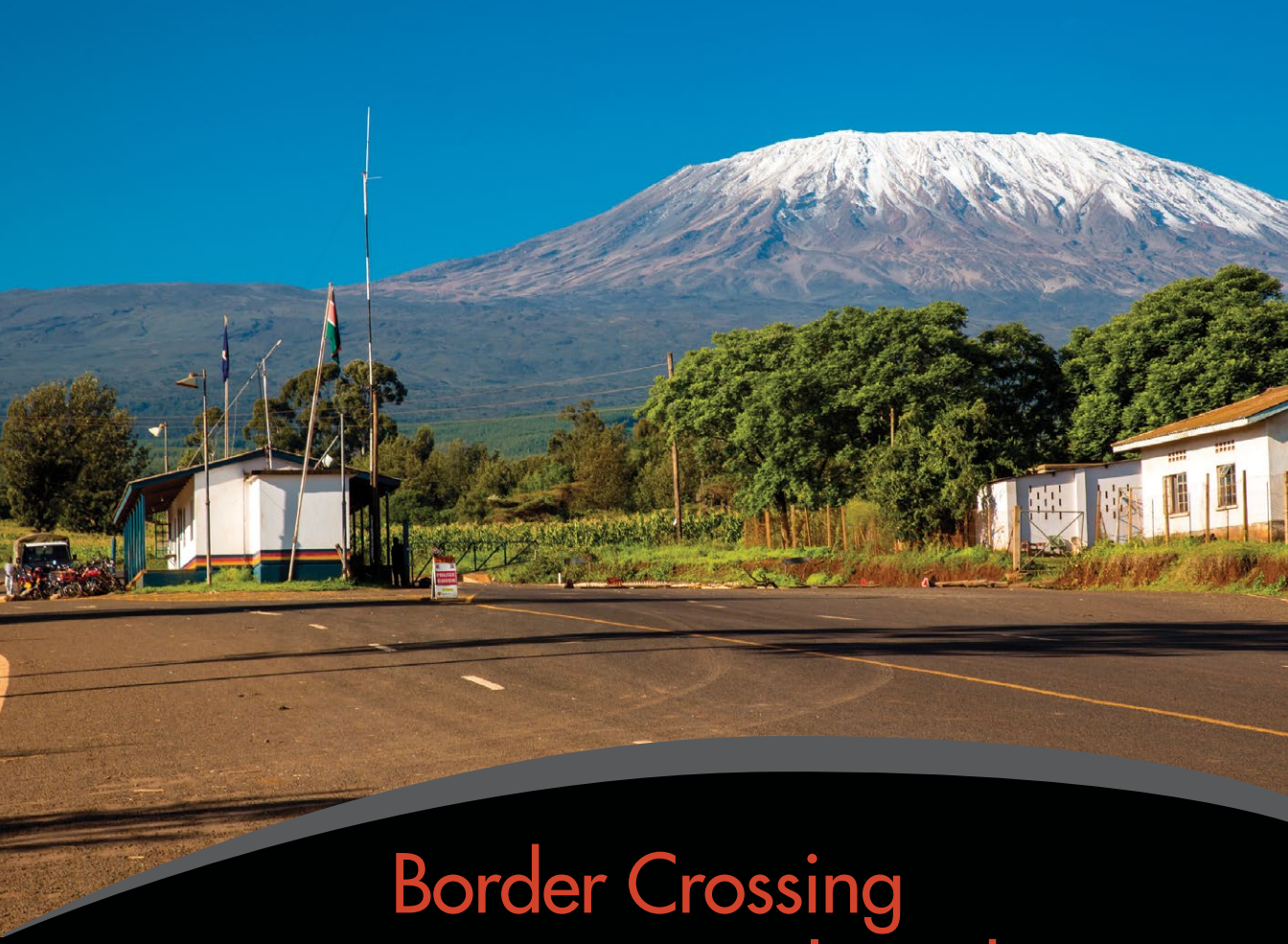

Border Crossing Monitoring along the Northern Corridor

Mike Fitzmaurice
Olivier Hartmann

SSATP
Africa Transport Policy Program

Working Paper No. 96

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Mike Fitzmaurice

Olivier Hartmann

April 2013

SSATP
Africa Transport
Policy Program

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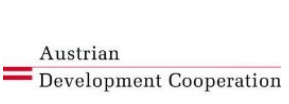


Table of Contents

Acronyms and abbreviations vii

Foreword ix

Acknowledgements xi

Executive summary xiii

Introduction 1

Background on Northern Corridor 3
- The Transit & Transport Coordination Authority of the Northern Corridor 3
- Trade and traffic statistics 4
- Border crossing in East Africa 5

Lessons from the surveys 7
- In the wider context of border reforms 7
- In the context of the Northern Corridor 9
- Options for follow-up on the revealed challenges 11

Choke monitoring methodology 15
- A few definitions 16
- Sampling 16
- The survey questionnaire 19
- Practical organization of the survey 22
- Presentation of results: averages, deviation and frequency distributions 23
- Sustainability of the border crossing surveys 23

Review of the border posts and survey findings 25
- Malaba border post 25
- Busia border post 31
- Gatuna / Katuna border post 35

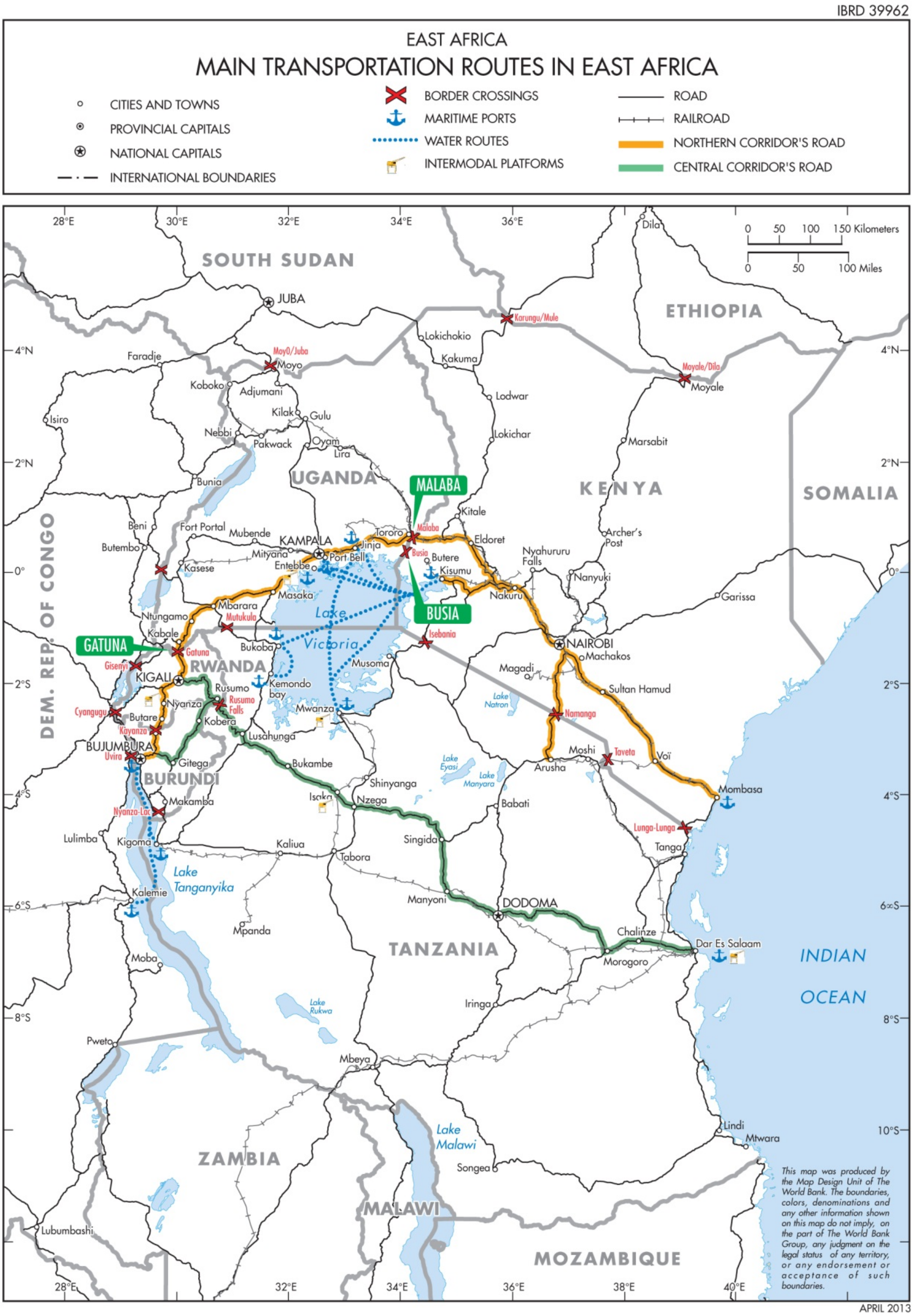
Annex: Survey results tables 39
- Malaba 39
- Busia 40
- Gatuna 40

Figure 1. Growth of transit traffic in Mombasa, KPA ____ 4
Figure 2. Overall monthly average crossing times for Malaba border ____ 7
Figure 3. Time spent towards Mombasa and towards hinterland ____ 10
Figure 4. Frequency distribution for outbound crossings at Malaba ____ 27
Figure 5. Frequency distribution for inbound crossings at Malaba ____ 27
Figure 6. Number of crossings surveyed per truck type ____ 28
Figure 7. Border crossing times outbound by side, comparison 2011 and 2012 _ 29
Figure 8. Average border crossing times inbound, comparison 2011 and 2012 _ 29
Figure 9. Average border crossing times outbound according to responsibility at Malaba ____ 30
Figure 10. Customs and other border agencies interventions ____ 30
Figure 11. Malaba inbound, crossing times by responsible party ____ 31
Figure 12. Average delays after completion of clearance at Malaba, outbound direction ____ 31
Figure 13. Monthly evolution of outbound border crossing times at Busia ____ 32
Figure 14. Frequency distribution of border crossing times at Busia, outbound_ 33
Figure 15. Monthly evolution of inbound border crossing times at Busia____ 33
Figure 16. Truck sample at Busia by type of load ____ 34
Figure 17. Border crossing times outbound according to side ____ 34
Figure 18. Average border crossing times outbound according to responsibility at Busia ____ 34
Figure 19. Delays before remittance of document to agent according to arrival time at Busia ____ 35
Figure 20. Border crossing times at Gatuna ____ 36
Figure 21. truck types surveyed at Gatuna ____ 36
Figure 22. Gatuna outbound crossing times according to side of the border ___ 38
Figure 23. Gatuna inbound crossing times according to side and load ____ 38
Figure 24. Gatuna outbound crossing times by party concerned____ 38

Table 1. OSBP program for East Africa____ 5
Table 2. Number of truck crossings per month over the survey period____ 18
Table 3. Trade types surveyed at Gatuna for containerized crossings outbound_ 37

Acronyms and abbreviations

AfDB	African Development Bank
C&F	Clearing and Forwarding Agents
EAC	East Africa Community
IBM	Integrated Border Management
JICA	Japan International Cooperation Agency
KEBS	Kenya Bureau of Standards
KEPHIS	Kenya Plant Health Inspection Services
KPA	Kenya Ports Authority
KRA	Kenya Revenue Authority
NCTA	Northern Corridor Transit and Transport Agreement
OSBP	One-Stop Border Post
RADDEx	Revenue Authority Digital Data Exchange
RRA	Rwanda Revenue Authority
SSATP	Sub-Sahara Africa Transport Policy Program
TFF	Trade Facilitation Facility
TLC	Transport Logistics Consultants
TMEA	TradeMark East Africa
TMSA	TradeMark South Africa
TTCA-NC	Transit and Transport Coordination Authority of the Northern Corridor
URA	Uganda Revenue Authority
USAID	US Agency for International Development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EAST AFRICA
MAIN TRANSPORTATION ROUTES IN EAST AFRICA
CITIES AND TOWNS
PROVINCIAL CAPITALS
NATIONAL CAPITALS
INTERNATIONAL BOUNDARIES
BORDER CROSSINGS
MARITIME PORTS
WATER ROUTES
INTERMODAL PLATFORMS
ROAD
RAILROAD
NORTHERN CORRIDOR'S ROAD
CENTRAL CORRIDOR'S ROAD
0 50 100 150 Kilometers
0 50 100 Miles
SOUTH SUDAN
ETHIOPIA
UGANDA
KENYA
SOMALIA
DEM. REP. OF CONGO
RWANDA
BURUNDI
TANZANIA
ZAMBIA
MALAWI
MOZAMBIQUE
INDIAN OCEAN
Lake Victoria
Lake Tanganyika
Lake Malawi
Lake Rukwa
Lake Eyasi
Lake Manyara
Lake Natron
MALABA
BUSIA
GATUNA
JUBA
KAMPALA
NAIROBI
KIGALI
BUJUMBURA
DODOMA
Mombasa
Dar Es Salaam
Karungu/Mule
Moyale/Dila
MoyO/Juba
Malaba
Busia
Mutukula
Isebania
Gatuna
Gisenyi
Cyangugu
Kayanza
Rusumo Falls
Uvira
Nyanza-Lac
Namanga
Taveta
Lunga-Lunga
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APRIL 2013

Foreword

When one thinks of border crossings in Africa, the image that comes to mind is that of a long queue of trucks waiting idly to fill out paperwork. With the improvement of road infrastructure throughout Africa—thanks to concerted efforts by country governments, Regional Economic Communities and development partners—the bottlenecks evoked by this image are even more prominent.

Indeed, compared to 25 years ago when only 20 percent of the main road network in Africa was considered to be in good condition, the present situation—where half of the network is in a good condition and the other half is fair—was expected to significantly reduce transport costs and prices. However, all the benefits derived by this achievement are undermined by time lost at the border, a situation that is now recognized to be a major obstacle to the intra-regional movement of goods and people. This ever-more-visible barrier to trade is the bane of the trucking industry, which frequently comes under public scrutiny.

On that backdrop, the notion of a One-Stop Border Post (OSBP) quickly took on importance as a miracle solution. Under this, border agencies from neighboring countries cooperate and coordinate their border-based interventions to save time. In the last decade, several border posts on main trade corridors in Africa have been converted into OSBPs, and many more are earmarked for conversion over the coming years. However, results have rarely met expectations, as coordination between border agencies from different countries is far from simple. Furthermore, in many cases border issues are perceived to be an infrastructure problem that is all too often solved by remodeling facilities.

In Eastern Africa, the Northern Corridor Secretariat has been a pioneer of fact-based over opinion-based policy development. With support from SSATP, the Secretariat has developed a comprehensive corridor performance measurement framework. The surveys on the main border crossings along the Northern Corridor are one of the many aspects of this effort. These surveys shed light on the reasons for slow border processing in Eastern Africa. They not only document the

impact of joint efforts by border agencies, but because their timing coincided with the reform, they provide the opportunity to measure its effects in real time.

This SSATP publication illustrates how effective cooperation between border agencies results in a highly improved border crossing experience for truckers and increased efficiency for trucking companies. By bringing a new perspective on the relative importance of infrastructure versus inter-agency cooperation this study resonates beyond the Northern Corridor.

Donat M. Bagula
Executive Secretary
TTCA-Northern Corridor

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The authors wish to thank participants of the Mombasa workshop held in March 2012 in which the early results of the surveys were presented and discussed by the East Africa logistics operators and control agencies. They are grateful to the TTCA-NC personnel who made this workshop a success and Transport Logistics Consultants (TLC) for conducting the surveys.

Finally, they also wish to thank the SSATP and its financing partners, as well as the Trade Facilitation Facility (TFF), for providing the funding for the surveys and the dissemination of the results.

Executive summary

Land border crossings constitute obstacles to regional integration, and facilitating the movement of goods and persons across borders ranks high in the priorities of Regional Economic Communities in Sub-Saharan Africa. These obstacles are common to gateway corridors serving the landlocked countries and also hinder regional trade and international transit, thereby adding to the importance of addressing this challenge.

Facilitating the movement of goods and persons across borders requires integrated border management. Two levels of integration are important: nationally, between the entire border management agencies represented at the border, and internationally, between the border management agencies on each side of the border.

Increased coordination is the objective of the one-stop border post (OSBP) approach, which is gaining momentum in several regions of Africa. In East Africa, the East Africa Community (EAC), the corridor authorities and their member states have decided to convert all major border posts into OSBP, whether situated on a gateway corridor or on a purely regional route. The East Africa OSBP program benefits from the coordinated support of bilateral and multilateral donors.

The SSATP is a partner of the East Africa OSBP program through its regional integration component. SSATP aims to develop a methodology to establish and sustain corridor transport observatories, identify measures to improve institutional capacity to define and implement appropriate policies and strategies to facilitate regional trade and transport, and disseminate best practices on corridor management. The value added of SSATP in the East Africa OSBP program is its extensive experience in performance monitoring and surveys, and notably its methodology for border-crossing surveys.

The Malaba border post (between Kenya and Uganda) is a pilot in the East Africa OSBP program, and several projects are contributing to its transformation into a full OSBP. The Malaba, Busia (also between Kenya and Uganda) and Gatuna / Katuna (between Uganda and Rwanda) border posts constitute the main and busi-

est border posts along the Northern Corridor, which spans between the ports of Mombasa and the landlocked countries and regions of East Africa.

The SSATP and the Secretariat of the Transit and Transport Coordination Authority of the Northern Corridor (TTCA-NC) commissioned a survey of the three border posts to establish a baseline prior to their conversion into OSBP.

During the survey period, the Customs authorities in Kenya and Uganda modified selected business procedures that resulted in a dramatic decrease of the border-crossing times. This unexpected situation provided a unique opportunity to observe and measure the impact of these decisions. The measures targeted the three types of parties involved in border crossings:

- Border management agencies, through advance preparation with pre-arrival lodgment of the declaration, and when the trucks have arrived, through coordination between appropriate agencies
- Clearing agents through mandatory pre-arrival lodgment of declarations (used to be optional and at the discretion of the agents, hence rarely used)
- Truck drivers through traffic and parking rules to decongest Customs Controlled Zone

A key aspect of these measures is that they have produced dramatic results even in the absence of infrastructure refurbishment, which is expected to take place at a later stage. However, these measure build on all the preparatory work required for the creation of an OSBP: the culture of cooperation across border agencies (within and across countries), the legal framework enabling that cooperation, and the supporting IT infrastructure that allows preparing the documentation process prior to the arrival of the trucks. This is an important fact to remember when numerous programs of border reform tend to focus on the infrastructure.

Crossing times that were routinely over 48 hours dropped to less than six hours; average border-crossing time, a measure that covers a wide range of situations, dropped from 24 hours to 4 hours. Based on estimates of the value of time for trucking enterprises (releasing capacity for increased activity and revenue) and for traders (through reduced inventory costs), the savings generated by the improvement of the situation represent up to $70 million per year.

The changes build on preceding work of the East Africa OSBP program that lays the ground work for customs authorities to reach decisions to improve trade facili-

tation, notably a strong framework for inter-agency and inter-country cooperation, and an enabling IT environment.

In the Northern Corridor context, the survey highlighted several areas that will require discussion among stakeholders and further action, notably:

- Customs operates on a 24/7 basis while other border management agencies and service providers (clearing and forwarding agents, and drivers) may not
- The findings highlight where procedures have not been implemented. Most notably, procedures not implemented include the priority granted to tanker trucks for safety reasons, and the direct crossing to the entry side of the border
- The reduction of border-crossing time will impact the driving patterns on the Northern Corridor. Long stays at the border used to constitute convenient rest stops for drivers. The generalization of same day crossings will require drivers and trucking companies to adjust to new travel patterns along the corridor, and consider other locations for their rest stops

The survey also provided the opportunity to clarify the methodology. The time taken to cross a border can vary widely, depending on the characteristics of the crossing, notably the nature of the load, the nature of the transactions conducted at the border, and the arrival time of the truck. Rather than capturing an average crossing by combining contrasted patterns, the survey methodology aims to analyze the detailed characteristics of a limited set of patterns corresponding to the most common scenarios. Supplementing the survey with contextual data is essential to target the relevant scenarios to analyze.

Introduction

Border-crossing times in East Africa have been identified as a major constraint for smooth trade flows, both for regional trade and for international transit. Delays at borders disrupt efficient trade logistics, impacting on the transport costs and prices, and ultimately on trade competitiveness. In order to improve the efficiency of border crossings in East Africa, the EAC has resolved to convert the main border crossings into a Stop Border Post (OSBP), in which all border agencies from the two sides of the border coordinate their interventions, thus reducing documentation processing time. This program is supported by several multilateral and bilateral donors as component of their assistance to regional integration in the EAC.

As a contribution of SSATP support to this joint effort, the stakeholders and the Secretariat of the Transit and Transport Coordination Authority of the Northern Corridor (TTCA-NC) helped define a plan to establish measurable performance indicators for the Malaba border post (border between Kenya and Uganda), Busia border post (border between Kenya and Uganda just below Malaba) and Gatuna border post (border between Uganda and Rwanda). The three selected border posts are the first borders crossed by transit goods on their journey from the port of Mombasa, and the most important in terms of traffic volumes, with over 600 truck crossings per day in the busiest direction at Malaba.

The proposed monitoring of the border-crossing times takes place prior to the transformation of the border posts into OSBP. This provides a reference situation against which reductions in border-crossing times can be measured after transformation. The SSATP recruited a consultant, Transport Logistics Consultants (TLC), to measure border-crossing times on the three selected border posts. The survey was conducted for the months of November 2011 to March 2012.

The initial objective of the survey was to establish a baseline for typical border crossings. It was to identify in the process problem areas that require attention and provide elements of the diagnostic that will support an inclusive dialogue between all stakeholders, who were to define a course of action to correct deficiencies.

However, several changes in the border-crossing procedure at Malaba occurred in the middle of the survey period, resulting in dramatic decreases in crossing times. This provided the unique opportunity to witness and measure the impact of the changes as they were unfolding. Some of the problem areas revealed by the survey also showed that focusing on typical border-crossing scenarios was not sufficient. A revision of the survey methodology was required to adequately collect sufficient data for a more diverse set of crossing scenarios.

The objective of this work is therefore twofold:

- Present the results of the survey for the main three Northern Corridor border crossings, focusing on the elements of diagnostic which will constitute the input for the next stage – the dialogue among stakeholders to further improve border-crossing conditions – but also on the consequences of the effectiveness of soft measures that can dramatically reduce border-crossing delays as revealed by the results on the Malaba border.
- Reflect on the methodology and its possible refinements as input for the continuation of the survey program, whether in the context of the EAC or in other regions of Sub-Saharan Africa.

The paper is divided into four sections. The first section provides background information on the Northern Corridor. The second section presents the conclusions that can be drawn from the survey—presented in the Northern Corridor context with the key issues that will require further discussion among stakeholders and further action. From a wider perspective, this section also emphasizes the shift of relative importance that should be attributed to the hard and the soft agendas of border crossings based on the analysis of the impact of the changes at the Malaba border post.

The last two sections present the surveys conducted on the Northern Corridor; the third section reviews the survey methodology as it was applied and suggests adjustments for future surveys, and the fourth section presents the detailed survey findings for each border post.

Background on Northern Corridor

The Northern Corridor is the transport and logistics network linking East Africa countries to its overseas trading partners through the port of Mombasa[1].

The Transit & Transport Coordination Authority of the Northern Corridor

In 1985, the Governments of Kenya, Uganda, Rwanda and Burundi signed the Northern Corridor Transit and Transport Agreement with a view to overcome transit challenges affecting them. The Treaty entered into force in 1986, and the Democratic Republic of Congo joined the agreement in 1987.

Changes in the environment (such as the shift towards using only the private sector in the provision of transport services, the provision of infrastructure and facilities, the strengthening of regional integration, and economic development concerns) led to a major revision of the treaty when the renewal period expired in 2006. As a consequence, the scope of the treaty has broadened since its inception to include development and regional integration issues related to trade and transport facilitation.

In order to support the implementation of the treaty, the Transit and Transport Coordination Authority of the Northern Corridor (TTCA-NC), with a secretariat based in Mombasa (Kenya), was established. The TTCA-NC provides the forum in which public and private stakeholders engage in trade and transport facilitation on issues and policies. It also provides a platform for monitoring the implementation and impact of those policies. The TTCA-NC Secretariat has been a pioneer in the development of a comprehensive corridor-performance-monitoring framework

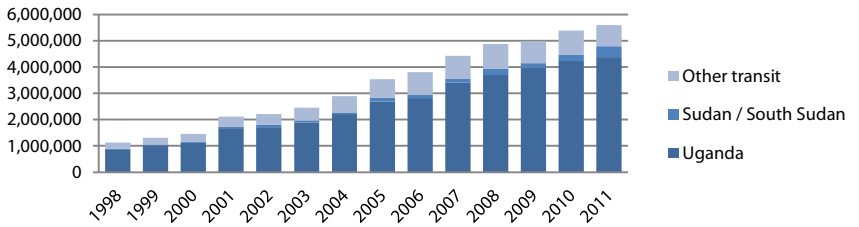
[1] The hinterland of the port of Mombasa includes Kenya, Uganda, Rwanda, Burundi, the Eastern part of DR Congo, the northern part of Tanzania, South Sudan. Access to northern Tanzania uses only the Kenya portion of the Northern Corridor infrastructure. Rwanda, Burundi and eastern DR Congo transit through Uganda. South Sudan has two route options, one through Kenya only entering after Lokichoggio, and one through Uganda.

that observes the multiple dimensions of corridor efficiency through a series of indicators on volumes, times, uncertainties, prices, costs, and capacity and efficiency of the logistics operators and control agencies. It measures these dimensions at both synthetic and disaggregated levels. The survey of border-crossing times is a component of that monitoring activity.

Trade and traffic statistics

The port of Mombasa is a major maritime gateway to East Africa and its hinterland extends beyond the countries that are signatories to the NCTA to cover Northern Tanzania and Southern Sudan. Transit represents a significant percentage of the activity of the port of Mombasa, with a share that has been fluctuating between 25 percent and 30 percent throughout the last decade. Transit traffic is imbalanced: imports predominate; exports from the transit countries represent only 8 percent of the imports for the same countries.

Figure 1. Growth of transit traffic in Mombasa, KPA



Uganda is the main contributor to transit volumes from Mombasa. The respective positions for the other countries have evolved over time. Tanzania used to be the second hinterland market for the port of Mombasa (its north-eastern part is more accessible from Mombasa than from Dar es Salaam), but its importance has receded. The most recent change is the dramatic increase of traffic to Sudan, which has become the second hinterland market for the port of Mombasa.

Most of the hinterland countries are connected to Mombasa through the Northern Corridor. This explains why Malaba and Busia are the two busiest border crossings on the Northern Corridor. Based on the first quarter 2012, more than 600 trucks cross daily from Kenya to Uganda at Malaba. Combined, around 300,000 trucks are crossing the border at Malaba and Busia every year.

Border crossing in East Africa

Road transport companies in East Africa have been complaining about the wait time at border crossings, which adds unnecessary idle time and reduces the number of roundtrips they can complete per year. This, in turn, affects negatively their operations and profitability.

In the absence of systematic measurement of border-crossing times along the Northern Corridor, there is only anecdotal data to quantify the magnitude of the delays. A baseline survey funded by the SSATP in 2006 estimated the average border-crossing time at 48 hours.

Table 1. OSBP program for East Africa

Internal EAC		*Between EAC and neighboring countries*	
Border post	Countries	Border post	Countries
Taveta/Holili	Tanzania / Kenya	Rubavu/Goma	Rwanda / DRC
Namanga	Tanzania / Kenya	Tunduma/Nakonde	Tanzania / Zambia
Lungalunga/Horohoro	Tanzania / Kenya	Unity Bridge	Tanzania / Mozambique
Isebania/Shirari	Kenya / Tanzania	Mpondwe	Uganda / DRC
Malaba	Kenya / Uganda	Moyale	Ethiopia / Kenya
Busia	Kenya / Uganda	Bibia/Elegu-Nimule	South Sudan / Uganda
Mutukula	Uganda / Tanzania	Kasumulu/Songwe	Tanzania / Malawi
Nemba/Gasenyi	Rwanda / Burundi	Nadapal	Kenya / South Sudan
Kobero/Kabanga	Burundi / Tanzania	Oraba	Uganda / South Sudan
Kagitumba/Mirama Hills	Rwanda / Uganda	Vura / Mahagi	Uganda / DRC
Akanyaru/Kanyaru	Burundi / Rwanda	Rusizi / Ruzizi	Rwanda / DRC
Rusumo	Tanzania / Rwanda	Ruhengeri / Bunagana	Rwanda / DRC / Uganda
Gatuna/Katuna	Rwanda / Uganda	Bujumbura / Kavimvira	Burundi / DRC
Ruhwa	Burundi / Rwanda		

Source: OSBP Source Book and TTCA-NC

The EAC adopted a regional approach for reducing border-crossing delays by transforming the border posts on the priority regional transport network into One-Stop Border Posts (OSBP). Several bilateral and multilateral donors participated in the effort according to their respective comparative advantages:

- Infrastructure development was supported by the World Bank, the African Development Bank and TradeMark East Africa (TMEA)
- The institutional framework by JICA (Japan International Cooperation Agency)
- The enabling IT by TMEA and USAID (US Agency for International Development)
- Capacity building for logistics operators (road transport and C&F agents) by JICA, USAID and TMEA

Under the OSBP model adopted in EAC, exit procedures are completed on the entry side, instead of taking place upon arrival at the border on the exit side, the trucks proceeding directly across the border to the Customs area on the entry side.

The conversion of Malaba into an OSBP dates back to 2002 when a Kenya-Uganda task force was established. The initial focus was on rail transport, with joint railway border posts opened in Malaba in 2006. For road transport, changes in the border process started in 2008, with specific treatment granted to certain types of loads, notably tanker trucks, and the customs operating hours extended to 24/7.

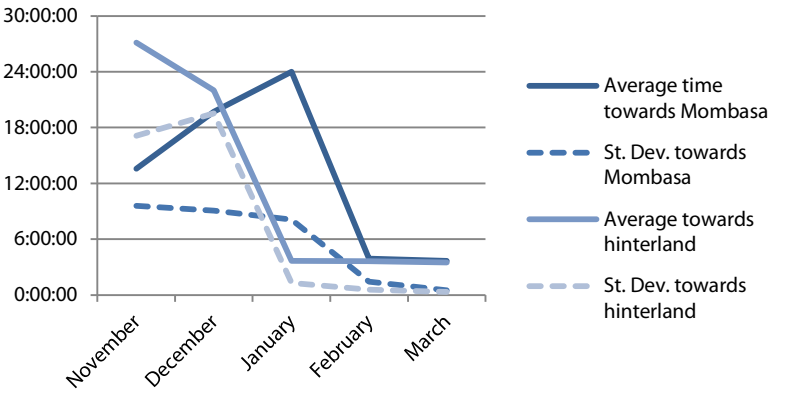
Lessons from the surveys

In the wider context of border reforms

The most important conclusion of the surveys has relevance beyond the Northern Corridor; efforts to reduce border delays do yield results, as evidenced by the case of Malaba. The measures to adopt target the three types of parties involved in border crossings:

- Border management agencies, through advance preparation with pre-arrival lodgment of the declaration, and when the trucks have arrived, through coordination between appropriate agencies
- Clearing agents through mandatory pre-arrival lodgment of declarations (used to be optional and at the discretion of the agents, hence rarely used)
- Truck drivers through traffic and parking rules to decongest Customs Controlled Zone

Figure 2. Overall monthly average crossing times for Malaba border



A key aspect of these measures is that they have produced dramatic results even in the absence of infrastructure refurbishment, which is expected to take place at a later stage. However, these measure build on all the preparatory work required for the creation of an OSBP: the culture of cooperation across border agencies (within

and across countries), the legal framework enabling that cooperation, and the supporting IT infrastructure that allows preparing the documentation process prior to the arrival of the trucks. This is an important fact to remember when numerous programs of border reform tend to focus on the infrastructure.

The magnitude of the improvement is impressive. On average, crossing times dropped from around 24 hours at the end of 2011 to less than 4 hours in 2012, for both directions. Predictability also improved, with a standard deviation in the range of 10-15 percent of the average, compared to 50-70 percent in 2011.

The dramatic improvement of the situation at the border was confirmed by the border management agencies and the operators during the presentation of the preliminary survey results to the Northern Corridor stakeholders.

In practical terms, such reduction corresponds for most trucks to a gain of two full days in the outbound direction (out of the port of Mombasa towards the hinterland). Before the change in procedures, 60 percent of the containers and half of the break-bulk trucks were crossing in 48 hours or more. After the change, all trucks but one passed the border in less than 6 hours.

Shorter border-crossing times mean that trucks are reaching their destination faster, with two direct consequences: traders receive their goods earlier, saving on inventory, and trucking enterprises can accomplish more roundtrips per year, increasing their revenue. In a study on total logistics costs on the Northern Corridor[2], estimates of the monetary costs of the delays were at $247.40 per 24 hours for a truck, and $137.00 for the goods, a total of $384.40 for a loaded truck. On the basis of 600 trucks per day, over 360 days, and a savings averaging of 20 hours, the total annual savings can be estimated at $69,192,000 ($44,532,000 for the trucking enterprises, and $24,660,000 for the traders).

Another option to estimate the savings would be to convert the total number of hours saved by the trucking enterprises (600 trucks over 360 days saving 20 hours each) into additional roundtrips per year that could be accomplished: based on a conservative estimate of two roundtrips a month for the average operator, this represents an addition revenue for 12,000 trips, each with an income of $3,500, or a total of $42M, consistent with the other estimate. For trucking enterprises, those

[2] Analytical Comparative Transport Cost Study along the Northern Corridor Region, CPCS Transcom Limited, June 2010.

estimates are based on the assumption that the unfrozen capacity will not remain idle and will actually generate additional revenue.

In the context of the Northern Corridor

Divergence between theory and practice

The survey results also show some divergence between the announced and actual procedures, when for instance the sequencing of the process revealed by the surveys contradicts what is advertised as the rule. The reasons are not completely clear and should be further investigated, but the priority for tankers does not seem enforced, nor does the practice of allowing trucks to cross the exit border to complete the documentation process.

Tanker preferential treatment. Border management agencies grant preferential treatment to tankers, essentially for safety reasons. That would imply that tanker truck crossing times are much shorter than for other truck types. Also, tanker trucks are supposed to cross over to the entry side directly (from the country perspective, i.e. where the entry procedures are completed, and not the arrival side of the border).

In practice, this is not the case:

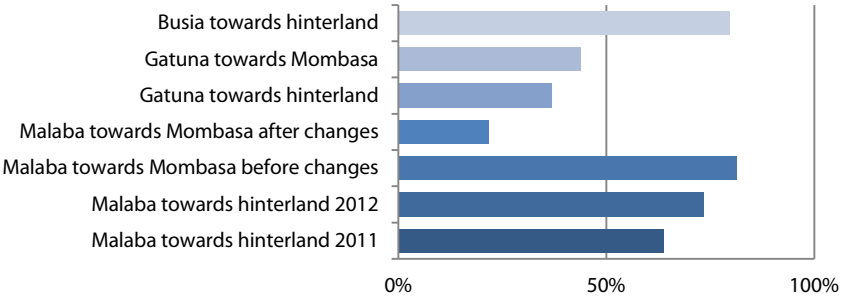
- In Malaba, tanker truck crossing times are shorter than the average, but still equivalent to break bulk truck times. The duration of the stay on the exit side (in that case, the Kenya side) of the border is also comparable to break bulk trucks.
- In Busia, tanker truck crossing times are shorter than the average, but still comparable to consolidated truck crossing times, and so is the duration of their stay on the exit side of the border.
- In Gatuna, tanker trucks are taking longer to cross the border than any other truck types, and also stay longer on the exit side.

This may be linked to the limitations of the infrastructure, which do not allow for tanker trucks to by-pass the line. At any rate, additional investigation is required.

Trucks proceeding to the other side of the border. In the model adopted by OSBP in East Africa, exit procedures are taking place on the entry side (from the country

perspective), with the trucks proceeding directly through the customs area on the exit side of the border to the entry side. In practice, the main part of the time spent at the border occurs on the exit side (i.e. on the Kenya side) for the border between Kenya and Uganda. It is only for Gatuna that the time spent on the entry side is longer than on the exit side, and at Malaba inbound, after the change of procedures.

Figure 3. Time spent towards Mombasa and towards hinterland



The measure of the time spent on each side of the border is linked to the truck location, not the documentation process. Since new procedures were put in place at Malaba, documents are processed on the entry side even before the truck has crossed over. The respective duration of the stay may be linked to physical reasons, such as movement and parking opportunities.

24/7 operations

This is a key issue. When Customs authorities agreed to operate 24/7, it was anticipated that the other border management agencies would follow suit. However, this did not happen, and other agencies, as well as clearing and forwarding agents (C&F), are still operating only during regular business hours. Trucking enterprises did not adjust driving patterns to take advantage of extended operating hours, and the majority of the truck arrivals are still occurring during daytime hours.

Due to the limited number of night arrivals, the survey was not specifically designed to measure the impact of night arrivals on the border-crossing time. Despite this choice, a number of trucks surveyed at Malaba and Busia arrived at the border outside of regular business hours.

At Malaba, surveyed truck arrivals outside of the period 6:00am-6:00pm represent less than 10 percent of the sample, while in Busia, more than half of the surveyed crossings were outside.

The analysis of the survey results clearly shows that the time attributed to the driver between the arrival and the remittance of the documents to the C&F agent correspond to the waiting time before regular business hours. Although the sample for Malaba is small, it conforms to the same pattern as Busia. When a truck arrives outside of regular business hours, the delays are almost exactly the time difference to the opening office hours. When they arrive during regular office hours, the wait is minimal, with more delays in the morning than in the afternoon, due to the backlog of trucks accumulated after office hours, creating a queue in the morning.

However, arrival patterns of trucks are not random. Drivers can decide to stop well before the border to spend the night so as to arrive at the border in the morning, or decide to drive up to the border and wait. The issue of arrival times and rest stops is connected.

Independently of the causes for night arrivals, whether by the driver's choice or caused by some events, analysis of the crossing times shows clearly that the operating hours are an issue, and customs indicated that in light of the current situation, the 24/7 operation decision may be reviewed.

Rest stops and border crossing

With the decrease of the border-crossing times, border posts can no longer be used as rest stops for drivers, and overnight stays are becoming the exception. Customs parking areas have limited capacity, and are not designed as rest stops, but temporary parking areas during the border-crossing process.

As a consequence, demand for specialized rest stop areas with adequate facilities for drivers has emerged as an issue that is separate from the borders and should be addressed within road infrastructure programs in close cooperation with the trucking industry.

Options for follow-up on the revealed challenges

The survey of the three border posts is one aspect of the wider cooperation between bilateral and multilateral donors, EAC and the member states for the estab-

lishment of OSBP in East Africa. In addition to the contribution of SSATP through the surveys of the three border posts, TMEA has agreed to conduct similar surveys for other selected border posts. The lessons, both in terms of results of the changes introduced by the Customs authorities and in terms of refinement of the methodology, will be taken into account in the next stages.

For the three border posts surveyed, intermediate results were presented to the Northern Corridor stakeholders during a workshop held on March 29, 2012. The participants included representatives from ministries in charge of transport, Customs authorities, other border agencies, road transport operators and associations, and C&F agents and their industry association.

The presentation of the results triggered a debate on the measures needed to improve border crossings. The participants expressed the need to go beyond measurements and start an inclusive dialogue between all stakeholders to further discuss the diagnosis, then identify and implement remedies.

Participants also commented on the design of the surveys and recommended including in the analysis of border-crossing times the impact of the following:

- Intervention of other border agencies
- Differentiation of crossing times according to the process, notably between transit and import, particularly when there is border clearance
- Operating times for the different border agencies and operators
- Adequacy of staffing

Several of the additional clarifications and questions raised by the participants have methodological implications. For future monitoring exercises, the question of building a representative sample that enables analyzing all areas of concern will have to be carefully addressed.

The TTCA-NC was requested by the participants to prepare a paper on the follow-up activities to undertake after the monitoring period to support the development of adequate remedies on the Northern Corridor border crossings that would cover the following activities:

- Thematic working groups with stakeholders to review the main identified topics, notably

  - Tanker trucks
  - Operating hours and the 24/7 option, including impact of staffing requirements and the role of the other border management agencies
  - IT and customs processes
  - Rest stop for truck drivers
- Survey conducted at the end of the activity to measure progress made versus baseline

The thematic working group will enable identifying solutions and responsible entity for their implementation. Additional technical assistance may be necessary to further define the requirement for their implementation.

Choke monitoring methodology

The transport observatory on the Northern Corridor has been designed to measure corridor efficiency at disaggregated levels for the main modes and nodes, in order to pinpoint the major choke points on the logistics chains. However, the nature of the data collected on a routine basis may not be sufficient to fully understand the underlying causes for the inefficiencies revealed by more synthetic indicators, and for those complex choke points, dedicated surveys are required. This is notably the case for inland border crossings, in which several physical and documentary processes are taking place.

The objective of detailed analysis of the border-crossing times is to measure the time taken by the interventions of the logistics operators and control agencies at the border, with a view to:

- identify delays or uncertainties in the time taken by interventions
- identify time lost between successive interventions
- provide information for corridor management decision making bodies

A methodology has been developed and tested on several border crossings:

- Beitbridge, between South Africa and Zimbabwe, with continuous survey on a sample of crossings over the period December 2005 to June 2006
- Chirundu, between Zimbabwe and Zambia, with surveys for a period of 11 months from November 2006 to September 2007
- Spot surveys of the main Southern Africa border crossings, involving short surveys over a period of few days for each border post

This methodology entails recording the main stages of a full border crossing, from arrival of the truck to its departure, for a sample of vehicles. For the sample trucks, additional information is collected on the consignment, its routing, and relevant information on the trip prior to arrival at the border.

A few definitions

The authors refer to the entry or exit sides of the border not from the perspective of the border post, but from the perspective of the two neighboring countries. Traditionally, when a truck arrives at a border, it completes the exit procedure, hence its denomination of *exit side*; then the truck proceed to the other side, where entry procedures are completed. The authors also refer to the direction of the traffic flow as *inbound* and *outbound*, which is the perspective from the perspective of the port of Mombasa: inbound corresponds to traffic towards the port, and outbound to traffic towards the hinterland.

Sampling

Border-crossing times can differ greatly according to the nature of the trade (type of goods, border formalities, etc.), but also to the conditions of arrival at the border (day, time, congestion, etc.), resulting in a vast range of crossing scenarios. Combining all the scenarios to measure an 'average' border-crossing time for a statistically representative sample is therefore not the primary objective of the survey. The objective was to measure border-crossing times for an homogeneous group of trucks conforming to typical border-crossings scenarios, and decompose the total time between the different parties involved (customs and other border management agencies, C&F agents, and drivers) to identify where possible efficiency gains could be found.

As a result, the construction of the sample focused on prioritizing some scenarios over others that were less frequent. The positive aspect is that the results are representative of the typical border-crossing scenarios privileged, instead of summarizing in a single figure different patterns. However, the negative side is that specific analysis for different patterns cannot be completed from the sample.

The sample must be constructed so as to contain sufficient observations for each stratum, identified by the three factors:

- Type of load (containerized, tankers, break bulk)
- Trade (empty, domestic transit or border clearance, through transit)
- Arrival time (day, evening, night for instance)

In the preparation of the surveys, interviews with border agency officials, clearing agents, trucking companies and drivers must be conducted to collect information on the border processes and reveal the perception of the problems by the logistics operators and the control agencies. This information, combined with additional data on the nature of the trade, the volumes, and the arrival times at the border, will determine the major scenarios that will be surveyed.

Traffic counts for type of load and trade

For loaded trucks, there is a customs declaration which contains at least the following information, which is relevant for the surveys:

- Truck number plates (which can be converted into country of vehicle registration)
- Date and time of submission of the declaration (the date enables daily traffic counts)
- Type of declaration (to distinguish between through transit and import)
- Commodity (which may with appropriate treatment allow for separation of the crossings between containerized goods, tankers, and others)

It is possible to exploit this information on the entry side of the border to confirm daily traffic counts by type of truck / load, nationality of carrier and type of trade, and guide the sampling of the trucks. It is easier to extract that information directly from the customs IT when the operations at the border are computerized, otherwise, it is necessary to derive it from manual registries.

In terms of trade characteristics, for the Kenya-Uganda borders, trucks returning to Kenya empty were omitted on purpose, whereas for Rwanda-Uganda, a limited number of empty returns were included in the sample. 80% of the maritime transit traffic on the Northern Corridor is Ugandan trade. Therefore, through transit trucks en route to countries beyond Uganda are relatively rare, and no particular efforts were made to include a representative number of through transit crossings in the sample. Their actual number in the sample is limited.

The Revenue Authorities on the Northern Corridor provided information on the number of loaded truck crossings per month during the survey period.

Table 2. Number of truck crossings per month over the survey period

	Inbound			Outbound		
Border post	*Gatuna*	*Busia*	*Malaba*	*Gatuna*	*Busia*	*Malaba*
November	2,319	431	14,987	2,735		20,013
December	2,800	577	14,794	2,284		19,112
January	2,546	1,505	16,138	2,145	6,471	18,255
February	2,408	960	8,586	2,797	6,045	19,060
March		1,392	15,775		6,692	18,244
Monthly average	2,518	973	14,056	2,490	6,403	18,937
Daily average	84	32	469	83	213	631
Trucks surveyed	**200**	**179**	**214**	**174**	**259**	**248**

Source: Revenue Authorities and survey data

Based on the previous monitoring activities conducted in Beitbridge (between South Africa and Zimbabwe) and in Chirundu (between Zimbabwe and Zambia), and on the resources available, an average of 40 detailed border crossings per direction and per month is a realistic expectation. In order to eliminate possible seasonal variations, the survey was to be conducted over a period of six months. In total, around 500 truck crossings per border were envisioned, with a sample robust enough, for the selected scenarios, to guarantee reliable results. For logistical reasons, the survey period was shortened, but the number of monthly observations increased to compensate for the reduced duration. Over a period of four and a half months (the surveys started in mid-November), 1,274 crossings were observed and analyzed. Outbound refers to the outbound direction from the port of Mombasa to the landlocked countries and the hinterland, while inbound refers to the opposite direction to the port.

Arrival time patterns

The issue of 24/7 operations for border posts is important, because of its implication in terms of staffing for border agencies and operators. Extended hours of operation only make sense if all parties involved have compatible operating hours and if trucks take advantage of the extended period.

The initial review of the borders revealed that despite 24h operations for customs, night arrivals represent only a small portion, and the survey efforts were concentrated over regular operating hours. For instance, based on KRA information, at Malaba, 75 percent of the trucks arrive between 7:00am and 9:00pm, 15 percent

between 9:00pm and 11:00pm, and only 10 percent between 11:00pm and 7:00am, due to the fact that most trucking companies do not allow night driving for security reasons. Arrivals are therefore bunched together, creating congestions during peak periods, and increasing crossing times accordingly. Consequently, the survey focused on daylight arrivals at the border, and the sampling stratification was oriented towards truck load types (containerized goods, break bulk, refrigerated, tanker, and consolidated).

The survey questionnaire

The survey questionnaire was divided into three main sections:

- Characteristics of the truck / trip (origin, destination, type of load, description of the cargo, truck identifiers, etc.)
- Border crossing events
- Obstacles encountered prior to arrival at the border

Characteristics of the truck / trip

The information obtained through this section is important to differentiate the border crossing scenarios. However, for future surveys, it is important to clarify the nature of the customs process at the border. For instance, when the entry country is the destination country, it is important to clarify whether the process was a domestic transit or a border clearance.

The Northern Corridor surveys collected the following information on the characteristics of the trip:

- Nature of the goods, and their classification under the Harmonized System Code
- Origin of the goods (pick up point)
- Destination of the goods (delivery point)
- Identity of the transporter (and his/her nationality)
- Truck plate number
- Exit clearing agent
- Entry clearing agent

However, due to the selection bias in the construction of the sample and the very low percentage of truck crossing surveyed, inferences on the total population of truck crossings are not reliable.

Crossing events section

The section on border crossing events consists of a series of time stamps corresponding to the stages of the border crossing identified at the preparation stage.

A typical border crossing is a combination of physical movements of the trucks and the associated documentation process. The stages of the border crossing, which tended to be sequential, are now adopting more complex patterns, with a tendency to develop parallel processes in order to save time. For instance, documents are processed by the Customs authorities from both sides in parallel, while the truck is still on the exit side of the border, and the declaration process can be initiated before the physical arrival of the truck at the border. The experience of the Northern Corridor also shows that evolving processes may result in the suppression of stages. As a consequence, it is no longer possible to assume that the duration of a process recorded only as a milestone can be obtained by difference with the end of the previous stage. It therefore becomes necessary to record both the beginning and the end of a specific stage, and dissociate the physical movements from the documentation.

The physical movements are decomposed into three main stages: arrival at the border, physical crossing of the border line, and finally departure from the border. The arrival of the truck is recorded when the truck is reaching the border area, either when it is reaching the queue (if there is a queue) or when it is parking while waiting to join the queue for the border formalities. With this convention, the actual waiting time of the truck is recorded and can be isolated from the border-crossing process itself. The departure time recorded is the actual time when the truck resumes its journey. With this convention, it is possible to measure the time the driver spends at the border after the completion of all formalities.

In the three borders surveyed on the Northern Corridor, the distance between the two customs areas is short, at most 500m in the case of Gatuna / Katuna. There is therefore no need to record departing time from one side and arrival time to the other side.

The documentation process is more complex, and individual stages for the follow-up of the documentation can be of two types:

- Simple events, such as handover of documents from driver to agent, for instance. In that case, only the time of the event is recorded
- Processes with a duration, such as customs checks. In that case, both times (for the beginning and for the end) are recorded

The sequence for each side of the border for the documents is as follows, as a rule:

1. The driver remits the documents to the agent
2. The agent submits the declaration to customs with supporting documents
3. Customs declaration process (begin and end)
4. Additional customs and other border agencies checks (begin and end)
5. Release of the truck by the agent once all formalities are completed

There is a growing recognition that customs are no longer necessarily the main constraint at the border, and there is a need to clearly identify the role of the other agencies. To achieve this, it is necessary to record whether other agencies have intervened on the crossing and obtain the respective time stamps for their intervention(s). However, in the case of the Northern Corridor, this was not considered as critical based on the results of the preparatory phase, and the role of other border management agencies is not identified in the survey form. All border agencies other than customs are lumped into the inspection cells of the form, together with customs physical checks.

Border management agencies interventions are clearly identified at the beginning and end of the process, with observation of the customs on each side of the border, as well as customs and other border agencies checks on each side of the border.

The time attributed to clearing agents is, for each side, the sum of the time taken to submit the documents once they have been received from the driver and the time between the end of the checks or processes and the release of the driver.

Time attributed to the driver is the addition of the time between interventions, which is actually a combination of voluntary periods of waiting time, but also some delays over which drivers have no control. A typical example of such delay is when the truck arrives at night and must wait for the clearing agent office to open.

Pre-arrival section

The section on pre-arrival obstacles is the result of an attempt to collect additional information on road transport constraints, notably on road blocks and weigh-bridges, and the delays they generate.

Exploiting that information proved to be difficult for two reasons. The major one is that the sample is not constructed to ensure statistical validity of the results of this survey. The second reason is that responses purely rely on the memory of the driver, which makes them more an indication of the perception of the nuisance caused by check points and weighbridges.

In future, this section should be deleted from the surveys. If collecting information on delays 'en route' to the border is a critical issue (revealed by the other transport observatory indicators or signaled by logistics operators), another type of survey should be considered. For instance, experiments in Southern Africa and in Eastern Africa to utilize GPS tracking data to identify the location and the duration of the stops along the road appear to be more suitable for this analysis.

Practical organization of the survey

The consultant TLC recruited and trained a team of qualified local assistants with experience in clearing and forwarding for the data collection work, two per border post between Kenya and Uganda, and one for Katuna/Gatuna (due to lower volume of vehicles and faster crossing times).

For the Kenya-Uganda borders, one assistant was deployed for each side of the border. Coordination between the two was ensured through communication equipment, to ensure that the selected trucks were observed during a complete crossing. In addition, one coordinator was recruited for each border to supervise the monitoring activities and capture the survey forms for analysis.

The monitoring sheets were captured in Excel tables, and processed to calculate differences in times to measure the duration of significant steps.

Presentation of results: averages, deviation and frequency distributions

An important question is what is the relevant indicator to consider for the presentation of the results? Using the average is usual, but at the same time highly misleading. To avoid oversimplification by just using the average, the standard deviation is frequently added to qualify the average.

This may be sufficient when the times are short, but the combination of several successive or parallel processes over an extended period of time produces complex frequency distributions (refer for instance to Figure 14).

To illustrate how misleading the average can be, one can consider crossing times at the end of 2011 in Malaba, in the outbound direction. The average duration of the border crossing was 24 hours as shown in Figure 2. However the frequency distribution for the same period in Figure 4 shows that containers were either crossing the border in 12 hours or less, or in 36 hours or more, and very rarely between those two values. Very few crossed the border in around 24 hours. The situation is practically identical for break bulk trucks. In that situation, the average corresponds to a situation which practically never occurs. This is generally the case when the duration of the process extends over longer than 24 hours.

A more relevant indicator for this type of situation would be for instance the proportion of trucks crossing the border on the same day. Applied to Malaba, this type of indicator translates the improvement in the border-crossing conditions, as used in the Malaba section:

> "Before the change in procedures, 60 percent of the containers and half of the break bulk trucks were crossing in 48 hours or more. After the change, all trucks but one passed the border in less than 6 hours".

On the contrary, when the distribution is simpler, for shorter processes, for instance a few hours, the average and the standard deviation are sufficiently representative of the distribution.

Sustainability of the border crossing surveys

The decision to undertake the border crossing surveys on the Northern Corridor was made originally to establish a baseline to which future crossing times will be compared after the conversion of the border posts into an OSBP. In that context,

the need to measure the actual impact of that conversion justified the cost of organizing a dedicated survey, but routine monitoring of border delays, alternative and more sustainable options need to be considered.

Several other options have been explored, with pros and cons, tapping into existing computerized sources that would eliminate the cost of generating the data, which is the main cost component of the surveys:

- Automated customs systems record not only the content of the declarations, but also the time stamps associated to its process
- An increasing number of road transport enterprises are managing their fleets with GPS tracking, generating a wealth of information on the movements of the trucks

In theory, extracting durations from customs automated systems is possible, but border crossing surveys conducted on several corridors throughout Africa confirmed that the customs processing time represents only a minor fraction of the time spent at the borders. Customs data, however, remains essential to monitor volumes and vehicle counts.

In the specific case of Malaba, the Uganda Revenue Authority (URA) has developed a computerized registry of truck arrivals and departures linking vehicle movements to the declarations, named CURES (Customs Reconciliation System). Using this system, the authorities are able to keep track of trucks and cargo entering and leaving the control zone. For the time being, the monitoring covers only the Uganda side of the border, but its extension to the Kenya side is planned. This could be an example to follow, particularly in the context where transformation of the border posts includes physical upgrade of the border facilities. Including a recording system at the entry and exit gates of the facility would provide comprehensive information on the duration of the crossing on a routine basis.

Alternatively, pending the generalization of gate registration, the alternative for monitoring truck physical movements is to access GPS tracking data, either from the road transport companies or directly from the GPS tracking service providers. This was piloted on the Chirundu border post by TMSA, enabling the measure of the border crossing characteristics of a large pool of trucks. However, in the absence of contextual data on the characteristics of the consignment (notably, nature of the good, type of load, and nature of the trade), this information is primarily aimed at routine monitoring, in order to trigger further investigation when abnormal situations occur.

Review of the border posts and survey findings

Malaba border post

Border post facilities and procedures

At Malaba, the two customs areas are just separated by a bridge. Besides immigration and customs, several other border agencies are represented. On the Kenya side, those include:

- Ministry of Health
- KEPHIS (Kenya Plant Health Inspection Services, Department of Agriculture)
- KEBS (Kenya Bureau of Standards)
- Kenya Police

Only customs and immigration agencies are operating on 24/7 basis. For customs, the decision to operate 24/7 was taken in November 2008. Other border agencies operate from 8:00 am to 5:00 pm, and do not presently have sufficient staff at the border to open extended hours.

The border is very busy, with over 600 trucks per day crossing to Uganda, and over 450 to Kenya, on a daily average.

There are infrastructure constraints at the border which impact the conditions of the crossings. The access road is narrow, and trucks are obliged to queue according to their arrival, irrespective of the priority treatment which can be granted according to commodities (for instance, tanker trucks are supposed to proceed directly to the exit customs yard). The bridge between the two customs area is also narrow, and only one truck can cross at a time.

The customs procedure differs according to the destination of the goods:

- For goods in transit through Kenya and destined to Uganda, clearing and forwarding agents (C&F) must clear the goods at the border
- Goods transiting to another country (for instance Sudan, or Rwanda) must be declared in transit

The RADDEx system (Revenue Authority Digital Data Exchange) has been developed to enable C&F agents in one country to pull the transit declaration from the other customs management system to populate the transit or import declaration.

A transit entry (for through transit) has 38 fields for information to be entered by the clearing agent. However, the number of information fields to update is decreased to only three (C&F agent, Bond in force, Value) when RADDEx is used.

During the survey period, the process was modified with the aim of reducing the total border crossing time:

- Part of the customs entry process can be done in parallel with the exit process (pre-lodgment or simultaneous submission of document), with the documents already processed on the entry side while the truck is still physically on the exit side, which was introduced in December 2011
- Reducing the number of additional checks on goods

Additional measures were taken to further reduce the delays, by preventing the trucks to join the queue before their documents can be processed, and to prevent them from remaining within the border area once the clearance is complete. Punitive fines have been established and published by KRA on 21 February, 2012 to enforce those decisions:

- No truck will allowed within 5 km of the customs entry gates. A penalty of US $1,000 will be imposed for transgressions as provided for under Section 15(4) of the East African Community Customs Management Act (EACCMA), 2004
- Fuel Trucks will move directly to the exit gates and none will not be allowed to join queues
- Only licensed clearing agents (a maximum of two per company) will be allowed to operate within the KRA border station premises
- Verification of cargo (where necessary), will be conducted by all government border agencies at the same time

Survey findings

Border crossing times. The combination of the facilitation measures and the penalization of longer stay of trucks at the border had a dramatic effect on the time taken to cross the border over the survey period. Border crossing times have com-

plex distributions patterns. That pattern with peaks approximately every 24 hours is frequent, as trucks are processed either within a window of a few hours corresponding to the first peak, or until the next window, the following day.

In both directions, the reduction of the crossing time translates into a higher proportion of trucks released from the border much earlier than before, illustrated by a shift to the left of the peak, which corresponds to the most frequent case.

Figure 4. Frequency distribution for outbound crossings at Malaba

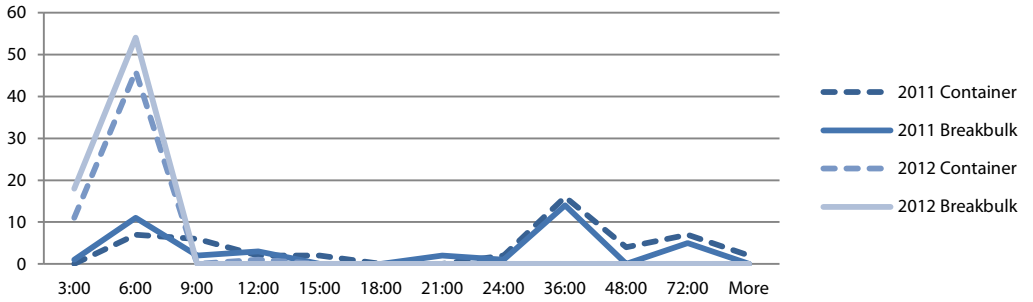
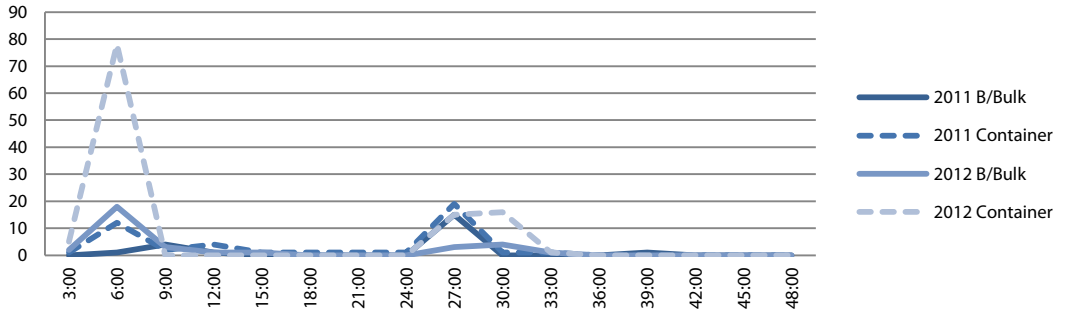


Figure 5. Frequency distribution for inbound crossings at Malaba

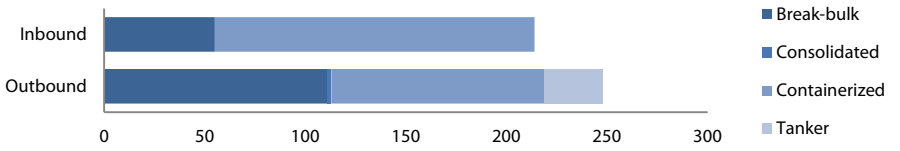


Type of traffic and trucks. Due to the difference of process between through transit and goods destined to Uganda, analysis of the border crossing times must distinguish the two cases for trucks moving towards the hinterland (outbound). However, in the sample, there are only a handful of trucks corresponding to through transit traffic, preventing significant analysis.

In the opposite direction (towards Mombasa, inbound), there is a significant number of trucks returning empty. However, empty trucks were not selected on purpose, to increase the sample of loaded trucks, preventing the analysis of border crossing times for empty trucks.

Out of the initial five truck types targeted, only three were sufficiently represented, container trucks and break bulk for both directions, and tankers outbound only.

Figure 6. Number of crossings surveyed per truck type



Containers and consolidated trucks are generally loaded with a mix of goods, requiring more complex declarations than homogeneous loads for tankers and break bulk trucks. The logic would be that trucks with mixed loads would require longer documentation process. Tanker trucks would be the fastest to clear the borders due to the priority they benefit for security reasons, and break bulk trucks would be in between.

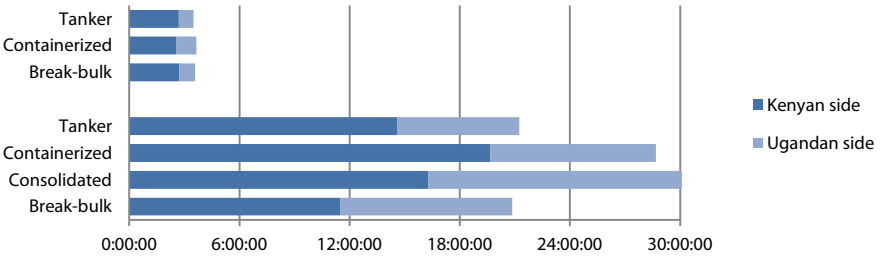
In practice, the border crossing times according to truck type illustrated in Figure 7 show a different picture for the end of 2011. However, the change of procedures in 2012 resulted in a dramatic reduction of time and a convergence of the crossing times, with practically no differences in the duration of the border crossings times between the different truck types.

Exit-entry country sides of the border. Exit procedures, which usually only involve confirming the exit of the goods in transit, are lighter than entry procedures, which involve a declaration and clearance for goods destined to the entry country. Moreover, some trucks should proceed directly to the entry side, for instance tanker trucks. Based on these two assumptions, the duration of the stay of trucks on the exit side of the border should be shorter than the time on the entry side.

Separating crossing times between the two countries reveals that those assumptions are erroneous. Trucks spend clearly more time on the exit side than on the

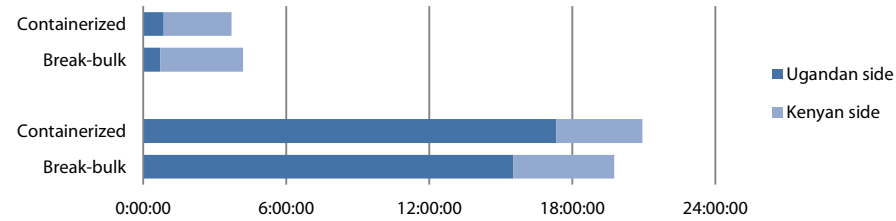
entry side. It is also important to note that tanker trucks do not spend a significantly shorter time on the exit side, compared for instance to break bulk.

Figure 7. Border crossing times outbound by side, comparison 2011 and 2012



In the inbound direction (towards Mombasa), the implementation of the amended procedures were delayed by one month. The first period corresponds to the first three months of the survey, November to January, and the second period to the last two months, February and March. The reduction of crossing times in that direction is of the same order of importance than for outbound traffic.

Figure 8. Average border crossing times inbound, comparison 2011 and 2012



Responsibilities for border crossing times. All parties involved contributed to the total reduction of crossing times, but the reduction is particularly important for the documentation procedures. Although, driver related time decreased, they constituted the greatest contribution of time spent at the border following the implementation of the new procedures.

Figure 9. Average border crossing times outbound according to responsibility at Malaba

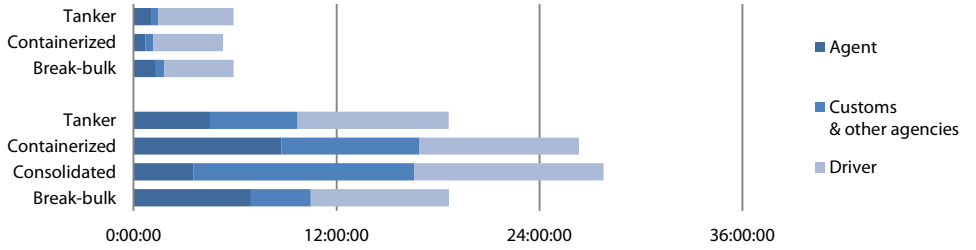
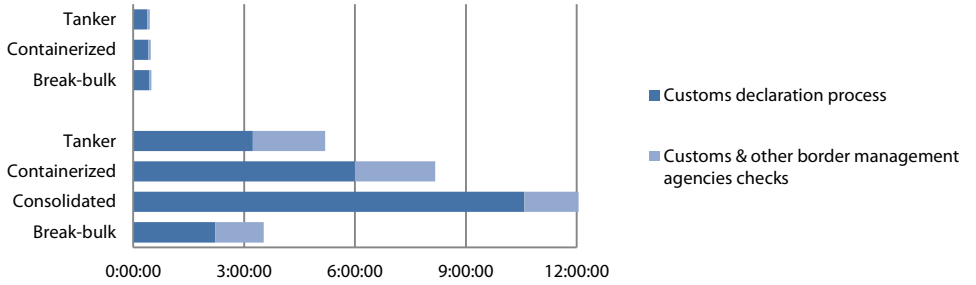


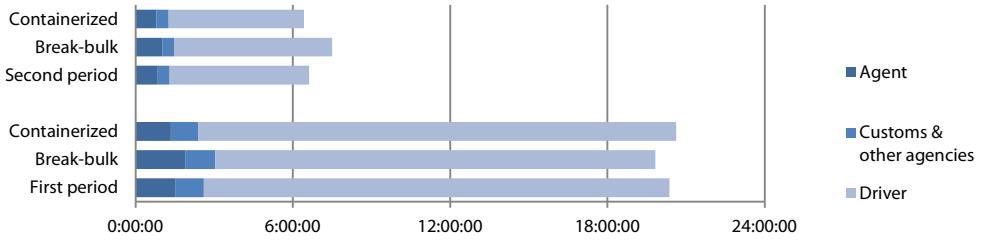
Figure 10. Customs and other border agencies interventions



Focusing on the interventions of the border management agencies (customs and others), Figure 10 shows that the physical checks have almost completely disappeared, and customs document process improved drastically.

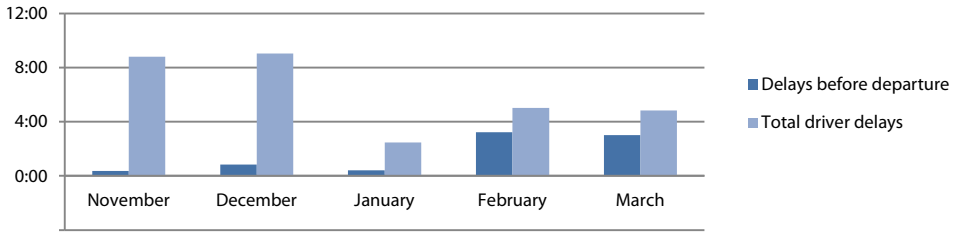
One of the decisions by customs was to impose fines to trucks remaining within border area after the completion of the clearance. The survey shows that delays after completion have increased rather than decreased, while the main portion of driver idle time shifted to the end of the process.

Figure 11. Malaba inbound, crossing times by responsible party



The most probable explanation for this is that drivers were able to conduct their 'private affairs' in parallel to the intervention of the border management agencies or upon arrival, while the new procedures leave far less time to do so. They probably need the additional time after the completion of the procedures to finish their own business. The perception by customs that trucks are idling at the border after the end of formalities is linked to this increase, which motivated the decision to impose fines.

Figure 12. Average delays after completion of clearance at Malaba, outbound direction



Busia border post

Border post facilities and procedures

In addition to customs, other agencies are present at the border:

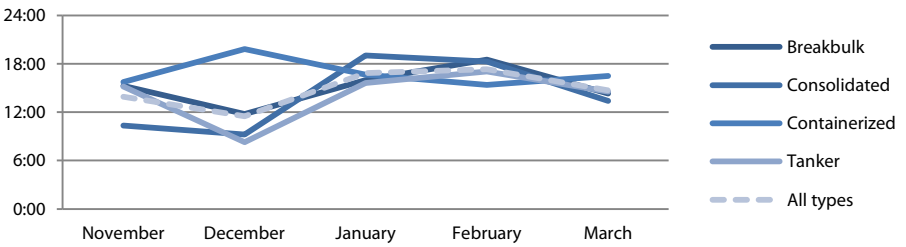
- Ministry of Health
- Ministry of Agriculture
- Bureau of Standards

Customs are operating 24/7, but other border agencies are operating only 8:00 am to 5:00 pm.

Busia is less busy than Malaba, with a daily average of 210 trucks crossing to Uganda, but only 30 crossing to Kenya, as indicated in Table 2. In Malaba, the proportion of loaded trucks crossing from Uganda to Kenya is around 75 percent, based on Revenue Authority data. That proportion is much lower, around 15 percent for Busia, indicating that Malaba is the preferred crossing point for return trips, a pattern which had been confirmed by several trucking enterprises.

The customs area is located inside the town, and trucks are passing through town before reaching the border. The road is lined with shops and there is practically no parking space. Within the customs area, there is limited parking space on the Kenya side, and even less on the Uganda side.

Figure 13. Monthly evolution of outbound border crossing times at Busia



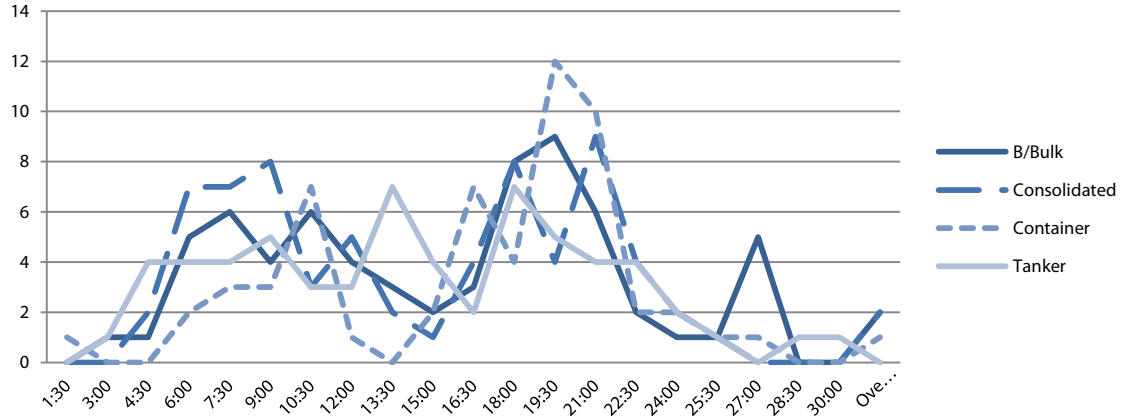
The border crossing process at Busia is similar to the process at Malaba, although the changes in the procedures implemented at Malaba during the survey period were not enforced at Busia.

Survey findings

Border crossing times. Border crossing times at Busia did not significantly change over the survey period in the outbound direction (to the hinterland), but significantly dropped inbound.

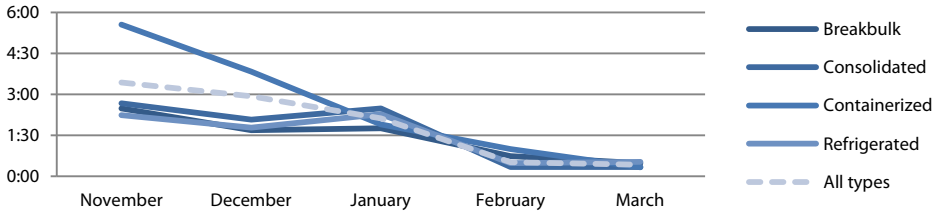
The relative convergence of average crossing times for all types of load hides a wide dispersion of border crossing patterns.

Figure 14. Frequency distribution of border crossing times at Busia, outbound



Except for tankers, which are more erratic, the distribution for other truck loads has two modes, a first peak between 7 hours to 10 hours, and second peak around 20 hours, corresponding in practice to one night at the border. This translates into a high standard deviation for the crossing times.

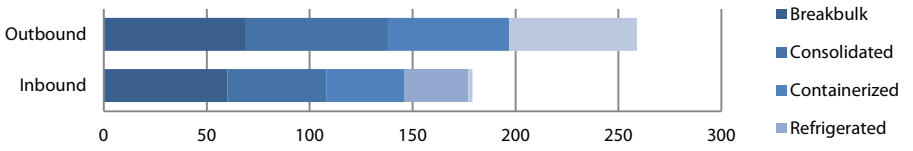
Figure 15. Monthly evolution of inbound border crossing times at Busia



Considering the overall duration of the border crossings inbound, dropping to an average of 30 minutes, no detailed analysis was conducted for this direction. The low traffic in that direction is most probably the reason for the short duration of the process.

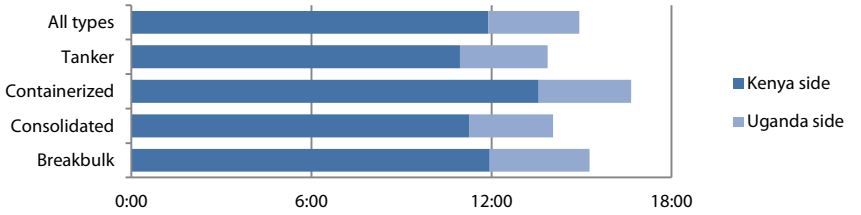
Type of traffic and trucks. In Busia, the truck sample is relatively balanced between the different types of loads, except refrigerated. However, the number of through transit crossings in the sample is low, less than 10 percent of the total, with over-representation of tankers. It is not possible to determine the differences in crossing times between the two on that limited sample.

Figure 16. Truck sample at Busia by type of load



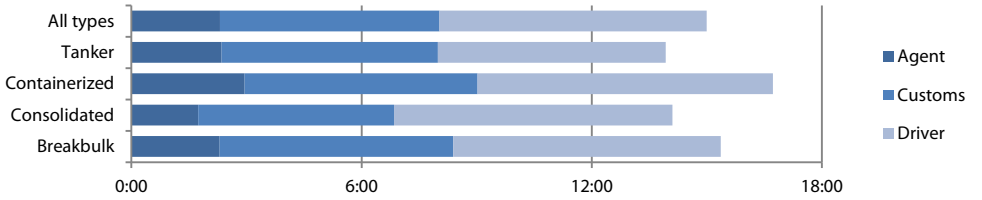
Exit country / Entry country side of the border. Trucks are spending more time on the exit side than on the entry side, including for tankers, which are supposed to benefit from a priority and immediate cross over due to safety regulations.

Figure 17. Border crossing times outbound according to side



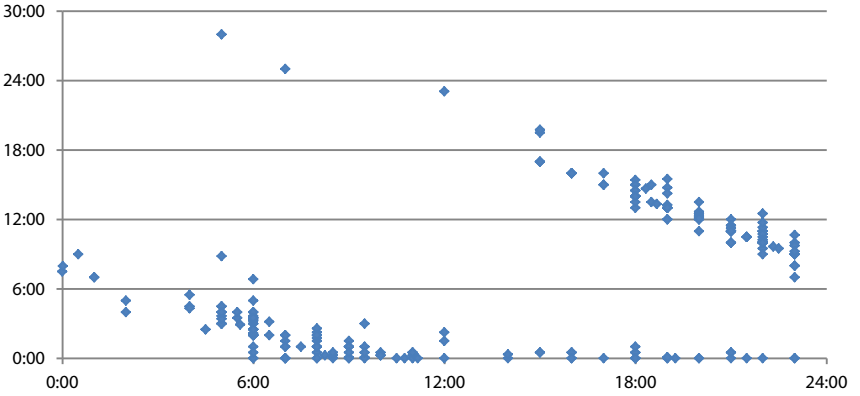
'Responsibilities' for border crossing times. On average, half of the border-crossing times is attributed to the driver.

Figure 18. Average border crossing times outbound according to responsibility at Busia



However, a closer analysis shows that most of it occurs between the arrival at the border and the remittance of the documents to the agent, and that duration is closely linked to the arrival time itself.

Figure 19. Delays before remittance of document to agent according to arrival time at Busia



When the driver arrives at the border early morning hours, the delay corresponds to the wait until operating hours for the agent to commence work, a pattern which occurs also for late arrivals. The delays are clearly linked to agent operating hours and not the result of a choice by the drivers. Comparatively, delays after clearance are minimal, 8 minutes on average.

Gatuna / Katuna border post

Border post facilities and procedures

The distance between the two border posts is around 500m, and the border operates 24/7.

On the Uganda side of the border, there are only two other border agencies based at Gatuna/Katuna border post and are listed as follows:

- Plant Health Inspectorate (Department of Agriculture)
- Uganda Bureau of Standards

These agencies operate during daylight hours from 08:00 am to 17:00 pm, which is contrary to customs that operates 24/7.

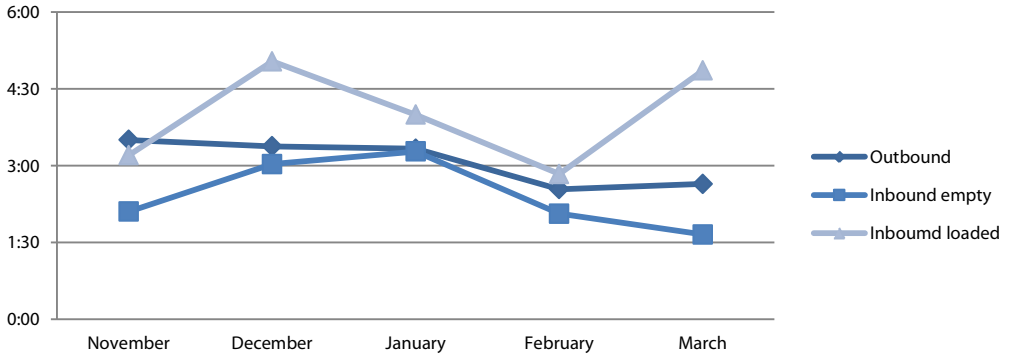
The border is moderately busy, with an average of 80 trucks in each direction per day, and not saturated, according to figures in Table 2.

Recently, Gatuna has been trying to introduce an OSBP concept by stationing a customs officer from the opposing revenue authority within the offices of the counter border to try and speed up the clearing process and reduce transit times.

Survey findings

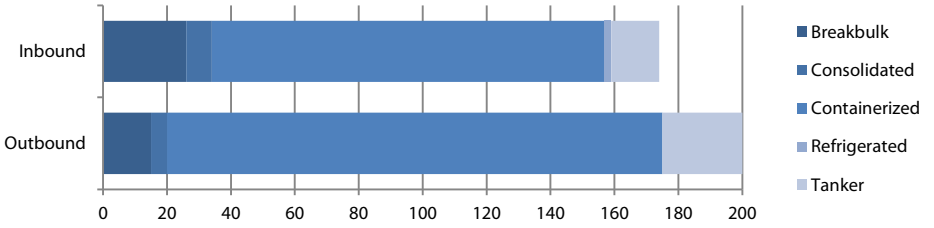
Border crossing times. In the presentation of the preliminary survey results to the Northern Corridor stakeholders, trucking enterprises confirmed they considered Gatuna as an efficient border: on average, it takes three hours to clear the border in the outbound direction, although it takes longer in the opposite direction.

Figure 20. Border crossing times at Gatuna



Type of traffic and trucks. At the Gatuna border, containerized trucks are the most frequent type of truck in the sample. Only small numbers of consolidated and refrigerated loads were recorded. The sample includes empty crossings in the inbound direction.

Figure 21. truck types surveyed at Gatuna



The trade patterns at Gatuna are more complex than for the Kenya-Uganda border posts, for which two types of trade were possible (external trade of Uganda or through transit). The possible combinations are:

- Bilateral trade Uganda-Rwanda
- Maritime transit to Rwanda
- Through transit
- Uganda trade with neighboring countries transiting through Rwanda

All cases are included in the sample, which reveals a large proportion of regional trade (categories Uganda trade, and bilateral), as opposed to international transit (categories through transit and transit to Rwanda)

Table 3. Trade types surveyed at Gatuna for containerized crossings outbound

	Count	*Total time*
Uganda trade in transit	22	3:29:05
Through transit	8	2:48:30
Transit to Rwanda	11	2:51:44
Bilateral Uganda – Rwanda	82	2:55:59
All trades	**123**	**3:01:02**

Exit country / Entry country side of the border. As explained in the corresponding section for the Malaba border, trucks with mixed loads would be expected to have slower crossing times than homogeneous loads and tankers, which should be released quickly because of the hazards associated with petroleum products,. The respective time spent on each side of the border at Gatuna is more in line with what would be expected from an OSCP, with an exit process shorter than entry procedures, but crossing time for tankers takes longer than for other types of load.

Figure 22. Gatuna outbound crossing times according to side of the border

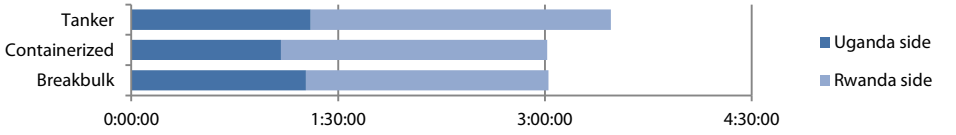
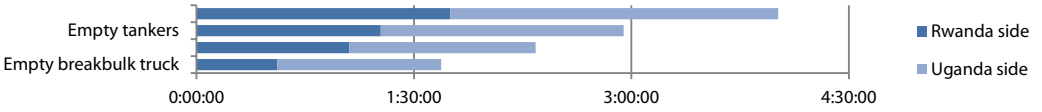


Figure 23. Gatuna inbound crossing times according to side and load



'Responsibilities' for border crossing times. The driver related time represent around half of the total time spent at the border.

Figure 24. Gatuna outbound crossing times by party concerned

Annex: Survey results tables

Malaba

Outbound	*Total crossing*		*Kenya side*		*Uganda side*	
	Average	St. Dev.	Average	St. Dev.	Average	St. Dev.
2011, all types	24:43:02	18:22:45	15:47:30	16:43:30	8:55:32	9:00:28
Break-bulk	20:50:54	15:52:42	11:28:12	14:57:25	9:22:42	9:59:00
Containerized	28:41:03	21:43:01	19:39:29	19:13:43	9:01:34	8:44:53
Tanker	21:14:00	9:58:57	14:35:20	10:12:18	6:38:40	7:12:00
2012, all types	3:36:06	0:48:54	2:38:50	0:27:43	0:57:17	0:44:55
Break-bulk	3:34:35	0:38:15	2:42:16	0:31:39	0:52:19	0:26:07
Containerized	3:39:38	1:02:29	2:33:56	0:20:59	1:05:42	1:03:30
Tanker	3:29:17	0:32:41	2:41:26	0:29:27	0:47:51	0:15:17

Inbound	*Total crossing*		*Kenya side*		*Uganda side*	
	Average	St. Dev.	Average	St. Dev.	Average	St. Dev.
Nov. 11 to Jan. 12	20:33:22	9:24:21	16:44:32	9:28:53	3:48:50	3:45:23
Break-bulk	19:45:10	9:46:31	15:31:15	8:59:06	4:13:55	5:08:23
Containerized	20:56:31	9:15:48	17:19:44	9:42:47	3:36:47	2:53:16
Feb. & Mar. 2012	3:47:24	1:04:03	0:49:44	0:17:52	2:57:40	1:01:36
Break-bulk	4:11:00	2:22:02	0:42:03	0:20:00	3:28:57	2:16:30
Containerized	3:42:13	0:25:05	0:51:25	0:17:02	2:50:48	0:21:29

Busia

Outbound	*Total crossing*		*Kenya side*		*Uganda side*	
	Average	St. Dev.	Average	St. Dev.	Average	St. Dev.
Break-bulk	15:15:46	7:25:16	11:56:09	6:58:32	3:19:37	1:37:08
Consolidated	14:03:09	6:58:59	11:16:03	6:38:32	2:47:06	1:22:30
Containerized	16:39:21	8:39:51	13:34:16	8:42:56	3:05:05	1:17:35
Tanker	13:52:12	6:34:12	10:56:48	6:13:33	2:55:23	2:13:18
All types	14:55:27	7:27:32	11:53:37	7:11:14	3:01:51	1:39:57

Gatuna

Outbound	*Total crossing*		*Uganda side*		*Rwanda side*	
	Average	St. Dev.	Average	St. Dev.	Average	St. Dev.
Break-bulk	3:01:39	1:06:58	1:15:55	0:51:21	1:45:44	0:37:59
Containerized	3:01:02	1:32:34	1:05:07	0:53:15	1:55:55	1:17:16
Tanker	3:28:48	1:32:41	1:18:04	0:49:01	2:10:44	1:19:54
All types	3:07:36	1:33:47	1:09:08	0:53:16	1:58:28	1:16:32

Inbound	*Total crossing*		*Rwanda side*		*Uganda side*	
	Average	St. Dev.	Average	St. Dev.	Average	St. Dev.
Empty	2:21:22	1:19:13	1:01:51	0:38:59	1:19:31	0:54:43
Break-bulk	1:41:17	0:36:27	0:33:17	0:16:08	1:08:00	0:31:29
Containerized	2:20:20	1:04:45	1:03:20	0:35:55	1:17:01	0:43:03
Tanker	2:56:50	2:18:27	1:16:16	0:55:02	1:40:34	1:41:45
Loaded	3:59:57	1:42:56	1:45:38	1:34:11	2:14:20	1:18:20
Containerized	4:00:45	1:45:40	1:45:03	1:37:27	2:15:42	1:20:41
All types	2:42:34	1:33:50	1:11:16	0:58:13	1:31:18	1:04:26