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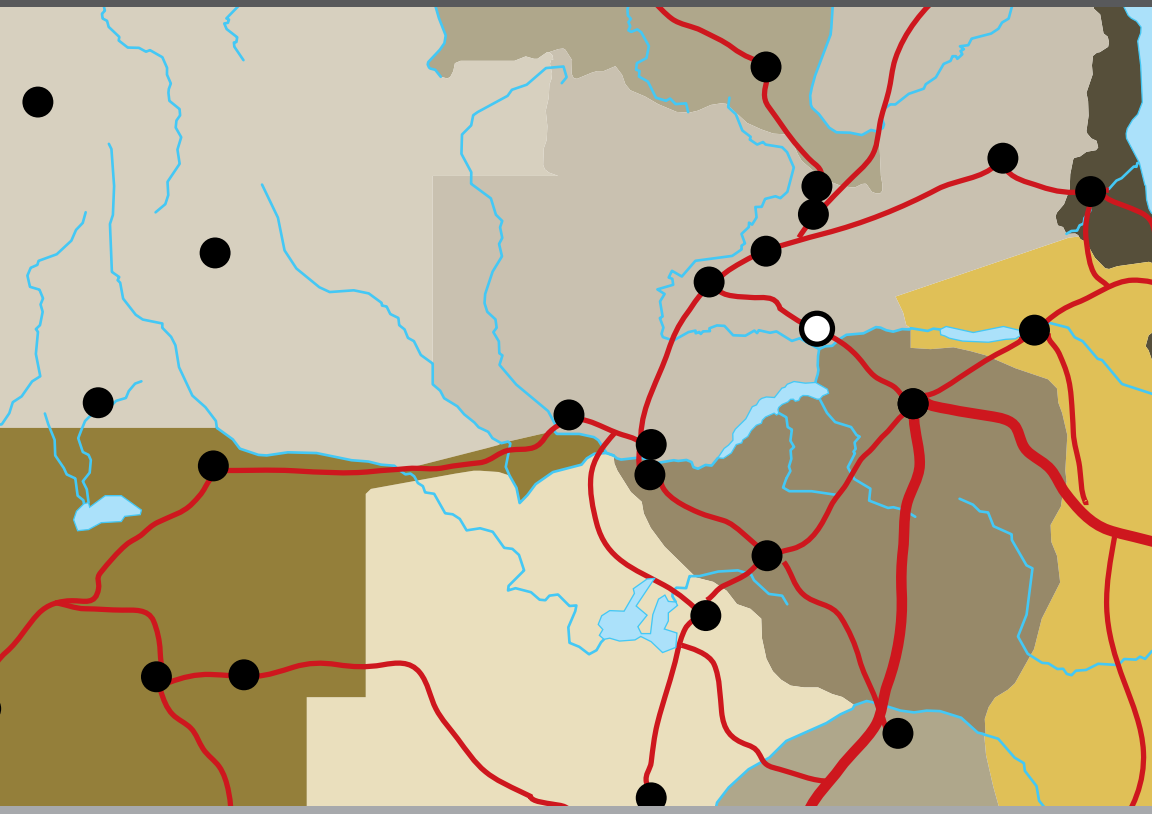

The Chirundu Border Post

Detailed monitoring of transit times

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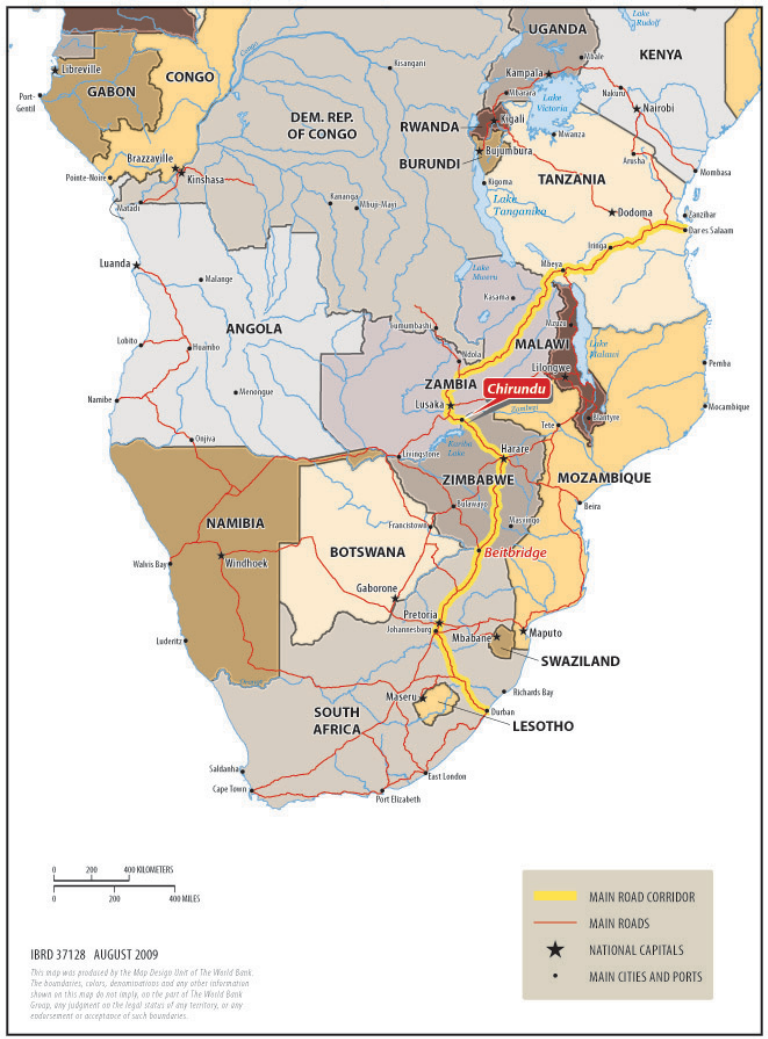

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Detailed Monitoring of Transit Times

Barney Curtis

September 2009

Sub-Saharan Africa Transport Policy Program

The SSATP is an international partnership to facilitate policy development and related capacity building in the transport sector in Sub-Saharan Africa.

Sound policies lead to safe, reliable, and cost-effective transport, freeing people to lift themselves out of poverty and helping countries to compete internationally.

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- 8 Regional Economic Communities
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Foreword

The economic function of trade and transit corridors is to promote both internal and external trade by providing efficient transport and logistics services. Typically, numerous parties and entities have to contribute various components and services within a corridor. These include different levels of government, agencies responsible for infrastructure, agencies at border posts, transport operators, and logistics service providers such as freight forwarders, clearing agents, etc. Unless the services provided by these parties are properly synchronized, their actions may not yield an efficient system and the corridor may not function well. However, until recently data on how each actor and the whole system are performing have not always been readily available.

Such data are important especially in Africa where a variety of problems have been observed along transport corridors. Individually and together, the problems (poor infrastructure, border delays and rent seeking behavior) contribute to transport costs that are higher than in other parts of the world. A major challenge has been the dearth of data to ascertain the magnitude of the additional costs these problems impose on African trade. In an effort to overcome this weakness, the SSATP and others have in recent years been working to develop methodologies for compiling metrics on the performance of trade corridors in Sub-Saharan Africa. Such metrics are a key input into the design of relevant and appropriate interventions that can reduce costs along corridors.

Corridor level performance indicators reveal when and where impediments to movement occur. Such indicators have great scope for practical impact on operations, since they reveal where specific impediments to logistics efficiency occur. By the interpretation and analysis of indicators, potential measures to address the impediments can be designed and their potential

impact evaluated. Clearly, it is always more valuable to collect detailed data at those locations where problems are apparent.

This document presents data on the performance of Chirundu, which is one of the main border crossing points along the North-South Corridor in Southern Africa. Both the Chirundu and Beitbridge border posts have long been identified as a major constriction to movement along this corridor. The document sheds useful light on the causes and magnitude of the long transit times experienced at Chirundu border crossing between Zambia and Zimbabwe. It provides for the first time disaggregated data on the amounts of time it takes to go through each step in the crossing process and which agency or entity is responsible. Based on systematic border crossing monitoring, it helps pin-point areas where improvements to transit could be realized.

One of the significant aspects of this work was the close collaboration between the SSATP and its private sector and REC partners to fill an important information gap. The data collected were provided just in time to support the on-going efforts to establish a one-stop border post at Chirundu. This further underscores the value of sound data to project design and to assess the impact of projects. This is one of the reasons why the SSATP and its regional partners should clearly continue to invest in collecting data on corridors in Sub-Saharan Africa, so that down the road we will be able to ascertain trends in corridor performance.

Stephen Vincent
SSATP Program Manager

Acknowledgement

Monitoring of border transit times at Chirundu was a follow-up on a similar exercise carried out at the Beitbridge border post. Nigel Ings, the former SSATP Program Manager took the initial decision to support these two activities. Zaza Ramandimbiarison who succeeded Nigel continued the support. Both saw the border posts as major constraints to trade and transport in Southern Africa and appreciated the strategic value of compiling statistics that could inform decision making on appropriate interventions. Suffice to say they were proved right, as the contents of this report confirm.

Several SSATP Team members played key roles in the design of the technical aspects of the activity. Chief among them were: Marc Juhel, who led the regional integration component of SSATP Program Management Team and who designed the original Beit Bridge project with the collaboration of FESARTA. Marc saw the importance of monitoring on the corridors and was also a catalyst in setting up the overall corridor observatory process; Charles Kunaka, Tesfamichael Nahusenay Mitiku, and Jean-Francois Marteau all played important roles in supervising the monitoring activity and in subsequent analysis of the data. Charles Kunaka, then SSATP Regional Coordinator for East and Southern Africa, contributed to the preparation of the briefing reports on the emerging findings and disseminating those findings timely in government and donor fora.

Amos Marawa, Director of Infrastructure at COMESA as the Chairman of the SSATP REC-Transport Coordinating Committee saw the importance of the monitoring efforts to the broader COMESA and SADC initiatives at Chirundu and other border posts. In general, the REC-TCC members from across the various regions provided guidance to the monitoring initiative.

The monitoring would not have been successful were it not for the ingenuity and innovativeness of Mike Fitzmaurice of Transport Logistics Consul-

tants (TLC), the firm that carried out the actual monitoring. TLC was able to develop a simple yet effective monitoring process covering the two sides of the border in a seamless manner, often under difficult circumstances. FESARTA managed the work of TLC.

Obviously all this would not have been possible without the cooperation of the various agencies at the border posts including customs authorities, agents and transporters at the borders, who either assisted TLC in sourcing the information, or actually sourced the data.

I hope that the various stakeholders find this report of value to their trade and transport facilitation efforts.

Acronyms and Abbreviations

CBRTA	South African Cross-Border Road Transport Agency
CEAR	Central East African Railways
COMESA	Common Market for East and Southern Africa
DRC	Democratic Republic of Congo
FESARTA	Federation of Eastern and Southern African Road Transport Associations
HS codes	Harmonized System codes
JICA	Japan International Cooperation Agency
JRMG	Joint Route Management Group
REC	Regional Economic Community
REC-TCC	Regional Economic Communities Transport Coordinating Committee
RFA	Road Freight Association
RFA	South African Road Freight Association
RIT	Regional Integration and Transport
SACU	Southern African Customs Union
SAD	Single Administrative Document
SADC	Southern African Development Community
SARS	South African Revenue Services
SSATP	Sub-Saharan Africa Transport Policy Program
TKC	Trans-Khalari corridor
TLC	Transport Logistics Consultants
ZIMRA	Zimbabwe Revenue Authority
ZRA	Zambia Revenue Authority

Explanatory Terms

Single entry break-bulk loads – the goods generally have one consignor and one consignee and are loaded onto a flat deck semi-trailer or set of interlink trailers. The load is then covered with a tarpaulin and roped. These types of loads are now carried on curtain-sided trailers, since they can often be loaded with a forklift and so improve efficiency.

Consolidated multiple entry loads – the goods have several consignors and consignees. They can be loaded onto flatbed trailers and tarped in the normal manner. Because of the potential for different clearing agents and several sets of duties having to be paid, these types of loads take the longest to transit the border.

Choke monitoring – detailed monitoring of a facility, such as a border, weighbridge, port, ferry along a transport corridor.

Pre-clearance – traditionally, documents relating to goods for import, export or transit, were handed over by the driver to clearing agents on arrival of the truck at a border. The clearing agent then created suitable clearance documents (e.g. bills of entry) and handed them in for clearance and stamping. With pre-clearance, the documents are prepared at the point of loading, even before the truck is loaded. These documents are then e-mailed or faxed to the clearing agent at the border where the goods are cleared by customs and duties paid before the truck arrives at the border.

Executive Summary

The centers of Beitbridge, between South Africa and Zimbabwe, and Chirundu, between Zimbabwe and Zambia, are the busiest border posts on the North-South corridor. Around 220 heavy goods vehicles transit the border in both directions in one day and the traffic was even higher before the decline of the Zimbabwe economy.

Following a monitoring exercise at Beitbridge border post, the SSATP and the Regional Economic Communities (RECs) decided to carry out the same exercise at Chirundu. This border post was acknowledged as one of the key impediments to the smooth flow of traffic on the North-South corridor and concomitantly, it was decided that it would be the pilot one-stop border post for the Southern African region. It was computed that Beitbridge and Chirundu delays could be equivalent to a 25 percent surcharge on transport costs along the corridor (Teravaninthorn and Raballand, 2009).

Therefore, a baseline of transit times through the border was critical to assess the current situation and the future impact of the proposed changes.

The Federation of East and Southern African Road Transport Associations (FESARTA) led the monitoring project at Beitbridge, which was completed in June 2006. The organization also managed the monitoring at Chirundu border post, which was executed by a private company called Transport Logistics Consultants. This project started in November 2006 and was completed in September 2007.

Length of delays

On average, it took 39 hours for a truck to transit the Northbound through Chirundu and 14 hours the Southbound. This compared with 34 hours and 11 hours respectively for Beitbridge. Based on the Road

Freight Association (RFA) estimates of the standing cost for a second-hand truck and flat deck semi-trailer, this equates to approximately US$31 million per annum. It means that the total cost of trucks standing at both Beitbridge and Chirundu is over US$60 million per annum. Add to this the cost of standing at other borders on the North-South corridor (Groblersbrug/Martins Drift, Kazungula, Nyamapanda, Zobue/Mwanza, Kasumbalesa) and the figure must be over US$100 million per annum and therefore transport prices along the corridor are inflated due to these delays.

Reasons for delays

Delays can be attributed mainly to the clearance of consolidated loads, e.g. loads that have multiple consignors or consignees. Contributory reasons for the extra delays are due to the potential for various duties rates having to be paid and more than one clearing agent being involved in the process. On average, it takes over 60 hours to clear a northbound consolidated load (there are virtually no southbound consolidated loads). Single entry break-bulk loads, i.e. those that are loaded by forklift or crane onto a flat deck trailer and then tarped, take around 40 hours to clear, both northbound and southbound traffic.

The main source of the northbound delays is the Zambian Revenue Authority (ZRA): the average time taken for the ZRA to process a truck and its documents is 17.4 hours, which include time to process documents and inspect loads.

It is interesting to note that idle time for northbound transit is much higher than might be expected. It is on average 10.9 hours per transit, the main reasons being: (i) not handling documents on arrival, (ii) not crossing the border when able to do so, (iii) waiting at the border after clearance and before departing for the destination or (iv) carrying out activities (own business or social) when supposed to be on duty. Southbound delays are much less (ZRA – 5.6 hours, driver idle time – 4.4 hours), but still drivers do waste time.

Recommendations

At the outset, it should be noted that goods spend up to one third of the total transport time at borders along the North-South corridor. Without reduced border crossing delays in Beitbridge and Chirundu, transport price will remain at the current level. In the recent years, the focus has rightly shifted away from large infrastructure to "trade facilitation" but difficulties remain to have facilitation measures implemented on the ground. Trade facilitation initiatives such as those launched by the SSATP, go a long way to convince authorities that facilitation is just as important as control. A border post as complex as Chirundu, has many controls carried out by several authorities, all whom contribute to high total transit times. Each control, no matter how small, takes time and can create a bottleneck.

One method to reduce the cumulative time spent to cross the border is to benefit from: (1) simplified and reduced clearance procedures and (2) an effective border management institution gathering major stakeholders from both sides of the border in order to reduce the number of controls and agencies involved.

The more complex and busy a border, the more likely an activity of corruption is taking place. This, combined with smuggling practices, creates serious problems for ZRA and ZIMRA, which results in more controls and inspections and subsequent tension between customs and transporters whose trucks are impounded.

An effective border management institution is not yet in place at Chirundu, (unlike Beitbridge) and it is hoped that with the introduction of a one-stop border post, this will be rectified.

However, even with the cooperation between both sides strengthened, effectiveness can be achieved if procedures are streamlined, documentation is simplified and a mandate given to local officials to tailor procedures to the local context in the interests of improved transit times. Reduced transit time is therefore the result of locally tailored procedures, but even more importantly from an overall modernized customs agency; an area where automation and a near real-time link between border post and HQ can help give some leeway to some operators.

The freight forwarding and trucking industries must encourage pre-clearance, which considerably limits delays at borders.

On the customs side, accreditation of transporters and clearing agents is not a new concept. It has been documented for some years and is being practiced by SARS (South African Revenue Services). However, organizations which are accredited and compliant to certain requirements do not receive any benefit. In most cases, accredited operators still face the same delays at borders. They should really benefit from fast transit lanes and better application of pre-clearance procedures.

The pilot one-stop border post for Chirundu is well under way and should help give trends in the future. It is also hoped that with infrastructure upgrades at the post, trucks of accredited transporters will be able to use the proposed "fast lanes". It will be necessary to monitor border crossing time after the establishment of the one-stop border post. This monitoring should then be integrated into the Observatory for the North-South corridor and should be one of the first examples of implementation on the ground of one stop-border posts in Africa.

Introduction

The economies of several countries in Sub-Saharan Africa are small and far removed from major global markets. This remoteness is compounded by weak international transport chains. The transport systems are characterized by congested and inefficient ports, lethargic railway networks, and poorly maintained roads. Poor infrastructure, operational bottlenecks, and slow bureaucratic procedures at international border posts all compromise the global competitiveness of most African economies and diminish the chances of meeting the Millennium Development Goals. In this context, transport corridors have the potential to contribute to regional integration and trade facilitation at the regional and continental levels. They are important to the economic growth of landlocked countries in particular, which face higher transport costs than the coastal states. Given that transport prices in Africa are already much higher than in other developing regions, this compounds the challenges faced by landlocked countries.

International transport corridors play an important role to lower trade costs for landlocked countries in particular. Cooperation between states, through corridor-based actions and improved dialogue, can lead to significant transit benefits for landlocked countries.

Given the challenges facing landlocked countries, sensitizing and influencing policy makers on how to improve access requires accurate and specific data on impediments to the smooth flow of traffic. Appropriate data can assist in pinpointing those components of the regional systems that are not working well so that infrastructure, regulatory or institutional reform interventions, or simply operations improvements can be better targeted. It is therefore critical that data on corridor operations be systematically collected[1]. The need to set up efficient and sustainable monitoring tools has

[1] Raballand, G., Marteau, JF., Kunaka, C., Kabanguka, JK. and Hartmann, O. (2008), "The Lessons of Corridor Performance Measurement", *SSATP Discussion Paper No 7,* available on the SSATP website.

been one of the main lessons drawn from the implementation of regional projects financed by the World Bank and other donors[2].

The performance of a corridor can be evaluated from two main perspectives: (i) from an infrastructure perspective, which considers the physical capacity of links and nodes in a corridor and their utilization. This approach often used when deciding on requirements for additional capacity provides little insight into the effect of corridor performance on trade. (ii) The second perspective examines the quality of the services provided for goods moving on the various routes. Performance is measured in terms of average time and cost for transport units moving through this corridor. These may be broken down into time and cost for specific links and nodes (Arnold 2006). In terms of trade facilitation, the second perspective probably gives the most interesting results, as it allows for benchmarking with other corridors with similar length or characteristics or, for a given corridor, defines the optimal transit time that should be expected from the infrastructure and services performance.

This paper presents the findings of an initiative carried out by the SSATP and its regional partners to monitor transit performance along a major trade corridor. The project was implemented at one of the major border posts identified as being a significant constriction to traffic flows on the North-South corridor in Southern Africa.

[2] See World Bank, Review of Bank lending for African transport corridors (Report No. 13099, May 1994).

Regional Context and Characteristics

North-South corridor

The transport corridor linking South Africa to its northern countries is the busiest regional transit transport link in eastern and southern Africa, carrying 5.8 million tons of cross-border traffic in 2001[3]. The North-South corridor is the most extensive corridor system in the region, linking the largest number of countries in eastern and southern Africa. It connects Botswana, DRC, Malawi, Mozambique, South Africa, Zambia and Zimbabwe and also interlinks to other corridors including the TransKalahari, Beira, Lobito, Dar es Salaam and Nacala corridors. The corridor has two main legs: one-stretching from the port of Durban on the South African coast, through Johannesburg, through either Harare in Zimbabwe or Francistown in Botswana, through Lusaka in Zambia and on to Lubumbashi and Kolwezi in the DRC. A second leg takes off from Harare, through Tete in Mozambique and on to Blantyre in Malawi.

There are two main reasons for the importance of the corridor: firstly, South Africa is the largest African trading partner in the region and secondly, the port of Durban handles a significant proportion of transit traffic for the landlocked states and is also the busiest port in Africa. The corridor extends over the territories of three RECs, COMESA, SADC and SACU.

The corridor is the main transport route to supply the landlocked countries of Zimbabwe, Zambia and the Democratic Republic of Congo.

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[3] The transport market and operations in Southern Africa are of great interest because they combine liberalization with enforcement of quality and load control rules applicable to all trucking operators. Operations to and from Southern Africa are governed by bilateral agreements. Unlike in West and Central Africa, the Southern African agreements do not establish quotas. This enables direct contracting between shippers and transporters and creates incentives for transporters to be more efficient (Teravaninthorn and Raballand, 2008).

The collapse of the economy in Zimbabwe has not only reduced significantly the flow of goods into and out of Zimbabwe, but lessened the growth of traffic along the whole corridor. Some of the negative effects of this trend include:

- Difficulty in sourcing fuel and other transport needs within Zimbabwe
- Less back loads out of Zimbabwe
- Inclination by Zimbabwe authorities to levy extra charges on transporters, to source foreign currency
- Deteriorating connectivity and logistics at the Zimbabwe border posts

Choice of two routes on the North-South corridor

Transporters have the choice of using either one of the two main routes on the corridor, between Johannesburg and Lusaka (see map). The route is often dictated to by the importers of the goods and is made for reasons other than whether one route is better than the other. The reasons may include special arrangements with customs to charge favorable duties for the goods transported.

Delays at border crossings (Beitbridge and Chirundu) are by far the most important impediments to transport along the North-South corridor. It was computed that Beitbridge and Chirundu delays could be equivalent to a 25 percent surcharge on transport costs along the corridor (teravaninthorn and Raballand, 2009).

For those transporters that have a choice, some of the reasons for choosing either the Francistown (Botswana) or the Harare (Zimbabwe) route are shown in Table 1.

Whilst the major reasons for choosing a particular route have been in place for years, there are some reasons that change over the years. For example, the Francistown route was considered the "overloading route" since the overloading controls were lax and the blatant overloaders made big profits on the route. Since the *Cross-Border Overloading Control System*, initiated by FESARTA, was introduced at the Groblersbrug/Martins Drift border a few years ago, this opportunity has been largely removed. Furthermore, the deteriorating situation in Zimbabwe has had an important impact on traffic assignment. Many transporters who do not have traditional working links with Zimbabwe, are finding it too difficult and expensive to operate

through that country. When the economic situation in Zimbabwe improves, there will most likely be a swing back to operating through that country.

Table 1. North-South corridor factor influencing traffic assignment

Route	Pull factors	Push factors
Route via Groblers Brug/Martins Drift and Francistown	A transporter may need to return Southbound to Namibia or Botswana	Kazungula ferry can be unreliable and is disliked Increasing delays at Kazungula border
Route via Beitbridge, Harare and Chirundu	Shorter route by a little over 200 km each way Traditionally reliable clearing agents and logistics service providers Majority of transporters are based in Zimbabwe and trucks will need to call in and be serviced, and there are no road user charges Many drivers are Zimbabwean and need to get home to see their families A lot of traffic is moved to and from Malawi	Delays at Beitbridge and Chirundu Difficulty in sourcing fuel and logistics service providers in Zimbabwe Increasing costs through Zimbabwe Problems on the Chirundu escarpment (road was being upgraded during survey period) There have been security of loads problems on the Harare/Beitbridge section

Other corridors

Five other major regional corridors interconnect with the North-South corridor: the Maputo, Trans-Kalahari, Nacala, Beira and Dar es Salaam Corridors. The region therefore has an extensive network of corridors that both complement and compete with each other.

The Maputo corridor extends from Gauteng, in South Africa to Maputo, in Mozambique and also the short road and rail link to Swaziland. The port of Maputo has recently been privatized, has undergone a major rehabilitation program, and is in the process of re-establishing its competitive position, by serving customers within its natural catchment area. The road along the corridor has been concessioned. Efforts are being made to improve border

post efficiency by extending working hours and consideration is being given to the establishment of a 'one-stop' border post.

The Trans-Caprivi Corridor, from the port of Walvis Bay, is becoming another main supply route to Zambia and the DRC. Concerted efforts by the Walvis Bay Corridor Group are seeing the volumes being moved along this corridor increasing at a commendable rate. The Group also plays a major role in enhancing operations along the other corridor anchored at Walvis Bay, the Trans-Kalahari Transport Corridor (TKC). The TKC consists of the route between Gauteng and Walvis Bay. It is important to note that the sections of the corridor on either end, between Gauteng and Lobatse and between Windhoek and Walvis Bay, carry mostly traffic which does not proceed further along the TKC.

The Nacala Transport Corridor is defined as the railway linking the Malawi railway system through Entre Lagos, Cuambo and Nampula to the Port of Nacala in Mozambique—there is effectively no all weather road system along this route. Since 1998 the corridor has been promoted as the main import and export route for Malawi, but the momentum has not gained much traction due to infrastructure problems related to flood damage and failure to upgrade and maintain some sections of the railway. The majority of Malawi's imports and exports are still routed through Beira and the North-South corridors.

In the past, the Beira corridor, from the port of Beira, was a main supply line for Zimbabwe, but the Mozambique war some 20 years ago has meant that the infrastructure and management of the port and corridor has had to be re-built.

The Dar es Salaam corridor, from the port of Dar es Salaam is also a main supply route for Zambia and DRC.

Given the infrastructure and management problems encountered on this corridor, continuing efforts are applied to make it more efficient.

Nevertheless, even with the Trans-Caprivi corridor and the improvements to the Dar, Beira and other corridors, the North-South corridor is still the main supply route into the region. This is mainly because the infrastructure, facilities and logistics suppliers along the corridor are well-established and reliable. The logistics support at the port of Durban is also well established. In addition, Johannesburg in Gauteng, is not only the major manufacturing supplier to the region, but also houses the head offices of many of the companies and other organizations operating in the region.

Table 2. Average traffic volumes and road transit times for major corridors (2005)

Corridor	Route	Distance	Volume/day (both ways)	Estimated transit time (days)
North-South	Johannesburg-Lusaka		250	5
Beira	Beira-Lusaka	1,150	50	3
Maputo	Maputo-Johannesburg	604	150	0.5
Nacala	Nacala-Lilongwe	-		
Dar es Salaam	Dar es Salaam-Lusaka	1,980	100	5
Trans-Caprivi	Walvis Bay-Lusaka	1,462	30	
Trans-Kalahari	Walvis Bay-Johannesburg	1,350	120	1.5

Source: FESARTA, Imani Capricorn and World Bank (2000), Portfutures (2005)

The Chirundu border post

The busiest border on the corridor is Beitbridge, between South Africa and Zimbabwe, closely followed by Chirundu, between Zimbabwe and Zambia[4].

The Chirundu border post straddles the Zambezi River. Two bridges link the border facilities across the Zambezi, an old bridge built in 1939, and a new one, which opened in 2002. The old bridge is a single lane bridge, which used to operate with traffic moving in alternating directions. This contributed to congestion and the justification of a new bridge with two-lane traffic. It was funded by JICA. In the recent past, the new bridge has been used for northbound freight traffic while the old bridge was still being used for southbound traffic. However, the old bridge is presently not being used. This has not made a significant difference to transit through the border, since a bridge or roadway is not normally a restricting factor. After the completion of the new bridge, both Zambia and Zimbabwe started work to improve their respective border facilities. Zimbabwe is building a completely new integrated border post while Zambia is constructing a new clearance and accommodation facilities. The construction of the facilities has experienced some delays but both became operational in late 2007.

[4] If all these delays (at port and border) could be significantly reduced, vehicle yearly mileage should improve by at least 30,000 kilometers along the North-South corridor (Teravaninthorn and Raballand, 2008).

New and old Zambezi river bridges at Chirundu

New Chirundu commercial freight building

On the Zimbabwean side, a new customs and immigration facility, together with a weighbridge, have been in operation since late 2006. These facilities have greatly enhanced the transit through this border post. Unfortunately, no clearing agent facilities were included and it is not apparent who is responsible to erect them.

On the Zambian side, a new customs and immigration and a new freight facility were under construction during the monitoring exercise. Therefore, for the duration of the project, old and inadequate facilities were being used and this serious hampered the quick transit of all travelers.

Methodology and Reporting

As a contribution to the broader efforts at better trade facilitation across Africa, the SSATP has been pursuing an agenda of corridor performance monitoring or observatories to be set up along major transport corridors. Observatories are effectively a monitoring process along a complete corridor, including the port. The final output should be detailing the cost to transport along a corridor and includes monitoring transit times, transport rates, procedures at border posts, roadblocks, weighbridges, etc. Choke monitoring of a border, in this case Chirundu, produces far more detail on delays at the border and the apportioning and reasons for those delays.

Setting up

The monitoring at Chirundu started in November 2006 and concluded at the end of September 2007. The Federation of East and Southern African Road Transport Associations (FESARTA), a regional partner of SSATP, supervised it. The actual monitoring was done through a private company called Transport Logistics Consultants (TLC). TLC has an office at the border, manned by a fulltime staff. The office was responsible for data capturing from customs, drivers, agents, etc. on both sides of the border. The data was then presented in a spreadsheet report. TLC also carried out the monitoring at the Beitbridge border post.

Data capturing

The office and employees being in Zambia, only direct data capturing was done on that side. Data were collected from customs, agents and drivers as well as from physical registers. On the Zimbabwean side, data were collected from agents and might have been considered suspect. However, the system was reasonably foolproof, in that the monitoring package was designed to follow the physical process or document flow from arrival at the exit border post to departure from the entry border post. Any inaccurate or suspect data entered into the system, would show up as out of sequence and be highlighted. The agents make use of a document register to capture

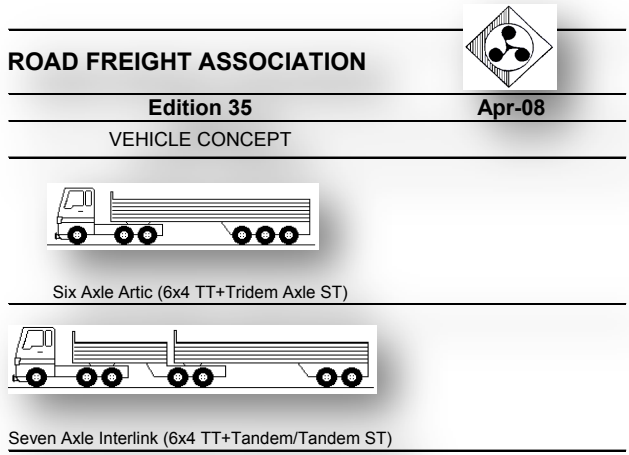
basic time data; release times were also obtained from the Release Order attached to the documentation and stamped by customs.

Traffic volumes

The Chirundu border post currently handles more than 6,000 trucks each month, with an average of 225 trucks per day, both directions (Table 1). More trucks use the route going northwards (120 average per day) than southwards (105 average per day). This reflects the availability of alternative routes linking South Africa and Zambia. The North-South corridor, on which Chirundu lies, offers several traffic assignment possibilities. The road from Lusaka to Chirundu was in poor condition but has been since rehabilitated. Before its reconstruction, some loads were lost going down the escarpment to the Zambezi River. Consequently, some drivers used the route through Livingstone when going south. However, as can be seen in Table 1, the southbound traffic through Chirundu picked up from January through April, but there has been a steady decline from May onwards which dropped sharply in the month of July. This could be attributed to the rapid decline in the Zimbabwe economy and the inconsistent availability of diesel/spares whilst in transit through Zimbabwe. It would appear that transporters were opting for the more reliable and safer route through Botswana/Livingstone. However in August and September 2007 there was a steady increase in traffic both ways and despite the ups and downs in traffic flow over the 11-month monitoring period the monthly average was consistently around the 220 heavy commercial vehicles.

The typical vehicle concept used on the corridor is either a 6-axle articulated vehicle or a 7-axle interlink (Figure1).

Figure 1. RFA vehicle concepts 11 and 18, as typically used on the corridor



Key data collected

Two categories of data were collected during the monitoring period, descriptive data on the vehicle and consignment carried, as well as data on the length of time each stage of the clearing process took. The various pieces of data are shown below.

Basic data on truck and goods	Data on transit processing times
Truck registration number Trailer/s registration number/s Transporter's name Country of Origin Type of load (consolidated multiple entry, single entry break-bulk, refrigerated, tanker and containerized) Commodity with HS codes and descriptions Exporter Country of manufacture/origin Importer Final destination Zimbabwean agent Zambian agent	Date and time were captured for: Arrival at exit border post Docs received by agent Docs into customs Docs out of customs Release of docs by agent Weighbridge Released back from customs Received by Zambian agent Vehicle crossed bridge and arrival at entry border post Docs into customs Docs out of customs Released back from customs Released by agent Left border

Similar data were collected, with minor modifications, for both north and southbound traffic. There are fewer controls on southbound movements than on the northbound. This is mainly because international trade in the region is generally imbalanced in favor of imports and regional trade being dominated by South Africa, with larger flows of goods moving north than the exports from the other countries moving southwards.

The data collected allowed the times it took to complete each clearance process to be calculated. In addition, other measures could also be obtained including market share based on truck registrations by country and by transporter. As the project progressed, it was decided to evaluate the influence of the different types of commodities on the transit times. The commodities were categorized into an international Harmonized System of codes (HS codes) to allow easier linkage to data from customs.

Data analysis

The analysis of data collected was kept as simple as possible, using a spreadsheet. The data were captured at the office in Chirundu, with a monthly sheet for the northbound transit and one for the southbound transit. Using spreadsheets, the time spent by drivers and with different authorities or agents was calculated and categorized as follows:

- Zimbabwe agent
- Zambia agent
- ZIMRA
- ZRA
- Driver idle
- Weighbridge

The reasons for any delays in the clearance process were also noted. Some of the common ones were:

- Border congested
- Duties
- Document errors
- Importer/Exporter
- Transporter
- Diesel
- Breakdown
- Driver

The totals and averages for each transit movement were calculated. In addition, the transit times were split up into:

- Border clearance
- Pre-clearance

Reporting format

Various reports were generated:

- Average hours taken by trucks carrying all categories of goods, to transit the border, both northbound and southbound.
- Average hours taken by trucks in each of the categories (single line/break-bulk, multiple line/consolidated, refrigerated, tankers and containerized) to transit the border, both northbound and southbound.
- Allocation of delays to the different authorities, drivers, agents and transporters.
- Effect of commodities on transit times.
- Monitoring sample as a percentage of total truck traffic count, transit time of day and the percentage of pre- and border-clearances.
- Transporter representation by country.

Findings

The procedures for heavy goods vehicles at Chirundu are shown below. These procedures have an important influence on transit flows through the border post.

Table 3. Procedures for northbound heavy vehicle traffic

NORTHBOUND	SOUTHBOUND
Zimbabwe	
Driver finds parking for truck on main road	Driver parks truck in truck parking area
Driver hands in documents for load to clearing agent	Driver hands in documents for load to clearing agent
Driver clears immigration and gets a gate pass	Driver clears immigration and gets a gate pass
Clearing agent checks documents for accuracy and correct supporting documentation prior to submission to customs for clearance	Customs issues Release Order and documents returned to agent for truck to be released
Customs issues Release Order and documents returned to agent for truck to be released and gate pass stamped	Driver pays carbon tax, road user charges, insurance and any other fees
Truck moves through border post after being weighed and crosses bridge	Gate pass stamped by customs
	Truck gets weighed and proceeds to Harare
Zambia	
Driver finds parking beyond the border post	Driver finds parking before the border post
Driver hands in documents for load to clearing agent	Driver hands in documents for load to clearing agent
Driver clears immigration and gets a gate pass	Driver clears immigration and gets a gate pass
Clearing agent checks documents for accuracy and correct supporting documentation prior to submission to customs for clearance	Customs issues Release Order and documents returned to agent for truck to be released and gate pass stamped
Duties paid by agent	Truck proceeds through border post, across the bridge
Customs issues Release Order and documents returned to agent for truck to be released	
Driver pays Zambian road user charge and insurance fee	
Gate pass stamped by customs	
Trucks proceeds to Lusaka	

Trends in traffic flow

The Chirundu border post is often congested, with more than 50 trucks parked on each side of the approach roads in both directions. Space between the border posts is very limited, and trucks that have been cleared through Customs are often held back for hours due to traffic gridlocks. As the bridge is no longer a contributory factor, the delays can be attributed to control operations at the two border facilities.

Table 4. Traffic volumes through the Chirundu border post

Month	Northbound	Southbound
November 2006	3641	1717
December 2006	3467	2430
January 2007	3330	3305
February 2007	3250	3182
March 2007	3775	3973
April 2007	3775	3802
May 2007	3658	3082
June 2007	4159	3097
July 2007	3251	2948
August 2007	3676	3395
September 2007	3770	3561
Average	*3614*	*3138*
Daily average	*120*	*105*

Source: TLC Monitoring Reports 1, 2, 3

Approximately 1.1 percent of the 120 northbound trucks per day were monitored and 1.3 percent of the 105 southbound trucks. This compared with the less than 1 percent of the trucks monitored at Beitbridge. However, since the sampling at Chirundu was done randomly on all commodities and transporters, it was considered more representative of the traffic through the border.

Nationality of trucks passing through Chirundu

Data on the nationality of trucks going through the border post were captured. Almost 80 percent of the monitored trucks are registered in South Africa and Zimbabwe, each of them making an almost equal contribution. However, South African transporters dominate the refrigerated and tanker markets while Zimbabwean truckers have a larger presence in the break-

bulk or consolidated freight markets. This could be explained by the capital requirements for refrigerated trucks and the stricter requirements for licensing of tankers in South Africa.

Figure 2. Nationalities of trucks passing through Chirundu, September 2007

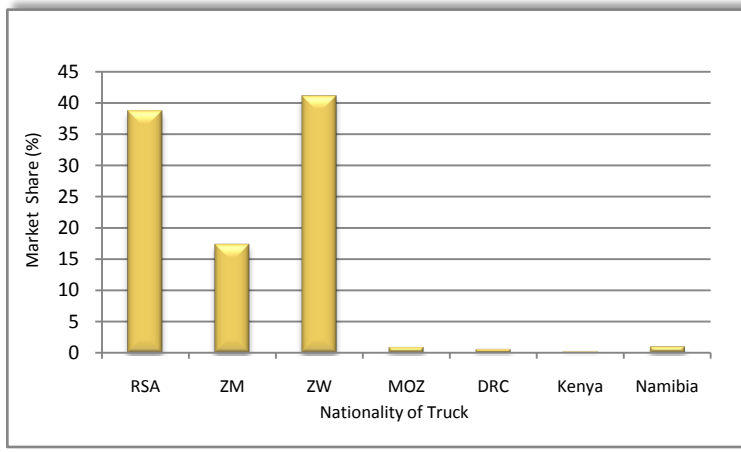
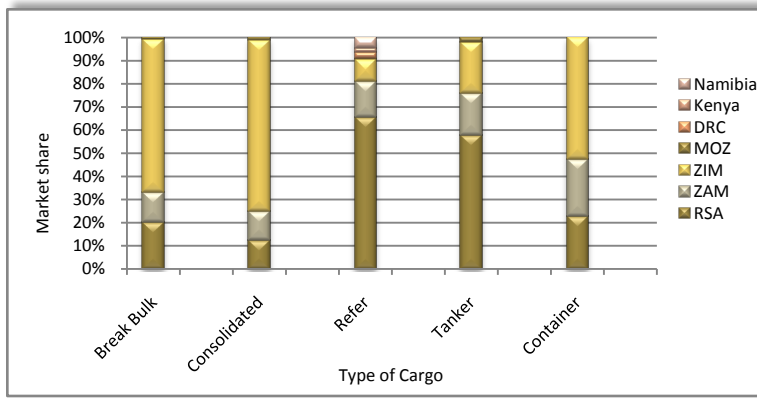


Figure 3. Share of types of traffic passing through Chirundu, September 2007



Border transit times

Long border crossing times are often cited as one of the main impediments to the competitiveness of African industry. However, for the most part, there are no recent data to quantify the magnitude of the delays that are experienced. The monitoring exercise is producing some indicative data on their size and the contributing factors.

The data shows several significant patterns:

a) The **border transit times** faced by the northbound traffic from Zimbabwe to Zambia are larger than those for the southbound traffic in reverse direction. While border transit time for the different categories have fluctuated, the average transit times for north and southbound trucks have remained consistent over the monitoring period and reflect as 38 hours and 14 hours respectively (cost estimates for such delays are still to be made). Part of the explanation of the difference lies in the fact that duty has to be paid for commodities entering Zambia, whereas those going southwards are in transit through Zimbabwe and no duty has to be paid. The formalities are therefore faster going south.

b) **Refrigerated trucks and tankers** are generally processed faster than break-bulk, consolidated or container traffic. Average transit times for these categories are 28 or 29 hours northbound compared to other categories that average 40 hours and upwards. However this needs to be brought down considerably and in line with Beitbridge where these loads transit in less than 10 hours.

c) The **customs authorities** of the two countries account for more than **sixty percent of the total** border transit time at Chirundu. Zambia Revenue Authority on its own accounts for more than half the border time for the northbound traffic and more than a third of the time for the southbound traffic (See Annex).

d) Traffic can be delayed for long periods while awaiting **payment of duties**. This only affects the northbound traffic, in particular consolidated loads, containerized and sometimes break-bulk loads, tankers/refrigerated duties being usually settled in advance as they are considered to be high priority loads.

Figure 4. Transit times for all categories northbound, November 2006 to September 2007

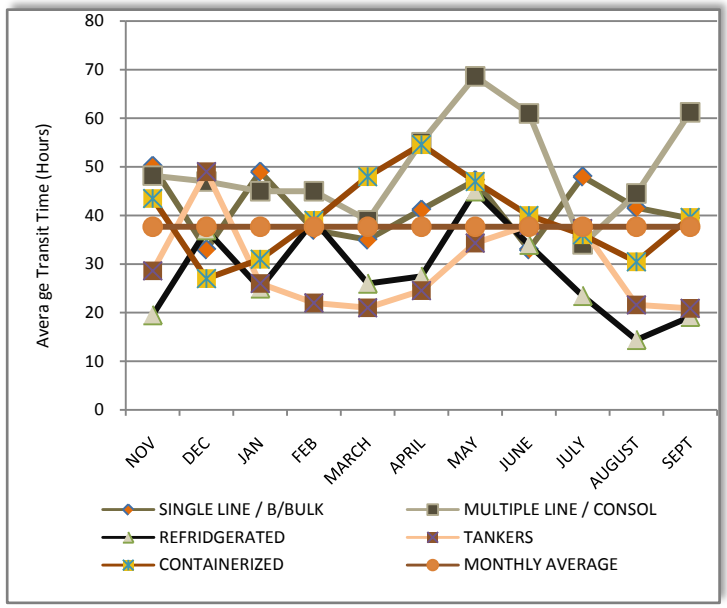


Figure 5. Transit times for all categories southbound, November 2006 to September 2007

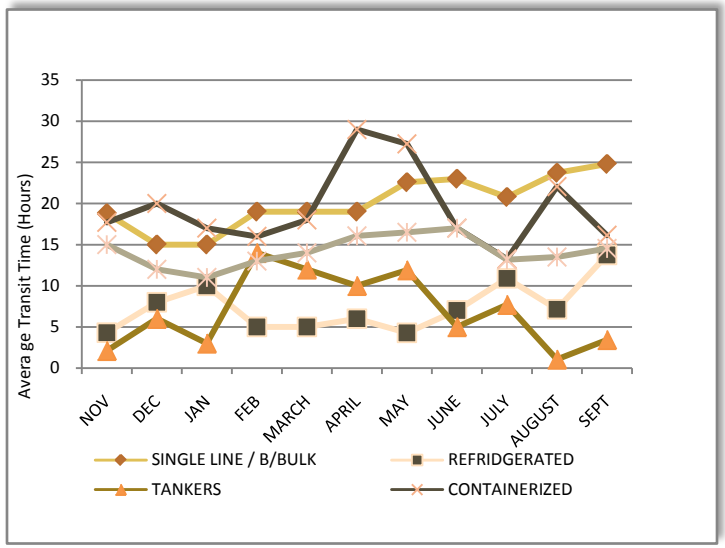


Figure 6. Contribution of different agencies to delays on the northbound traffic

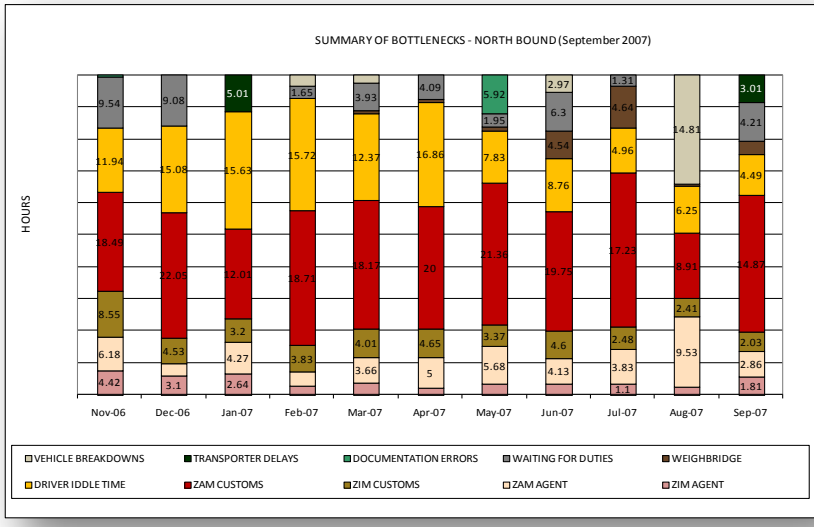
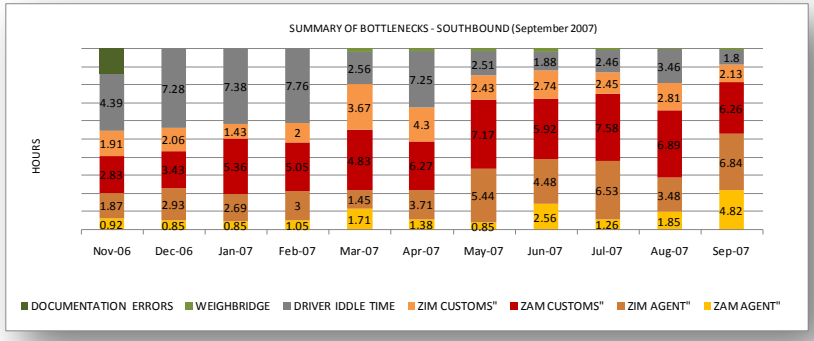


Figure 7. Contribution of different agencies to delays on southbound traffic



On average, it took 39 hours for a truck to transit northbound through Chirundu and 14 hours southbound. This compared with 34 hours and 11 hours respectively for Beitbridge. The RFA Vehicle Cost Schedule for April 2008, gives the standing cost for a secondhand truck and flat deck semi-trailer combination as US$265 per day, the equivalent standing cost for a modern truck and tanker interlink combination is US$524 per day. Estimating that 75 percent of the trucks transiting Chirundu are secondhand

and noting that on average 225 trucks transit the border in a day, the daily cost for trucks standing at the border is the US$84656 (225 x .75 x 323 + 225 x .25 x 536). This equates to US$31 million per annum.

The number of trucks transiting Beitbridge has declined in recent years, but the standing cost will be much the same. It means that the total cost of trucks standing at both Beitbridge and Chirundu is over US$60 million per annum. Add to this the cost of standing at other borders on the North-South corridor (Groblersbrug/Martins Drift, Kazungula, Nyamapanda, Zobue/Mwanza, Kasumbalesa) and the figure must be over US$100 million per annum.

Weighbridges

It is apparent from the data collected that the weighbridges have been taking up very little or no time during the border crossing process, this is mainly because the weighbridges on the Zimbabwe side have been under construction and where only officially commissioned on March 1st. However during the months of June, July and August the northbound traffic experienced some delays, but this was largely due to trucks crossing in the late afternoon and only being able to transit the weighbridge the following day due to the border closing at 18h00. There are two weighbridges, on the Zimbabwe side for both north and southbound traffic and situated opposite each other using one control room. The northbound traffic is weighed on entering the Customs yard, while the southbound traffic is weighed on departure before leaving the Customs yard. Zimbabwe is therefore basically controlling axle loads entering Zambia.

Commodity monitoring

Initially, information on commodities was captured in the monitoring process, but the data were not utilized. Subsequently, reports were generated on the types of commodities passing both north and south through Chirundu. The data were classified using the HS (Harmonized System) codes, an internationally recognized system used by the World Customs Organization and member countries, which allows comparison with customs trade statistics. The assessment of transit times of different commodities through the border post would yield information on the effect if any, on transit times.

Based on the analysis, the main commodities passing through this border post northbound are a mixed bag of goods with volumes being dominated by commodities like *animal/vegetable* products, *mineral/chemical* products, as well as *miscellaneous* (mostly made up of consolidated loads) playing a major role, while the balance is made up from *stone* (building material or cement), *machinery/electrical* and *rubber/plastics* products. While southbound commodities are clearly dominated by *vegetable* products and *foodstuffs*, with empty returns, mainly due to tankers returning south (RSA) after delivering fuel/solvents, etc. in Zambia and unable to get return loads, playing a major role. The analysis showed that one category of commodity faces considerable delays, "stone" (cement) on northbound loads, as it spends an average of 65 hours, followed by "metals" (50 hours). The two commodities are way above the average of 38 hours for the northbound traffic. FESARTA has previously reported cement along with fertilizer were cited for smuggling and this could be a contributing factor for the high transit times on these commodities.

Figure 8. Commodities northbound (September 2007)

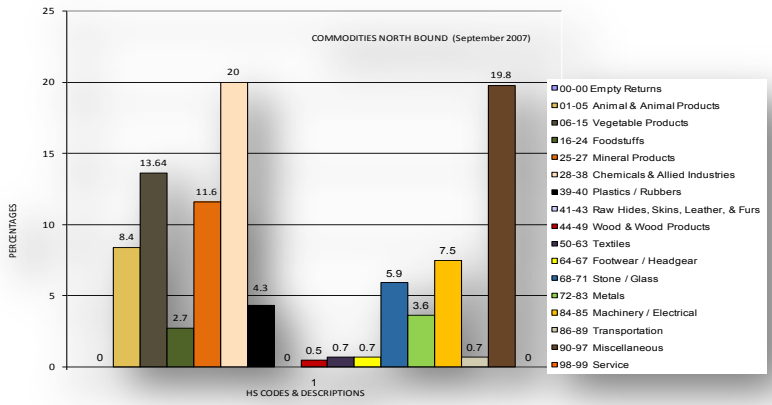


Figure 9. Commodities southbound (September 2007)

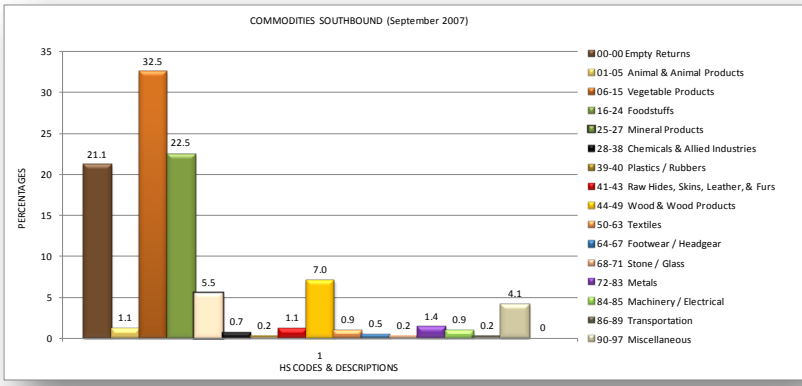


Figure 10. Northbound transit times per commodity (September 2007)

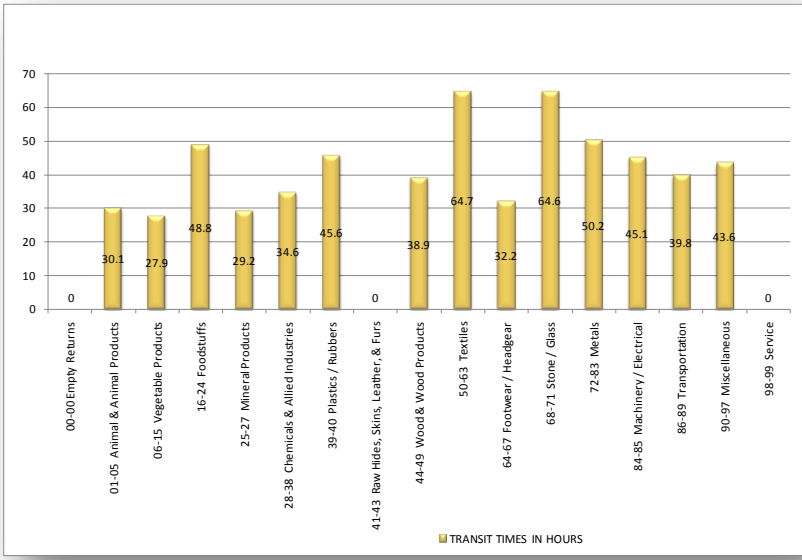


Table 5. Number of loads surveyed on northbound per code (September 2007)

00-00	01-05	06-15	16-24	25-27	28-38	39-40	41-43	44-49
00	37	60	12	51	88	19	00	38.9
50-63	64-67	68-71	72-83	84-85	86-89	90-97	98-99	
3	3	26	16	32	3	87	00	

Figure 11. Southbound transit times per commodity (September 2007)

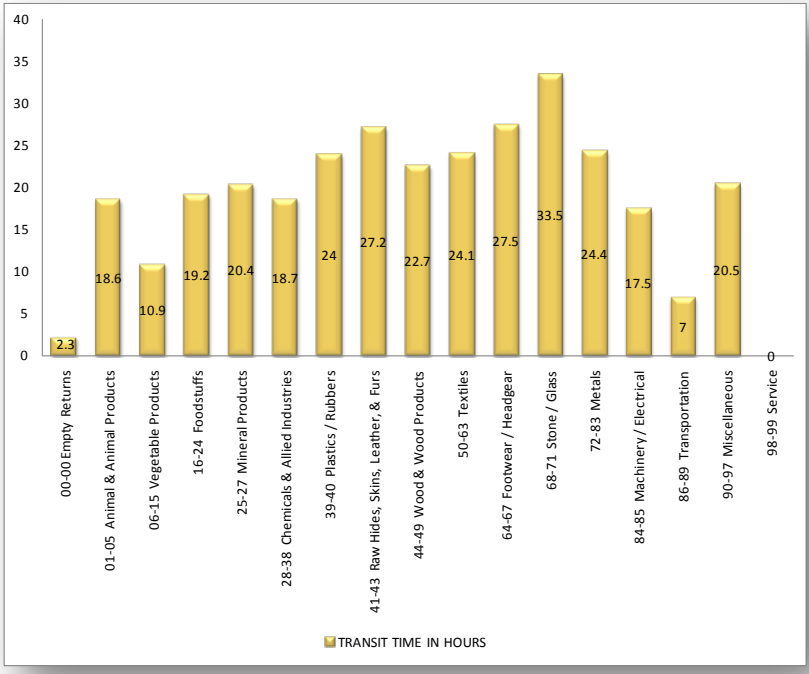


Table 6. Number of loads surveyed on southbound per code (September 2007)

00-00	01-05	06-15	16-24	25-27	28-38	39-40	41-43	44-49
93	5	143	99	24	3	1	5	31
50-63	64-67	68-71	72-83	84-85	86-89	90-97	98-99	
4	2	1	6	4	1	18	00	

Comparison with Beitbridge

As argued above, the economic problems in Zimbabwe have resulted in a decline in imports to and exports from that country. Zimbabwe's main trading partner being South Africa, it significantly affected the number of trucks entering and exiting Zimbabwe at Beitbridge during the period of the two projects. Whereas the number of trucks transiting the border used to be upwards of 300 (for both directions), during the period of the Beitbridge monitoring project in 2005-2006 it only averaged 250.

The Customs authorities at the border posts generate their own records of the number of vehicles passing through each border. For Chirundu, a com-

parison was made of the figures monitored and the number of trucks passing though, based on their records. The figures were found to differ from those given by ZIMRA. The monitoring project produced an average daily figure of 225 trucks, whereas ZIMRA gave 251 over the same period. It is possible that ZIMRA included smaller trucks in its listing, whereas the project only listed 6- and 7-axle combinations. Nevertheless, the figures showed that Chirundu is presently as busy as Beitbridge.

Table 7. Heavy trucks volumes through Beitbridge and Chirundu

	Beitbridge		Chirundu			
Month	Northbound	Southbound	Northbound		Southbound	
			TLC	ZIMRA	TLC	ZIMRA
Sept 05	3,010	3,635				
Oct 05	4,010	506				
Nov 05	1,677	5,767				
Dec 05	1,422	4,113				
Jan 06	2,478	4,815				
Feb 06	3,034	4,300				
Mar 06	2,780	5,827				
Apr 06	2,948	3,752				
May 06	3,832	5,236				
Jun 06	1,977	4,775				
Jul 06-Oct 06	No monitoring					
Nov 06			3,641	3,685	1,717	3,348
Dec 06			3,467	3,490	2,430	3,865
Jan 07			3,330	3,588	3,305	4,080
Feb 07			3,250	3,237	3,182	3,444
Mar 07			3,775	2,218	3,973	3,899
Apr 07			3,775	3,826	3,802	3,782
May 07			3,658	3,608	3,082	4,036
Jun 07			4,159	3,756	3,097	4,341
July 07			3,251	4,251	2,948	4,196
Aug 07			3,676	3,930	3,395	4,269
Sept 07			3,770	3,959	3,138	4,009
Average	**2,719**	**4,773**	**3,614**	**3,595**	**3,138**	**3,934**
Daily average	**91**	**159**	**120**	**120**	**105**	**131**
Daily average	**250**		**225** (TLC)		**251** (ZIMRA)	
% age TLC sampled	**1.3**	**0.6**	**1.1**		**1.3**	

Constraints

The tasks performed by Customs staff working at a border post are not always enjoyable and rewarding. The conditions can at times be unpleasant; often being at low altitude at river crossings where ambient temperatures are high and air conditioning is either not installed or not working. Travelers and clearing agents are under pressure to get through the borders as quickly as possible, with as little inconvenience as possible, and are therefore often curt and unfriendly with the authorities. There is also potential suspicion between the parties and this does not make the transactions any easier. This job image pervades the borders and influences the personnel at head offices.

It follows that the staff are mainly concerned with getting through the day with as little difficulty as possible, and not be concerned with how the other sections of the border are working and whether the traveler or the trucks are getting through the border quickly and efficiently. They are concerned mainly with their own jobs and authorities, making sure their controls are in place. As a result, procedures at a border post are often not conducive to the most efficient way of transiting the border. Trucks are made to park a long way from customs and other authorities. Drivers are made to walk long distances to get clearances. They are made to stand in long queues. Entries of goods and vehicles are duplicated; to suit the different authorities. There is inadequate communication between the authorities on the two sides of a border, leading to confusion as to what should happen. Not all is doom and gloom though, since the concept of trade facilitation is slowly infiltrating head offices and even some borders. At Beitbridge, for example, there is a regular *Inter-Border Meeting*, at which authorities and private sector stakeholders are encouraged to table their issues and have them debated and hopefully resolved. Chirundu does not have such a process in place.

Walking distances at border posts

As with many border posts, it is not simply the number of processes that a driver, the truck and the load must go through. It is the manner in which they are carried out. For example, on the Zimbabwe side where once a driver finds parking on the main road (this may be some kilometers away from the border post), he then has to walk to the clearing agents' offices, which are also some distance away from the border post. Not only does it take time to cover the distances, but drivers are as a result not motivated to

do all this walking in as short a time as possible. Similarly, on the Zambian side, the driver might only find parking on some side of the road some distance away from the border post. Furthermore, the customs facilities are not close to the border posts and these distances may have to be walked several times in a day.

Lack of pre-clearance

Pre-clearance procedures can save considerable time at a border post, especially if duties are to be paid on the goods. Most customs authorities now allow and even encourage pre-clearance. Up until recently, ZRA did not allow pre-clearance and trucks had to be physically present before the documents would be attended to. During the period of the project however, ZRA began to allow reputable transporters and agents to pre-clear. Unfortunately, it is not always clear what is allowed and in fact, what actually happens at a border. It can happen that both countries allow pre-clearance, but that the importing country will not attend to the documents until they have been stamped by the exporting country.

Zambian infrastructure

Whilst the new Zimbabwe facility had been in operation for some months, the Zambian equivalent was still under construction and a long way from complete. It meant that clearance for immigration, customs and other authorities, had to take place in facilities that were constructed many years ago and were designed to cater for probably one tenth of the traffic. Added to this was that construction space, equipment, vehicles, workers, etc. took some of the very limited space available. All of this did not motivate the staff. Nor could head office put more staff into limited office space.

Zimbabwe clearing agents facilities

When Zimbabwe Public Works constructed the new freight facility at the border, they did not see fit to include offices for the clearing agents in the control area. As a result, agents have to be accommodated in facilities that are not up to standard and are more than a kilometer from the border post. Telephone and electricity supplies are very irregular to the agents' building. It means that agents have to commute long distances and this includes "runners" having to cover these distances by foot.

Connectivity

Telephone connectivity to both border posts is not good and furthermore, the connectivity between the two border posts is poor. Much of this is being done by cellular phone, though the reception is only available from certain position. Even electricity connectivity is not always reliable, particularly on the Zimbabwean side. Of course, it should be noted that connectivity problems are not peculiar to Chirundu. By the very nature of such borders in the region, they are at the extremities of a country's electricity and telephone networks and so high standards can normally not be expected. Furthermore, trade facilitation has only become important in the recent years and the borders have not yet received the importance they deserve.

Truck parking facilities

ZIMBABWE. Something did not come out right with the planning of the new Zimbabwean freight facility, since most of the trucks have to park on the main road. They may not enter the border post control area until their documents are cleared or they are required to be inspected. It means on a busy day, the queue can stretch back kilometers towards Harare. This further hampers the drivers and agents from communicating effectively and moving documents efficiently.

Waiting trucks at Chirundu border post in Zimbabwe

Waiting trucks at Chirundu border post in Zambia

ZAMBIA. This situation can be described as a nightmare! Like on the Zimbabwean side, there are limited facilities for trucks to park in. However, unlike in Zimbabwe, there is the small town of Chirundu, with some shops, other buildings and dirt roads. To be close to customs and the border post, the drivers park along every little dirt road and parking space. It results in chaos, especially in rainy weather. The new freight facility was almost completed at the time of the project and, when completed, will provide more

parking for trucks. However, this parking is not sufficient and trucks will continue to be spread throughout the town. The communication between agents and drivers is therefore clearly unsatisfactory.

Chirundu commercial freight building under construction in Zambia

New Chirundu parking area in Zambia

Future prospects

Zambia and DRC growth

Zambia and the DRC are both experiencing good economic growth, particularly in the mining sector, which influences the traffic along the North-South corridor and particularly in Chirundu. Thus, much of the traffic through Beitbridge is transiting to Zambia and DRC.

Zimbabwe

As has been stated, the economic slow-down in Zimbabwe has resulted in a lessening of imports to and exports from that country. As a result, the number of trucks transiting the Beitbridge border (Zimbabwe exports and imports are mainly through Beitbridge), has reduced from up to 400 trucks per day to around 250 per day. The trend will go positively upwards, probably within a year, when Zimbabwe once again plays an important economic role in the region.

Rail

Rail still fails to meet its obligations to transport all of the bulk products over long distances. For this reason, around 80% of all goods are moved by road. There is no reason for this trend to change in the near future.

Dar es Salaam corridor

The Dar es Salaam corridor has not performed to expectations. Both the TAZARA railway and the TANZAM highway are experiencing severe problems. The railway has always underperformed. Traffic through the TANZAM border post at Nakonde/Tunduma has grown tremendously over the years, but infrastructure, staffing and procedures have not kept pace with this growth. Hence it is experiencing serious delays. The TANZAM route has also bad road stretches and experiences severe delays due to roadblocks and weighbridges towards Dar es Salaam. Finally, Dar es Salaam port is seriously congested and causing ship turnaround times of up to three weeks. Overall, it means that this corridor, even though over 500 kilometers shorter than the North-South corridor to the port from the mines, is not the preferred import/export route. The situation is not likely to improve in the short term, even though the Dar Corridor Committee is strengthening its efforts to improve it.

Kazungula project

The project to replace the Kazungula ferry with a bridge and build three new border posts, is proceeding slowly and is unlikely to be completed within the next two years. Once the bridge is opened and the new border posts are in place, traffic will be encouraged to take this improved route through Botswana. It will reduce the flow through Chirundu.

Trans-Caprivi corridor

Namport and the Walvis Bay Corridor Group are making considerable progress with the development of the Trans-Caprivi corridor, including new bridges and upgraded roads. This enhances Walvis Bay as an alternative port to supply Zambia and the DRC. The distance to the mines is however similar to that from Durban. Another consideration is that Walvis Bay is a small port and not adequately served by the major shipping lines. It does however have a benefit for shipping from the West, i.e. the USA and Europe. This is negated slightly by the increased trade between Africa and the East, particularly China.

Summary

Therefore, the suggested overall trend is:

- Traffic through Chirundu will increase steadily with time; probably at a rate of 5 percent per annum or an increase of around 3 trucks per day. The increase will be more dramatic when Zimbabwe comes on stream in a year, but then get back to a normal increase when the Kazungula project is completed.
- Starting within a year when Zimbabwe once again plays an important economic role, the traffic flow through Chirundu will increase strongly.
- When the Kazungula project is completed in two years, traffic through Chirundu will decrease markedly.
- Walvis Bay will take an increasing amount of traffic away from the other routes.
- The one-stop border at Chirundu will boost the corridor.

Likely Impact of a One-Stop Border Post

The introduction of one-stop operations at Chirundu is imminent and this step forward will reduce delays through the border and encourage importers and exporters to use this route. It is, however, difficult to predict exactly what the reduction in time will be.

One-stop border post

Justification for a one-stop border post

Traditionally, two border posts are on either side of a border between two countries. A traveler or truck must go through Customs, immigration and other formalities at each border post. In the case of trucks, this can mean inspection of goods twice, including the offloading of trucks or the destuffing of containers. The benefits of a one-stop border are many:

- The staff of an authority (e.g. Customs) of both countries are stationed in one set of offices and on one side of the border.
- The driver of the truck, or the traveler, is attended to by such an authority of both countries in one place.
- In the case of customs, the vehicle and its load are inspected by the authorities of both countries, one after the other.
- The documents for the goods, whilst possibly being entered on two sets of documents, are nevertheless processed in one set of offices.
- The truck only needs to queue once, on one side of the border.

It is therefore self-evident that a one-stop border must save on processes and therefore delays.

Progress on the Chirundu pilot

At the REC-TCC meeting in Nairobi in 2006, it was decided that Chirundu be the pilot one-stop border for the Southern African region. It was also agreed between SADC and COMESA, that COMESA be the leader for the process. Chirundu was chosen over Beitbridge for the following reasons.

- Some work towards a one-stop border had been done at Chirundu.
- The new facilities being erected at Chirundu would be more suitable for transformation to a one-stop.
- Beitbridge would be far more difficult to convert to a one-stop.
- Chirundu is close to Lusaka, where the headquarters of COMESA are located.

At the time of the project, two meetings of stakeholders had been held.

Table 8. Procedures for northbound heavy vehicle traffic

EXISTING TWO BORDER POSTS	PROPOSED ONE-STOP BORDER
Zimbabwe	
Driver finds parking for truck on main road	
Driver hands in documents for load to clearing agent	
Driver clears immigration and gets a gate pass	
Clearing agent checks documents for accuracy and correct supporting documentation prior to submission to customs for clearance	
Customs issues Release Order and documents returned to agent for truck to be released and gate pass stamped	
Truck moves through border post after being weighed and crosses bridge	After being weighed, truck bypasses Zimbabwe border post and crosses bridge
Zambia	
Driver finds parking for truck beyond the border post	Driver parks in truck parking area
Driver hands in documents for load to clearing agent	Driver hands in documents for load to clearing agent/s
Driver clears immigration and gets a gate pass	Driver clears both immigration authorities and gets gate pass
Clearing agent checks documents for accuracy and correct supporting documentation prior to submission to customs for clearance	Clearing agent/s checks documents for accuracy and correct supporting documentation prior to submission to both customs authorities for clearance
Duties paid by agent	Duties paid by agent/s
Customs issues Release Order and documents returned to agent for truck to be released	Both customs authorities issue Release Orders and documents returned to agent/s for truck to be released
Driver pays Zambian road user charge and insurance fee	Driver pays Zambian road user charge, insurance fee and any other fees
Gate pass stamped by customs	Gate pass stamped by both customs authorities
Trucks proceeds to Lusaka	Trucks proceeds to Lusaka

A significant benefit of the one-stop border post will be that the truck only has to find parking once and the driver will not have to walk long distances.

Table 9. Procedures for southbound heavy vehicle traffic

EXISTING TWO BORDER POSTS	PROPOSED ONE-STOP BORDER
Zimbabwe	
Driver parks truck in truck parking area	Driver parks truck in truck parking area
Driver hands in documents for load to clearing agent	Driver hands in documents for load to clearing agent/s
Driver clears immigration and gets a gate pass	Driver clears both immigration authorities and gets a gate pass
Customs issues Release Order and documents returned to agent for truck to be released	Both customs authorities issue Release Orders and documents returned to agent/s for truck to be released
Driver pays carbon tax, road user charges, insurance and any other fees	Driver pays carbon tax, road user charges, insurance fee and any other fees
Gate pass stamped by customs	Gate pass stamped by both customs authorities
Truck gets weighed and proceeds to Harare	Truck gets weighed and proceeds to Harare
Zambia	
Driver finds parking before border post	Driver bypasses Zambian border post
Driver hands in documents for load to clearing agent	
Driver clears immigration and gets a gate pass	
Customs issues Release Order and documents returned to agent for truck to be released and gate pass stamped	
Truck proceeds through border post, across the bridge	

Indicators for one-stop operations

Whilst the basic data will be the same for a one-stop border post, the data for analysis will be much reduced:

- Data for analysis for a one-stop border, northbound
- Weighbridge
- Arrival at border post
- Documents received by Zimbabwean and Zambian agents
- Documents into Zimbabwe customs
- Documents into Zambia customs
- Documents out of Zimbabwean customs
- Documents out of Zambian customs
- Released by Agent
- Left border post

Lessons and Recommendations

Lessons on choke monitoring

Choke or corridor monitoring

Choke and corridor monitoring are complementary and have various objectives. Choke monitoring is useful at the project level, but at a higher cost[5]. It should therefore be used when there is a major change taking place along a corridor. This could be conversion to a one-stop (e.g. Chirundu), the building of a bridge (e.g. Kazungula), or the upgrading of a section of road (e.g. Chirundu escarpment). The monitoring should be done before the change and then after the change, once the effects of the change have settled down to a stable pattern.

Corridor monitoring, or observatories, should be permanently in place on all major corridors and are more useful for advocacy to authorities on the importance of trade facilitation. Such monitoring needs to build on information gathered from focal points, such as Customs, weighbridges, and through the "trip sheet" system used by many transport operators.

It is worth noting that financially sustainable corridor management institutions must be in place on all the major corridors, so that the observatory process, including choke monitoring, can be adequately managed.

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[5] Choke monitoring may require ideally an office and a staff member on both sides of the border. Either two persons are required for the two border posts, or one person has to do significant traveling; sometimes over long distances (e.g. Zobue (Mozambique) and Mwanza (Malawi)). For best results, it is necessary to have two persons doing the monitoring. Each person can then interact more effectively with the different authorities on his/her side of the border and so obtain the best information. It should be noted that information is not just an entry in a register, but a person's perception on how things are working and what should be done to improve them.

RFID (Radio-frequency identification) merely identifies delays

This recently introduced electronic form of monitoring, whereby handheld or fixed scanners are used to identify and track goods along corridors, may well be the most common method of carrying out observatories in the future. The electronics are contained within the seals used on ISO containers.

However, the system could not be used for choke monitoring, which requires personnel intervention to identify and detail the reasons for the delays along the corridors.

Project constraints

For the project contractor to employ staff at the border, he had to be registered in the country where the employment took place. Under the prevailing circumstances, it was more practical for the contractor to register his company in Zambia (easier regulations, Chirundu closer to Lusaka than to Harare…). It meant that the staff member employed was based in Zambia and the contractor's office was also in that country. Capturing data was therefore relatively simple there, but not so in Zimbabwe. This was because it was not possible for the projects staff to cross the border by foot several times each day, so as to track every truck through the two border posts. Tracking 80 trucks in a month would have meant crossing the border numerous times each day, in both directions. For this reason, to capture the data on the Zimbabwean side, the consultant did not communicate as frequently with ZIMRA but instead used the services of clearing agents. He could do this two to three times a week. One of the results of this one-sided process was that the statistics of the number of trucks transiting the border, as determined by the consultant through the agents, was different to that given by ZIMRA.

Recommendation on border procedures

Pre-clearance

Some customs authorities are silent on the availability of pre-clearance. The process of pre-clearance must be marketed by all customs authorities and be encouraged at all borders. In addition, the freight forwarding industry and the trucking industry, must create awareness in their membership that pre-clearance is to be encouraged and that individual agents and transporters must lobby their clients to use pre-clearance.

Trade facilitation at borders

The concept of trade facilitation needs to be properly understood by all authorities through workshops and seminars and the concept must then be instilled in the staff at all borders. In the case of Chirundu, there needs to be monthly Inter-Border meetings of all public and private stakeholders. The minutes of these meetings must be made available to all interested parties. This may show donors and other stakeholders that the authorities at the borders are serious about improving efficiencies and would welcome interventions to improve matters.

One-stop operations

Whilst the process towards the one-stop border at Chirundu is moving at a steady pace, it is clear that insufficient attention is being given to the project by regional authorities. As a result, obstacles to the process become apparent, which could otherwise be avoided.

This move towards one-stop is well documented in the region, but it is the first time that something is actually happening. New ground is being covered and obstacles never envisaged are appearing. One such obstacle is that the authorities have never actually experienced working in another country, side-by-side with their counterparts. This new experience is creating uncertainty in the minds of some of the staff and so they are reluctant to embrace the concept of a one-stop border post. There is a need for authorities to publicize the process in the media.

Accreditation and the authorized economic operator

Accreditation of transporters and clearing agents is not a new concept. It has been documented for some years and is being practiced by SARS in South Africa. As yet, an authorized economic operator (AEO) is still a new international term and has not yet been embraced.

However, accredited organizations are not receiving any benefits for their accreditation. Although they have to comply with certain requirements, e.g. be electronically linked to SARS, in most cases, they still face the same delays at the borders.

Accredited transporters need to benefit from special dispensations, such as:

- quicker transit through the borders and this requires fast transit lanes and better application of pre-clearance
- only have to weigh at point of departure and not all along the route.

It is hoped that with the infrastructure upgrades at the Chirundu border posts, trucks of accredited transporters will be able to use the proposed "fast lanes".

Further monitoring

Now that monitoring has been carried out at both Beitbridge and Chirundu border posts and the outcomes studied, it is apparent that there is a place for choke monitoring within a corridor. The details and causes of the delays at Chirundu are now fairly well documented. Once the border converts to a one-stop, a second process of choke monitoring will identify and detail where the benefits lie and the effect on delays that the benefits will have. The disadvantage of choke monitoring is its cost. Because it requires full-time attendance by monitoring personnel and therefore some sort of office and accommodation infrastructure, its costing is much higher than corridor monitoring.

Annex

Summary of bottlenecks – Northbound												
Report status	Interim report		Interim report 2			Interim report 3			Draft report		Final report	AVERAGE HOURS ACCUMULA-TIVE
ALLOCATION	AVERAGE HOURS - MONTHLY											
	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	
ZIM agent	4.4	3.1	2.6	1.1	1.6	1.0	1.5	1.7	1.1	0.9	1.8	1.9
ZAM agent	6.2	2.2	4.3	1.9	3.7	5.0	5.7	4.1	3.8	9.5	2.9	4.5
ZIM customs	8.6	4.5	3.2	3.8	4.0	4.7	3.4	4.6	2.5	2.4	2.0	4.0
ZAM customs	18.5	22.1	12.0	18.7	18.2	20.0	21.4	19.8	17.2	8.9	14.9	17.4
Driver idle time	11.9	15.1	15.6	15.7	12.4	16.9	7.8	8.8	5.0	6.3	4.5	10.9
Weighbridge	0.0	0.0	0.0	0.0	0.4	0.5	0.7	4.5	4.6	0.3	1.5	1.1
Waiting for duties	9.5	9.1	0.0	1.7	3.9	4.1	2.0	6.3	1.3	0.0	4.2	3.8
Documentation errors	0.5	0.0	0.0	0.0	0.0	0.0	5.9	0.0	0.0	0.0	0.0	0.6
Transporter delays	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.7
Vehicle breakdown	0.0	0.0	0.0	1.7	1.2	0.0	0.0	0.3	0.0	14.8	0.0	1.9

Summary of bottlenecks – Southbound												
Report status	Interim report		Interim report 2			Interim report 3			Draft report		Final report	AVERAGE HOURS ACCUMULA-TIVE
ALLOCATION	AVERAGE HOURS - MONTHLY											
	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	
ZAM agent	0.9	0.9	0.9	1.1	1.7	1.4	0.9	2.6	1.3	1.9	4.8	1.6
ZIM agent	1.9	2.9	2.7	3.0	1.5	3.7	5.4	4.5	6.5	3.5	6.8	3.9
ZAM customs	2.8	3.4	5.4	5.1	4.8	6.3	7.2	5.9	7.6	6.9	6.3	5.6
ZIM customs	1.9	2.1	1.4	2.0	3.7	4.3	2.4	2.7	2.5	2.8	2.1	2.5
Driver idle time	4.4	7.3	7.4	7.8	2.6	7.3	2.5	1.9	2.5	3.5	1.8	4.4
Weighbridge	0.0	0.0	0.0	0.0	0.3	0.4	0.3	0.3	0.2	0.1	0.2	0.2
Documentation errors	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2

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