce transport times, as discussed below.

6.2. Transport times, costs and competitiveness of the EAC transport sector

Our analysis then took a closer look at the transport sector in East Africa. The main intended goal of the recent trade facilitation efforts was to decrease transport times and costs. These efforts have proven partially successful. The EAC has now faster customs clearance and speedier handling of cargo at ports and terminal depots. However, transit times have not decreased massively. Unnecessary *en route* delays because of weighbridges, slow border-crossing times and police roadblocks mean cargo transit times are almost twice as long as without these barriers. Further efforts to reduce trade costs will need to focus on eliminating these barriers to decrease transit times.

Similarly, the cost of moving goods through the region has not decreased extensively, and some link the decrease achieved to lower oil prices and weaker demand, rather than real improvements. Our scenario analysis indicates that tackling the remaining trade facilitation barriers along the corridors could result in additional cost savings of up to 23% per transported tonne. In addition to this, reducing transit times through improved infrastructure may have a beneficial impact on cost.

We assessed the times and costs of transport on the Mombasa–Kampala route. Based on its volume and coverage of the trade of Rwanda, Uganda and Kenya, this constitutes a good representation of the times and transport costs of other routes in the EAC. Our analysis suggests that, over the past three years, clearance times for imports with Kampala as their final destination has declined strongly both at the port of Mombasa and at the inland container depot in Kampala, while *en route* transit times have remained stagnant at around five or six days. Future trade facilitation efforts will thus need to target lower transit times through the removal of specific barriers that persist along the trade corridors, such as a reduction in the number of weighbridge and police roadblocks, and through continued improvements in hard infrastructures, as better roads can considerably reduce transit times.

Our research also highlighted that the East African cargo transport industry seems to operate in a relatively competitive environment, with cost savings being passed-through entirely to clients of transport companies. While this is definitely positive, more research is required to assess whether these are then passed on to final consumers.

In terms of the cost structure, fuel represents almost 70% of the transport costs. This is the only component that has observed a sizable reduction in the past three years, mostly explained by the evolution of fuel prices. Nevertheless, any further sustainable reduction in transport costs needs to address fuel costs by increasing speeds and thus enabling truck engines to operate under more efficient regimes.

We found that a generalised and complete elimination of the NTBs affecting transport and logistics should imply a reduction of costs of between 3% and 15.7% depending on the product considered. In particular, the improvement of infrastructure, through an increase in circulation speeds, should generate reductions of transport costs of almost 5%. The elimination of weighbridges, border delays and road user fees would generate a reduction of 0.2–2.5%. Nevertheless, the true cost reduction may be smaller considering that some of the barriers cannot and should not be totally eliminated (i.e. weighbridges).

6.3. Economic and poverty impact

Through the reduction in trade costs, the reduction of NTBs is expected to affect regional and individual EAC country economies, through prices, exports, imports, output and employment. The reduction of NTBs will also align domestic with international prices, which will expose firms and workers to foreign competition as well as making domestic products more competitive internationally.

Some channels are direct. The reduction of NTBs is expected to reduce domestic prices by increasing import competition. This will benefit consumers immediately, although producers and workers in the exposed sectors are expected to suffer. More exports, meanwhile, will expand incomes and employment, although in the short run prices may increase, damaging consumer welfare.

In addition to these first order direct effects, the removal of NTBs could help in countries' economic transformation process. The removal of NTBs can help in the structural change process by revealing sectors and products with new comparative advantages. Moreover, by accessing lower-cost inputs and through competition pressure, within-sector productivity is expected to increase. The structural change and within-sector productivity growth will help make the growth process sustainable over time.

Economic transformation, assisted by the reduction of NTBs, should help provide jobs for an increasing urban population in the region. This indicates that the NTB reduction can constitute a tool, within a larger toolbox, to secure growth and reduce structural poverty. Meanwhile, although the reduction of NTBs may not *per se* reduce poverty, it may constitute a key enabler for the operation of other policy channels. Using modelling techniques, our study tried to assess the potential effects of eliminating different types of NTBs. Looking at intra-EAC exports only, the impact is sizeable. By eliminating all NTBs affecting transport, intra-EAC trade volume is estimated to rise by 13%. The effects are much stronger for trade with the rest of the world, given that intra-EAC trade is a small share of total trade for EAC countries. The gains from the reduction in all trade costs are considerably larger in this case, and vary by country, ranging from 55% in

Uganda to 26% in Rwanda. However, this suppose a complete elimination of all the barriers considered, which can be very complicated to achieve.

The elimination of all the NTBs associated with transport and logistics may generate an increase of GDP of between 1.7% in Rwanda and 2.8% in Kenya. For some specific NTBs, the gains will be between 0.1% and 0.4% depending on the country.

All factor prices except natural resource rents in Kenya and Uganda rise in real terms. Skilled workers gain slightly more than unskilled workers in all EAC Partner States: in the SAll scenario, the skills premium as measured by the relative wage of skilled to unskilled labour rises by 0.6% in Uganda, 0.5% in Kenya, 0.3% in Tanzania and by 0.2% in Rwanda. The effects on the factor price relation between capital and unskilled labour are less clear-cut and range from +0.8% in Uganda to -0.2% in Rwanda under the SAll scenario. With the exception of Rwanda, agricultural land rents rise less than the rewards to labour.

Nevertheless, there are significant variations by sector. In particular, employment in the manufacturing sector is expected to fall. However, agriculture and the services sector are expected to improve, providing a neutral change in the total level of employment. Movements are expected in relation to both skilled and unskilled workers. Prices also observe significant variation by sector, with significant falls in the prices of mining, refined petrol, transport and textiles. This contributes to generate important generalised price reductions of up to 2.8% in the generalised scenario. However, it is expected that prices for consumers will fall in any scenario.

The increase of incomes and fall of prices indicate that poverty in the region should experience a generalised reduction as a result of the reduction of NTBs. The elimination of all NTBs may have a maximum combined poverty reduction of between 5.3% in Kenya and 3.7% in Rwanda. This assumes the complete elimination of NTBs and that the groups that benefit from the price reduction also benefit from the income increase. The elimination of particular NTBs may reduce poverty by between 0.3% and 0.5%.

In addition, there are direct effects on households. Although employment effects may be small, a significant reduction in the transport and logistics NTBs may reduce the prices paid by the poorest. Based on assessment of the constraints affecting the capacity of households to seize the opportunities arising from trade and to protect themselves from any negative effects, the poor in Kenya and Rwanda are better equipped to benefit from the removal of NTBs but are also among those who could be more negatively affected, because they are more integrated into trade flows.

The main point to emphasise is that the countries that are more embedded in the regional trading systems (e.g. Kenya) have more to gain from the elimination of NTBs compared with countries that are less exposed to regional trade (e.g. Burundi). Therefore, a reduction in NTBs will have a lesser effect on Burundi owing to the country's minor role in the regional economy. Nevertheless, the elimination of NTBs can open up the operation of other policy channels to reduce poverty. This suggests that, in addition to increasing incomes and reducing prices, the reduction of NTBs can enable further liberalisation in trade within the region and with the rest of the world.

6.4. Policy recommendations

It is clear from the analysis that the EAC countries have much to gain from the elimination of NTBs affecting all transport and logistics costs. However, it is clear too that a complete elimination of NTBs is not feasible. Moreover, some measures (e.g. weighbridges) are not NTBs in themselves, as their presence may be justified by other policy objectives. This suggests it is necessary to achieve an optimal value for measures that secure the delivery of the policy objectives and minimise their economic costs.

Based on the analysis, the improvement of infrastructure is of paramount importance. Further significant reductions in transport costs are likely to be associated with the reduction of transit times. An increase in transit speeds should lead to lower fuel consumption and a potential reduction in the number of vehicles for a given volume of trade. Nevertheless, the investment necessary to secure these results is important and not immediately available to the EAC countries.

This suggests that, although their impact may be smaller, a reduction in the number of weighbridges and in border delays and the elimination of road fees may constitute very cost-effective measures. They do not require important investments and they may deliver an immediate reduction in transport times and costs. These measures can be implemented almost immediately alongside investments in infrastructure.

The elimination of bribes and informal payments is justified beyond being a way to reduce transport costs, if nothing else because they constitute criminal activity but this may require a change in focus. Rather than focusing exclusively on penalising officials, which is complicate to enforce, actions should be taken to reduce the opportunities for officials to ask for bribes by empowering drivers and firms with up-to-date information about regulations, rights and penalties. Moreover, the process to pay fines and penalties must be simplified to avoid unnecessary costs that make the payment of a bribe more cost-effective. Current technologies (truck and driver cameras) can help reduce the discretion used in the actions of officials.

It is important to secure the adequate functioning of the NTB reporting and resolution mechanism, to make it more open to other actors and more able to steer NTBs and complaints towards the most appropriate resolution mechanism. Ideally, complaints about the operation of institutions and procedures should be dealt with under a different channel; they should receive fast assessment and solution, through a formal bilateral and permanent channel established to deal with them.

However, it is important to ensure that the existing NTB reporting mechanism focuses its attention on resolving the NTBs that require general agreement and/or changes in the relevant legislation. The mechanism should also explore additional unreported barriers by engaging NTB specialists and academics in addition to the relevant stakeholders. This suggests that the existing mechanism should also aim to identify areas for potential improvement.

The reduction of NTBs is expected to have positive effects on poverty. However, it is clear that the benefits will not be evenly distributed, and it is expected that some groups may suffer from the elimination of barriers. It is necessary to design and implement complementary policies to secure the protection of those negatively affected both in the countries that benefit directly from the reduction of NTBs and in those where the reduction of NTBs will expose them to future shocks.

However, it is also important to highlight that the elimination of the inefficiencies that NTBs generate in the economies of the EAC are key to their general poverty reduction and economic transformation policies. Consequently, the negative effects that the reduction of NTBs may have for certain groups or sectors should not be an impediment to the reform. The reduction of NTBs will have important immediate economic effects as well as facilitating the actions of future policies.

References

Bigsten, A. et al. (1998). *Rates of return on physical and human capital in Africa's manufacturing sector*. Working Paper 1998-12. Oxford: CSAE.

Bottini, N., Gasiorek, M., Mendez-Parra, M. and Schwartz, A. (2017) *Measuring the trade related constraints to poverty alleviation with the Trade Poverty Constraint Index*. Working Paper. London: ODI.

Calabrese, L. and Eberhard-Ruiz, A. (2016). *What types of non-tariff barriers affect the East African Community?* London: ODI.

Calabrese, L. and Eberhard-Ruiz, A (2017) *Would more trade facilitation lead to lower transport cost in the East African Community?* London: ODI.

EAC (East African Community) (2016) 'The East African Community mission'. http://www.eac.int/about/key-documents

EAC (East African Community) and EABC (East African Business Council) (2016) 'Monitoring mechanism for elimination of non-tariff barriers in EAC'. www.customs.eac.int/index.php?option=com_docman&task=doc_download&gid=4&Itemid=165

EACS (East African Community Secretariat) (2009) 'Draft EAC time-bound programme for elimination of identified non-tariff barriers (NTBs)'. Arusha: EACS.

EACS (2012) 'Status of the elimination of non-tariff barriers in the East African Community' Vol. 2, March. Arusha: EACS.

EACS (2014) 'Status of the elimination of non-tariff barriers in the East African Community' Vol. 8, December. Arusha: EACS.

EACS (2016) 'Resolved non-tariff barriers in East African Community as of June 2016'. Report of the 21st EAC Regional Forum on NTBs. Arusha: EACS.

EALA (East African Legislative Assembly) (2015) 'The East African Community Elimination of Non-Tariff Barriers Act'. Arusha: EALA.

Eberhard-Ruiz, A. and Calabrese, L. (2017) 'Would more trade facilitation lead to lower transport cost in the East African Community?' Policy Briefing. London: ODI.

Gasiorek, M. and Martuscelli, A. (2017) *Regional integration and poverty: A review of the transmission channels and the evidence*. Working Paper. Brighton: Centre for the Analysis of Regional Integration.

Grimm, M., Krüger, J., & Lay, J. (2011). Barriers To Entry And Returns To Capital In Informal Activities: Evidence From Sub-Saharan Africa. Review of Income and Wealth, 57(s1), S27-S53.

The Law and Development Partnership (2016) 'Formative evaluation of TMEA projects on Non-Tariff Barriers to Trade'. http://results.trademarkea.com/downloads/NTBs%20Evaluation%20Report.pdf

Mathieson, C. (2016) *The political economy of regional integration in Africa: The East African Community*. Maastricht: ECDPM.

McDonald, S., Thierfelder, K. and Robinson, S. (2007) *GLOBE: A SAM-based global CGE model using GTAP data*. Working Paper 14. Annapolis, MD: USNA.

MTIC (Ministry of Trade, Industry and Cooperatives) (2016) 'Overview of the MTIC's National Response Strategy for Elimination of Non-Tariff Barriers (NRSE-NTBs)'. Kampala: MTIC.

Safari, V. and Knudsen, M. (2014) *Review of Rwanda's National Strategy for Elimination of Non-Tariff Barriers (NTBs)*. ACE International.

Teravaninthorn, S. and Raballand, G. (2016) *Transport prices and costs in Africa: A review of the international corridors. Directions in development; infrastructure.* Washington, DC: World Bank.

TMEA (TradeMark East Africa) (2017) 'TMEA annual report 2015/2016. https://www.trademarkea.com/download/16222/

UNCTAD (United Nations Conference on Trade and Development) (2013) *Non-tariff measures to trade: Economic and policy issues for developing countries*. Geneva: UNCTAD.

Versailles, B. (2012) *Market integration and border effects in Eastern Africa*. Working Paper WPS/2012-01. Oxford: CSAE.

World Bank and WTO (World Trade Organization) (2015) *The role of trade in ending poverty*. Washington, DC, and Geneva: World Bank and WTO.