



ANNUAL STATE OF CROSS-BORDER OPERATIONS REPORT

MARCH 2022

(ASCBOR COMPLETED DURING 2021/22)

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ACRONYMS

Abbreviation	Meaning
ADA	Austrian Development Agency
AEO	Autorised Economic Operator
ASCBOR	Annual State of Cross-Border Operations Report
AU	African Union
AUC	African Union Commission
AUDA	African Union Development Agency
AUDA-NEPAD	African Union Development Agency New Partnership for Africa's Development
BMA	Border Management Agency
C-BFC	Cross-Border Flow Calculator
CBOCS	Cross-Border Overload Control System
C-BRTA	Cross-Border Road Transport Agency
CCTV	Closed-circuit television
CMC	Corridor Management Committee
CMI	Corridor Management Institution
COMESA	Common Market for Eastern and Southern Africa
CPI	Corridor Performance Indicator
CPMS	Corridor Performance Monitoring System
CSF	Critical Success Factor
CTMS	Corridor Trip Monitoring System
DBSA	Development Bank of Southern Africa
DFI	Development Finance Institution
DOT	Department of Transport
DRTS	Department of Road Transport and Safety
DRC	Democratic Republic of the Congo
EAC	East African Community
ECOWAS	Economic Community of West African States
EIA	Economic Impact Assessment
EU	European Union
FDM	Freight Demand Model
FESARTA	Federation of East and Southern African Transport Associations
GDP	Gross Domestic Product
GVM	Gross Vehicle Mass
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
ICD	Inland Container Depot
ICT	Information and Communications Technology
INTERPOL	The International Criminal Police Organization
IT	Information Technology
JDA	Johannesburg Development Agency
JICA	Japan International Cooperation Agency
JITI	Johannesburg International Transport Interchange
JRMC	Joint Route Management Committee
LAP	Linking Africa Plan
LCM	Logistics Cost Model
LPI	Logistics Performance Index
MCBRTA	Multilateral Cross-Border Road Transport Agreement
M&E	Monitoring and Evaluation
MoU	Memorandum of Understanding
MS	Member State(s)
NAMPORT	Namibia Ports Authority
NSC	North South Corridor

NTB	Non-Tariff Barrier
OCAS	Operator Compliance Accreditation Scheme
OSBP	One Stop Border Post
PAP	Priority Action Plan
PICI	Presidential Infrastructure Champion Initiative
PIDA	Programme for Infrastructure Development Africa
PIDA-PAP 1	Programme for Infrastructure Development Africa Priority Action Plan One
PIDA – PAP 2	Programme for Infrastructure Development Africa Priority Action Plan Two
PPDF	Project Preparation Development Fund
PPP	Public-Private Partnership
PrDP	Professional Driving Permit
REC	Regional Economic Community
RFA	Road Freight Association
RIDMP	Regional Infrastructure Development Master Plan
RISDP	Regional Indicative Strategic Development Plan
RTRN	Regional Trunk Road Network
RUC	Road User Charge
SAD	Single Administrative Document
SADC	Southern African Development Community
SADC-PF	Southern African Development Community Parliamentary Forum
SAPS	South African Police Service
SARDC	Southern African Research and Development Centre
SARS	South African Revenue Service
SMART	Smart, Mobility, Automated, Real-time, Traffic Management
SOE	State-Owned Enterprise
SP	Service Provider
SSA	Sub-Saharan Africa
STAP	Short-term Action Plan
TA	Transaction Advisor
TCC	Traffic Control Centre
TEU	Twenty-foot Equivalent Unit
TFTA	Tripartite Free Trade Area
TKC	Trans Kalahari Corridor
TKCS	Trans Kalahari Corridor Secretariat
TLS	Traffic Light System
ToR	Terms of Reference
TRALAC	Trade Law Centre
TRIPS	Transport Register Information Platform System
TTT	Technical Task Team
TTTFP	Tripartite Transport and Transit Facilitation Programme
TVH	Total Vehicle Hours
TVM	Total Vehicle Mileage
TV	Total Vehicles
UN	United Nations
USD	United States Dollar
VCF	Vehicle Cost Factor
VHCF	Vehicle Hour Cost Factor
VLM	Vehicle Load Management
VLMA	Vehicle Load Management Agreement
VLM MoU	Vehicle Load Management Memorandum of Understanding
PIC	Virtual PIDA Information Centre
WBCG	Walvis Bay Corridor Group
WHO	World Health Organisation

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EXECUTIVE SUMMARY

The ASCBOR is compiled annually by the Cross-Border Road Transport Agency (C-BRTA) to provide information regarding the state of the cross-border road transport industry to national and regional stakeholders which include, Ministries responsible for Trade and Transport, regulatory and law enforcement authorities, Corridor Management Institutions (CMIs) and other corridor structures and institutions involved in trade facilitation. Apart from identifying major constraints that affect the efficiency of road transport corridors in the Southern African Development Community (SADC or the region), the ASCBOR articulates major trade and transport initiatives unfolding in the region that are aimed at addressing corridor constraints.

Transport corridors play an indispensable role in facilitating the movement of goods, people and services in SADC where six countries (Botswana, Zimbabwe, Zambia, Malawi, Lesotho and Swaziland) are land-locked. These countries rely on coastal countries for the greater share of their trade and regional road transport corridors link countries in the interior to fellow African countries and foreign markets through the main ports in South Africa, Mozambique, Angola and Namibia.

Given the strategic importance of transport corridors, SADC adopted a Corridor Development Strategy in 2008 that acknowledges the need for an integrated transport system that can effectively facilitate intra-regional trade, economic growth and stimulate investment opportunities in the region. Although eighteen major transport corridors traverse the SADC region, they are all inundated by several infrastructure impediments that hinder the attainment of strategic goals and objectives set out in regional road transport agreements and other instruments.

Poor regional connectivity is not solely a problem of physical (hard) infrastructure, but also of soft issues, that impacts directly on service delivery, including regulatory red-tape, over regulation, duplicated processes (especially at inland borders) and corrupt practices along road transport corridors where cross-border drivers are liable for various kinds of formal and informal payments at roadblocks and checkpoints.

Cross-border trade and transport challenges are not limited to SADC only but are experienced in all African Regional Economic Communities (RECs). Studies show that, on average, the cost of transport in Africa is around 30 to 40 percent above that of other developing regions that undermines growth prospects in the continent. (<https://unctad.org/press-material/investing-transport-investment-africas-future>).

In response to on-going infrastructure and regulatory challenges affecting commercial cross-border road transport operations in the region, the C-BRTA developed a cost estimation model that assess and quantify the factors that contribute to the high cost of doing business along the North South Corridor (NSC) between Johannesburg and Lusaka. The findings of this model reveal that the total average annual hours spent by a cross-border truck in operation is 6,360 hours over 265 days per annum, costing the operator around R1 071 718,83 per annum to conduct cross-border road transport operations on the NSC. This equates to 17% of the cross-border truck annual operating costs of R6 182 474,50. 60 (C-BRTA. Cost of Doing Business by Cross-Border Road Freight Operators along the North South Corridor. 2021)

Furthermore, the cost-estimation model concludes that the total travel time for a cross-border truck from Johannesburg to Lusaka on the northbound leg of the NSC is 176 hours of which 81% (141,77 hours) of the journey time is spent at government regulatory stoppages (border posts, weighbridges, and at roadblocks). Customs processes takes the lion's share of 77% (136 hours) of total standing time. (C-BRTA. Cost of Doing Business by Cross-Border Road Freight Operators along the North South Corridor. 2021)

On the southbound leg of the NSC, the total travel time for a truck travelling from Lusaka to Johannesburg is approximately 176 hours of which 55% (96,42 hours) of the journey time is spent at government regulatory stoppages per single cross-border truck trip. Customs processes takes up the greatest portion (around 92 hours) of total standing time. (C-BRTA. Cost of doing business by Cross-Border Road Freight Operators along the North South Corridor. 2021)

The lengthy processes associated with clearing goods at border posts, as well as time delays along transport corridors to conduct regulatory checks (e.g. law enforcement inspections) drive transport and logistics costs upwards and increase the cost of doing business in the region. Against this background, infrastructure impediments are cited as a key-contributor to the low level of intra-African trade, which is estimated at around 16%. (Export-Import Bank of India report. 2018).

Further to infrastructure inefficiencies, the COVID-19 pandemic continues to disrupt international value chains. The slow global recovery continues to decrease commodity prices, including raw materials, oil and minerals, the main exports from the SADC region. To bring about change, public-sector stakeholders must implement trade and transport facilitation reforms (e.g. single-window systems and OSPPs) to eliminate corridor constraints. By doing so, it can entice African countries to shift their focus to intra-regional trade and investment to reboot African economies and prepare for a post-pandemic order.

To date, several initiatives have been approved at Continental, Tripartite and Regional level to improve the efficiency of transport corridors. Examples of the said initiatives include:

At Continental level: The Programme for Infrastructure Development and Presidential Infrastructure Champion Initiative;

At Tripartite level: The Tripartite Transport Transit Facilitation Programme and the Multilateral Cross-Border Road Transport Agreement;

At Regional level: The Regional Infrastructure Development Masterplan and the Corridor Trip Monitoring System.

This report identifies several reforms (interventions) aimed to eliminate, or at least reduce infrastructure inefficiencies along regional road transport corridors, once reforms have been implemented. Some reforms are existing/ on-going reforms that are in various stages of the project life-cycle. Since comprehensive corridor development require that MS attend to hard and soft infrastructure inefficiencies in a similar fashion, the 2021/22 ASCBOR categorises reforms under Hard, Technology driven and Soft Infrastructure reforms.

Hard Infrastructure Reforms

- Implement prioritised SADC Regional Infrastructure Development Master Plan projects;
- Establish ranking facilities in SADC MS;
- Establish One Stop Border Posts (OSBPs);
- Establish formal truck stops along regional transport corridors;
- Develop rail infrastructure along regional transport corridors; and

Technology Driven Reforms

- Implement cross-border telematics in cross-border vehicles;
- Implement corridor performance monitoring systems; and
- Transform transport corridors into SMART corridors.

Soft Infrastructure Reforms

- Establish a regional legislature;
- Establish a regional Monitoring & Evaluation body;
- Implement risk-based regulatory systems;
- Establish a regional law enforcement academy;
- Establish single-stop (joint) law enforcement inspections; and
- Develop Funding frameworks at SADC MS level.

The implementation of any of the above reforms will require support from respective governments, regulatory authorities and other role-players in the cross-border value chain. Decisive action will be required to get the private sector on board in funding prioritised infrastructure programmes to ensure they move to implementation.

It is envisaged that the full implementation of the reforms proposed in this report will go a long way towards closing the gaps in current interventions and eradicating long-standing challenges that affect cross-border road transport movements in the SADC region.

1. OVERVIEW OF REPORT

1.1 Introduction and Background

The Annual State of Cross-Border Operations report (ASCBOR) is compiled annually with a view to advise key stakeholders (the Minister of Transport), the Department of Transport (DOT) and other key national and regional stakeholders (e.g. Ministries responsible for trade and transport, regulatory and law enforcement authorities) of challenges and developments which affect the cross-border road transport industry. This report proposes solutions which are recommended for implementation by stakeholders to eliminate, or at least reduce corridor impediments.

Cross-border road transport plays an important role of facilitating regional trade, cross-border services and passenger movement in and between countries in the Southern African Development Community (SADC). Six countries in the region are land-locked, which means they rely on coastal countries to access regional and global markets. From this viewpoint it becomes imperative that the region establishes and maintains an efficient cross-border transport system to reach regional and global markets.

Road transport is the dominant mode of transport in the SADC (and Africa), accounting for over 80% total freight and passenger traffic movements, moving along regional road transport corridors (EXIM Bank. 2018: 9). Road transport corridors are particularly important to landlocked countries in the SADC as they rely on coastal countries for the greater share of their trade.

Despite the significance of the cross-border road transport industry in fostering regional and global trade and in enhancing regional integration, this sector faces several hard and soft infrastructure challenges. Additionally, the cross-border road transport industry is dynamic in nature and therefore subjected to constant changes. Due to changes in the macro and market environments, road transport operator's needs, and challenges evolve at a rapid pace, even faster than the pace at which solutions are found and implemented.

To effect change, regulatory authorities should continuously monitor the state of cross-border road transport operations to identify bottlenecks. Resolving cross-border challenges is a daunting task that requires involvement of several public and private sector stakeholders at local, national and regional levels.

Reality on the ground however indicates that regulatory authorities in MS's are often unable to respond to operator challenges in an urgent and timeous fashion, owing to various reasons that will be discussed in later sections of this report. What is clear is that regulatory authorities should make a paradigm shift in the way they operate to deliver on their mandates if they are to effectively resolve cross-border road transport challenges.

This is the ninth report since the successful completion of the first report in 2014, two that were finalised in 2015 and one report per annum between 2016 and 2020. Previous reports were shared with various public and private sector stakeholders including relevant government departments (e.g. Ministries of Transport), SADC Secretariat, Corridor Management Institutions (Trans Kalahari Corridor Management Secretariat) and cross-border road transport operators.

It is envisaged that by updating national and regional stakeholders with on-going infrastructure developments in the SADC, they will be able to incorporate key elements of regional programmes into the design and implementation of national programmes. Some of the interventions/ reforms recommended in past ASCBOR reports were implemented and some are currently being implemented in the East African Community (EAC), Common Market for Eastern and Southern African States (COMESA) and the SADC.

It is anticipated that the stakeholders will, through adopting a partnership approach, tailor-made the recommendations in this report to suit the specific environment at the time of implementation. By implementing report reforms, all parties will play a critical role towards improving the unimpeded flow of cross-border road transport movements and reducing inefficiencies that increase the cost of doing business for cross-border road transport operators in the SADC.

1.2 Problem statement

The development of this report was informed by the need to provide up to date information and interventions to constraints (also referred to as impediments or challenges) faced by operators in the domestic and regional environments that undermine the efficiency of the cross-border road transport industry. These challenges include:

- **Inadequate road infrastructure** – due to insufficient investment and the absence of road maintenance programmes in some MS, road conditions in the SADC have deteriorated. Currently, missing links along regional road transport corridors and inefficient land borders hinders connectivity and increases distances for cross-border operators and traders;
- **Weak soft infrastructure** – due to stagnation in the regulatory and legislative environments in SADC MS, existing regulatory and legislative frameworks are no longer able to effectively respond to evolving industry needs and expectations;
- **Road blocks** – commercial cross-border road transport vehicles are stopped at various inter and intra country road blocks even where there is no proof that traffic being transported is of a suspicious nature. This is exacerbated by the mushrooming of illegal road blocks in some MS's;
- **Inspection procedures** – delays in the inspection of commercial vehicles, coupled with cumbersome and costly quality inspection procedures result in impediments and increased costs for commercial road transport operators;
- **Outdated and Inappropriate Information and Communications Technology (ICT) systems** – hinder the electronic sharing of information between corridor role-players;
- **Inefficient border posts** – ineffective border management systems, paper-based systems in some MS, on-site execution of customs clearance procedures (instead of pre-clearance), lack of ICT systems for data exchange and repetitive processes and procedures result in lengthy delays for commercial road transport operators at border posts;
- **Customs documentation and administrative procedures** – the non-standardised of customs rules and procedures at several border posts in the SADC result in excessive time delays at border posts and increased costs for cross-border operators;
- **Absence of corridor performance monitoring systems** – along many regional road transport corridors prevent regional decision-makers from identifying bottlenecks and responding to infrastructure constraints urgently;
- **Market access restrictions** – regulatory authorities in several MS still control the supply of transport services (e.g. through permits and the quota system);

- **Multiple Memberships** – several countries in the SADC belong to different Regional Economic Communities (REC). This practice results in administrative and operational constraints, as well as high cost of compliance for cross-border road transport operators;
- **Conflicts and Xenophobic attacks** – clashes along road transport corridors targeted at foreign drivers, and increased corridor criminal activities such as bus robberies are increasingly witnessed along strategic regional roads transport corridors;
- **Uncoordinated implementation of Covid-19 measures** – especially at strategic inland border have resulted in a drastic decline in cross-border road transport movements during 2021.

The cost of transport is directly related to the time taken to complete a journey. Since the challenges listed above materialise in high transport costs, long journey times and poor service delivery, it is imperative that corridor role-players intensify their efforts to find lasting solutions to corridor constraints.

Intervention at the highest political levels is required to approve/ implement solutions that will reduce the said challenges and improve the uninterrupted flow of traffic between MS. Chapter eight of this report provides a list of recommendations (all which aim to address road infrastructure constraints) that will be presented to national and regional decision-makers for consideration /approval.

1.3 Purpose of Report

The purpose of this report is to:

- Update stakeholders on progress achieved with respect to the implementation of interventions (reforms) recommended in previous reports which aim to address on-going infrastructure challenges along strategic regional road transport corridors;
- Present the current state of cross-border operations to key stakeholders by identifying hard and soft infrastructure challenges that impede the seamless flow of cross-border road traffic movements in the SADC;
- Assess the cost of doing business along the NSC from a cross-border road freight perspective;
- Identify and track the progress of developments (on-going and new) implemented at Continental, Tripartite and SADC to resolve corridor constraints;
- Provide statistics on cross-border volumes and values of goods passing through South African commercial border posts within the focus area;
- Report on the state of corridor performance monitoring in the SADC and progress made towards developing online corridor performance monitoring systems;
- Determine and quantify the economic impact of transit time at selected nodes along a section of the Trans Kalahari Corridor (TKC) and incorporate delay time in calculating trade logistics costs for the segment of the TKC that was analysed;
- Propose suitable recommendations (reforms) that will be escalated to relevant stakeholders in the SADC for noting and approval.

1.4 Focus of the Report

The report focuses on **SADC**. This large African REC comprises of 16 MS, with a population of 345 million spread along a land area of 556 781 square kilometres. (<https://www.sadc.int/about-sadc/overview/sadc-facts-figures/>).

Given the size of the region, and land-locked nature of six MS, road transport corridors perform a strategic role in facilitating intra-regional trade and travel. Eighteen (18) transport corridors traverse the region, linking the countries in the interior with seaports in the Western, Southern and Eastern parts of the region (Angola, Namibia, South Africa and Mozambique).

The discussions of this report provide a high-level overview of the current state of road transport corridors than traverse the SADC and challenges experienced along such corridors. The discussions of chapters four (4) and seven (7) however is limited to the NSC and a section of the TKC only.

1.5 Report Methodology

This Report was compiled largely based on information obtained through *qualitative* research methods. A literature review of available materials (obtained mainly through desktop study) was complemented with information obtained:

- Through Corridor assessments;
- Through participation in technical working groups in the region;
- From bilateral and regional committees including Joint Route Management Committee meetings (JRMCM) and Corridor Management Institutions (e.g. Walvis Bay Corridor Group);
- From the SADC Secretariat; and
- From cross-border road transport operators who provided invaluable insight into operational (and often undocumented) constraints experienced by cross-border road transport operators.

The engagements with the above stakeholders assisted the research team of the C-BRTA to identify recommendations (reforms) for improvement that is discussed in detail in Chapter eight of this report.

1.6 Outline and Scope of Report

The report is structured as follows:

- Chapter 1 - outlines the introduction and background of the ASCBOR, problem statement, purpose of the report and gives an update on progress made towards implementing reforms put forward in the 2017, 2018, 2019 and 2020 ASCBOR.
- Chapter 2 - focuses on the current state of the cross-border industry in the SADC with emphasis on operational challenges and bottlenecks experienced by cross-border operators along road transport corridors in the region.
- Chapter 3 - tracks developments unfolding at regional (SADC), Tripartite and continental levels which aim to improve cross-border road transport operations.
- Chapter 4 - assesses the cost of doing business in the SADC from a road freight perspective along the NSC. South African cross-border road transport operators provided invaluable info into compiling this chapter.
- Chapter 5 - provides statistics on trade volumes and values passing through South African commercial border posts with specific attention paid to trade volumes by country and South Africa's trade with SADC MS;
- Chapter 6 - reports on the state of corridor performance monitoring in the SADC, with specific reference to progress made in developing a formal corridor performance monitoring system for the Trans Kalahari Corridor (TKC);

- Chapter 7 - determine and quantify the economic impact of corridor delays at selected nodes along a section of the TKC.
- Chapter 8 - provides a synopsis of study findings and present a list of recommendations that can be considered by decision-making bodies in the SADC to improve corridor efficiency.

1.7 Update on the Implementation of Previous ASCBOR Recommendations

Many of the recommendations to stakeholders in previous ASCBOR reports are now being implemented.

Tables 1 to 5 below indicate the progress achieved in the implementation of the recommendations outlined in the 2016/17, 2017/18, 2018/19, 2019/20 and 2020/21 ASCBORs:

Table 1: Tracking Progress with respect to Implementation of 2016 /17 ASCBOR Reforms

Recommendation	Action Plan	Envisaged impact	Responsibility	Progress as at March 2021
Establish an Independent Regional Body tasked to monitor implementation of regional agreements and relevant regional programmes by MS.	Corridor role-players should establish a Regional Parliament.	<ul style="list-style-type: none"> Improved delivery of regional agreements, commitments and programmes which will lead to improvement in transport efficiency, trade and regional integration; Improved governance, transparency and accountability at MS level. 	<ul style="list-style-type: none"> SADC MS 	<ul style="list-style-type: none"> Discussions on this reform are on-going. The CBRT-RF that was established by the Council of Ministers (in line with SADC Protocol) in November 2017 in Malawi will play a key role towards lobbying for the establishment of a SADC Parliament.
Fast-track the implementation of the Multilateral Cross-Border Road Transport Agreement (MCBRTA).	MS should adopt and implement the MCBRTA.	<p>Implementation of the MCBRTA will lead to:</p> <ul style="list-style-type: none"> The implementation of quality regulation in the Tripartite; Improved transport system performance; Harmonisation of regulatory frameworks; Creation of a single competitive regional road freight market; Improved intra-regional trade and transport flows; Improved decision-making processes due to the availability of real-time data; <p>Sustained economic growth and development.</p>	<ul style="list-style-type: none"> SADC MS. 	<ul style="list-style-type: none"> Baseline Surveys were conducted to determine the status of each country in relation to the MCBRTA requirements and standards. Country consultations led by the Tripartite Programme Office are currently underway. The MCBRTA was approved by the Council of Ministers responsible for transport. Model laws and standards for implementation of the MCBRTA were adopted. Some countries are already reviewing their domestic transport policies/legislations /regulations/systems to align legal frameworks to the MCBRTA and standards.
Transform Prioritised Border Posts into One Stop Border Posts (OSBPs)	MS should implement prioritised OSBP along major road transport corridors in the region.	<p>The implementation of OSBPs will result in:</p> <ul style="list-style-type: none"> Improved border post efficiency Reduction in time spent at border posts; Reduction in total travel time and costs; 	<ul style="list-style-type: none"> SADC MS SADC PPDF 	<ul style="list-style-type: none"> Tunduma/Nakonde border is operating as an OSBP. The Kazungula border post has been operationalised as a OSBP in May 2021. OSBP facilities have been built at the Lebombo/Ressano Garcia border post. This border will be transformed into an OSBP once the legal frameworks have been signed by the

Recommendation	Action Plan	Envisaged impact	Responsibility	Progress as at March 2021
		<ul style="list-style-type: none"> Reduction in the cost of doing business; Improvement in transport and trade turnaround times; Increased economic growth and development in the SADC region. 		<p>governments of Mozambique and South Africa.</p> <ul style="list-style-type: none"> Signing of a MoU by the governments of Botswana and Namibia to establish the Mamuno/Trans-Kalahari OSBP. Zambia and Zimbabwe working on plans to implement more OSBPs
Establish Roadside Stations / Truck stops	Corridor Management Committees should lead the implementation of truck stops along regional road transport corridors.	<p>The implementation of strategically located Truck Stops will:</p> <ul style="list-style-type: none"> Reduce driver fatigue and the risk of accidents; Improve road safety along regional road transport corridors; Boost local economies with a continuous stream of travellers passing through; Improve vehicle and cargo security and safety along regional road transport corridors; Reduce the risk of contracting HIV / AIDS and sexually transmitted infections for drivers. 	<ul style="list-style-type: none"> Corridor Management Committees SADC MS Private sector 	<ul style="list-style-type: none"> Feasibility study into the establishment of truck stops along the Trans Kalahari corridor revealed several suitable locations for truck stop establishment. Engagements with local authorities and relevant Ministries are ongoing. Consultations led by CMI with relevant stakeholders are on-going to promote the truck stop initiative.
Establish Corridor Road Transport Observatories.	Corridor Management Committees with support of MS should implement corridor road transport observatories.	<p>The Implementation of observatories will:</p> <ul style="list-style-type: none"> Enhance the availability of real-time data on traffic flows; Enable evidence-based transport policy making; Improve decision-making by public sector bodies and corridor users; improve the facilitation of trade and transport flows along strategic regional road transport corridors. 	<ul style="list-style-type: none"> Corridor Management Committees SADC MS; Private sector. 	<ul style="list-style-type: none"> Road transport observatories have been developed and implemented along the Northern and Central Transport Corridors in the EAC and is constantly being updated to monitor the performance of several corridors in the Eastern and Southern African regions. SADC Secretariat has implemented an online infrastructure web portal, that displays project information on strategic regional infrastructure projects in all infrastructure sub-fields. Dashboards allows the filtering and visualisation of regional infrastructure projects by sector, countries, current stage and reference plan.

Source: C-BRTA. Annual State of Cross Border Operations Report. 2017, as adapted.

Table 2: Tracking Progress with respect to Implementation of 2017 /18 ASCBOR Reforms

Recommendation	Action Plan	Envisaged impact	Responsibility	Progress as at March 2021
Establish Corridor Performance Monitoring System for the Tripartite	Corridor role-players should participate in developing a corridor performance monitoring tool for the Eastern and Southern African regions	<ul style="list-style-type: none"> • Availability of real-time data on traffic flows; • Evidence based transport policy making by Tripartite governments; • Improved decision-making by public sector bodies and corridor users; • Improved traffic flows along Tripartite corridors; • Increase in intra-REC trade; • Economic growth and development. 	<ul style="list-style-type: none"> • Tripartite MS; • Public sector role-players; • Private sector; • Tripartite Secretariats; • Tripartite Coordination Mechanism and Coordination unit; • Cross-border road transport operators. 	<ul style="list-style-type: none"> • A web-based corridor performance monitoring system that measures border crossing and route trucking time according to various indicators for several corridors in the East and Southern African region, has been developed and is operational. This on-line tool is constantly being upgraded.
Implement the Multilateral Cross-Border Road Transport Agreement	Tripartite countries should implement quality regulation.	<ul style="list-style-type: none"> • Harmonisation of regulations, instruments, systems and standards; • Reduction in the number of roads accidents; • Creation of a single regional road freight market; • Improved inter and intra-regional trade and traffic flows; • Improved decision-making due to the availability of real-time data on corridor traffic. 	<ul style="list-style-type: none"> • Tripartite MS; • Council of Ministers; • RECs. 	<ul style="list-style-type: none"> • Baseline Surveys were conducted to determine the status of each country in relation to the MCBRTA requirements and standards. • Country consultations led by the Tripartite Programme Office are currently underway. • The MCBRTA was approved by the Council of Ministers responsible for transport. • Model laws and standards for implementation of the MCBRTA were adopted. • Some MS are already reviewing their domestic transport policies / legislations / regulations / systems to align it to the MCBRTA and standards.
Implement One Stop Border Posts (OSBPs)	Tripartite countries should implement OSBPs.	<ul style="list-style-type: none"> • Shorter clearance time at border posts due to improved border management processes; • Reduction in time spent at OSBPs; • Reduction in total travel time and cost; 	<ul style="list-style-type: none"> • Tripartite MS 	<ul style="list-style-type: none"> • Tunduma/Nakonde border operating as OSBP. • The Kazungula border post has been operationalised as a OSBP in May 2021. • OSBP facilities have been built at the Lebombo/Ressano Garcia border post. This border will be transformed into an OSBP

Recommendation	Action Plan	Envisaged impact	Responsibility	Progress as at March 2021
		<ul style="list-style-type: none"> Increases in inter and intra-REC traffic flows; Economic growth and development. 		<p>once the legal frameworks have been signed by the governments of Mozambique and South Africa.</p> <ul style="list-style-type: none"> Signing of a MoU by the governments of Botswana and Namibia to establish the Mamuno/Trans-Kalahari OSBP. Zambia and Zimbabwe working on plans to implement more OSBPs.
Address Skills Gaps and Strengthen Institutional Capacity	Public sector institutions in the Tripartite should eliminate the skills gap through up-skilling of human resources.	<ul style="list-style-type: none"> Improved transparency and governance; Improved delivery on regional commitments; Creation of a conducive environment for private sector participation; Enhanced economic growth and development. 	<ul style="list-style-type: none"> Public sector institutions. Regional bodies. 	<ul style="list-style-type: none"> Information on the skills gap(s) in public transport institutions is not readily available. However, various institutions embarked on skills development in key areas (road transport standards).
Obtain Alternative Sources of Funding for Infrastructure Development	Tripartite countries should obtain alternative sources of funding for infrastructure development.	<ul style="list-style-type: none"> Timeous completion of prioritised projects; Improved delivery on regional commitments; Improved monitoring of projects during and after delivery. 	<ul style="list-style-type: none"> Tripartite MS. Private sector. 	<ul style="list-style-type: none"> Within the Tripartite, public financing still constitute the bulk of resources allocated towards infrastructure projects. Engagements between public and private sector stakeholders are ongoing to find alternative financing solutions for infrastructure development.

Source: C-BRTA. Annual State of Cross Border Operations Report. 2018, as adapted.

Table 3: Tracking Progress with respect to Implementation of 2018 /19 ASCBOR Reforms

Recommendation	Action Plan	Envisaged impact	Responsibility	Progress as at March 2021
Implement Prioritised Infrastructure Projects	Implement prioritised transport projects/programmes at Continental and Tripartite level.	<ul style="list-style-type: none"> Improved cross-border movements; Time and cost savings for cross-border operators; Just-in-time deliveries. 	<ul style="list-style-type: none"> Tripartite MS. Private Sector. Development Finance Institutions. 	<ul style="list-style-type: none"> Priority programmes identified. Feasibility studies ongoing. Engagements between public and private sector stakeholders ongoing.
Establish Regional Parliaments	Establish Regional Parliaments to improve the delivery of regional commitments.	<ul style="list-style-type: none"> Improved governance, transparency and accountability at MS level; Decrease in corruption and misuse of public money; Improved delivery on regional commitments. 	<ul style="list-style-type: none"> COMESA and SADC MS. 	<ul style="list-style-type: none"> Deliberations are on-going. At SADC level, the CBRT-RF will play a key role towards lobbying for the establishment of a SADC Parliament.
Harmonise Regulatory Frameworks and Implement Quality Regulation	Harmonise regulatory frameworks and implement quality regulation.	<ul style="list-style-type: none"> Improved cross-border road transport movements; Improved decision-making processes; Creation of a single regional road freight market; Intensification of regional integration efforts and progress towards establishment of a continental free trade area. 	<ul style="list-style-type: none"> Tripartite MS. 	<ul style="list-style-type: none"> Baseline Surveys were conducted to determine the status of each country in relation to the MCBRTA requirements and standards. Country consultations led by the Tripartite Programme Office are currently underway. The MCBRTA was approved by the Council of Ministers responsible for transport. Model laws and standards for implementation of the MCBRTA were adopted. Some MS are already reviewing their domestic transport policies / legislations /regulations / systems to align it to the MCBRTA and standards.
Operationalise One-Stop Border Posts (OSBP)	Implement OSBPs.	<ul style="list-style-type: none"> Time savings at border posts due to improved border management processes; Reduction in total travel time and transport costs; Improved reliability and predictability; Increase in inter and intra-REC traffic flows. 	<ul style="list-style-type: none"> Tripartite MS. 	<ul style="list-style-type: none"> Tunduma/Nakonde border operating as an OSBP. The Kazungula border post has been operationalised as a OSBP in May 2021. OSBP facilities have been built at the Lebombo/Ressano Garcia border post. This border will be transformed into an OSBP once the legal frameworks have been signed by the governments of Mozambique and South Africa.

Recommendation	Action Plan	Envisaged impact	Responsibility	Progress as at March 2021
				<ul style="list-style-type: none"> • Signing of a MoU by the governments of Botswana and Namibia to establish the Mamuno/Trans-Kalahari OSBP. • Zambia and Zimbabwe working on plans to implement more OSBPs.
Develop and Implement a Corridor Performance Monitoring System (CPMS) for the Tripartite	Develop and implement a corridor performance monitoring system for East and Southern Africa.	<ul style="list-style-type: none"> • Availability of real-time data on traffic flows; • Improved decision-making by public- and private sector role-players; • Improved traffic flows along road transport corridors; • Increase in intra-REC trade. 	<ul style="list-style-type: none"> • Tripartite MS. • Public sector role-players. • Private sector. • Tripartite Secretariats; • Tripartite Coordination Mechanism & Coordination Unit. • Cross-border road transport operators. 	<ul style="list-style-type: none"> • A web-based corridor performance monitoring system that measures border crossing and route trucking time according to various indicators for several corridors in the East and Southern African region, has been developed and is operational. This on-line tool is constantly being upgraded. • A tool for measuring transit time developed. • Transit Time measurement conducted at pilot level for some key border posts along the TKC.
Boost Private Infrastructure Investing in Africa	Obtain alternative sources of funding for infrastructure development.	<ul style="list-style-type: none"> • Improved monitoring and evaluation of strategic projects; • Improved delivery on strategic infrastructure projects / programmes; • Improved return on investment; • Enhanced cross-border traffic flows. 	<ul style="list-style-type: none"> • Tripartite MS. • Private Sector. • Development Finance Institutions. 	<ul style="list-style-type: none"> • Engagements between public and private sector stakeholders are ongoing to find alternative financing solutions for infrastructure development.
Establish Monitoring and Evaluation (M&E) Bodies	Establish M&E bodies.	<ul style="list-style-type: none"> • Improved delivery of regional projects through continuous monitoring and correction; • Improved return on investment. 	<ul style="list-style-type: none"> • Political heads of Tripartite MS. • Private Sector. 	<ul style="list-style-type: none"> • No information was available at the time of completing the report
Coordinate the Provision of Ranking Facilities for cross-border passenger transport	Coordinate the provision of ranking facilities.	<ul style="list-style-type: none"> • Incorporation of cross-border infrastructure requirements in local development and integrated transport plans; 	<ul style="list-style-type: none"> • Departments of Transport. • Regulators. • Provincial and local authorities. 	<ul style="list-style-type: none"> • Engagements are ongoing between stakeholders responsible for cross-border road transport operations and local authorities to establish dedicated cross-border ranking facilities in SADC MS.

Recommendation	Action Plan	Envisaged impact	Responsibility	Progress as at March 2021
		<ul style="list-style-type: none"> • Adequate provision of ranking facilities. 		
Implement a Harmonised Cross-Border Charges Framework	Develop and implement a harmonised cross-border framework / system.	<ul style="list-style-type: none"> • Coordinated implementation of harmonised cross-border charges; • Levelling of the playing field for operators; • Fair competition. 	<ul style="list-style-type: none"> • Departments of Transport. • Regulators. 	<ul style="list-style-type: none"> • Most countries implemented cross-border charges. • Consultations ongoing to implement a harmonised cross-border charges framework.
Implement Mandatory Joint Law Enforcement Operations	Implement mandatory joint law enforcement.	<ul style="list-style-type: none"> • Reduction in duplications; • Reduction in delays and transit times; • Optimisation of resources; • Reduction in the cost of doing business; • Elimination of silo operations. 	<ul style="list-style-type: none"> • Departments of Transport. • Regulators. • Law enforcement agencies. 	<ul style="list-style-type: none"> • Domestic and regional consultations are on-going. • A strategy for mandatory joint law enforcement inspections is currently being developed.
Implement technology for law enforcement operations	Implement technology for law enforcement operations.	<ul style="list-style-type: none"> • Reduction in delays and transit times; • Optimisation of resources; • Collection and processing of information. 	<ul style="list-style-type: none"> • Departments of Transport. • Regulators. • Law enforcement agencies. 	<ul style="list-style-type: none"> • Although some regulatory authorities in the region employ SMART technologies for law enforcement checks, not much progress has been made.
Implement Risk based regulatory and law enforcement systems	Implement risk-based law enforcement tools/systems.	<ul style="list-style-type: none"> • Reduction in delays and transit times; • Optimisation of resources; • Reduced cost of doing business; • Reduction in bribery and corruption. 	<ul style="list-style-type: none"> • Departments of Transport. • Regulators. • Law enforcement agencies. 	<ul style="list-style-type: none"> • Regional standards developed. • Technical work to design and develop regulatory tools, including implementation manuals, are on-going in the region. • Review of regulatory requirements, processes and procedures are on-going. • Training of staff on-going. • Corridor law enforcement and monitoring systems are lagging. • Customs and immigration are at various stages of implementing preferred trader/AEO/Trusted Traveller programmes
Capacitate regulatory authorities and implement ICT systems	Capacitate regulatory authorities and implement required ICT systems.	<ul style="list-style-type: none"> • Shorter turnaround times; • Optimisation of resources; • Improved productivity; 	<ul style="list-style-type: none"> • Departments of Transport. • Regulators. 	<ul style="list-style-type: none"> • Some countries have implemented reliable ICT systems to support law enforcement operations. • Border stakeholders especially customs and immigration are working on various ICT programmes

Recommendation	Action Plan	Envisaged impact	Responsibility	Progress as at March 2021
		<ul style="list-style-type: none"> • Reduced cost of doing business; • Reduction in bribery/corruption 	<ul style="list-style-type: none"> • Law enforcement agencies. 	to enhance the sharing of information and to facilitate cross-border movements.

Source: C-BRTA. Annual State of Cross Border Operations Report. 2019, as adapted

Table 4: Tracking Progress with respect to Implementation of 2019 /20 ASCBOR Reforms

Recommendation	Action Plan	Envisaged impact	Responsibility	Progress as at March 2021
Implement Prioritised Road Transport and Border Post Projects	Tripartite MS should implement prioritised transport projects / programmes at Continental and Tripartite level.	<ul style="list-style-type: none"> Improved cross-border movements; Time and cost savings for cross-border operators; Just-in-time deliveries. 	<ul style="list-style-type: none"> Tripartite MS. Private Sector. Development Finance Institutions. 	<ul style="list-style-type: none"> Priority programmes identified. Feasibility studies are ongoing for some of the projects. Engagements between public and private sector stakeholders ongoing.
Establish Regional Legislature	Tripartite MS should establish Regional Parliaments to improve the delivery of regional commitments.	<ul style="list-style-type: none"> Improved governance, transparency and accountability at MS level Decrease in corruption and misuse of public money Improved delivery on regional commitments. 	<ul style="list-style-type: none"> COMESA and SADC MS. 	<ul style="list-style-type: none"> Deliberations are on-going. At SADC level, the CBRT-RF will play a key role towards lobbying for the establishment of a SADC Parliament.
Implement Corridor Performance Monitoring Systems in the SADC	CMI's should implement corridor performance monitoring system(s) along prioritised corridors in the SADC.	<ul style="list-style-type: none"> Availability of real-time data on traffic flows; Improved traffic flows along road transport corridors; Improved decision-making by public-sector bodies in the SADC. 	<ul style="list-style-type: none"> CMI. Private Sector. SADC MS. 	<ul style="list-style-type: none"> A Corridor Trip Monitoring System (CTMS) was developed and implemented along prioritised corridors in the region to record and share info on the health of drivers/ crew and to observe the movement of vehicles in the region. The C-BRTA in collaboration with the TKCS is developing a Cross-Border Flow Calculator to measure transit time and identify key bottlenecks along regional road transport corridors. Transit Time measurement conducted at pilot level for some key border posts along the TKC.
Establish Truck Stops along strategic transport corridors in the SADC	CMI's should implement truck stops along strategic transport corridors that traverse the region.	<ul style="list-style-type: none"> Reduction in driver fatigue; Improved safety along regional transport corridors; Boost in local economics due to a continuous stream of travellers passing through; Reduction in crime / fraudulent activities along road transport corridors. 	<ul style="list-style-type: none"> CMI. Private Sector. SADC MS. 	<ul style="list-style-type: none"> Feasibility study into the establishment of truck stops along the Trans Kalahari corridor revealed several suitable locations for truck stop establishment. Engagements with local authorities and relevant stakeholders are on-going to promote the truck stop initiative.

Recommendation	Action Plan	Envisaged impact	Responsibility	Progress as at March 2021
Implement aligned Risk-based regulatory systems in the SADC	Road transport regulatory authorities should implement risk-based regulatory systems in the SADC.	<ul style="list-style-type: none"> • Decrease in delays and transit times; • Improved compliance by cross-border road transport operators; • Reduction in bribery and corrupt activities along corridors. 	<ul style="list-style-type: none"> • Ministries of Transport. • Road transport regulators. • Law enforcement agencies. 	<ul style="list-style-type: none"> • Regional standards developed. • Technical work to design and develop regulatory tools, including implementation manuals, are on-going in the region. • Review of regulatory requirements, processes and procedures are on-going. • Training of staff on-going. • Corridor law enforcement and monitoring systems are lagging. • Customs and immigration are at various stages of implementing preferred trader/AEO/Trusted Traveller programmes.
Implement Quality Regulation	MS should accelerate domestication of the MCBRTA into their domestic policies and legislations on road transport. This will pave the way for the progressive liberalisation of road transport markets.	<ul style="list-style-type: none"> • Harmonisation of legal instruments; • Improved cross-border road transport movements; • Improved decision-making processes; • Intensification of regional integration efforts; • Creation of a single regional road freight market. 	<ul style="list-style-type: none"> • Tripartite MS. 	<ul style="list-style-type: none"> • Baseline Surveys were conducted to determine the status of each country in relation to the MCBRTA requirements and standards. • Country consultations led by the Tripartite Programme Office are currently underway. • The MCBRTA was approved by the Council of Ministers responsible for transport. • Model laws and standards for implementation of the MCBRTA were adopted by MS. • Some MS are already reviewing their domestic transport policies / legislations / regulations / systems to align it to the MCBRTA and standards. • Some MS are already developing regulatory tools and systems for quality regulation.
Implement Joint Law Enforcement Inspections	Regulatory authorities in the SADC should eliminate silo operations and implement joint law enforcement inspections along transport corridors in the region.	<ul style="list-style-type: none"> • Reduction in delays and transit times; • Reduction in duplicated law enforcement processes along regional road transport corridors; • Optimisation of resources; • Improved productivity; 	<ul style="list-style-type: none"> • Ministries of Transport in SADC MS. • Road transport regulators. • Law enforcement authorities. 	<ul style="list-style-type: none"> • Domestic and regional consultations are on-going. • The CBRT-RF technical work-group developed a strategy for mandatory joint law enforcement inspections. • The CBRT-RF deliberating on the strategy for the joint operations.

Recommendation	Action Plan	Envisaged impact	Responsibility	Progress as at March 2021
		<ul style="list-style-type: none"> Reduction in the cost of doing business. 		
Implement the Linking Africa Plan	The Linking Africa Plan must be elevated to the AUC responsible for transport, trade and infrastructure. MS must coordinate and align implementation of the Linking Africa Plan. Role-players should implement Linking Africa Plan Programmes in the SADC.	<ul style="list-style-type: none"> Improved cross-border road transport movements, trade flows and regional integration; Improved corridor performance; Time and Cost savings for cross-border road border operators; Improved economic growth and development; Improved regional competitiveness. 	<ul style="list-style-type: none"> Public sector role-players in SADC MS (e.g. Ministries of Transport and Trade). Regulatory authorities. Local authorities. Development assistance (donor agencies). DFI. Private Sector. 	<ul style="list-style-type: none"> Domestic and regional consultations are on-going targeted at lobbying stakeholders to start implementing LAP programmes. Engagements with the African Union commissioner conducted. Engagements with development partners and financial institutions ongoing.
Implement the Preferred Trader Programme	Prioritised public-sector bodies should implement the Preferred Trader Programme (also referred to by some MS as the AEO programme). The Preferred Trader Programme should be linked with other risk-based regulatory systems (OCAS) for road transport.	<ul style="list-style-type: none"> Improved cross-border road transport movements and trade flows; Time and cost savings for cross-border operators; Improved economic growth and development. 	<ul style="list-style-type: none"> Customs in SADC MS. Departments of Trade in SADC MS. 	<ul style="list-style-type: none"> The platform for implementing the AEO programme developed in some MS. Some countries are already implementing the AEO programme, whilst others are still finalising the development phase. Engagements with departments/ agencies, responsible for regulation of road transport is on-going to consider integration with other road transport risk-based regulatory systems (OCAS)/
Implement the SMART corridors initiative	Public-sector role-players should implement the Smart Corridors Initiative in the SADC.	<ul style="list-style-type: none"> Improved operator compliance, safety and security; Improved corridor performance; Improved safety and security along transport corridors; Improved corridor performance; Time and Cost savings for cross-border operators. 	<ul style="list-style-type: none"> Public sector role-players in SADC MS (e.g. Ministries of Transport). 	<ul style="list-style-type: none"> Conceptualisation of the programme finalised. Stakeholder consultations are on-going.

Recommendation	Action Plan	Envisaged impact	Responsibility	Progress as at March 2021
Implement Pre-clearance of freight	Relevant public-sector role-players should implement mandatory Freight Pre-clearance programme(s).	<ul style="list-style-type: none"> Improved economic growth and development. Improved cross-border road transport movements and trade flows; Reduction in congesting, delays and transit time along transport corridors; Time and Cost savings for cross-border operators; Just-in-time deliveries and quicker turnaround times; Improved economic growth and development. 	<ul style="list-style-type: none"> SADC MS (e.g. Ministries of Transport). Customs in SADC MS. 	<ul style="list-style-type: none"> Preclearance of cargo is done on a voluntary basis in many countries in the region.
Expand and support the role of the Cross-Border Road Transport Regulators Forum	The CBRT-RF must be empowered and adequately funded to carry out coordination and monitoring of programmes that are implemented by road transport regulatory authorities and law enforcement.	<ul style="list-style-type: none"> Greater coordination and more effective monitoring of regional programmes; Accelerated implementation of regional programmes; Reduction in corridor constraints; Improved harmonisation and facilitation of cross-border operations. 	<ul style="list-style-type: none"> Public sector role-players in SADC MS (e.g. Ministries of Transport). Regulatory authorities in SADC MS. 	<ul style="list-style-type: none"> CBRT-RF was established in 2019. CBRT-RF work plans developed and are being implemented.
Establish a Regional Monitoring and Evaluation (M&E) Body	SADC MS should implement a regional M&E body.	<ul style="list-style-type: none"> Timeous delivery of strategic regional projects through continuous monitoring and correction; Availability of credible, results-based information; Improved decision-making processes; Existence of a robust basis / platform for raising funds. 	<ul style="list-style-type: none"> SADC MS. 	<ul style="list-style-type: none"> No information was available at the time of completing the report

Recommendation	Action Plan	Envisaged impact	Responsibility	Progress as at March 2021
Establish dedicated cross-border ranking facilities in all SADC MS	Prioritised public-sector bodies in MS should establish dedicated cross-border ranking facilities.	<ul style="list-style-type: none"> • Provision of quality, safe and accessible ranking facilities, including storage, ablution, booking offices and adequate lightning; • Provision of secure off-street loading holding facilities for cross-border vehicles; • Timeous departure of cross-border vehicles; • Elimination of on-street ranking for cross-border services. 	<ul style="list-style-type: none"> • Ministries of Transport in SADC MS. • Road transport Regulators. • Provincial and Local authorities. • Private Sector. 	<ul style="list-style-type: none"> • Engagement is ongoing between stakeholders responsible for cross-border road transport operations and local authorities to move this initiative forward.
Re-engineer permit issuing processes and systems in the SADC	Regulatory Authorities in SADC MS should re-engineer regulatory procedures and permit issuing systems.	<ul style="list-style-type: none"> • Improved regulation of cross-border road transport movements; • Improved harmonisation of the regulatory environment • Increased value-add to cross-border road transport operators; • Improved competitiveness of the cross-border road transport industry. 	<ul style="list-style-type: none"> • Regulatory authorities in SDC MS. 	<ul style="list-style-type: none"> • A e-permit system has been developed by the C-BRTA. • System testing and refinement completed. • The e-permit system, titled Cross Easy was implemented in January 2022.
Implement the International Road Transport System	Prioritised public-sector role-players should implement the International Road Transport System.	<ul style="list-style-type: none"> • Improved compliance by cross-border road transport operators; • Improved cross-border road transport movements and trade flows; • Time and Cost savings for cross-border road transport operators; • Improved economic growth and development. 	<ul style="list-style-type: none"> • Ministries of Transport in SADC MS. • Regulatory authorities in SADC MS. 	<ul style="list-style-type: none"> • Benchmarking of the TIR system conducted. • The TIR System awaits implementation in the SADC.
Implement a Corridor Patrol Programme	Prioritised public-sector role-players should implement a Corridor Patrol Programme	<ul style="list-style-type: none"> • Reduction in criminal activities along transport corridors; 	<ul style="list-style-type: none"> • Ministries of Transport in SADC MS. 	<ul style="list-style-type: none"> • The CBRT-RF lobbying MS to implement corridor patrols.

Recommendation	Action Plan	Envisaged impact	Responsibility	Progress as at March 2021
	to improve safety and security.	<ul style="list-style-type: none"> Improved safety and security along transport corridors. 	<ul style="list-style-type: none"> Ministries of Police in SADC MS. Regulatory authorities in SDC MS. 	
Strengthen the mandate and capacity of institutions responsible for transport and trade facilitation	Prioritised public and private sector role-players should strengthen the capacity / mandate of institutions responsible for transport and trade facilitation.	<ul style="list-style-type: none"> Professional cross-border road transport sector; Improved compliance by cross-border operators; Improved safety and security along transport corridors. 	<ul style="list-style-type: none"> Ministries of Transport in SADC MS. Regulatory authorities in SADC MS. Private Sector. 	<ul style="list-style-type: none"> Challenges affecting regulatory institutions in MS have been identified Engagements are on-going at MS level.
Professionalise the cross-border road transport industry	Role-players in the public and private sector spheres should professionalise the cross-border road transport industry,	<ul style="list-style-type: none"> Improved compliance by cross-border road transport operators / drivers; Improved road safety; Reduction in time spend at border posts; Reduction in xenophobic attacks. 	<ul style="list-style-type: none"> SADC MS (Ministries of Transport). Regulatory authorities in SADC MS. Cross-border road transport operators. 	<ul style="list-style-type: none"> No information was available at the time of completing the report.
Pre-clearance of cross-border road transport passengers	Immigration authorities in SADC MS should pre-clear cross-border road transport passengers,	<ul style="list-style-type: none"> Reduction in delays at border posts; Improved cross-border road transport movements; Stimulated economic activity. 	<ul style="list-style-type: none"> Immigration authorities in SADC MS. 	<ul style="list-style-type: none"> No information was available at the time of completing the report.
Implement green lanes for compliant and pre-cleared vehicles	Border Management Institutions should implement green lanes for compliant and pre-cleared vehicles at border posts.	<ul style="list-style-type: none"> Reduction in congestion at border posts; Time and Cost savings for cross-border operators; Improved cross-border road transport movements; Enhanced economic growth. 	<ul style="list-style-type: none"> Border Management Institutions. 	<ul style="list-style-type: none"> No information was available at the time of completing the report.
Implement a cross-border telematics programme	<ul style="list-style-type: none"> Prioritised role-players in the public and private sectors should implement the Cross- 	<ul style="list-style-type: none"> Improved visibility of cross-border operations; Improved law enforcement and compliance and safety; 	<ul style="list-style-type: none"> Ministries of Transport in SADC MS; Regulatory authorities in SADC MS; Private Sector. 	<ul style="list-style-type: none"> No information was available at the time of completing the report.

Recommendation	Action Plan	Envisaged impact	Responsibility	Progress as at March 2021
	Border Telematics Programme.	<ul style="list-style-type: none"> • Smart law enforcement operations; • Time and Cost savings for cross-border operators. 		

Source: C-BRTA. Annual State of Cross Border Operations Report. 2020, as adapted

Table 5: Tracking Progress with respect to Implementation of 2020 / 21 ASCBOR Reforms

Recommendation	Action Plan	Envisaged impact	Responsibility	Progress as at March 2021
Implement Prioritised Road Transport and Border Post Projects	Tripartite MS should implement prioritised transport projects / programmes at Continental and Tripartite level.	<ul style="list-style-type: none"> Improved cross-border movements; Time and cost savings for cross-border operators; Just-in-time deliveries. 	<ul style="list-style-type: none"> Tripartite MS. Private Sector. Development Finance Institutions. 	<ul style="list-style-type: none"> Priority programmes identified. Feasibility studies are ongoing for some of the projects. Engagements between public and private sector stakeholders ongoing.
Transform Border Posts into OSBPs	Implement OSBPs.	<ul style="list-style-type: none"> Time savings at border posts due to improved border management processes; Reduction in total travel time and transport costs; Improved reliability and predictability; Increase in inter and intra-REC traffic flows. 	<ul style="list-style-type: none"> Tripartite MS. 	<ul style="list-style-type: none"> Tunduma/Nakonde border operating as an OSBP. The Kazungula border post has been operationalised as a OSBP in May 2021. OSBP facilities have been built at the Lebombo/Ressano Garcia border post. This border will be transformed into an OSBP once the legal frameworks have been signed by the governments of Mozambique and South Africa. Signing of a MoU by the governments of Botswana and Namibia to establish the Mamuno/Trans-Kalahari OSBP. Zambia and Zimbabwe working on plans to implement more OSBPs.
Implement Regional Corridor Performance Monitoring Systems	CMI's should implement corridor performance monitoring system(s) along prioritised corridors in the SADC.	<ul style="list-style-type: none"> Availability of real-time data on traffic flows; Improved traffic flows along road transport corridors; Improved decision-making by public-sector bodies in the SADC. 	<ul style="list-style-type: none"> CMI. Private Sector. SADC MS. 	<ul style="list-style-type: none"> A Corridor Trip Monitoring System (CTMS) was developed and implemented along prioritised corridors in the region to record and share info on the health of drivers/ crew and to observe the movement of vehicles in the region. The C-BRTA in collaboration with the TKCS is developing a Cross-Border Flow Calculator to measure transit time and identify key bottlenecks along regional road transport corridors. Transit Time measurement conducted at pilot level for some key border posts along the TKC.
Implement Cross-Border Telematics	Prioritised role-players in the public and private sectors	<ul style="list-style-type: none"> Improved visibility of cross-border operations; 	<ul style="list-style-type: none"> Ministries of Transport in SADC MS; 	<ul style="list-style-type: none"> No information was available at the time of completing the report

Recommendation	Action Plan	Envisaged impact	Responsibility	Progress as at March 2021
	should implement the Cross-Border Telematics Programme.	<ul style="list-style-type: none"> Improved law enforcement and compliance and safety; Smart law enforcement operations; Time and Cost savings for cross-border operators. 	<ul style="list-style-type: none"> Regulatory authorities in SADC MS; Private Sector. 	
Establish a Regional Monitoring and Evaluation Body	SADC MS should implement a regional M&E body.	<ul style="list-style-type: none"> Timeous delivery of strategic regional projects through continuous monitoring and correction; Availability of credible, results-based information; Improved decision-making processes; Existence of a robust basis / platform for raising funds. 	<ul style="list-style-type: none"> SADC MS. 	<ul style="list-style-type: none"> No information was available at the time of completing the report
Expand the Role of the Cross-Border Road Transport Regulators Forum	The CBRT-RF must be empowered and adequately funded to carry out coordination and monitoring of programmes that are implemented by road transport regulatory authorities and law enforcement.	<ul style="list-style-type: none"> Greater coordination and more effective monitoring of regional programmes; Accelerated implementation of regional programmes; Reduction in corridor constraints; Improved harmonisation and facilitation of cross-border operations. 	<ul style="list-style-type: none"> Public sector role-players in SADC MS (e.g. Ministries of Transport). Regulatory authorities in SADC MS. 	<ul style="list-style-type: none"> CBRT-RF was established in 2019. CBRT-RF work plans developed and are being implemented.
Re-engineer Permit Issuing Processes and Systems in the SADC	Regulatory Authorities in SADC MS should re-engineer regulatory procedures and permit issuing systems.	<ul style="list-style-type: none"> Improved regulation of cross-border road transport movements; Improved harmonisation of the regulatory environment Increased value-add to cross-border road transport operators; Improved competitiveness of the cross-border road transport industry. 	<ul style="list-style-type: none"> Regulatory authorities in SDC MS. 	<ul style="list-style-type: none"> A e-permit system, titled Cross Easy has been developed by the C-BRTA. System testing and refinement completed. The e-permit system was implemented in January 2022.

Recommendation	Action Plan	Envisaged impact	Responsibility	Progress as at March 2021
Establish Dedicated Cross-Border Ranking Facilities in all SADC MS	Coordinate the provision of ranking facilities.	<ul style="list-style-type: none"> Incorporation of cross-border infrastructure requirements in local development and integrated transport plans; Adequate provision of ranking facilities. 	<ul style="list-style-type: none"> Departments of Transport. Regulators. Provincial and local authorities. 	<ul style="list-style-type: none"> Engagement are ongoing between stakeholders responsible for cross-border road transport operations and local authorities to establish dedicated cross-border ranking facilities in SADC MS.
Implement Risk-Based Systems	Road transport regulatory authorities should implement risk-based regulatory systems in the SADC.	<ul style="list-style-type: none"> Decrease in delays and transit times; Improved compliance by cross-border road transport operators; Reduction in bribery and corrupt activities along corridors. 	<ul style="list-style-type: none"> Ministries of Transport. Road transport regulators. Law enforcement agencies. 	<ul style="list-style-type: none"> Regional standards developed. Technical work to design and develop regulatory tools, including implementation manuals, are on-going in the region. Review of regulatory requirements, processes and procedures are on-going. Training of staff on-going. Corridor law enforcement and monitoring systems are lagging. Customs and immigration are at various stages of implementing preferred trader/AEO/Trusted Traveller programmes.
Establish a Regional (SADC) Parliament	Tripartite MS should establish Regional Parliaments to improve the delivery of regional commitments.	<ul style="list-style-type: none"> Improved governance, transparency and accountability at MS level Decrease in corruption and misuse of public money Improved delivery on regional commitments. 	<ul style="list-style-type: none"> COMESA and SADC MS. 	<ul style="list-style-type: none"> Deliberations are on-going. At SADC level, the CBRT-RF will play a key role towards lobbying for the establishment of a SADC Parliament.
Establish Single-Stop (Joint) Law Enforcement Inspections	Regulatory authorities in the SADC should eliminate silo operations and implement joint law enforcement inspections along transport corridors in the region.	<ul style="list-style-type: none"> Reduction in delays and transit times; Reduction in duplicated law enforcement processes along regional road transport corridors; Optimisation of resources; Improved productivity; Reduction in the cost of doing business. 	<ul style="list-style-type: none"> Ministries of Transport in SADC MS. Road transport regulators. Law enforcement authorities. 	<ul style="list-style-type: none"> Domestic and regional consultations are on-going. The CBRT-RF technical work-group developed a strategy for mandatory joint law enforcement inspections. The CBRT-RF deliberating on the strategy for the joint operations.
Transform Transport Corridors into Economic (SMART) Corridors	All transport corridors in Africa should be transformed into SMART	<ul style="list-style-type: none"> Improved operator compliance, safety and security; 	<ul style="list-style-type: none"> Ministries of Transport in African countries; 	The NSC and Dar es Salaam corridors have been selected as pilot corridors;

Recommendation	Action Plan	Envisaged impact	Responsibility	Progress as at March 2021
	corridors that entail the use of ITS to improve corridor efficiency.	<ul style="list-style-type: none"> Improved corridor performance; Improved safety and security along transport corridors; Time and cost savings for cross-border road transport operators; Increases in intra-Africa trade; Enhanced economic growth and development. 	<ul style="list-style-type: none"> Road Transport Regulators; Corridor Management Institutions; Operator Associations; Cross-border road transport operators. 	The SMART corridor initiative is still at conceptualisation phase, awaiting funding to move forward,
Establish Regional Trade and Transport Working Groups	The SADC should establish regional trade and transport working groups to promote/encourage the timeous delivery of strategic trade and transport programmes in the region.	<ul style="list-style-type: none"> Improved skills transfer; Improved delivery on strategic regional programmes; Enhanced intra-regional trade; Increased economic opportunities; Regional growth and development. 	<ul style="list-style-type: none"> Public sector representatives from the Ministries of Trade and Transport; Representatives from trade and transport associations; Corridor Management Institutions; Civil Society; Academia. 	<ul style="list-style-type: none"> No information was available at the time of completing the report.
Establish a Regional Law Enforcement Training Academy	The SADC should establish a regional law enforcement training academy to improve the level of professionalism in the law enforcement industry.	<ul style="list-style-type: none"> Improved skills transfer to law enforcement officials; Time savings during law enforcement check-points; Collection and distribution of real-time data; Shorter journey times; Improved performance of the cross-border value chain. 	<ul style="list-style-type: none"> All role-players in the law enforcement environment. 	<ul style="list-style-type: none"> Agreement was reached at SADC level to develop customised training programmes; South Africa was tasked to lead this reform; Several training modules developed to date Training modules await certification by the South African Qualifications Authority (SAQA).

Source: C-BRTA. Annual State of Cross Border Operations Report. 2021, as adapted

It is encouraging to note that many reforms proposed in previous ASCBORs are now being implemented by corridor stakeholders in the region. Despite the progress made, several impediments still undermine efficient cross-border road transport operations. Chapter 2 sheds light on infrastructure and operational constraints that cross-border road transport operators face when conducting business for reward in the SADC.

2. CROSS-BORDER ROAD TRANSPORT INDUSTRY: CURRENT STATE AND CHALLENGES

2.1 Introduction

SADC hosts several regional road transport corridors that carry the bulk of regional traffic in the region. Even though most intra-Africa trade goes by road, the road transport sector is plagued by various infrastructure inefficiencies that materialise in long transit times and high transportation costs for transporters, which has huge consequences.

Infrastructure constraints includes both physical “**hard infrastructure**”, such as ports, railway lines, roads, border crossings, bridges, weighbridges and Inland Container Depots (ICDs), as well as “**soft infrastructure**”, such as institutions, transport laws and regulations and systems and resources that deals directly with service delivery and that is required for the smooth operating and maintaining of the transport. Reality on the ground reveals that soft infrastructure inefficiencies are more acute and therefore a greater contributor to poor corridor performance.

Infrastructure inefficiencies undermine the growth of the cross-border industry and are partly to blame for the low level of intra-regional trade in Africa. Over the past decade, intra-Africa trade has remained low; the highest levels were recorded in 2015 and 2016 with 19 per cent and 20 per cent of total trade. In 2019 intra-Africa trade amounted to 15% of Africa’s total trade. (<https://www.tralac.org/documents/publications/trade-data-analysis/3982-summary-intra-africa-trade-2019/file.html>).

This chapter assesses corridor impediments experienced by road transport operators when conducting business for reward in the SADC. The discussions of this chapter lay the foundation for the identification of key priority areas (reforms) in later sections of this report, which aim to address infrastructure inefficiencies in the region.

2.2 CORRIDOR CHALLENGES

Intra-Africa trade statistics clearly indicate that SADC MS generally trade more with non-SADC MS, than with each other. According to available literature, a main cause for the low level of trade amongst Africa countries is the existence of several hard and soft infrastructure impediments along regional road transport corridors. This section dwells on infrastructure challenges experienced by cross-border road transport operators along road transport corridors in the region.

This exercise will pave the way for the identification of key-priority areas in later discussions of this report (chapter 8) that should be escalated to national and regional decision-making structures for approval/ implementation.

2.2.1 Poor Road Network Connectivity / Inadequate Road Networks

Transport corridors are currently the best way to address connectivity challenges facing the region. Hence, regional road infrastructure projects are developed along the key transport corridors linking SADC countries to each other.

Road transport accounts for most of the surface transport in the SADC. Although the region has an extensive regional trunk road network (RTRN), some sections of the RTRN are not adequately maintained. In this regard, poorly maintained road networks and missing links along regional road transport networks are particularly noted in the north and western parts of

the region, notably Angola and the DRC. Much of the road networks in these countries have been destroyed by prolonged civil wars. In Angola, the main links in the western half of the country are in a satisfactory condition, while roads on the eastern side are sparser and more dilapidated.

Since missing road links increase the distance travelled by vehicles between origin and destination points, cross-border road transport operators face higher transportation costs and longer journey times. Increases in transportation and logistics costs are ultimately passed on to the end-user.

The implementation of the most infrastructure programmes (e.g. road, bridge and border posts) contained in the SADC Regional Infrastructure Development Master Plan (RIDMP) has been very slow. An assessment of the status of prioritised projects, carried out in 2019, reveals that most projects (expressed in the short-term action plan of the RIDMP) are at the feasibility state with very few having been completed. (SADC. 2019:9).

A problem experienced in many SADC countries is that they do not have dedicated and ring-fenced road maintenance funding frameworks, which leads to erratic road network maintenance regimes. This impediment can be resolved if SADC countries adopt and implement funding frameworks that provide a conducive environment for private sector participation.

At regional level, the SADC has created the Project Preparation and Development Facility (PPDF) as an instrument to facilitate the successful development of bankable projects for market presentation. (<https://www.sadcppdf.org/>). This facility can assist MS in implementing strategic regional infrastructure projects. The aim of the PPDF is three-fold:

- Create a conducive environment for investment by financing the preparation of infrastructure projects based in at least one SADC MS or those with a direct and positive impact on another MS;
- Concentrate on those projects that will be considered as enablers of regional integration providing technical assistance for project identification, preparation and feasibility studies as well as for advisory, and capacity building purposes that will lead to investment in projects; and
- Provide technical assistance in infrastructure project identification, preparation and feasibility studies with a view to presenting bankable projects to investors and lenders.

2.2.2 Inefficient Border Posts

Most strategic border posts in the SADC still operate as traditional two-stop border posts. These borders are characterised by several impediments that are documented and well-known. Inadequate approach roads to inland borders, lack of signage, too many stakeholders working in silos, lack of systems integration and misaligned working hours on either side of the border serve as examples of inefficiencies that materialise in lengthy delays at border posts in the region.

SADC's response to border post inefficiencies lies in the establishment of One-Stop Border Posts (OSBPs). The RIDMP prioritises the transformation of 18 traditional (two-stop) borders into OSBPs. Although the SADC Master Plan was released in 2012, only a few borders (e.g. Chirundu, Tunduma/Nakonde and Kazungula) has so far been operationalised as functioning OSBPs.

The opening of the Kazungula bridge and OSBP facilities on 10 May 2021 should have a significant impact on South Africa, relieving congestion at the infamous Beitbridge border crossing for freight truckers. Currently cross-border operators moving goods from South Africa to Lusaka must travel via Zimbabwe, crossing the congested Beitbridge at the border between Limpopo and its Northern neighbour. But with the new bridge at Kazungula, South Africans can travel via Botswana, bypassing the Beitbridge crossing, and Zimbabwe altogether. (<https://www.businessinsider.co.za/test-kazungula-2021-5>)

Further progress is witnessed in the building of OSBP facilities at the Lebombo /Ressano Garcia border. However, this inland border will only be transformed into a OSBP once legal frameworks have been signed by the governments of Mozambique and South Africa. Furthermore, construction work is ongoing at the Beitbridge (Zimbabwe side only). As far as the other OSBP candidates are concerned, less progress is witnessed. In most cases, projects are still in the pre-feasibility / feasibility phases and await funding to move beyond the planning / conceptual phase(s).

2.2.3 Multiple Law Enforcement Inspections along Transport Corridors

Law enforcement inspections in the region are conducted by several role-players. These parties rarely coordinate operations and as a result law enforcement checks are often conducted near each other by different stakeholders. Intermittent road checks cause interruptions (delays) in traffic flows and increase the cost of moving traffic between various locations.

Further to the existence of too many law enforcement check-points, the exchange of information on law enforcement transgressions between role-players in the region is poor, and in many cases non-existent. The seemingly simple act of information sharing amongst law enforcement agencies in the SADC is compromised by “invisible barriers” such as a lack of trust between role-players, security, politics, regulations, and management decisions. As a result, it is often impossible to trace the owners or employers of foreign drivers and, even when they can be traced; there is no legal process by which they can be forced to pay penalties while they are in their country of origin.

Another problem facing law enforcement operations is that many checkpoints along regional corridors are illegal. At these locations drivers are subjected to harassment, corruption and extortions. Corruption does not only compromise road safety, but also national security and is a threat to legitimate cross-border trade in Southern Africa.

A new development at regional level is the development and approval of a draft strategy on combatting organised crime in the SADC in May 2020 that was jointly developed by the SADC Secretariat and INTERPOL to present MS with a tool to implement a range of regional security instruments and decisions. This regional strategy provides a common framework for tactical, operational and strategic approaches to organised crime. It also includes mechanisms for transparency, cooperation and monitoring and evaluation. An accompanying action plan will identify timelines, resources and partners needed for effective implementation. The strategy to combat organised crime awaits adoption by SADC’s various policy organs and heads of state and government. (<https://issafrica.org/impact/spotlight-a-new-sadc-strategy-to-combat-organised-crime-in-southern-africa>).

2.2.4 Weighbridges

Weighbridges play a vital role in economic activities insofar it captures and releases valuable weight data for incoming and out-going vehicles along transport corridors. Despite its importance in gathering intelligence, weighbridges constitute a fixed delay point along regional transport corridors that manifest in time delays (and additional logistics costs) for commercial road transport operators.

Most weighbridges in the SADC are fixed structures (where a large set of scales are mounted permanently on a concrete foundation) used to weigh road vehicles. The weighing process is relatively slow and is aggravated by insufficient space to load and off-load vehicles, limited resources allocated to conduct inspections and poorly maintained weighbridge scales.

Due to the lack of harmonised regional rules and standards pertaining to vehicle loads and dimensions in the SADC, the application of different national vehicle weight standards create inefficiency along the logistics chain. For example, cross-border operators will be forced to load their vehicles sub-optimally when conveying goods through the territory of a MS with a lower weight limit. This causes an unnecessary financial burden on operators, delays in cargo delivery, and lower efficiency.

The challenges that arise from the absence of a harmonised framework for overload control materialise in a lack of faith in the systems used in SADC countries. Differences in the infrastructure used contribute to varying perceptions of the integrity of the overload control systems. As a result, cross-border vehicles are weighed again as they cross into the territory of another country.

2.4.5 Inadequate Cross-Border Ranking Facilities

The responsibility for the provision and maintenance of ranking facilities in most SADC MS vests with local government. Insufficient funds for the construction of new facilities and maintenance of existing ones, coupled with a spike in the demand for local and cross-border public passenger travel in recent years, has created a situation whereby the demand for ranking facilities exceeds the supply of such facilities.

Due to the absence of dedicated cross-border ranking facilities in urban areas of South Africa, and SADC MS, public transport ranking facilities and holding areas are used collectively by local and cross-border road transport operators and commuters. This practice worsens congestion and often results in the late departure of cross-border taxis and buses.

Zimbabwe currently ranks the top destination in terms of cross-border passenger movements for South African citizens. Following complaints from South African cross-border travellers, a team of C-BRTA officials visited various ranking facilities in Zimbabwe during 2017 to determine the status of such facilities. The observation exercise revealed the following findings:

- Most facilities do not support the operational requirements for international travel as noted in the wide-spread absence of dedicated security and weighing facilities and refreshment amenities for commuters;
- Most of the facilities face safety and security constraints. The absence of fencing and too few security officers at ranking facilities open opportunities for criminal activities to take place; and

- Loading spaces allocated to cross-border vehicles is not enough. The loading of personal effects often take place outside ranking facilities, with the resultant late departure of cross-border vehicles.

Discussions with selected law enforcement officials in SADC countries point to the absence of a coordinated approach to the regulation of cross-border public passenger departure points. This limitation has led to the establishment of various informal ranking facilities in urban areas, and near commercial border posts. Tempelhof is an example of a taxi rank, located next to the N1 highway just before the Beitbridge border post. The loading and off-loading of passengers near this busy inland border posts further obstructs the flow of traffic between South Africa and Zimbabwe.

2.2.5.1 Construction of the Johannesburg International Transport Interchange

The construction of the Johannesburg International Transport Interchange (JITI), located in the central business district of Johannesburg, is nearing completion. The Johannesburg Development Agency (JDA), on behalf of the City's Transport Department, has undertaken the construction of the JITI that was officially unveiled as Africa's largest intermodal transport hub on October 12, 2021. (<https://www.engineeringnews.co.za/article/city-of-joburg-unveils-africas-largest-intermodal-transport-hub-2021-10-13>)

The JITI is the largest public transport facility for long-distance travellers in Africa, accommodating around 1 500 travellers a day, arriving or departing to destinations in the SADC. (<https://www.engineeringnews.co.za/article/johannesburg-international-transport-interchange-to-launch-at-the-end-of-june-2021-06-03>)

This premier transport hub provides easy access to transport routes, like the Nelson Mandela bridge and the M2 double-decker freeway, and has amenities to make departure and arrival easier for long-distance travellers. To reduce the waiting times of long-distance travellers for buses and taxis in the inner city, the facility's 50 000 square meter floor area, includes a bus terminal for cross-border buses, as well as holding space for 800 taxis, ranking space for 158 taxis and ranking for 20 buses.

Another feature of this transport hub is its excellent safety /security features that include closed-circuit television (CCTV) cameras throughout the facility, good lighting and wide corridors that ensure safe transfer. The security of the facility is managed from a control room equipped with a building management system. Only vehicles that have the correct operating licences (e.g. cross-border permits) and vehicle fitness certificates can operate in this facility.

Another distinguishing factor is the facility's advanced access control that features dual-authentication, including licence plate recognition to ensure safe cross-border operations. Green building designs, including solar power, have also been incorporated throughout the facility.

While the JITI represents a break-through that will change the landscape of cross-border passenger operations in the region, it is imperative that SADC MS follow suit and develop similar facilities in their territories. Since this reform is capital-intensive, it is imperative that the private sector / business be engaged from the outset, not only be assist with financing (in the form of PPPs), but also in providing technical support in developing projects for bankability.

2.2.6 Adherence to Fixed Bus Timetables

Cross-border bus operators conduct business according to timetables. When applying for permits, bus operators state the points along the corridor where they will stop. The number of stops is considered when regulatory authorities in the respective MS determine what time a bus should arrive at its final stop in the destination country. Late arrival results in penalties for non-compliance.

A complaint frequently raised by cross-border bus operators is that clearance processes at border posts is very slow and that excessive time delays at borders often result in the late arrival of cross-border buses in the destination country. This problem is exacerbated at the Beitbridge border post. The status quo calls for intervention by relevant role-players to intervene and adopt interim measures (e.g. allow grace period for late arrival) until border post delays are addressed.

2.2.7 Conveyance of Undocumented Immigrants by Cross-Border Operators

Reported incidents exist of people travelling across national borders without the required documents (passports). This is especially true for Zimbabwean nationals where the extended economic and political crisis in the country led to a major increase in mixed migration flows to South Africa.

Although human trafficking is common in different continents of the world, it is endemic in Africa where human trafficking is a booming industry. Armed conflict throughout the continent makes children vulnerable to be trafficked and to becoming child soldiers. In SADC, a great percentage of undocumented immigrants are school children. The cross-border transport of undocumented migrants is also more noticeable during school holidays. The governments of SADC MS are responsible to cover the costs associated with the deportation of undocumented immigrants.

2.2.8 Issuance of Organised Party Permits

Organised party permits are permits issued by regulatory authorities in SADC MS for special and /or unforeseen events (e.g. funerals and weddings) that take place outside their countries and which requires the transportation of people in public transport vehicles (e.g. minibus taxis). Regulatory authorities issue organised party permits on condition that the applicant provides proof of the special event taking place (e.g. death certificate for funerals and wedding invitation for weddings). Furthermore, the applicant must submit a list with the names of people that will attend the once-off event, including their biographical details (passport numbers and contact numbers).

If supporting documents look doubtful, the regulator should verify the authenticity of documents. Failure to do so, will result in documents not being verified. Applicants of organised party permits must return expired permit(s) and passenger lists after the special event has taken place.

Cross-border taxi operators often voice their concern at national and regional stakeholder forums that organised party permits are often not limited to the special event, but also used to convey passengers for reward over highly trafficked cross-border routes, thereby taking away business (market share) from existing operators. This matter undermines the integrity of the permit issuing process in MS and calls for improvements to existing permit issuing system(s) to better control the way organised party permits are issued.

2.2.9 Lack of Detailed Route Descriptions on Cross-Border Passenger Permits

SADC countries are guided by domestic legislation when decisions are made regarding the issuing of permits for the conveyance of passengers across national boundaries. Although a few countries in the region issue electronic permits, not all electronic permits display detailed route descriptions.

For some countries such as South Africa, all cross-border bus and taxi permits issued by the C-BRTA stipulate the pick-up points (in the country of origin) and drop-off points (in the destination country). Since ranking facilities are managed by local metros (municipalities), the C-BRTA liaises closely with relevant metros when identifying suitable pick-up points in South Africa. In most cases, formal ranking facilities are assigned.

Although cross-border taxi permits issued by Mozambique specify pick-up and drop off points in Johannesburg (China point and Hotel Oribi) these informal locations do not have suitable ranking facilities, neither has the City of Johannesburg granted permission to use these facilities for the transfer of cross-border passengers.

Since not all regulatory authorities in the region issue permits with detailed route descriptions, the status quo enables some foreign operators (those who are not bounded to specified pick-up and drop-off points) to capture a greater portion of the market. The unlevel playing field causes conflict amongst cross-border operators in the region.

2.2.10 Return of Passenger Lists, Consignment Notes and Expired Permits

According to section 28 of the Cross-Border Road Transport Act, No. 4 of 1998, as amended, cross-border road passenger and freight operators must return completed passenger lists, consignment notes and expired permits to the C- BRTA. Failure to do so result in penalties and may lead to refusal by the Regulatory Committee to re-issue permits to non-compliant operators.

In the absence of cross-border legislation in other SADC countries, cross-border permits issued by MS do not stipulate that expired permits and associated materials be returned to regulatory authorities. Since additional requirements are imposed on South African operators, the request is often made by South African operators that the C-BRTA align itself to the global trend that present a shift towards a paperless environment. Before this requirement can be met, the C-BRTA must amend existing regulations.

2.2.11 Unharmonised Regulatory Requirements

Regulatory requirements pertaining to rules, standards and procedures that must be followed by cross-border road transport operators in conducting cross-border operations are not harmonised across the SADC. Differences This trend is noted in the following examples:

- Different third-party motor vehicle insurance schemes at used by SADC MS;
- Cross-border road transport permits are either issued in the country of operator registration (except in the case of cabotage permits), or in some instances at the border of the destination country; and
- Different cross-border charges apply in the region.

The variation is a matter of concern, because these it no harmonisation of operating conditions, implying that road transport operators are subjected to different conditions in different countries in the region.

2.2.12 Erratic Power Supply at Strategic Border Posts

Power shortages at inland borders contribute to delays at land borders. Although most border posts are equipped with generators, they are often poorly maintained and too small to service all electricity needs. The automation of customs processes is dependent on reliable power supplies. Since all customs entries are done electronically, no entries can be processed when power supply is cut during which the entire process comes to a standstill.

2.2.13 Cross-Border Charges

Currently, SADC MS levy different cross-border charges on cross-border road transport operators in line with national policy frameworks. Such charges are collected in pursuit of funding for road construction projects, as well as for improving road safety and law enforcement operations.

Cross-border charges are levied on foreign cross-border road transport operators (freight, bus and taxi vehicles). While most countries in the SADC region have implemented cross-border charges, a few have not, of which South Africa is an example. The status quo (un-harmonised road transport environment) creates an unlevel playing field whereby additional costs are imposed on some cross-border operators, creating conflict.

2.2.14 Funding Shortages

The infrastructure financing requirements of the SADC is set out in the SADC RIDMP that lays out infrastructure projects for the transport sector. A recent review of the implementation of the Short-Term Action Plan (STAP) of the SADC RIDMP reveals that MS are lagging as far as the implementation of identified projects are concerned and struggle to raise adequate levels of funding for prioritised projects.

According to recent research conducted by the Trade Law Centre (TRALAC), the costs associated with implementing the STAP accounts to approximately USD 67 billion, including additional transport projects that have been added to the list (<https://www.tralac.org/discussions/article/5329-operationalising-the-sadc-regional-infrastructure-development-master-plan.html>).

Cross-border infrastructure projects are large scale and long-term in nature and successful implementation requires the participation of several countries. Given the heavy cost burden of developing, maintaining and operating infrastructure, the SADC has adopted the *subsidiary principle* that demarcates certain activities to be undertaken at the regional level, while other activities will be left to MS.

Due to the disparity in levels of economic development in the SADC, some countries are better equipped to fund infrastructure programmes. The struggle to raise adequate levels of funding for prioritised projects often result in the stagnation of regional infrastructure projects. Against this background the importance of developing funding frameworks at MS level, that set out rules and conditions to safeguard domestic and international investors, becomes apparent.

2.2.15 Capacity of Public Sector Institutions and Skills Shortages

Although many people are employed in public sector agencies in the region, the availability of skilled human resources are limited. This tendency is partly blame for the slow pace of implementation of regional transport programmes. To accelerate the implementation of key regional programmes (those set out in the RIDMP), it is imperative that MS governments upskill resources, especially in key areas, such as project management and finance.

A shortage of skilled technical resources is widely acknowledged as a contributing factor towards failure of MS to prepare projects for bankability. This problem is worsened by the long-term tendency to award public infrastructure contracts to non-African companies, limiting skills and technology transfer. As a result, project costs escalate, local talent is not developed, and immigrant talent is imported to fill the gaps. Moving forward, public sector institutions should adopt and support a culture of learning, sharing and innovation. It is therefore important that formal and informal education and training programmes promote innovation and creativity.

2.2.16 Corrupt Practices along Transport Corridors

Corrupt practices along regional transport corridors in the SADC is widespread. Several checkpoints are found along regional road transport networks and while many of them are legal, some of them are not. Cross-border road transport operators are subjected to harassment, corruption and extortion at informal checkpoints.

Identified by their number plates, the thinking goes that South African transport and logistics companies carry more money onboard than their SADC counterparts, therefore South African vehicles are frequently targeted by criminals.

Corrupt activities do not only take place at law enforcement checkpoints along corridors, but also at border posts where various actors, including customs officials, border guards and immigration officials, with different powers and bureaucratic mandates, uses the opportunity to extract bribes. This practice reveals that while law enforcement inspections are supposed to increase compliance levels, it often increases the probability of non-compliance.

Corrupt activities are particularly acute at the Beitbridge border post that handles the largest volume of traffic in the SADC region. Although this border is notorious for long delays, the situation has worsened since the outbreak of the Covid-19 pandemic since travellers must be screened for the Covid-19 virus. According to the Road Freight Association (RFA) in South Africa, this association often receives hourly complaints about incidents where money is demanded from truck drivers to enable them to move forward in the queue. While the average waiting time at Beitbridge is around 24 hours, truck drivers sometimes wait up to four days before they get permission to move through the border post. (<https://www.news24.com/citypress/news/tempers-flare-as-bribes-block-border-crossing-resulting-in-long-queues-and-truckers-waiting-up-to-four-days-20200801>).

Corruption is also acute at the Kasumbalesa border that is characterised by a build-up of trucks on both sides of the border, awaiting customs clearance. Trucks moving to and from the mines in Katanga provinces pass through this border, which is the main road link between the DRC and Southern Africa. In 2019 around 500 trucks crossed into the DRC each day. (<https://www.theeastafrican.co.ke/tea/news/rest-of-africa/zambia-drc-border-post-set-for-facelift-1417844>).

Unfortunately, congestion at the Kasumbalesa border has created a breeding ground for criminality, with reported incidents of truck drivers who carry USD to pay clearing fees, being held at gunpoint by soldiers who robbed them of their cash. (Goddard. 2018). Corrupt activities do not only increase the cost of transportation, but also contribute to burgeoning poverty among a major part of the population in the region. This contribution aims to identify illegal practices that can impact the efficiency of the main West African corridors suffering from the increased distances they induce.

2.2.17 Truck Stops

SADC, like all other African Regional Economic Communities (RECs) has a poor safety record, compared to world standards. The poor safety record can be attributed to several factors, including the uneven spread of formal truck stops along road transport corridors. An example of this tendency is found along the NSC. As a rule of thumb, the further North from South Africa cross-border road transport operators travel, the less developed truck stop facilities become, and the greater the danger of robberies at these facilities.

The findings of previous ASCBOR's propose that Corridor Management Institutions (CMIs) in the SADC take the lead in establishing truck stops along road transport corridors that they manage. To date, the Trans Kalahari Corridor Secretariat (TKCS) has taken the lead in the region with the completion of a feasibility study into the establishment of truck stops along the TKC. Suitable locations for truck stop developments have been identified and engagements with local authorities and relevant Ministries are on-going towards availing suitable land for truck stop development.

2.2.18 Xenophobic Attacks on Foreign Operators / Driver Conflict

Xenophobic attacks on foreign truck drivers in South Africa is not a new challenge but has been building up over years and a solution to this alarming tendency still to be found. This criminal act has two important dimensions:

- **Labour issues** – deals with tendencies by some employers displacing South African truck drivers with foreign nationals and subsequent sporadic actions of torching of trucks by those affected to get government to take actions against foreign truck drivers;
- **Business issues** - ownership of trucks, tenders and contracts and competition between companies for lucrative routes are emerging as challenges that are introducing new set of dynamics.

As far as labour issues are concerned is it worth mentioning that foreign drivers are not represented by Unions. Transport companies are therefore inclined to employ foreign nationals without proper documentation or paying them unfair wages while also imposing strict conditions of service (e.g. longer working hours) on them. The employment of foreign drivers intensifies xenophobic attacks and is witnessed in an increase in the hijacking and burning of vehicles on South African highways, especially on the N3 highway that connects between Durban and Johannesburg. Between April and November 2020, 84 incidents of xenophobic attacks have been recorded in South Africa (<http://www.labour.gov.za/government-moves-to-deal-decisively-with-attacks-on-trucks>).

In retaliation, foreign truck drivers have threatened to block South African truck drivers from crossing land borders into other neighbouring countries, if they are forced to leave their jobs in South Africa. Any such attempts may lead to unrest at cross-border points resulting in

congestion or delays for freight trucks and customs processing time, which is already significantly impeded by COVID-19 restriction.

National law prescribes that transport companies adhere to a quota system regarding the employment of national and foreign truck drivers. Despite stipulations, South African companies often deviate from prescribe regulations. A request made by selected South African companies who engage in cross-border operations, is that the legal frameworks dealing with the quota system (e.g. percentage split foreign vs. national drivers) be amended. To solve this problem, the C-BRTA is engaging with other sector role-players (e.g. Department of Home Affairs, Department of Labour) to seek a long-lasting resolution to this matter.

Engagements with South African companies who engage in cross-border operations reveal another perspective, namely that South Africans citizens are often not willing to travel to many African countries (e.g. Mozambique and the DRC). Reported incidents exist where South African truck drivers abandoned trucks in some MS (e.g. Mozambique). Furthermore, local citizens are inclined to disobey labour laws.

2.3 Impact of COVID-19 on Cross-Border Operations

The effects of the COVID-19 pandemic have not spared the SADC and like in all other parts of the world, MS economies have suffered from the various measures that are being imposed to try and contain the spread of the virus. COVID-19 lockdowns, particularly, the closure and/or restrictions of ports of entry have been limiting the movement of goods and/or types of goods being allowed across into other regional markets. Not all borders were open during the lockdown periods. In addition, regional countries added more COVID-19 induced controls, which are blamed for delaying road and air cargo movements at regional ports of entry notwithstanding existing cargo movement facilitation policies.

Firstly, the mandatory health checks for cross border truck drivers and crews and compulsory disinfection of trucks before and after crossing, resulted in delays at most border posts, especially at the following inland borders:

- Nakonde (between Zambia and Tanzania);
- Chirundu (between Zambia and Zimbabwe),
- Forbes (between Zimbabwe and Mozambique),
- Beitbridge (between Zimbabwe and South Africa),
- Lebombo (between South Africa and Mozambique) and;
- Kopfontein (between South Africa and Botswana).

Further to the health checks and disinfection of cross-border vehicles, some MS also insisted on the physical inspection of cargo despite the COVID-19 induced reduction in staff levels. Not all MS embrace risk management protocols. This is mainly due to the continued use of manual processes to process import and export documents by border agencies at the Botswana, Zambia and Zimbabwe ports of entry. This practice causes delays in the movement of cargo across national territories since truck drivers and clearing agents still need to submit hard copies of documents to customs authorities for, inter alia, verification, stamping and filing, a process that greatly slows down the movement of goods.

Border delays are more acute at the Beitbridge and Chirundu border posts. According to information sources at hand, between 4 August 2020 to early September of the same year, commercial vehicles crossing between Zimbabwe and South Africa experienced 7 prolonged delays. The average clearance time had initially been fixed at 24 hours, but later extended to 96 hours. The delays have been attributed to screenings for COVID-19, plus further delays linked to travel restrictions in force in Zimbabwe and South Africa and increased police roadblocks on the highways. In August 2020 it was reported that the queue to reach the border post in South Africa was 15-kilometre long. (Mataba, K & Ismail, F. 2021:7).

At the Chirundu OSBP, Zambian clearance procedures created severe congestion, resulting in trucks queuing on the Zimbabwe side of the border northbound. On 2 April 2020, the queue was around 9-kilometre long. Drivers slept in their trucks for an average of two nights with no ablution facilities. No preferential treatment was given to trucks that carry essential goods (e.g. medical supplies). As a result, Zambian border processes have been accused of creating a bottleneck in the movement of transiting cargo in its efforts to protect national health interests. (Mataba, K & Ismail, F. 2021:7).

Further to prolonged delays at border posts, the COVID-19 pandemic caused other disruptions that impacted negatively on trade facilitation. Examples include:

- Increased smuggling activities on prohibited goods – notably on cigarettes and liquor into South Africa;
- Increase in human trafficking - through illegal crossing points and by commercial truck drivers;
- Prohibition on the Importation of certain products - In South Africa and Botswana restrictions on the public consumption of beer and cigarettes have affected trade in these two products;
- Prohibition on the exportation of certain products - most SADC MS have introduced measures that restrict the exportation of several goods, including face masks, ventilators, sanitisers, to ensure there are no shortages in their countries.

2.3.1 Impact of COVID-19 on SADC Economies

The impact of COVID-19 was first felt in China due to the role this country plays in global manufacturing. China is a major consumer of agricultural products and disruptions to manufacturing in China rippled through global supply chains. Cargo was backlogged at China's major container ports, while travel restrictions led to a shortage of truck drivers to pick up containers, and ocean carriers cancelled (or blanked) sailings. The resulting shortage of components from China impacted manufacturing operations overseas. Although manufacturing processes has picked up in China a return to full production capacity is unlikely in the short-term because of the spread of the pandemic to China's trading partners.

The COVID-19 pandemic has brought multiple challenges to the SADC as a region and to its member countries. Some of these challenges include the unavailability of medicines and health equipment and food insecurity. Declining growth prospects in the major export markets of China, the United States and the European Union due to the virus has led to lower commodity prices and hence lower export revenues for the SADC that is characterised as a highly commodity dependent region. The fall in commodity prices is acknowledged as the main contributor to the contraction of SADC economies, many of which are still anchored on the agriculture and mining sectors.

However, the pandemic hit when SADC economies was already experiencing flaccid growth rates. For example, South Africa's Gross Domestic Product (GDP) for quarter 4 of 2019 decreased by a further 1.4 percent, after contracting by 0,8 percent in the third quarter, plunging the economy into a technical recession. Since then, further hurdles have emerged, including load shedding and the coronavirus pandemic which has created havoc on regional and global markets. Angola, Botswana, Zambia and Zimbabwe all face dim growth prospects, in main due to lower commodity prices, drought and power shortages. (United Nations Economic Commission for Africa. 2020).

According to predictions, the SADC economy was expected to contract by around 3.3 percent in 2020, while debt levels was likely to rise to 90 percent of regional Gross Domestic Product (GDP). Budget deficits is expected to rise to around 9 percent of GDP due to the increase in health spending, as well as the provision of stimulus packages to sustain economies. (United Nations Economic Commission for Africa 2020).

The slow opening of SADC border posts has had a severe impact on intra-SADC trade facilitation. A rise in active COVID-19 during the early months of 2021 compelled several SADC MS to reintroduce restrictions that reduce regional economic prospects against the backdrop of projected regional real GDP growth contraction of 4.8% in 2020. (<https://www.accord.org.za/analysis/covid-19-stresses-intra-sadc-trade/>)

Against this background COVID-19 has greatly undermined intra-SADC trade. However, the severity of economic underperformance varies across MS since some countries have been avoiding the early withdrawal of stimulus packages and safety nets thereby reversing the progress that has been made to revive the economies. Also, closure of border posts forced informal cross border traders to smuggle goods through undesignated points thereby evading all sanitary and phytosanitary controls, payment of import duties and flooding local markets with smuggled goods. (<https://www.accord.org.za/analysis/covid-19-stresses-intra-sadc-trade/>).

Zimbabwe informal traders continue entering South Africa through undesignated points notwithstanding the risk of crossing the crocodile-infested Limpopo river, an electric fence, and patrolling armed soldiers. The South African Police Services (SAPS) apprehended several cases of cigarette smuggling syndicates and increases in cigarette smuggling cases from Zimbabwe, and liquor smuggling from Lesotho during the hard lockdown period when the importation and consumption of alcohol was banned in South Africa. (<https://www.accord.org.za/analysis/covid-19-stresses-intra-sadc-trade/>).

In South Africa the introduction of level-5 COVID-19 lockdown in March 2020 by the South African government costed local importers R1,4 billion rand in storage and demurrage cost, while more than 20,000 containers were left in storage facilities. (<https://www.everstream.ai/risk-center/special-reports/xenophobic-attacks-on-foreign-drivers-in-south-africa/>).

In June 2021, more than a year after the release of the United Nations study, the COVID-19 pandemic continues to disrupt trade, logistics and tourism. The slow global recovery continues to decrease commodity prices, including raw materials, oil and minerals, the main exports from the SADC region. According to projections of the World Health Organization (WHO), the virus will be around for long. This leaves SADC countries with little choice but to shift their focus to intra-regional trade and investment to reboot their economies and prepare for a post-pandemic order.

2.4 Transport and Logistics Performance

Previous sections of this chapter (section 2.2) alluded to the existence of several infrastructure impediments, faced by cross-border operators along regional road transport corridors. These constraints materialise in time delays and increase the cost of doing business in all African Regional Economic Communities (RECs). Infrastructure constraints are also a main cause of the low levels of trade amongst MS that accounted to only 15% of Africa's total trade in 2019. Most African exports are shipped to foreign markets, notably China, the United States and the European Union (EU).

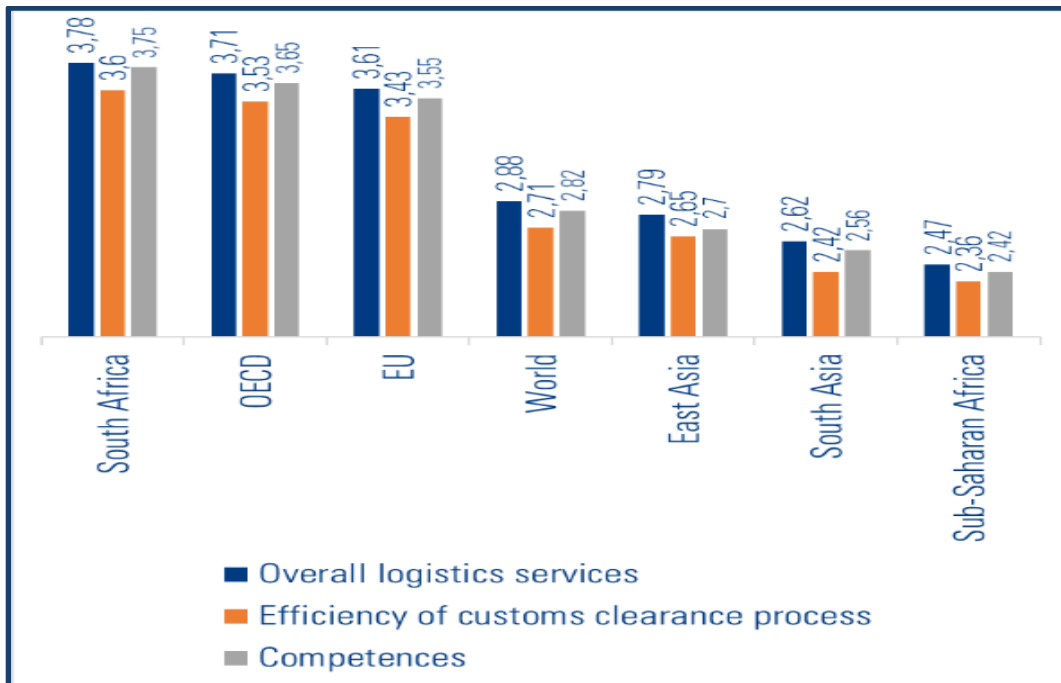
The cost of transport is extremely high in Africa and is brought on by hard and soft infrastructure inefficiencies. Poorly maintained road sections, missing links along regional road transport corridors and soft issues such as costly and lengthy customs procedures and lack of ICT systems integration continue to undermine the growth of the cross-border road transport industry.

The World Bank Group conducts a Logistics Performance Index (LPI) study on a regular basis. Essentially, the LPI is an interactive benchmarking tool created to assist countries in identifying the challenges and opportunities they face in their performance on trade logistics and what they can do to improve their performance. The LPI study analyses countries through the following six indicators:

- The efficiency of customs and border management clearance;
- The quality of trade- and transport-related infrastructure;
- The ease of arranging competitively priced international shipments;
- The competence and quality of logistics services;
- The ability to track and trace consignments; and
- The frequency with which shipments reach consignees within the scheduled or expected delivery time

The latest LPI (2018 edition) allows for comparisons across 160 countries. The index ranges from 1 to 5, with a higher score representing better performance. Figure 1 illustrates the LPI for selected global RECs, based on the findings of the 2018 World Bank study.

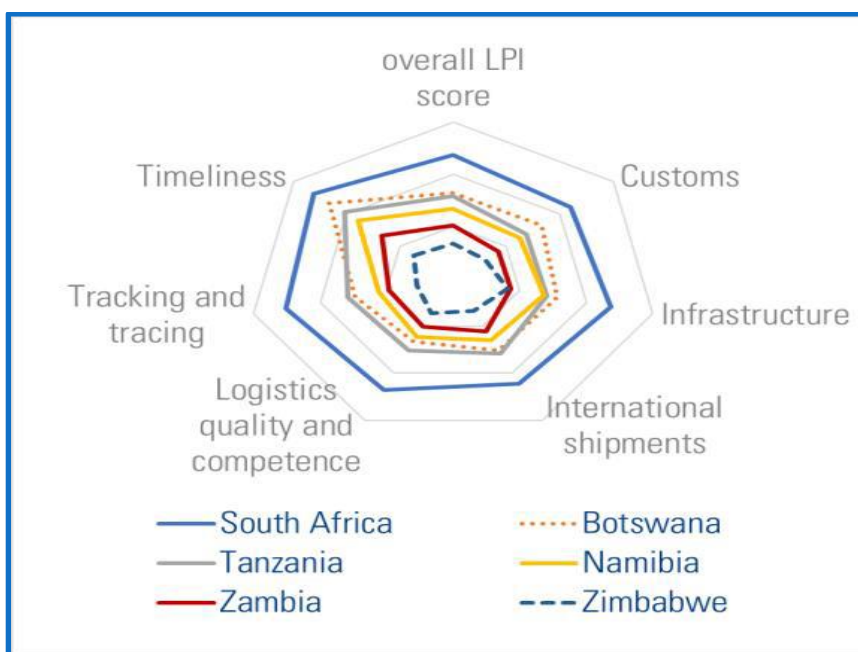
Figure 1: Comparison of Logistics Performance



Source: The European House - Ambrosetti on World Bank Data. 2018

Figure 1 reveals that Sub-Saharan Africa (SSA) ranks as the worst-performer region in terms of logistics, behind the world average of 2,88 and far from the best performers. A key finding of the 2018 study is that SSA displays the highest possible variability in terms of logistics performance. This trend is visible in figure 1. While SSA came out bottom of the list in terms of logistics performance, South Africa (that forms part of SSA) came out on top with a score of 3,78.

Figure 2: Logistics Performance Index across Selected SADC Countries.



Source: The European House - Ambrosetti on World Bank Data. 2018

Figure 2 shows that South Africa (indicated in the blue line) outperforms all other regional peers. Even at country level, differences are noted with unbalanced outcomes between different areas. This may point to the existence in bottlenecks in overall logistics performance. For example, Botswana performs well in timeliness, but has rather poor tracking and tracing services. Tanzania is also good in timeliness, but customs hinder logistics performance in the country.

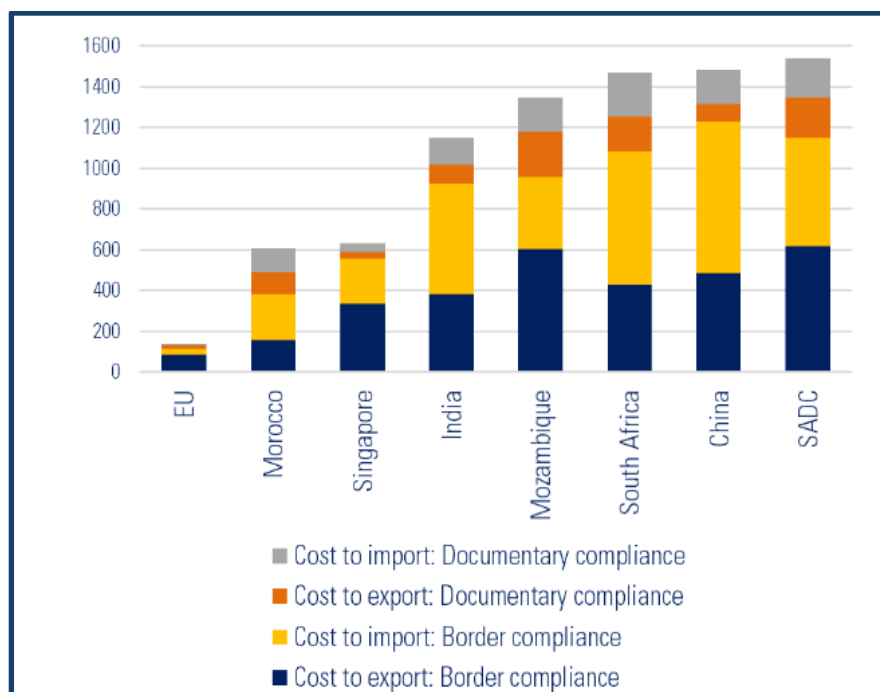
The findings of the 2018 LPI study also point to the heterogeneity of SADC economies. Zimbabwe, with an overall score of 2.12, ranks in 152th position (out of 160 candidates) and lies in the bottom of the 10 least performing LPI economies. South Africa, on the other hand with an overall score of 3.38 ranks amongst the top performing upper-middle income economies for 2018. (World Bank Group 2018:12). Due to different levels of economic development, SADC countries are characterised by acute economic imbalances and inequalities.

According to literature sources, the poor state of transport infrastructure in SADC (and the rest of Africa) can be attributed to several factors, including prolonged under-investment in transport infrastructure, poor and unintegrated planning at intra-national and intra-regional level, lack of technical expertise, poor political will amongst public sector bodies and a shortage of cross-country projects.

Although investment in transport infrastructure is regarded as one of the key levers to overcome high transport and trading costs in the SADC, it is important to acknowledge that high logistics costs are not necessarily the result of hard infrastructure inefficiencies. Rising logistics costs can also be attributed to soft infrastructure elements, such as poor governance, low skills levels (especially in the ICT and digital technology fields) and operational inefficiencies.

High costs associated with crossing borders also serve as a major obstacle for intra-regional and international trade. Figure 3 here-under illustrates that the cost of trading across borders in the SADC region displays values higher than other benchmarking candidates, considering border and documentary compliance costs. In major SADC economies (e.g. South Africa and Mozambique) the cost of trading is much higher than in other countries (e.g. India, Marocco and Indonesia).

Figure 3: Trading Across Borders – Selected Countries and Regions



Source: *The European House - Ambrosetti on World Bank Data. 2018*

Figures 1,2 and 3 illustrates the inter-relationship that exist between transport and economic growth. While efficient transport infrastructure/ systems support trade and travel that in turn stimulates economic growth and development, the latter is also true. Inadequate transport infrastructure and systems drive transport and logistics costs upwards and increase the cost of doing business. To bring about improvement, the SADC must implement measures that address hard and soft infrastructure inefficiencies in a similar fashion.

2.5 Conclusion

The discussions of this chapter indicated that the existence of multiple hard and soft infrastructure inefficiencies impede the seamless movement of cross-border traffic in the SADC. Infrastructure challenges raise trade and logistics costs and is partly to blame for the region (SADC) and continent’s poor performance in the international arena. The current state of transport infrastructure in the SADC constitutes a serious handicap to the region’s production and competitiveness.

In response to the infrastructure challenges, several transport reforms have been approved for implementation at Continental, Tripartite and Regional level to bring about improvement. Chapter 3 sheds light on the status of on-going reforms.

3. TRACKING DEVELOPMENTS AIMED AT IMPROVING THE CROSS-BORDER ROAD TRANSPORT ENVIRONMENT

3.1 Introduction

Several projects have been approved for implementation by various structures at Continental, Tripartite and regional (SADC) level to address infrastructure and operational constraints faced by cross-border operators who conduct business for reward in Africa.

Given the vast number of reforms that has been approved for implementation and acknowledging the fact that information on the implementation status and impact of reforms is not readily available, this section does not dwell on all reforms. Instead, the discussions of this chapter are limited to strategic initiatives unfolding along regional transport corridors across the continent that have the potential to stimulate trade and transport movements on the continent through eliminating infrastructure gaps.

3.2 Developments unfolding at Continental Level

Several initiatives are currently being implemented at continental level to address infrastructure inefficiencies. For the purposes of this study, the following programmes are noteworthy:

- Programme for Infrastructure Development Africa (PIDA);
- Presidential Infrastructure Champion Initiative (PICI);
- Move Africa Initiative; and
- Linking Africa Plan (LAP).

3.2.1 Programme for Infrastructure Development Africa

PIDA is a continent-wide infrastructure programme for the development of priority regional and continental infrastructure in transport, energy, trans-boundary water resources and ICT. Agenda 2063, which is the African Union's (AU) strategic framework for the socio-economic transformation of the continent over the next decades, identifies PIDA as the key strategic framework for the development of regional infrastructure. As such, 5 of the 12 flagship programmes of Agenda 2063 are infrastructure programmes.

Although PIDA underscores Africa's infrastructure development all the way until 2040, the programme's Priority Action Plans (PAP) is structured in a phased manner to rectify infrastructure gaps by 2040:

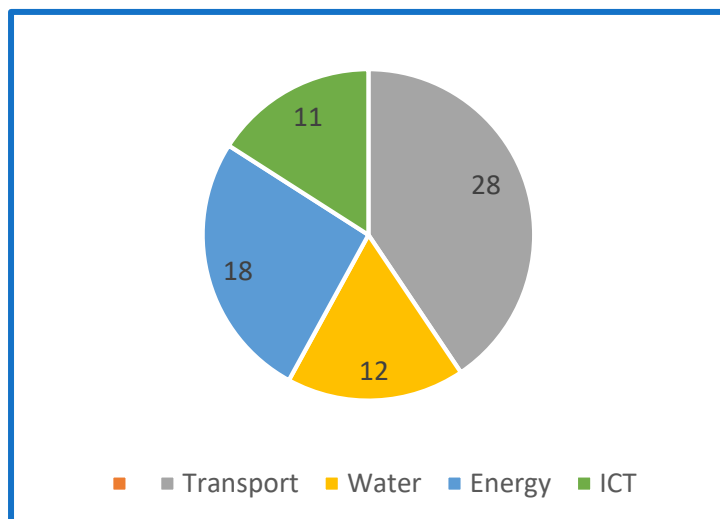
- Short-term (2012-2020);
- Medium-term (2021-2030); and
- Long-term (2031-40).

The first PIDA Priority Action Plan (PIDA-PAP 1), which was set out for implementation until 2020, embodied 51 cross-border programmes decomposed into over 400 individual projects in the energy, transport, ICT, and trans-boundary water sectors.

The development of PIDA PAP 2 has commenced and will be executed over the next decade (between 2021-2030). PAP II is premised on an *Integrated Corridor Approach*, which ensures that all related corridor infrastructure, link to and complement each other. Emphasis is placed

on inter-modal transport to enable a gradual shift in traffic from road to rail. Figure 4 illustrates infrastructure projects for the infrastructure sub-sectors under PAP 2.

Figure 4: PIPA PAP 2: Projects for the Infrastructure Sub-Sectors



Source: Figure created for study. Information extracted from www.au-pida.org

PAP 2 projects consist of 69 projects. Most projects are directed to transport (28), while the remained are allocated to energy (18), water (12) and ICT (11).

➤ Status of PIDA

The Virtual PIDA Information Centre (VPIC), an online knowledge portal facilitates the sharing of PIDA-PAP information and enables the tracking and reporting of progress in PIDA-PAP implementation.

PAP 1: 2012-2020

During October 2019 only 175 of the 408 PIDA PAP 1 projects that were tracked, reached the construction or operation stage. At its close in 2020, around 50 percent of those were in some stage of operation, construction, tendering, or financial close. The implementation of PAP 1 projects has been limited. Several reasons are cited for poor implementation, including:

- Too many projects added an element of complexity, which hindered the implementation of PIDA PAP I; and
- Lack of an implementation strategy. While the institutional architecture for infrastructure development in Africa is clear on the roles that various institutions should play in planning and developing projects, the implementation of PIDA programmes lies with MS and RECs, who often do not coordinate amongst each other for the timely execution of large infrastructure projects.

PAP 2: 2021-2030

The priority list of projects for PIDA-PAP 2 (there are 69 regional infrastructure projects) has been approved by the Assembly of the African Union Heads of State and Government during an Africa Union (AU) summit in February 2021.

3.2.2 Presidential Infrastructure Champion Initiative

PICI was born out of a proposal by South Africa to accelerate regional infrastructure development through the political championing of projects. The main purpose of political championing is to bring visibility and awareness to the selected trans-boundary projects, unblock bottlenecks, co-ordinate resource mobilisation and ensure project implementation. As such it presents an opportunity for African Heads of State and Government to be actively involved in the development and implementation of projects.

South Africa, under the leadership of the reigning president, President Cyril Ramaphosa, chairs the PICI. The projects cover various transboundary infrastructure sectors, including transport, energy, information and communication technology (ICT), and transboundary water. The PICI was jointly conceptualised, developed and implemented by the African Union Development Agency (AUDA), NEPAD Agency and the South African Presidency.

Initially eight projects were identified to be championed by seven selected Heads of State and Government. Most of these projects were endorsed by the 16th AU Assembly in January 2011 in Addis Ababa, Ethiopia. In recent years, new projects were added to the list, making the number of projects 11. The names of the PICI projects are listed below:

- Missing links on the Trans-Sahara Highway;
- Kinshasa-Brazzaville Bridge Road/Rail Project;
- The Abidjan-Lagos highway project;
- The Lake Victoria - Mediterranean Sea Navigational Line;
- The Lamu Port-Southern Sudan-Ethiopia Transport (LAPSSET) Corridor Project;
- The Namibian - International Logistics Hub;
- The Trans-Sahara Gas Pipeline;
- Unblocking Political Bottlenecks for ICT Broadband and Optic Fibre Projects Linking Neighbouring States;
- The Dakar-Bamaka Road/Rail Project;
- The North-South Road, Rail and related Infrastructure Corridor; and
- The Sawakin-Port Sudan Project.

➤ Status of PICI

The NEPAD Agency, acts as the Secretariat and Executing Agency of the PICI. Regular Technical Task Team (TTT) workshops are conducted to monitor the progress of the projects and to provide a platform to share experiences on project implementation.

PICI projects are projects are being implemented across the countries involved and are in different stages of development. Some projects (e.g. Sawakin-Port Sudan and Dakar-Bamaka Road/Rail Project) are still in the early phases of the life-cycle and awaits funding to move forward.

For other projects (e.g. unblocking political bottlenecks for ICT broadband) more progress is noted. The ICT broadband and optic fibre project was completed for all East African Countries (EAC) and were linked to the submarine optic fibre cables from Mombasa to Dar es Salaam. South Africa also approved the legal framework regarding roaming and international communications within the initiative. The purpose is to define a harmonised legal and tariff framework for roaming and international calls on fixed and mobile communication networks open to the public.

Constructing missing links on the Trans-Sahara highway is another example where progress is noted. This project will be implemented in 2 phases. In 2020, 64% of phase 1 (covering 125 km) was completed and 74% of phase 2 (covering 100 kilometre) was finalised. (NEPAD & The Presidency Republic of South Africa. 2020: 18).

The North-South Road, Rail and related Infrastructure Corridor project is driven by South Africa. This project incorporates several transboundary projects, including the establishment of the Beitbridge OSBP, the Inga III hydropower project and the Lesotho Highlands Water project. The construction of OSBP facilities (on the Zimbabwean side of the border) has commenced, while negotiations on the Inga II hydropower project is on-going.

3.2.3 Move Africa

NEPAD has launched the Move Africa Initiative in May 2016 in Kigali, Rwanda. This continental initiative seeks to address policy hurdles to trade across the continent to enhance intra-Africa trade through comprehensive corridor development.

Comprehensive corridor development entails providing adequate “*hard*” infrastructure (e.g. roads, railway lines and bridges) and “*soft*” infrastructure such as cross-border transport laws and regulations related to border crossings (e.g. customs clearance, quarantine) and organisational systems and resources to ensure the smooth operation of hard infrastructure across all transport modes. Both “*hard*” and “*soft*” infrastructure is critical to unlocking the continent’s economic potential.

Corridor development across Africa is inhibited by several complex factors and it is impossible to fully improve the entire cross-border transport system by focusing on either the hard or soft side of infrastructure in isolation. For this reason, a holistic approach is required when planning is undertaken for corridor development.

While PIDA articulates prioritised programmes for hard infrastructure, the Move Africa Initiative, which fits squarely within the PICI objectives, aims to package soft infrastructure issues to reduce transport costs along corridors. The Move Africa initiative also entails the development of a Traffic Light System (TLS) to unlock some of the transport challenges along transport corridors.

This initiative will also result in the establishment of a “traffic light” system to assess the performance of cross-border logistics. Logistics diagnostic surveys are conducted from time to time of functioning OSBPs to identify bottlenecks. Pilot studies conducted to date focused on OSBP’s and assessments were based on the following parameters:

- Traffic flows and volumes on key corridors;
- Policy and regulations concerning OSBPs;
- Existing procedures at OSBPs; and
- Current operational flows at OSBPs.

The TLS seeks to address the following key issues:

- Risks and rewards, as well as the appropriate strategic and operational decisions to support private sector players;
- Certainty of the timeline cost factors and return on investment based on potential that these corridors offer; and
- The handling of stakeholder priorities by governments and conditions along selected corridors that hinder growth of economic activities.

The belief exists that the TLS will lead to informed and accelerated corridor development that will result in greater synergies between private-sector partners, the NEPAD Agency and its development partners. Ultimately, it will be expected of African RECs to monitor and report on the performance of OSBPs on key corridors. Over time, the NEPAD Agency plans to expand the “traffic light” system from assessing OSBP logistics performance to monitoring the performance of the entire corridor. This provides an opportunity to attract broader private-sector participation in the initiative.

➤ **Status of Move Africa**

Since the launch of Move Africa, the NEPAD Agency convened several high-level dialogue sessions at continental and international level to attract the development community and private sector support for the implementation of prioritised projects. NEPAD has also partnered with the Japan International Cooperation Agency (JICA) to reduce processing inefficiencies and delays at inland borders through the implementation of OSBPs, which will be monitored in its TLS.

The SADC Committee of Ministers of Transport has endorsed four OSBPs to pilot the Light Traffic System. These borders that will also act as roadmap for implementation of the TLS, are:

- Beitbridge,
- Kazungula,
- Kasumbalesa; and
- Chirundu.

The TLC has been piloted at all the above border posts. Furthermore, the AUDA- NEPAD has extended the TLS tool to the following border posts, located along the Abidjan-Lagos Corridor:

- Seme-Krake border post between Nigeria and Benin; and
- Noepe border post between Ghana and Togo.

3.2.4 Linking Africa Plan

Road transport corridors in Africa are plagued by several hard and soft infrastructure inefficiencies that materialise in excessive time delays, increased transaction costs, poor and poor connectivity. To change the status quo, the C-BRTA, upon request of the Department of Transport (DOT) in South Africa, and in consultation with various regional and continental stakeholders embarked on the development of a Linking Africa Plan (LAP) in 2017.

The LAP is developed as a transport and trade integration campaign that seeks to connect the economies of the African continent through the creation of seamless, integrated transport infrastructure /systems, while also transforming and diversifying African economies by creating new markets within Africa itself.

The LAP builds on the momentum of regional integration initiatives, enshrined in various African Union programmes (e.g. Africa 2063 Agenda: The Africa we want) and Tripartite programmes (e.g. Tripartite Transport and Transit Facilitations Programme). Therefore, the LAP therefore does not seek to replace programmes being implemented, but rather compliments them and seeks to attend to, and address the soft issues which, historically have been neglected.

The LAP answers questions beyond the physical barriers that are constraining the linking of the continent. The Plan is therefore essentially focused on trade and transport regulatory issues and seeks to give effect to the task of harmonising cross-border trade and transport governance matters. Furthermore, it is concerned with partnering with, and working with private sector players to improve predictability for cross-border road transport operators, cargo owners, traders of cross-border goods and services, freight forwarders and many other players in the cross-border trade and transport value chain.

➤ **Status of Linking Africa Plan**

From the outset, the C-BRTA has worked closely with selected national, regional and continental stakeholders in developing the LAP. The draft plan was presented to corridor role-players at the OR Tambo Road Transport Indaba, hosted by the C-BRTA in partnership with the DOT and with support of the SADC Secretariat, in October 2017 in Pretoria, South Africa. The Indaba was attended by various government and regulatory stakeholders from various MS in the East and Southern African region, cross border road transport operators, donor and development partners, and academia and industry experts.

Inputs received from delegates were incorporated into the LAP and assisted with the identification of key implementation reforms. As already mentioned, the LAP focus mainly on addressing soft issues facing the transport, trade and industrial sectors. The reason for prioritising soft issues is that the mandate of public sector role-players (including the C-BRTA) enables relevant parties to work together in developing and implementing reforms to address soft infrastructure constraints. Furthermore, solutions to soft issues are less costly to implement and their benefits are visible over a shorter period.

Since the LAP compliments existing continental and regional initiatives, the importance of adopting a coordinated and collaborative approach to align the LAP with continental and regional programmes / initiatives cannot be over-emphasised.

3.3 Developments unfolding at Tripartite Level

Further to continental initiatives, several strategic trade and transport facilitation reforms have been approved and are currently being implemented by the EAC-COMESA-SADC Tripartite. More information is presented in sub-sections 3.3.1 and 3.3.2 below.

3.3.1 Tripartite Transport Transit Facilitation Programme

The Tripartite initiative is currently developing a flagship programme under the Tripartite Free Trade Area Agreement that is titled, the Tripartite Transport Transit Facilitations Programme (TTTFP). The purpose of the TTTFP is to develop and implement harmonised road transport policies, laws, regulations and standards for efficient cross border road transport.

The TTTFP combines a series of initiatives of all three REC into a single trade facilitation programme that provides for:

- A mechanism for reporting, monitoring and eliminating NTBs;
- Border and customs procedures for OSPBs, coordinated border management, regional customs bonds and transit information management systems;
- Immigration procedures; and
- Transport procedures (regional third-party insurance, vehicle standards and regulation, self-regulation of transporters, overload control, harmonised road user charges and regional corridor management systems).

Key results are expected in the following four areas (Bingandadi, L. 2018):

- Result 1: Implementation of Tripartite Vehicle Load Management Strategy;
- Result 2: Implementation of harmonised vehicle regulations and standards;
- Result 3: Implementation of Transport Register Information Platform System (TRIPS);
and
- Result 4: Improved efficiency of regional transport corridors.

The Tripartite Vehicle Load Management Strategy identifies optimal weighbridge locations in the Tripartite and sets out the methodology for calculating overload fees. It also provides the basis for cooperation between Tripartite MS regarding vehicle load management, law enforcement, information sharing, as well as mechanisms for dispute resolution.

On the other hand, the implementation of harmonised vehicle regulations and standards intends to address cross-border transport and trade challenges (e.g. high transport costs and delays). This programme, which is funded by the European Union (EU), focuses on the establishment of minimum standards, instruments, enabling regulation and systems for 11 key elements of road transport activities set out in Table 6.

Although the implementation of the TTTFP was originally set for 2022, the implementation of the TTTFP has been extended to May 2023, due to extended negotiations on the VLMA and MCBRTA, as well as the COVID-19 pandemic.

Table 6: Harmonisation Elements

Key Elements of Road Transport Activities		Output
1.	Vehicle Overload Control	Development of harmonised regulations and standards and uniform management & control systems to support weighbridge developments and permit inter-state coordination.
2.	National Transport Operator Registration	Development of a uniform and harmonised system of operator registration, backed by a uniform national transport information system.
3.	National Transport Information System	Establishment of TRIPS to permit harmonisation, coordination and joint control of cross-border road transport in the region and the sharing of information on drivers, vehicles and operators involved in cross-border road transport operations and services.
4.	Vehicle Dimensions	Development of harmonised regulations and standards.
5.	Vehicle Testing Stations and Inspection	Development of harmonised regulations, standards and procedures.
6.	Training, Testing and Licensing of Drivers	Development of harmonised regulations, standards and procedures.
7.	Transportation of Abnormal Loads	Development of harmonised regulations, standard procedures and support systems.
8.	Transportation of Dangerous Goods	Development of harmonised classifications and training standards, regulations and procedures.
9.	Third Party Motor Vehicle Insurance Schemes	Development of harmonised cross-border third party motor vehicle insurance schemes.
10.	Vehicle Load Management MoU	Signing /ratification of Tripartite Vehicle Load Management MoU
11.	Multilateral Cross-Border Road Transport Agreement	Development and implementation of the Multilateral Cross-Border Road Transport Agreement.

Source: MCLI Newsletter. 29 March 2018.

The successful implementation of the TTTFP depends on Tripartite MS signing and implementing the:

- Vehicle Load Management Memorandum of Understanding (VLM MoU); and
- Multilateral Cross-Border Road Transport Agreement (MCBRTA).

The above instruments serve as the *primary legal instruments* to drive the harmonisation of related regulations, standards and systems. Harmonisation can however not be introduced in the absence of a supporting statutory framework in the form of enabling legislation. For this reason, the TTTFP will develop Model Laws and a framework for common systems and exchange of information among MS. The following model laws has been developed under the TTTFP:

- Vehicle Load Management Model Law;
- Vehicle and Driver Quality Model Law;
- Cross-Border Road Transport Model Law;
- Dangerous Goods Model Law; and
- Model Law on Decriminalisation of Road Traffic and Transport Offences and Demerit Points System.

The following support will be provided to the selected MS, corridor institutions and other stakeholders:

- Training of experts;
- Institutional capacity building in preparation for implementation;
- Implementation of harmonised legislation, regulation, systems and procedures;
- Development, implementation and commissioning of transport information management systems; and
- Evaluation of lessons learnt on selected corridors and making of recommendations for roll-out to other corridors.

To date, Angola, Ethiopia, Kenya, Lesotho, Namibia, Rwanda, Tanzania and Uganda have made significant progress with harmonising transport rules and standards. These eight MS are at different stages of changing existing laws based on the model laws. (<https://www.sadc.int/news-events/news/ttftp-harmonise-road-transport-policies-laws-regulations-affecting-drivers-loads-vehicles-and-road-infrastructure-eastern-and-so/>)

3.3.2 Status of the Tripartite Transport and Transit Facilitations Programme

The Tripartite Sectoral Committee of Ministers of Infrastructure at their inaugural meeting on 26 October 2017, in Dar es Salaam, Tanzania officially launched the TTTFP. Since islands such as the Republic of Madagascar and the Union of the Comoros do not have active cross border road transport operators on the continent, they are not included in the TTTFP.

The Tripartite Free Trade Area (TFTA) will be officially formed once the TTTFP has been ratified by the national parliaments of all MS. Table 7 outlines progress towards implementing the TTTFP. Information was extracted from the TTTFP website on 28 June 2021 and verified during February 2022. (<https://ttftp.org/current-status/>).

Table 7: Update on TTTFP

	Key Area	Competed Work	Work in Progress	Planned Future Work
1	Implement the Tripartite Vehicle Load Management Strategy;	<ul style="list-style-type: none"> ○ The following specifications and standards documents have been compiled: <ul style="list-style-type: none"> ➤ Weigh Station Standard Design Specification; ➤ Weigh Station Module Functional Requirements Specification; ➤ Standard for Static Scale Calibration; ○ Standard for Weigh-In-Motion Calibration. ○ Approval of VLMA by the Tripartite Sectoral Committee of Ministers of Infrastructure 	<ul style="list-style-type: none"> ○ Identifying optimal weighbridge locations throughout the region. ○ Training and implementation of Vehicle Load Management within the Tripartite. ○ Benchmarking weighbridge management systems within the Tripartite. ○ Signing of the Vehicle Load Management Agreement (VLMA) by all countries. 	<ul style="list-style-type: none"> ○ Review the financial sanctions for overload control
2	Implement harmonised vehicle regulations and standards	<ul style="list-style-type: none"> ○ Drafting of agreements, model laws and regulations. ○ Country Sensitisation Workshops conducted to introduce TTTFP Agreements and model laws. ○ Standard specification for an ISO /IEC 18013 compliant driving licence and Professional Driving Permit (PrDP). ○ Conversion of domestic driving categories to categories compliant with the MCBRTA categories for Mozambique, Ethiopia, Eswatini, Uganda and Zanzibar. ○ Design of ISO compliant driving licence and PrDPcard for Angola and Ethiopia. ○ Approval of road transport model laws, model regulations and standards by the 	<ul style="list-style-type: none"> ○ Drafting of conversion provisions for driving licence categories and design of compliant driving licence cards and PrDP's. ○ Motor vehicle roadworthiness and vehicle inspection stations. <ul style="list-style-type: none"> ➤ Vehicle inspection and driving testing centre specifications. ➤ Processes for privatisation of motor vehicle Inspection. 	<ul style="list-style-type: none"> ○ Improving motor vehicle system compliancy with TTTFP baseline requirements within Tripartite MS ○ Document institutional requirements for establishing inspectorates within the Tripartite and preparation of quality requirement manual and training of inspectorate

	Key Area	Completed Work	Work in Progress	Planned Future Work
		Tripartite Sectoral Committee of Ministers of Infrastructure.		
3	Implement TRIPS	<ul style="list-style-type: none"> ○ Functional requirements for the modules of the National Transport Information System: <ul style="list-style-type: none"> ➤ Driving licence module; ➤ Vehicle and vehicle testing module; ➤ Accident module; ➤ Operator module; ➤ Transgression module; ➤ Weigh-station module; ○ Updating system specifications for TRIPS. 	<ul style="list-style-type: none"> ○ Functional and non-functional requirements for the cross-cutting functionality and interfaces of the National Transport System. ○ Update functional requirements for the modules of the national transport information System. 	<ul style="list-style-type: none"> ○ Study visits by representatives from MS to experience the model computerised systems (Malawi) and weighbridges (South Africa) for knowledge sharing. ○ Development and implementation of TRIPS. ○ Implementation of compliant National Transport and Vehicle Load Management Systems and integration with TRIPS.
4	Improve the efficiency of regional transport corridors	<ul style="list-style-type: none"> ○ Facilitating meetings between Cross Border Road Transport Regulators. ○ Governance Instruments for Lobito and Maputo Development Corridors has been developed. 	<ul style="list-style-type: none"> ○ Implementing Yellow Card Scheme in the relevant Tripartite Member States. ○ Facilitating meetings between Tripartite Member States. 	<ul style="list-style-type: none"> ○ Implementing Yellow Card Scheme in the relevant Tripartite Member States ○ Feasibility study on proposed establishment of Traffic Control Centres ○ Investigating the feasibility of a Region-Wide Corridor Management Institution

Source: <https://ttftp.org/current-status/> & <https://www.sadc.int/news-events/news/ttftp-harmonise-road-transport-policies-laws-regulations-affecting-drivers-loads-vehicles-and-road-infrastructure-eastern-and-so>

3.3.2 Multilateral Cross-Border Road Transport Agreement

Regulatory instruments in the Tripartite (e.g. Protocols, Treaties, Bilateral agreements) are still based on the assumptions of quantity regulation and “supply-side” control of the movement of freight and passenger transport vehicles, while international best practice has shifted from quantity to quality control to enhance corridor efficiency. In line with this development, the Tripartite has adopted the MCBRTA which will require signatory states to introduce quality regulation in their respective territories.

Essentially quality regulation implies that the bilateral issuing of cross-border road transport permits between 2 MS will be abolished in favour of the adoption of a MCBRTA that supports the creation of a single regional road freight market in which cross-border road transport vehicles will move freely in the Tripartite region.

The MCBRTA will act as a primary legal instrument towards implementing the TTTFP. As such it provides for the establishment of TRIPS that will capture information on cross-border operators, drivers and fleet. It is envisaged that the TRIPS will allow regulators to improve their monitoring and enforcement functions via accessing real-time information on registered operators and vehicles. Operator misconduct will be identified through operator profiling and audits and random inspections and will be registered against the operator’s profile.

3.3.2.1 Status of the Multilateral Cross-Border Road Transport Agreement

The adoption of the MCBRTA is a requirement towards introducing a harmonised regulatory framework in the Tripartite. Progress towards implementing quality regulation in the Region is witnessed in the following accomplishments:

- Development of the draft MCBRTA;
- Conceptualisation and development of guidelines for TRIPS;
- Kick-start of validation workshops with signatory states to validate draft standards;
- Signing of the MCBRTA by the Council of Ministers of Transport;
- Operationalisation of TRIPS along selected transport corridors, with a common tracking system containing mandatory health information;
- Implementation of a corridor trip monitoring system to enable the tracking of vehicles and drivers, as well as for sharing of information on the health status across borders, including COVID-19 related information.

Outstanding actions include:

- Domestication of the MCBRTA at MS level;
- Establishment of structures to coordinate the implementation of the MCBRTA;
- Full development and implementation of TRIPS; and
- Implementation of the MCBRTA.

According to the original planning estimates, the MCBRTA was scheduled for implementation between 2017 and 2022. Given the disruptions caused by the Covid-19 pandemic, the implementation timelines have been extended to 2023 when signatory states must migrate to quality regulation.

3.3 Developments unfolding at Regional Level

3.3.1 SADC Regional Infrastructure Development Master Plan

Infrastructure development in SADC is guided by the SADC Regional Infrastructure Development Master Plan (RIDMP) that was finalised in August 2012. The Master Plan outlines strategic projects in six priority sectors, including transport. According to planning estimates, the RIDMP will be implemented in a phased approach, as indicated below:

- Short Term Action Plan - 2012 –2017;
- Medium Term Action Plan – 2018 – 2022;
- Long-term Action Plan – 2023-2027.

The Short-Term Action Plan (STAP) was developed to guide the implementation of Phase 1 of the infrastructure projects under the RIDMP. The Directorate of Infrastructure at the SADC Secretariat has the responsibility to lead and coordinate, while MS and subsidiary organisations remain responsible for implementation.

3.3.1.1 Status of Short-term Action Plan Projects

The SADC Secretariat, with the support of the Austrian Development Agency (ADA) and the Development Bank of Southern Africa (DBSA) has engaged the Southern African Research and Documentation Centre (SARDC) to carry out an independent assessment of results achieved by the RIDMP Short Term Action Plan.

Although the STAP identified 98 projects, other projects that were not originally designed as STAP or RIDMP, but are considered important by MS, were added to the list increasing the number of projects to 134. Table 8 provides a summary of the overall status of prioritised SADC projects in all six priority sectors.

Table 8: Overall Status of SADC Projects: Six Priority Sectors

Sector	Pre-feasibility	Feasibility	Project Design	Financial Closure	Project Implementation	Project Completion	Total
Transport	7	27	7	1	9	1	52
Energy	3	20	3	1	2	1	30
Water	6	3	9	0	1	0	19
ICT	1	0	0	0	14	2	17
Meteorology	0	0	0	0	5	2	7
Tourism	0	1	0	0	7	1	9
TOTAL	17	51	19	2	38	7	134
Percentage	13	38	14	2	28	5	100

Source: SADC Secretariat 2019

Table 8 clearly illustrates that most of the infrastructure projects are experiencing high levels of stagnation. Of the total, only 7 projects have reached the project completion phase, while most projects were still in the planning (pre-feasibility and feasibility) phases in 2019.

Table 9 provides summary of the project phase for all transport projects.

Table 9: Project Phase of Transport Projects

Project Status	Number	Percentage
Pre-feasibility	7	13
Feasibility	27	52
Project Design	7	13
Financial Closure	1	2
Project Implementation	9	18
Project Completion	1	2
TOTAL	52	100

Source: SADC 2019

The above table shows how regional projects have fallen behind schedule, with only one project reaching financial close. In 2019 most projects (65 percent) were at the feasibility or pre-feasibility stages. The picture presented by these findings typifies the state of infrastructure projects within the region. It also underpins the need for the region to prioritise the implementation of agreed projects (those outlined in the SADC RIDMP) within specified time-frames. Failure to implement projects would imply that SADC's development goals will continue to look good on paper but fail to materialise in practice.

Table 10 outlines the status of the 52 transport sector projects as they are captured in the SADC Short Term Action Plan Assessment 2019 document (SADC.2019:30-36).

Table 10: Status of SADC Transport Sector Projects

	Project Name	Countries involved	Private Sector involvement	Status	Progress to Date
1	Construction of Standard Gauge Railway from Mtwara-Mbamba railway with spurs to Liganga and Mchuchuma	Tanzania	Yes - Consideration given to PPP arrangement	Feasibility	➤ Procurement of transactional advisor to review the feasibility study for PPP investment is at the final stage towards signing of contract.
2	Construction of standard gauge railway from Isaka-Keza-Kigali-Musongati railway line	Tanzania, Rwanda and Burundi	No	Implementation	➤ Construction for Lot I started on February 2017 and was scheduled for completion in November 2019. ➤ Lot II (422km) started March 2018 and was due for completion by April 2021.
3	Kisarawe Freight Station	Tanzania / Central Corridors	No	Feasibility	➤ Procurement of Consultants to undertake consultancy services for the feasibility study including land-use plan, implementation plan, preliminary design, detailed engineering designs and preparation of tender documents for development of dry ports at several locations. ➤ Project design will commence upon completion of feasibility study.
4	Upgrading of Zambia Railways Network from Chingola to Livingstone	Zambia	No	Feasibility	➤ Lot I stretches until 2019 and Lot II until 2021. ➤ Funding sources identified for detailed feasibility and design.
5	Luano - Chililabombwe Railway	Zambia, DRC	Yes – intention is that a private developer will implement the project	Pre-feasibility	➤ Project proposal prepared and submitted to the government by a private developer. ➤ Project Proposal approved by the Ministry of Transport and Communications, Zambia. ➤ Identification of funding sources for pre-feasibility study and detailed design.
6	National Railways of Zimbabwe Recapitalization and Rehabilitation	Zimbabwe	Yes - intention is that a private developer will implement the project	Pre-feasibility	➤ Discussions initiated with potential finance partners and investors. ➤ Feasibility study should be revised.
7	Establishment of Regional Locomotive & Wagon Pool Leasing	SADC	No	Pre-feasibility	➤ The project is yet to gain traction. ➤ Feasibility studies are required and should be conducted.
8	Regional Rolling Stock Manufacture Hub	South Africa	Yes - intention is that a private developer will implement the project	Pre-feasibility	➤ Two South African State-Owned Enterprises (SOEs) have been assigned to develop a concept document. ➤ Feasibility studies are required.
9	Francistown – Nata Road (190kms)	Botswana	No	Feasibility	➤ Feasibility study and detailed design for Sebina-Nata portion (140km) completed. ➤ Feasibility study and detailed design for the remaining 50km are required.
10	Kazungula (Kasane) to Pandamatenga to Nata Road	Botswana	No	Project Design	➤ This is a fully prepared project with funding for implementation being mobilised 100 percent from the Government of Botswana.
11	Kazungula Bridge and OSBP	Botswana, Zambia & Zimbabwe	No	Implementation	➤ The Kazungula bridge and OSBP was officially commissioned during May 2021. is work in progress
12	Bulawayo-Beitbridge Road (321km)	Zimbabwe	No	Project Design	➤ Feasibility study completed by COMESA. ➤ The Draft Final Report and Draft Bidding Documents submitted in July 2018. ➤ Funding sources for construction should be identified.
13	Upgrading of Zambia Railways Network from Chingola to Livingstone	Zimbabwe	No	Feasibility	➤ Feasibility study being commissioned. ➤ Identification of additional funding sources required.
14	Harare-Nyamapanda Road (238km)	Zimbabwe	No	Pre-feasibility	➤ Identification of funding sources and widening of the actual road required.
15	North-South Dry Port in Lusaka, Copperbelt or Central Provinces	Zambia	No	Pre-feasibility	➤ Not much progress, project is still at the concept stage. ➤ Identification of funding sources for pre-feasibility and detailed design required.
16	Durban dig-out Port (Durban Port Expansion)	South Africa	No	Feasibility	➤ Pre-feasibility study completed. ➤ Review of the feasibility study and funding required for the Port.
17	Plumtree/ Ramokgwebane OSBP	Botswana, Zimbabwe	No	Feasibility	➤ Situational Analysis completed. ➤ Feasibility study, detailed design and identification of funding sources required.
18	Pioneer Gate Skilpadhek OSBP	Botswana, South Africa	No	Implementation	➤ South African side completed. ➤ Identification of funding sources for detailed design and construction required.
19	Nakonde/Tunduma OSBP	Zambia, Tanzania	No	Implementation	➤ The Nakonde/ Tunduma OSBP was officially opened during October 2019 and functions as an OSBP
20	Beitbridge OSBP	Zimbabwe, South Africa	No	Project Design	➤ Mutual Administrative Assistance Agreement signed between the two Customs Units of South Africa and Zimbabwe. ➤ A Beitbridge Border Efficiency Management Systems Inter-Ministerial Committee has been set up to come up with an OSBP Draft Agreement. ➤ Feasibility study, design and infrastructure master plan completed. ➤ Master Plan completed on the RSA side, and needs to be harmonised with Zimbabwe. ➤ Construction of OSBP facilities already started on the Zimbabwean side of the border.
21	Kasumbalesa OSBP	DRC, Zambia	No	Implementation	➤ The building on the Zambia side is constructed and hardware setup completed. ➤ Similar work is set to commence on the DRC side of the border.

	Project Name	Countries involved	Private Sector involvement	Status	Progress to Date
22	Martins Drift Bridge expansion	Botswana, South Africa	No	Feasibility	➤ Project yet to commence. ➤ Feasibility and detailed design required.
23	Martins Drift Bridge expansion	Botswana, South Africa	No	Pre-feasibility	➤ Project yet to commence. ➤ Feasibility and detailed design required.
24	Beira-Machipanda Railway Upgrade	Botswana, South Africa	No	Project Design	➤ Project yet to commence. ➤ Feasibility and detailed design required.
25	Inland Cargo Dry Port at Dondo including an Inland cargo terminal at Inchope	Mozambique	No	Project Design	➤ Feasibility study completed by Mozambique Regional Gateway programme.
26	TAH9 Beira-Lobito Corridor: Lobito Roads	Angola, DRC, Zambia	No	Implementation	➤ Feasibility and assessment studies completed in August 2012. ➤ Angola and Zambia are progressively rehabilitating and constructing the road networks to SADC standards. ➤ There is no clear time-based programme regarding the rehabilitation of the road networks in DRC.
27	Rehabilitation of Makambako- Songea Road (295 km)	Tanzania, Malawi	No	Project Design	➤ Feasibility study and detailed designs completed in August 2014. ➤ Funds should still be secured for civil works.
28	Dar es Salaam-Chalinze Toll Road (99.7 km)	Tanzania	No – despite efforts this project is yet to attract private sector support	Feasibility	➤ Private sector partners have not yet been secured. ➤ A PPP model toll road transaction structure is being considered. ➤ The Transaction Advisor (TA) is reviewing/ updating the Feasibility Study & Detailed Designs.
29	Port of Walvis Bay-Container Terminal in Namibia	Namibia	No	Implementation	➤ Construction of the new container terminal at the port completed.
30	Road rehabilitation RN 13: Tolanaro-Ambvombe	Madagascar	No	Feasibility	➤ Preparatory studies conducted and tender ready.
31	Road rehabilitation RN 6: Antsiranana-Ambanja	Madagascar	No	Feasibility	➤ Preparatory studies conducted and tender ready.
32	Port Victoria	Seychelles	No	Feasibility	➤ Preparatory studies conducted and tender ready.
33	Cargo and Freeport Development at the Airport	Mauritius	No	Project Design	➤ Project study has been completed.
34	Kisantu-Ndidinga-Kindopolo Road (117 km)	DRC	No	Feasibility	➤ Concept note to undertake the feasibility study has been completed and should be evaluated to raise funds for this project.
35	Lubumbashi-Bukavu Road (1,402 km)	DRC	No	Feasibility	➤ Project is yet to be implemented.
36	Tshikapa-Kananga-Kisangani Road (1,524 km)	DRC	No	Feasibility	➤ Project is yet to be implemented.
37	Port Kalemie Rehabilitation	DRC	No	Feasibility	➤ Project is yet to be implemented.
38	Rehabilitation of Kolwezi-Dilolo Railways	DRC/ Angola	No	Feasibility	➤ Project is yet to be implemented.
39	Sakanian and Tenke Railway Rehabilitation	DRC	No	Feasibility	➤ Project is yet to be implemented.
40	Bunker Jetty at Fort George	Mauritius	No	Feasibility	➤ Only pre-feasibility study completed as part of the port master planning exercise.
41	Lusaka to Luangwa bridge road rehabilitation	Zambia	No	Feasibility	➤ Feasibility study completed.
42	Kafue-Lions Den Feasibility Studies and Engineering Designs	Zambia	No	Feasibility	➤ Project is yet to be implemented.
43	Livingstone-Sesheke Railway Spur	Zambia	No	Pre-feasibility	➤ Feasibility study completed.
44	Livingstone-Kazungula-Sesheke Road	Zambia	No	Feasibility	➤ Project is yet to be implemented.
45	Modernisation of Mpulungu Port	Zambia	No	Feasibility	➤ Project is yet to be implemented.
46	Mwami/Mchinji OSBP	Zambia	No	Feasibility	➤ Project is yet to be implemented.
47	Nseluka-Mpulungu railway spur (175 km)	Zambia	No	Feasibility	➤ Project is yet to be implemented.
48	Chipata-Petauke-Serenje Greenfield Railway Spur	Zambia	No	Feasibility	➤ Project is yet to be implemented.
49	Rehabilitation of T1 from Kafue (Turnpark) to Mazabuka Road	Zambia	No	Feasibility	➤ Project is yet to be implemented.
50	Serenje Mpika Road	Zambia	No	Financial Closure	➤ Feasibility studies completed. ➤ Alternative contacts can be replaced
51	Plumtree-Bulawayo-Gweru-Harare-Mutare road: rehabilitation	Zimbabwe	No	Implementation	➤ Re-surfacing of the road and implementation of tolling system has been completed.

	Project Name	Countries involved	Private Sector involvement	Status	Progress to Date
52	Manyoni-Tabora-Kigoma Road	Tanzania	No	Implementation	<ul style="list-style-type: none"> ➤ Project is being implemented. The Nyahua-Chaya section is 26 percent complete. ➤ The Urambo-Kaliua leg is 35 percent complete.

Source: SADC Secretariat. 2019, updated with the latest information sources at hand

As seen in table 10, most projects are still in the pre-feasibility and feasibility phases, awaiting funding to move towards implementation. Several OSBP projects are prioritised for implementation in the region. This emphasises the priority that corridor role-players attach to OSBPs in addressing/ minimising corridor constraints. To date, only a few borders (e.g. Chirundu, Nakonde/ Tanduma and Kazungula) have been commissioned at OSBPs, while infrastructure works commenced on the Zimbabwean side of the Beitbridge border post. Infrastructure works at the Lebombo Ressano Garcia border post has been completed, but this border will only be transformed into a functioning OSBP once legal frameworks have been finalised by the governments of Mozambique and South Africa.

3.3.2 Launch of a SADC Infrastructure Web Portal

The SADC Secretariat has taken the lead in implementing an infrastructure web portal during the early months of 2020 that displays project information on strategic regional infrastructure projects in all infrastructure sub-fields. The online platform is linked to the SADC website and display dashboards for all SADC infrastructure projects. It also allows the filtering and visualisation of regional infrastructure projects by sector, countries, current stage and reference plan. Table 11 illustrates the breakdown per infrastructure sub-field:

Table 11: Breakdown per Infrastructure Sub-Field

Infrastructure Sub-Field	Projects by Sector
Energy	23
ICT	18
Transport	40
Water	3
TOTAL	84

Source: <https://www.sadc.int/information-services/sadc-infrastructure-dashboard/>

Project profiles of infrastructure projects can be assessed at <https://www.sadc.int/information-services/sadc-infrastructure-dashboard/>. This website offers an interactive Geographic Information System (GIS) for infrastructure projects. The following steps are recommended to view relevant project information:

- Click on charts to narrow the list of selected projects;
- Alternatively, projects can be selected from the list at the bottom by clicking on the project rows and then clicking the filter link in the projects tab;
- Use the download link above each chart and project list tab to export the charts and the list of selected projects.

Table 12 summarises the project stage of road transport and border post projects. Information was obtained from the interactive project dashboard in February 2022

Table 12: SADC Dashboard – Road Transport and Border Post Projects

No	Project Name	Type	Sub-Sector	Location	Stage	Year	Data
12	Colomue/Dedza OSBP	Upgrade	Border Post	Malawi, Mozambique	Tendering	2019	35%
13	Forbes/Machipanda OSBP	Upgrade	Border Post	Mozambique, Zimbabwe	Project definition	2019	26%
16	Nyamapanda/Cuchimano OSBP	Upgrade	Border Post	Mozambique, Zimbabwe	Project definition	2013	26%
21	Huambo-Kuito road	Upgrade	Road	Angola	Operation	2019	22%
22	Kinshasa-Luanda road (Angola section)	Upgrade	Road	Angola	Construction	2013	13%
23	Kinshasa-Luanda road (DRC section)	Upgrade	Road	DRC	Data not available	2013	13%
24	Kioto-Luena	Upgrade	Road	Angola	Data not available	2013	17%
25	Luena-Luau-Dilolo road	Upgrade	Road	Angola	Data not available	2013	17%
54	Beitbridge OSBP	Upgrade	Border Post	South Africa, Zimbabwe	Construction	2019	43%
55	Bulawayo-Gwanda road	Upgrade	Road	Zimbabwe	Project structuring	2017	43%
57	Gwanda-Beitbridge road	Upgrade	Road	Zimbabwe	Transaction support & financial close	2019	65%
58	Harare-Nyamapanda-road project	Upgrade	Road	Zimbabwe	Feasibility	2019	52%
59	Joint standards for modern road corridor design on the NSC	Upgrade	Road		Data not available	2013	9%

60	Kamuza International Airport Turn-Off to Mzimba turn-off section of the M1 in Malawi	Upgrade	Road	Malawi	Sub-feasibility	2018	70%
61	Kitwe-Chingola Road	Upgrade	Road	Zambia	Construction	2019	35%
62	Martin's Drift OSBP	Upgrade	Border Post	Botswana, South Africa	Project definition	2013	26%
64	Teta Toll Bridge	New	Bridge	Mozambique	Project definition	2013	35%
91	TAH8: Lagos to Mombasa – missing road links in the DRC	Upgrade	Road	DRC	Data not available	2013	17%
92	Zobue/Mwanza OSBP	Upgrade	Border Post	Malawi, Mozambique	Project Definition	2013	26%

Source: <https://www.sadc.int/information-services/sadc-infrastructure-dashboard/>

The launch of an online data portal that outlines project dashboards for strategic SADC infrastructure projects represents a step in the right direction. Although project sheets (templates) have been designed for all infrastructure projects, many of them still lack essential information pertaining to project risk, project financing and project cost calculations.

It is imperative that affected role-players intensify their efforts in continuously submitting relevant information that will serve as input data into updating project sheets. The availability of accurate project information data poses several benefits. Not only will it enable monitoring and evaluation bodies to identify problems as and when they occur, it may also entice foreign investors to fund strategic infrastructure programmes in the SADC to move such programmes to completion.

3.3.3 Corridor Trip Monitoring System

The TTTFP identified the need for Corridor Trip Monitoring System (CTMS) to facilitate the continuation of cross-border trade of essential goods during the on-going crisis occasioned by the outbreak of the COVID-19 pandemic. The European Union (EU) provided additional funding to develop a computer-based corridor trip monitoring system (CTMS) to record and share information on the driver's health and observe the movement of drivers and their vehicles.

The CTMS facilitates a regulatory framework that ensures cross border transport operations is performed by healthy drivers that are constantly monitored and tracked to minimise the spread of COVID-19 and to reduce extended travel and transit times during the pandemic.

The primary purpose of the CTMS in the immediate and longer term is to:

- Maintain a record of driver & crew compliance to medical requirements;
- Monitor trip progression by tracking vehicle(s) & driver(s);
- Facilitate management of safe transit in cross border road transport operations;
- Perform corridor performance management;
- Monitor trip progression by tracking vehicle(s)/ cargo;
- Avail information to all CMLs; and
- Serve as tool towards establishing SMART corridors.

3.4 Conclusion

Several infrastructure programmes have been approved for implementation across the African continent to address infrastructure inefficiencies that impede cross-border road traffic flows, and which are partly to blame for the low levels of intra-African trade. An assessment of strategic Continental, Tripartite and regional (SADC) projects reveals that many projects have not yet moved beyond the planning phases (e.g. feasibility phase) and are awaiting funding to move forward towards implementation.

Limited progress is mainly due to inadequate funds and a shortage of technical skills to prepare projects for bankability. Financiers are hesitant to support the earliest project stages owing to high risk that projects will not reach financial close. One area where significant progress is noted is the development of the TTTFP that will introduce quality regulation in the Tripartite by the year 2023. To date, the following milestones have been reached:

- Development of a vehicle load management strategy;
- Implementation of common load management strategy and regulations across the Eastern and Southern African regions;
- Drafting of agreements, model laws and regulations in favour of harmonising vehicle regulations and standards; and
- Operationalisation of TRIPS along selected road transport corridors.

The above accomplishments show what can be accomplished when adequate funding is secured, and technical assistance is provided to MS to work jointly towards creating efficient transport corridors.

4. ASSESSING THE COST OF DOING BUSINESS IN THE SADC: ROAD FREIGHT PERSPECTIVE

4.1 Introduction

Previous discussions of this report alluded to the existence of infrastructure inefficiencies along regional road transport corridors which result in high transportation costs for cross-border operators and poor regional competitiveness. Although cross-border operations are subjected to several hard and soft infrastructure inefficiencies, most impediments are caused by “soft issues” that directly impacts on service delivery, including regulatory red-tape, over regulation, duplicated processes (especially at inland borders) and corrupt practices. On the road, cross-border drivers are liable for various kinds of formal and informal payments at roadblocks and checkpoints.

Cross-border trade and transport challenges are not limited to SADC only but are experienced by all African Regional Economic Communities (RECs). Studies show that, on average, the costs of transport in African countries are 63 percent higher compared to the average in developed economies and 135 percent higher than in Europe. The average cost of freight as a percentage of the total value of imports is approximately 11.4 percent for Africa compared to 6.8 percent for developed countries (African Export-Import Bank, 2020).

In response to on-going infrastructure and regulatory challenges facing commercial cross-border road transport operators in the region, the C-BRTA embarked on a study during FY 2020/21 to develop a cost estimation model that assess and quantify the factors that contribute to the high cost of doing business in the region. The objectives of this study were three-fold, namely to:

- Assess the key determinants of high cross-border road freight costs within Southern African corridors;
- Estimate the cost of doing business for cross-border road freight operators along the NSC (between Johannesburg and Lusaka, Zambia); and
- Derive key findings that will be considered in formulating study recommendations.

4.2 Data Collection and Analysis

Section 4.2 below gives more information on the data collection methods and analysis

4.2.1 Methodology

The initial strategy was to conduct on-truck data collection during cross-border road freight journeys from point of origin to the destination, as well as on the reverse cross-border journeys. The outbreak of the COVID-19 pandemic during the early months of 2020, left SADC MS with no choice but to introduce several lockdown measures and travel restrictions to fight the spread of COVID-19. Border posts introduced stringent measures to contain the spread of the virus while customs administrations activated risk management systems.

Due to the introduction and enforcement of COVID-19 measures / restrictions, the on-truck data collection was cancelled. The research team introduced remote surveys as an alternative data collection method. Data used for the study included cross-border operators’ data for 2020 and the early months of 2021 when the COVID-19 lockdown level 5 commenced on 27th March 2020.

Data collection and analysis was complemented with *telephonic interviews* whereby cross-border road freight operators had to answer questions relating to all costs incurred during individual road freight journeys. Interviews were successful insofar cross-border freight operators habitually kept journey records of every cross-border freight trip per truck.

Among other variables of importance were *time spent* to complete each cross-border freight journey, counting the number of regulatory stoppages and time spent at roadblocks, weighbridges, checkpoints, toll plazas and at border posts. The analyses comprised of tables, pictorial graphs, and charts to enable the reader to easily comprehend.

4.2.2 Model Description

The model below depicts the three-variable unit cost model of allocating operating expenses incurred by cross-border commercial trucks systems. This model assigns actual operating costs experienced by a system to each sub-service (truck, route, service area, etc.) based on the following three service variables:

- Truck hours,
- Truck mileages (kilometres); and
- Trucks.

The underlying assumption behind the allocation model is that *the cost of operating a cross-border commercial truck system is directly related to the number of truck hours of service provided, the number of kilometres travelled, and the number of trucks required to provide the service*. Therefore, the expense of providing a service (in a specific service sector) can be determined by apportioning total expenses of the business in proportion to the number of truck hours, miles, and trucks required to provide the service.

The model developed is described as follows:

$$\text{Total Costs} = \left[\begin{array}{l} \text{(Vehicle Hour-Related Costs * Vehicle Hours)} + \text{(Vehicle} \\ \text{Mileage-Related Costs * Vehicle Mileages)} \end{array} \right] + \left[\frac{\text{(Fixed Costs)}}{\text{(Vehicle * Vehicles)}} \right]$$

$$= (\text{VHCF} * \text{TVH}) + (\text{VMCF} * \text{TVM}) + (\text{VCF} * \text{TV})$$

Note:

- VHCF : Vehicle Hour Cost Factor
- TVH : Total Vehicle Hours
- VMCF : Vehicle Mileage Cost Factor
- TVM : Total Vehicle Mileages
- VCF : Vehicle Cost Factor
- TV : Total Vehicles

Source: C-BRTA. Cost of Doing Business by Cross-Border Road Freight Operators along the NSC. 2021

This cost expression can be used to represent the entire cross-border commercial operation for an entire year, or it can be used to calculate the operating expenses for a sub-service and/or for a shorter period. Table 13 depicts an expense assignment for the three-variable cost model

Table 13: Expense Assignment for Three-Variable Cost Model

Cost Components	COST MODEL VARIABLES		
	Truck Hours	Truck Mileage	Truck
FIXED COSTS			
Truck repayment			✓
Trailer repayment			✓
Licenses			✓
Permits			✓
Driver(s) Income and benefits	✓		
Crew Income	✓		
Administrative Costs	✓		
VARIABLE COSTS			
Fuel		✓	
Tyres		✓	
Maintenance		✓	
Repair, Spares and Lubrication		✓	
Truck Wash		✓	
Loading/Unloading Fees		✓	
Lodging/Rent			✓
Meals			✓
Cross-border fees and tolls			✓
Fines			✓
Miscellaneous Expenses			✓

Source: C-BRTA. Cost of Doing Business by Cross-Border Road Freight Operators along the NSC. 2021

The above table shows that both fixed and variables costs are incurred in the daily running of a business. Fixed costs are not subject to frequent change and are not generally affected by the amount that a truck is used. Examples of fixed cost include: truck and trailer repayment, licenses, permits, driver and crew income (salaries) and administrative costs.

Variable costs are those cost elements that vary according the actual use of the vehicle (truck). Examples include the cost of fuel, tyres, maintenance, lubricants and repairs, to name a few. Fixed and variable costs make up Operational Costs.

Section 4.3 gives a brief overview of the focus area (NSC), inclusive of strategic border posts along the NSC.

4.3 Data Analysis and Interpretation

Section 4.3 describes the quantification and calculation of cross-border road freight transport cost components for commercial cross-border trucks that conduct cross-border journeys on the NSC between Johannesburg and Zambia, Lusaka. The three-variable unit cost model engaged the following three steps:

- Assembly of the data;
- Assign each expense line item to one of the unit cost variables; and
- Calculate the average unit costs.

4.3.1 Data Analysis

After collecting all necessary data for cross-border journeys along the NSC between Johannesburg (South Africa) and Zambia (Lusaka) a systematic data analysis was carried out to come up with the results to achieve the intended objectives of this study. Microsoft Excel (MS Excel) was used for basic analysis.

4.3.2 Flexibility of the Model

The model was designed for ease of use and to quickly provide results for different configurations. The decision-maker can choose any of the cost components (e.g. price of tyres, insurance costs) and change such components to compensate for different bus/ truck and trip characteristics. It is thus easy to update the model since all parts of the model can easily be changed /amended to specific applications.

4.3.3 Model Validation

Cost models should be validated to ensure they produce results that are as accurate and reliable as possible. Depending on the model's architecture, supporting software and uses, the specific validation procedures may vary. However, at a minimum, model validation included the total of all costs input into the model and reconciled them against the total of all costs output from the model to ensure that all costs have been included in the output.

4.3.4 Cross-Border Freight Journeys between Johannesburg and Zambia

Table 14 illustrates the cost components of fixed and variable costs along with cost model variables.

Table 14: Fixed and Variable Costs for Cross-Border Trucks (Johannesburg – Zambia)

COST MODEL VARIABLES				
Cost Components	Truck Hours	Truck Mileage	Truck	Percentage
FIXED COSTS				
Truck repayment			R 679 633,00	11%
Trailer repayment			R 114 884,00	2%
Insurance			R 329 354,00	5%
Licenses			R 58 100,17	1%
Permits			R 184 727,00	3%
Driver(s) Income	R 378 344,00			6%
Driver bonuses and benefits	R 212 080,00			3%
Administrative Income	R 481 294,83			8%

COST MODEL VARIABLES				
Cost Components	Truck Hours	Truck Mileage	Truck	Percentage
VARIABLE COSTS				
Fuel		R 1 843 673,83		30%
Tyres		R 282 117,00		5%
Maintenance		R 325 537,67		5%
Repair, Spares and Lubrication		R 341 841,50		6%
Truck Wash		R 94 165,50		2%
Loading/Unloading Fees		R 87 498,33		1%
Lodging/Rent			R 46 233,00	1%
Meals			R 58 315,33	1%
Cross-border fees and Tolls			R 295 509,00	5%
Fines			R 46 622,50	1%
Miscellaneous Expenses			R 322 543,83	5%
TOTAL TRUCK OPERATING COST	R1 071 718,83	R2 974 833,83	R2 135 921,83	R6 182 474,50
Percentages	17%	48%	35%	100%

Source: C-BRTA. Cost of Doing Business by Cross-Border Road Freight Operators along the NSC. 2021

The three steps used to complete unit cost model are discussed in greater detail below.

4.3.4.1 Assembly of the data

Data collection and an analysis of actual truck operating costs were conducted to 10 cross-border freight operators. Each operator operates at least 4 trucks, all with a minimum payload of 34 tons of different dimensions and conveying different types of goods. The cross-border trucks (vehicles) of interest were those conveying goods to Zambia, Lusaka, from South Africa in Johannesburg.

The average distance of the study between Johannesburg and Lusaka was approximately 1,645 km per cross-border trip or per one-way route and the average kilometres travelled by each cross-border truck was 150,455 kilometres per annum.

The cross-border truck driving hours was 176 hours (7 days) on average on the northbound leg from Johannesburg to Lusaka and they are said to be the same on the southbound journey. Truck driving hours include standing times along the NSC. Truck drivers confirmed that depending on the efficiency of clearance processes at borders, trucks sometimes take a minimum of 3 days to move between Johannesburg and Lusaka. For this study, the maximum truck driving hours of 7 hours per single trip have been used to analyse the cost of doing business.

The most important factor concerning step 1 is that the expense and operating data must represent the same service and for the same period. That is, the operating expense listing should include all the costs associated with operating the 10 cross-border trucks for the kilometres travelled and service hours recorded along the NSC.

4.3.4.2 Assigning each expense line item to one of the unit cost variables

The line items are assigned to the unit cost variables (vehicle hours, vehicle miles and number of vehicles) based upon the service variable that most closely determines the expenses for the line item. For example, drivers' salaries are most closely related to the number of vehicle hours of service provided. Likewise, fuel, maintenance, and tyre expenses are most closely linked to the number of kilometres operated. Finally, many costs, including most administrative expenses, are fixed, and are therefore arbitrarily allocated based on the number of vehicles associated with a service.

4.3.4.3 Calculation of the average unit costs

This is the calculation of the average unit costs and application of the model to cost components estimations. Unit costs are calculated by summing the expense items assigned to each of the three cost variables and then dividing the total expenses for each category by the service variable.

4.3.5 Cross-Border Truck Hours

Truck hours are the amount of time that a truck is in operation. Since it represents the average amount of time that trucks are to be paid, it is an appropriate basis for allocating driver related costs and administration costs to the truck operations.

Table 15 illustrates a cross-border trucks cost model used to analyse the cost of doing cross-border road freight business between Johannesburg and Zambia.

Table 15: Cross-Border Truck model between Johannesburg and Lusaka

	COST MODEL VARIABLE		
	Truck Hours	Truck Mileage	Truck
Total Vehicles (trucks) (TV)			10
Total Vehicle (truck) Mileages (TVM)		150,455	
Total Vehicle (truck) Hours (TVH)	6,360		
Truck Cost Factor (VCF)			R213,592.18
Truck Mileage Cost Factor (VMCF)		R86.24	
Truck Hour Cost Factor (VHCF)	R168,51		
TOTAL TRUCK OPERATING COST	R1 071 718,83	R2 974 833,83	R2 135 921,83
Percentages	17%	48%	35%

$$\begin{aligned}
 &= (\text{VHCF} \times \text{TVH}) + (\text{VMCF} \times \text{TVM}) + (\text{VCF} \times \text{TV}) \\
 \text{Cross-border Truck Annual Operating Cost} &= (\text{R}168.51 \times 6,360) + (\text{R}86.24 \times 150,455) + (\text{R}213,592.18 \times 10) \\
 &= (\text{R}1\,071\,718,83) + (\text{R}2\,974\,833,83) + (\text{R}2\,135\,921,83) \\
 &= \text{R}6\,182\,474,50
 \end{aligned}$$

Source: C-BRTA. Cost of Doing Business by Cross-Border Road Freight Operators along the NSC. 2021

According to Table 15, the total average annual hours a cross-border truck spends in operation/service is 6,360 hours over 265 days per annum, costing the cross-border operator around R1 071 718,83 which is 17% of the cross-border truck annual operating costs (R6 182 474,50). The cross-border truck hour related cost is R168,51 (R1 071 718,83/6,360). This is the amount of money the cross-border truck consumes per hour while it is in operation.

4.3.5.1 Driver Income

Truck drivers can be paid in many ways. The two most common methods of payment are:

- According to a percentage of the freight bill; or
- On a per mile basis.

Other payment methods include payment per trip, per period, per kilometre or simply “dividing up what is left over after expenses. Driver wages vary considerably across the country in terms of vehicle size, task complexity and remuneration packages. All assumptions include an allowance for company contributions but exclude overtime and bonuses.

In this study, most of the truck drivers are paid a fixed amount per month, or per year. Therefore, their income is included as a fixed cost because the same cost is incurred regardless of the number of kilometres driven during cross-border trips. One driver is assigned to a cross-border truck, conveying goods between Johannesburg and Zambia. The truck driver is said to earn an average income of R590 424,00 per annum, inclusive of bonuses and benefits, which amounts to 10% of the cross-border truck annual operating costs equating to R6 182 474,50 (refer to table 15).

4.3.5.2 Administrative Overhead Costs

Administrative costs are costs spent to keep the business running efficiently. These costs include the annual cost of management and administrative help. Other relevant costs are sales, front line managers, bookkeeping/accounting, payroll and year around management. Most of these costs are the result of expenditures on wages or salaries. Administrative overhead costs therefore become an annual cost for businesses.

On an annual basis, administrative costs of a cross-border truck, conducting cross-border road transport operations between Johannesburg and Zambia amount to approximately 8% of the cross-border truck annual operating costs (R6 182 474,50), thus R481 294,83.

4.3.6 Cross-Border Truck Mileage

The typical average distance for cross-border trucks, conducting business for reward between South Africa and Zambia, range between 11,000 km and 15,000 km per month, or between 146,700 km and 170,000 km per annum. The trucks are operated to the end of their economic life, which is typically more than 1,500,000 km, or up to 12 years total service.

According to the data collected from the cross-border truck operators, on average the cross-border trucks travelling between Johannesburg and Zambia recorded about 150,455 km per year, with relative mileage costs of R2 974 833,83 constituting 48% of the cross-border truck annual operating costs. (refer to Table 15).

4.3.6.1 Fuel Costs

Fuel consumption by cross-border trucks varies slightly between loaded and unloaded movements. Any differences are manifested in a weighted kilometre per litre experienced by the cross-border trucks in the business. The fuel price per litre is then multiplied times the kilometres per litre to yield an estimated per kilometre cost. In the study, fuel costs assumed that cross-border trucks were operating on a level terrain and incorporated all fuel-efficiency measures. It did not account for vehicle speed and different road conditions.

Fuel cost is a major cost in cross-border truck operating costs and for cross-border trucks that conducted business in the study between South Africa and Zambia. On average each cross-border truck consumed about R1 843 673,83 of fuel which is 30% of the cross-border truck annual operating costs of R6 182 474,50.

4.3.6.2 Tyre Costs

Tyre performance varies in accordance with the quality of road networks. The typical average life of a truck tyre on roads is estimated at 160,934 km (100 000 miles), and for a trailer tyre it is estimated at 329,111 km (204 500 miles). The tyre life is a function of safety considerations, driver behaviour, load conditions and speed as well as roughness of the road surface.

Tyre costs on different road qualities have not yet been quantified definitively as there is a magnitude of factors that contribute to tyre wear, for instance tyre pressure, rubber composition, load, and tread pattern.

The study did not assign the type of cross-border truck, its age, how the truck is used and route characteristics in the model and the tyre costs of the cross-border truck contributed R282 117,00 which is 5% of total cross-border truck annual operating costs (R6 182 474,50).

4.3.6.3 Maintenance and Repair, Spares and Lubrication Costs

It is quite difficult to obtain reliable and consistent maintenance and repair estimates from cross-border freight operators. Estimates of engine lifetime, overall cost and other repairs must be combined to generate a maintenance and repair cost. Generally, the maintenance and repair costs include lubricants, tune-ups, engine overhauls, and general repairs.

In the study, the contribution to maintenance and repair, spares, and lubrication costs were not collected separately as trucks and trailers, but they were aggregated as one vehicle. This cost category comprises of maintenance and repair, spares, and lubrication of the engine, other mechanical components, and parts costs. These costs for a cross-border truck translated into approximately 11% of the total cross-border truck annual operating costs (R6 182 474,50), namely R667 379,17.

The high costs associated with maintenance and repair motivates why vehicle maintenance deserves continuous improvement. The aim should not only be to lower maintenance costs, but also be keep the vehicles in a good condition.

4.3.6.4 Truck- Tractor and Trailer Vehicles

a) Truck and Trailer Repayment

Vehicle financing is by far the biggest fixed-cost factor and is directly related to the purchase price of the truck (vehicle). For this reason, it is critical that businesses undertake a detailed study prior to purchasing vehicles to ensure they choose a vehicle that is right for the job and that will keep fixed operating costs as low as possible.

The truck and trailer repayments are determined by the interest rate on the loan and the years that the loan must be paid in, is converted to months. On an annual basis, the average cross-border truck and trailer repayments constitute R794 517,00, which equates to 13% of the cross-border truck annual operating costs of R6 182 474,50.

b) Insurance, License and Permit Costs

Most cross-border freight operators carry full coverage insurance on their truck-tractor and trailer equipment. Such coverage includes liability, physical damage, and cargo insurance. License fees, permits and insurance are other costs that commercial cross-border trucks incur. It has been recorded that on average a cross-border truck spends about R572 181,17 on insurance, license, and permit costs. This equates to around 9% of total operating costs.

c) Meals and Lodging

Transportation expenses are any costs related to business travel by company employees. An employee who travels for a business trip is generally able to claim the cost of travel, hotel, food, and any other related expense as a transportation expense. These costs may also include those associated with traveling to a temporary workplace from home, under some circumstances. For instance, an employee whose travel area is not limited to their tax home can generally claim that travel as a transportation expense.

The costs of lodging and meals only relates to the average annual expenditure of the specific cross-border truck driver and recorded R104 548,33 per annum registering 2% of the cross-border truck annual operating cost of R6 182 474,50.

d) Cross Border Fees and Tolls

The common denominator of existing user charge theory and practice is the idea that the user should pay for the use of roads. A large fraction of the expenditure on roads has been incurred only because of the existence of cars and trucks. Therefore, the owners of these vehicles, rather than the general taxpayer, should foot most of the bill for the use of roads.

Cross-border charges and toll fees are a user-pay principle that represent a fair and precise way of paying for the use of transport facilities. At border crossings along the NSC there is unfair practice of imposing cross-border road-user charges. For example, when a South African cross-border truck or South African registered truck crosses from South Africa to Zimbabwe, there are multiple charges that the South African registered truck is subjected to, whereas when the Zimbabwean registered truck crosses from South Africa to Zimbabwe, the Zimbabwean registered truck is immune from those cross-border road-user charges. This practice results in unfair competition between cross-border road transport operators in the region (SADC).

According to this study, on a journey from Johannesburg to Lusaka, a South African registered truck devotes approximately 11% of cross-border truck annual operating costs, which equates to R295 509,00 per annum.

e) Fines

The consequences for not obeying traffic laws may result in a traffic fine. Traffic ticket cost also increases with driving speed. Thus, the traffic fine costs may be completely unpredictable and the best way for the operator to assess it is to calculate the total money spent on fines per year.

For a trip between Johannesburg and Lusaka, the fines paid by cross-border truck operations are significant and record R46 622,50 per annum, which equates to 1% of cross-border truck annual operating costs.

f) Miscellaneous Costs

Miscellaneous expenses include an array of small transactions that do not fit within the ledgers' specified accounts. They must, therefore, be recorded and accounted for in the general ledger account of businesses. If these expenses increase in size and usage, then the miscellaneous expense should be given its own account.

Deductible miscellaneous expense examples include costs that could cover such things as clothing or job uniforms, advertising, subscription services for work, accounting and legal fees, interest and bank charges, tools, office supplies and theft losses. They also cover any number of unexpected and unforeseen expenses such as insurance excess and the cost of unrecoverable incidents.

The study has recorded that on average the cross-border operator incurs around R322 543,83 of miscellaneous expenses per annum. This equates to 5% of the cross-border truck annual operating costs.

g) Bribes

Bribery costs increases the cost of doing business and in this study the operators did not furnish them. Reported incidents exists of cross-border drivers being exposed to multiple informal payments (bribes) along the NSC. Drivers who were interviewed, revealed that bribery is not limited to border posts only, but that it happens at other fixed delay points along regional transport corridors, notably weighbridges, and roadblock/ checkpoints.

4.4. Fixed and Variable Costs of Cross-border trucks along the North-South Corridor

4.4.1 Fixed Costs

Fixed vehicle operating costs (also referred to as standing costs) are fixed costs that are assigned to the cost model of cross-border trucks that operate between Johannesburg and Lusaka. As already stated in earlier discussions, fixed costs should be paid irrespective of whether the cross-border truck is transporting traffic, or not. For this reason, proper control should be exercised over all the factors that could bring cross-border vehicles to a standstill.

On average, cross-border operators that took part in the study spends about R16,21 per kilometre on cross-border truck total fixed costs that amounts to R2 438 417,00 with the average annual traveling distance of the cross-border truck amounting to 150,455 km per annum.

Table 16 depicts the contribution of fixed costs, assigned to the model, to estimate the cost of doing business by cross-border freight operators between South Africa and Lusaka.

Table 16: Contribution of Fixed Costs to Cross-Border Truck Operating Costs

Vehicle cost components	Costs	Contribution	Cost per Km
<i>Truck-tractor and trailer repayment</i>	R794 517,00	33%	R5,28
<i>Insurance, licenses, and permits</i>	R572 181,17	23%	R3,92
<i>Driver income, bonuses, and benefits</i>	R590 424,00	24%	R3,80
<i>Administrative Expenses</i>	R481 294,83	20%	R3,20
Fixed Costs	R2 438 417,00	100%	R16,21

Source: C-BRTA. Cost of Doing Business by Cross-Border Road Freight Operators along the NSC. 2021

Table 16 illustrates that truck-tractor and trailer repayment are the most significant fixed cost component, comprising around 33% (R794 517,00) out of total fixed costs (R2 438 417,00). With the average annual traveling distance of the cross-border truck of 150,455 km per annum, the cross-border operator spends around R5,28 per kilometre in truck-tractor and trailer repayment (table 17).

Another component of fixed costs is insurance, licenses, and permits that contributes around R572 181,17 per annum. This equates to 23% of total fixed costs (R572 181,17). On average, the cross-border operator bestows approximately R3,92 per kilometre on insurance, licenses, and permits with an average annual traveling distance of 150,455 km per annum.

Other fixed cost element includes driver income, bonuses, and benefits with that amount to R590 424,00. On average, the cross-border operator devotes around R3,80 per kilometre on driver income, bonuses, and benefits with the average annual traveling distance of the cross-border truck estimated at 150,455 km per annum.

The actual number of hours the truck driver works is in practice often more than the actual driving time. The truck driver may be involved in loading and unloading the truck, waiting in line, maintaining the vehicle, or performing other duties. To take this into account, the number of hours can be expanded beyond the actual driving time. For example, if the truck driver spends a third of his/her time loading and unloading a vehicle and only two-thirds of the time driving, the driving time should be expanded by a factor of 1.5 to account for the loading and unloading time.

Drivers are the key factor in operating vehicles in a professional manner and in reducing the overall fixed and variable costs of operating the vehicle. Therefore, driver selection and continuous training are paramount.

Administrative expenses are the last fixed cost element in the study and amounts to R481 294,83, registering 20% of total fixed costs. On average, the cross-border operator confers around R3,20 per kilometre on administrative expenses with an average annual traveling distance of 150,455 km per annum.

In conclusion it is worth mentioning that the fixed costs of operational overheads should be managed and carefully controlled to ensure that costs remain within budget limits.

4.4.2 Variable Costs

Variable costs are the money that the cross-border truck operator spends in operating his/her vehicle between Johannesburg and Lusaka. These costs include, but are not limited to fuel, maintenance, repairs, meals, lodging, and other expenses incurred while undertaking cross-border road freight journeys along the NSC.

On average, cross-border operators expend about R24,88 per kilometre on cross-border truck total variable costs that amount to R3 744 057,50 with the average annual traveling distance estimated at 150,455 km per annum.

Table 17 portrays the contribution of components of variable costs that have been assigned to the model of estimating the cost of doing business for cross-border road freight operators between Johannesburg (South Africa) and Lusaka (Zambia).

Table 17: Contribution of variable costs in the cross-border truck operating costs

Vehicle cost components	Costs	Contribution	Cost per Km
<i>Fuel</i>	R1 843 673,83	49%	R12,25
<i>Tyres</i>	R282 117,00	8%	R1,89
<i>Maintenance and Repair, Spares, and Lubrication</i>	R667 379,17	18%	R4,44
<i>Vehicle Wash</i>	R94 165,50	3%	R0,63
<i>Loading/Unloading Fees</i>	R87 498,33	2%	R0,58
<i>Lodging/Rent and Meals</i>	R104 548,33	3%	R0,69
<i>Cross-border fees and Tolls</i>	R295 509,00	8%	R1,96
<i>Traffic Fines</i>	R46 622,50	1%	R0,31
<i>Miscellaneous Expenses</i>	R322 543,83	9%	R2,14
Variable Costs	R3 744 057,50	100%	R24,88

Source: C-BRTA. Cost of Doing Business by Cross-Border Road Freight Operators along the NSC. 2021

Table 17 discloses that fuel costs rank consistently as one of the biggest cost centres for cross-border truck operators. Fuel costs amount to an average of R1 843 673,83 per annum, contributing to 49% of the variable costs (R3 744 057,50). With the average annual traveling distance of a cross-border truck of 150,455 km per annum, the cross-border operator approximately R12,25 per kilometre in fuel costs.

Maintenance and Repair, Spares, and Lubrication costs registered the second highest variable costs, amounting to R667 379,17. On average, cross-border operators disburse around R4,44 per kilometre per truck with the average annual traveling distance estimated at 150,455 km per annum.

Miscellaneous expenses recorded the third components of variable costs with an average contribution of R322 543,83 per annum, constituting 9% of total variable costs. On average, cross-border operators bestow around R2,14 per kilometre miscellaneous expenses with the average traveling distance captured at 150,455 km per annum.

Cross-border fees, tolls and tyre costs are another variable cost item that cross-border truck operators incur with a contribution of 8% of total variable cost, recording R295 509,00. On average, a cross-border operator spends around R1,96 per kilometre per truck on cross-border fees and tolls while the cross-border operator expends R1,89 per kilometre per truck on tyre costs, considering the average traveling distance captured at 150,455 km per annum.

When a cross-border truck exits South Africa and enters Zimbabwe, all foreign registered trucks pay road user charges based on the gross vehicle mass, irrespective of the weight carried whereas domestic trucking companies are not charged a road user fee since they pay for road maintenance when purchasing licenses.

The remaining variable costs (vehicle wash, loading /unloading fees, lodging /rent and meals, and traffic fines) vary from 1% to 3%, with the cost per kilometre being less than R1,00 per kilometre per truck.

Variable costing allows cross-border truck operators to analyse data based on the actual cost of production. Hence, understanding the actual cost of each unit allows operators to reduce variances between actual and budgeted amounts, which often results in higher revenues for the business.

In conclusion, the cross-border truck operator confers about R40,10 per kilometre with the average annual traveling distance of the cross-border truck capped at 150,455 km per annum. This means out of the total cross-border truck operating costs (R6 182 474,50), the cross-border truck consumes approximately R40,10 in average annual traveling distance of 150,455 km per annum along the NSC between Johannesburg and Lusaka.

4.4.3 Standing Time along the North South Corridor

In the road transport industry, the standing cost is based on the term "standing time", which is used to describe the time a truck is not moving. This cost is often described as induced costs (also referred to as opportunity costs) for the logistics or transport provider. Standing time is often caused by compulsory government controls along strategic transport corridors in the SADC region. At these check-points, public-sector officials exercise their powers in enforcing their respective mandates. Government controls result in excessive time delays for cross-border operators

The indicators used in the cost model include time spent along the routes (road transport corridors) associated with multiple regulatory stoppages at:

- Traffic Control Centers/ Weighbridges;
- Road blocks / check-points, and
- Border posts.

Due to the type of interviews undertaken when secondary data was collected from cross-border truck operators, no differentiation was made between time spent during peak and off-peak periods.

4.4.3.1 Standing Time at Traffic Control Centers /Weighbridges

Traffic control centres or weighbridges are used to weigh road vehicles and their contents. By weighing a vehicle (both empty and fully loaded) the load carried by a vehicle is calculated and overloading trucks are fined. One of the advantages of this practice is that it minimises overloading along regional road corridors, as well as the level of unrecorded trade.

In the SADC, weighbridges are not linked and do not have the same calibration. In a linked corridor system, weighbridges communicate with one another. As a result, interactions are not only limited to engagements between the truck and the weighbridge, but also between weighbridge stations in different SADC MS.

In this study, cross-border truck operators furnished their estimated waiting times, including processing times at traffic control centres, along the NSC. Waiting times confirmed the truck arrival and departure time at different weighbridge stations. The difference in processing rates is only due to rate of truck arrivals or traffic volumes. Table 18 depicts the average waiting times at weighbridge stations between Johannesburg and Zamiba.

Table 18: Average Standing Time of Cross-Border Trucks at Weighbridges

Route	Standing Times (minutes)			
	Northbound		Southbound	
<i>Johannesburg – Beitbridge border post, Musina</i>	90	47%	60	46%
<i>Beitbridge, Zimbabwe – Chirundu border post, Zimbabwe</i>	60	32%	40	31%
<i>Chirundu border post, Zambia – Lusaka</i>	40	21%	30	23%
<i>Total standing time Johannesburg – Lusaka</i>	190	100%	130	100%

Source: C-BRTA. Cost of Doing Business by Cross-Border Road Freight Operators along the NSC. 2021

a) Johannesburg – Beitbridge border post - Musina

The principle of the Cross-Border Overload Control System (CBOCS) is that the truck driver of a cross-border vehicle must produce documentary evidence (e.g. a weighbridge clearance certificate) to customs showing that the vehicle is not overloaded. The clearance process only commence after the weighbridge clearance certificate has been given to Customs.

From Johannesburg to the Beitbridge border post in Musina, a single cross-border truck spent an average of 90 minutes at South African weighbridges on the north-bound route to Zambia, whereas on the south-bound route, a single cross-border truck spend around 60 minutes at all traffic control centres on the South African side of the Beitbridge border, on-route to Johannesburg.

b) Beitbridge border post – Zimbabwe – Chirundu border post - Zimbabwe

On the cross-border trip between Johannesburg, Zimbabwe and Zambia, the cross-border truck spent an average of 60 minutes at Zimbabwean weighbridges on the north-bound route to Zambia, while approximately 40 minutes is spent at weighbridge stops on the south-bound route.

c) Chirundu border post, Zambia – Lusaka, Zambia

On the final leg from Chirundu border post in Zambia to Lusaka along the T2 highway, the estimated waiting times at the weighbridges was around 40 minutes on the northbound trip, while on the return trip from Lusaka to Chirundu border post, it took approximately 30 minutes for the cross-border truck to be weighed /cleared at the weighbridges.

In conclusion, table 18 shows that the time spent at weighbridges along the NSC on the north-bound route totalled 190 minutes, whereas on the south-bound route, standing time at weighbridges totalled 130 minutes. This table implies that 59% of standing time by cross-border trucks at weighbridges was recorded on the north-bound route while 41% was time spent by the cross-border trucks at weighbridges along the south-bound route.

4.4.3.2 Standing Time at Roadblocks /Checkpoints

Law enforcement officials in the SADC are mandated to use roadblocks and checkpoints for specific purposes. In the SADC region, the primary purpose of roadblocks and checkpoints are to ensure road safety; for instance; to check the validity of drivers' licenses, vehicle roadworthiness and vehicle registrations. Furthermore, road blocks are also used to search vehicles for illegal drugs and consignments.

Law enforcement operations along all strategic transport corridors in the region are performed by various stakeholders, who seldom coordinate operations. It is thus not surprising to find that operations are being conducted near each other by different stakeholders. Currently, cross-border vehicles are stopped at various inter and intra country roadblocks even where there is no proof that traffic being transported is of a suspicious nature. While most law enforcement operations and checkpoints along transport corridors are legal, some of them are not. Quick passage through inspection points is often facilitated by informal payments, which are far less than what would be payable for the offence committed.

Table 19 depicts the average standing times by cross-border truck at all roadblock /checkpoints between Johannesburg and Lusaka, as well as for the return trip to Johannesburg.

Table 19: Average Standing Times of Cross-border Trucks at Roadblocks / Checkpoints

Route	Standing Times (minutes)			
	Northbound		Southbound	
<i>Johannesburg – Beitbridge border post, Musina</i>	25	24%	17	21%
<i>Beitbridge, Zimbabwe – Chirundu border post, Zimbabwe</i>	65	62%	52	64%
<i>Chirundu border post, Zambia – Lusaka</i>	15	14%	12	15%
Total standing time Johannesburg - Lusaka	105	100%	81	100%

Source: C-BRTA. Cost of Doing Business by Cross-Border Road Freight Operators along the NSC. 2021

The discussion below gives a break-down of average time spent at roadblocks between Johannesburg and Lusaka.

a) Johannesburg – Beitbridge border post - Musina

From Johannesburg to Musina along the N1 highway on an outbound journey, cross-border truck operators reported that their vehicles were stopped 4 times with an average 25 minutes combined. On the return trip the average time spent at the three roadblocks was 17 minutes.

b) Beitbridge border post – Zimbabwe – Chirundu border post- Zimbabwe

On the transiting northbound trip from Zimbabwe to Chirundu border post, the truck was stopped 6 times with an average standing time of 65 minutes in aggregate. On the reverse route, the truck was stopped 5 times spending on average 52 minutes at all 5 checkpoints.

c) Chirundu border post, Zambia – Lusaka, Zambia

From Chirundu border to Lusaka, the truck was stopped twice spending 15 minutes on the northbound trip, while on the southbound trip from Lusaka to Chirundu border post, the truck spent about 12 minutes collective at 2 roadblocks.

4.4.3.3 Standing Time at Border Processes

Several government agencies exercise document and goods controls at inland border posts. For the purposes of this study, only time that cross-border freight vehicles spent at immigration and customs was taken into consideration.

a) Standing Time at Immigration

Table 20 depicts standing times experienced by cross-border truck operators at Immigration at the Beitbridge and Chirundu border posts for north-bound and south-bound movements.

Table 20: Average Standing Time of Cross-border Drivers at Immigration

Border post	Standing Times (minutes)			
	Northbound		Southbound	
<i>Beitbridge border post, South Africa</i>	45	45%	38	45%
<i>Beitbridge border post, Zimbabwe</i>	30	30%	24	29%
<i>Chirundu border post, Zimbabwe</i>	-	-	22	26%
<i>Chirundu border post, Zambia</i>	26	26%	-	-
Total standing time at Immigrations	101	100%	84	100%

Source: C-BRTA. Cost of Doing Business by Cross-Border Road Freight Operators along the NSC. 2021

❖ Beitbridge Border Post – South Africa

At the Beitbridge border post on the South Africa's side of the border, a cross-border truck driver on average, spent around 45 minutes while queuing and processing his/her passport on the northbound leg of the NSC. On the southbound leg of the return trip, a cross-border truck driver spent around 38 minutes to stamp his/her passport at Immigrations. Based on this information, South Africa recorded the highest immigration standing times of 45% each, on the northbound leg (out of total 101 minutes of standing times at these border posts). On the South-bound leg, 84 minutes of total standing time was recorded.

❖ Beitbridge Border Post – Zimbabwe

On the Zimbabwean side, immigration processes were faster than on the South African side. The standing time per driver was 30 minutes on the north-bound leg, whereas a driver spent around 24 minutes to stamp his/her passport on the south-bound leg of the NSC.

❖ Chirundu Border Post - Zimbabwe

The Chirundu border post operates as a OSBP, meaning that on the north-bound stretch, all border post services are offered on the Zambian side, while on the south-bound leg, all services are on the Zimbabwean side. On the northbound journey, a single truck driver spent on average, 26 minutes to stamp his/her passport, entering Zambia from the Zimbabwean side.

❖ Chirundu Border Post - Zambia

On the southbound leg, it took a cross-border truck driver around 22 minutes to stamp his/her passport when entering Zimbabwe from Zambia. In conclusion, table 21 shows that the total time spent by a cross-border truck driver at Immigration services (for all 4 border posts) is 101 minutes on the north-bound side, entering Zambia. On the southbound leg, the total time spent by a cross-border driver to conclude immigration processes is 84 minutes.

b) Standing Time at Customs

Customs agents in the border post environment is mainly responsible for enforcing customs regulations and facilitating trade through ensuring the speedy movement of goods through borders posts. The standing time at customs at inland borders depends on the type of freight this is transported. For the study, average standing time does not consider the type of cargo transported.

Table 21 demonstrates the standing time experienced by cross-border truck operators at Customs at the Beitbridge and Chirundu border posts for north-bound and south-bound movements.

Table 21: Average Standing Time of Cross-Border Drivers at Customs

Border post	Standing Times (hours)			
	Northbound		Southbound	
<i>Beitbridge border post, South Africa</i>	32	23.5%	28	30%
<i>Beitbridge border post, Zimbabwe</i>	65	47.8%	48	53%
<i>Chirundu border post, Zimbabwe</i>	-	-	16	17%
<i>Chirundu border post, Zambia</i>	39	28.7%	-	-
Total standing time at border posts	136	100%	92	100%

Source: C-BRTA. Cost of Doing Business by Cross-Border Road Freight Operators along the North South Corridor. 2021

❖ **Beitbridge Border Post – South Africa**

At the Beitbridge border post (on the South Africa's side), a cross-border truck spent on average around 32 hours to clear cargo on the north-bound leg of the corridor. On the south-bound leg (return trip), cross-border trucks spent around 28 hours to clear consignments.

It is worth mentioning that it can take a cross-border truck on average 2 to 4 hours to clear a truck at the South African side of the Beitbridge border on a normal day. The average transit times on a normal day range between 2 to 5 hours to cross the border.

❖ **Beitbridge Border Post - Zimbabwe**

On the Zimbabwean side, a cross-border truck takes on average 65 hours from arrival time, until it is cleared and departs the border on the north-bound side. This is the highest standing times with around 48% of the total standing times at all 4 border posts. On the southbound, customs processes registered the highest percentage (53%) of the 92 hours of total standing times at the 4 border posts.

It must be noted that it can take on average 3 to 5 hours to clear a cross-border truck at the Zimbabwean side on a normal day. The average transit times on the Zimbabwe side range between 3 hours to 12 hours to cross the border on a normal day.

❖ **Chirundu Border Post - Zambia**

The average standing time to clear a cross-border truck at the Chirundu border post on the northbound leg on the Zambian side, is measured around 39 hours. Cross-border truck operators indicated that cargo is often cleared faster when documents are in order. They also said that in extreme cases, cross-border trucks could idle up to 7 days at the border post.

❖ **Chirundu Border Post - Zimbabwe**

On average, it took 16 hours for a cross-border truck to clear cargo and transit through Chirundu on the Zimbabwean side of the border post.

The total time spent by cross-border trucks clearing goods at all 4 border posts 136 hours (about 5,7 days) on the northbound leg. On the southbound leg, the total time spent by the cross-border driver is 92 hours (3,8 days).

In conclusion, the total standing time at Immigration services reveals that it was faster to clear goods on the south-bound leg of the NSC. It is worth mentioning again, that the interviews conducted with truck drivers did not differentiate when clearing processes took place (e.g. peak or off-peak). Furthermore, it did not reveal crossing days or the time of crossings.

Lastly, it is worth mentioning that the SARS systems in South Africa are fully automated and can therefore process more trucks per day, than what customs authorities in Zimbabwean can do. The customs systems in Zimbabwe are still largely manual and are thus limited to processing 20 trucks per hour, at most 30 at peak performance. This deters performance, since South African cannot send more trucks to the other side of the border than what Zimbabwe can handle.

4.5 Costing of Time Sent at Regulatory Stoppages

Cross-border road transport in SADC region faces a plethora of challenges. The major sources of the challenges are fragmentation of regulatory regimes within and between MS, inefficient corridor and border management systems and non-implementation of regional transport agreements. Regulatory authorities also face numerous challenges, including funding constraints, outdated ICT systems and skills shortages to implement high impact fit-for-purpose interventions. These impediments manifest in excessive delays along regional transport corridors, longer journey times, fewer return trips and reduced reliability and dependability of services.

The calculation below shows costing of the time spent by cross-border trucks at regulatory stoppages along the NSC between South Africa, Johannesburg and Zambia, Lusaka on the Northbound and Southbound legs during 2019/20.

Table 22 illustrates the total standing time of cross-border trucks along the Northbound and Southbound legs of the NSC, while tables 23 and 24 depict total standing costs on the Northbound (table 24) and Southbound (table 25) legs of the NSC.

4.5.1 Average Truck Speed and Standing Costs

- The cost estimation study showed that on average each cross-border truck travelled about 1,645 km per single trip for 176 hours either on the northbound and southbound. This signifies that each cross-border truck travelled at an average operating speed of 9.35 kilometres per hour (1,645 km/176 hours) between Johannesburg and Lusaka per single cross-border trip.
- The total average annual hours the cross-border truck spent in operation/service was 6,360 over 265 days per annum, costing the cross-border operator around R1 071 718,83 which was 17% of the cross-border truck annual operating costs (R6 182 474,50).
- The cross-border truck hour related cost is $R1\ 071\ 718,83 / 6,360\ \text{hours} = R168,51$ which is the amount of money the cross-border truck consumes per hour while it is in operation.
- If the cross-border truck spent R168,51 per hour when conducting business between Johannesburg and Lusaka, then, it means that for every single cross-border trip between the said two nodes (176 hours) on the northbound, the cross-border truck expended about $R168,51 \times 176\ \text{hours} = R29,657.76$.

Table 22: Total standing times of cross-border trucks along the North-South corridor

Standing Times	Standing Times (hours)			
	Northbound		Southbound	
RSA Traffic control centres	1.00 (60min)	0.71%	0.67 (40min)	0.69%
Roadblocks in South Africa	0.42 (25min)	0.30%	0.28 (17min)	0.29%
Beitbridge border post, South Africa	32.75 (1,965min)	23.10%	28.63 (1,718min)	29.66%
i. Immigration	0.75 (45min)	0.53%	0.63 (38min)	0.65%
ii. Customs	32.00 (1,920min)	22.57%	28.00 (1,680min)	29.01%
Total standing time in South Africa	34.17 (2,050min)	24,10%	29.58 (1,775min)	30.68%
Beitbridge border post, Zimbabwe	65,50 (3,930min)	46,20%	48,40 (2,904min)	0,96%
i. Immigration	0.50 (30min)	0.35%	0.40 (24min)	0.41%
ii. Customs	65.00 (3,900min)	45.85%	48.00 (2,880min)	49.78%
Zimbabwe Weighbridges	0.67 (40min)	0.47%	0.50 (30min)	0.52%
Roadblocks in Zimbabwe	1.08 (65min)	2.68%	0.87 (52min)	0.90%
Chirundu border post, Zimbabwe	-	-	16.37 (982min)	16.97%
i. Immigration	-	-	0.37 (22min)	0.38%
ii. Customs	-	-	16.00 (960min)	16.59%
Total standing time in Zimbabwe	67,25 (4,035min)	47,43%	66,14 (3,968min)	68.60%
Chirundu border post, Zambia	39.43 (2,366min)	27.81%	-	-
i. Immigration	0.43 (26min)	0.30%	-	-
ii. Customs	39.00 (2,340min)	27.51%	-	-
Zambia Weighbridges	0.25 (15min)	0.18%	0.20 (12min)	0.21%
Roadblocks in Zambia	0.67 (40min)	0.47%	0.50 (30min)	0.52%
Total standing time in Zambia	40,35 (2,421min)	28.46%	0.70 (42min)	0.73%
Total standing time	141.77 (2,421min)	100%	96.42 (5,785min)	100%

Source: C-BRTA. Cost of Doing Business by Cross-Border Road Freight Operators along the North South Corridor. 2021

Table 23: Total standing costs on the Northbound leg along the North-South corridor

Standing Times	Hours	%	Per trip	Per annum
RSA Traffic control centres	1,00	0,71%	R169,62	R3 652,43
Roadblocks in South Africa	0,42	0,30%	R71,67	R1 543,28
Beitbridge border post, South Africa	32,75	23,10%	R5 518,51	R118 832,71
i. Immigration	0,75	0,53%	R126,62	R2 726,46
ii. Customs	32,00	22,57%	R5 391,90	R116 106,25
Total standing time in South Africa	34.17	24,10%	R5 757,41	R123 976,99
Beitbridge border post, Zimbabwe	65,50	46,20%	R11 037,02	R237 665,43
i. Immigration	0,50	0,35%	R83,61	R1 800,50
ii. Customs	65,00	45,85%	R10 953,41	R235 864,93
Zimbabwe Weighbridges	0,67	0,47%	R112,28	R2 417,81
Roadblocks in Zimbabwe	1,08	2,68%	R640,24	R13 786,65
Chirundu border post, Zimbabwe	-	-	-	-
i. Immigration	-	-	-	-
ii. Customs	-	-	-	-
Total standing time in Zimbabwe	67.25	47,43%	R11 330,87	R243 992,88
Chirundu border post, Zambia	39,43	27,81%	R6 643,72	R143 062,24
i. Immigration	0,43	0,30%	R71,67	R1 543,28
ii. Customs	39,00	27,51%	R6 572,05	R141 518,96
Zambia Weighbridges	0,25	0,18%	R43,00	R925,97
Roadblocks in Zambia	0,67	0,47%	R112,28	R2 417,81
Total standing time in Zambia	40,35	28,46%	R6 799,00	R146 406,02
Total standing time	141,77	100,00%	R23 889,66	R514 427,33

Source: C-BRTA. Cost of Doing Business by Cross Border Road Freight Operators along the North South Corridor. 2021

Table 24: Total standing costs on the Southbound along North-South corridor

Standing Times	Per trip	Percentage	Per trip	Per Annum
RSA Traffic control centres	0,67	0,69%	R112,90	R2,366.37
Roadblocks in South Africa	0,28	0,29%	R47,18	R994.56
Beitbridge border post, South Africa	28,63	29,66%	R4 824,44	R101,719.43
i. Immigration	0,63	0,65%	R106,16	R2,229.19
ii. Customs	28,00	29,01%	R4 718,28	R99,490.25
Total standing time in South Africa	29,58	30,68%	R4 984,53	R105,217.54
Beitbridge border post, Zimbabwe	48.40	50.19%	R8,155.88	R172,127.38
i. Immigration	0.40	0.41%	R67.40	R1,406.10
ii. Customs	48.00	49.78%	R8,088.48	R170,721.28
Zimbabwe Weighbridges	0.50	0.52%	R84.26	R1,783.35
Roadblocks in Zimbabwe	0.87	0.90%	R146.60	R3,086.56
Chirundu border post, Zimbabwe	16.37	16.97%	R2,758.51	R58,198.88
i. Immigration	0.37	0.38%	R62.35	R1,303.22
ii. Customs	16.00	16.59%	R2,696.16	R56,895.66
Total standing time in Zimbabwe	66,14	68,60%	R11 145,25	R235 264,76
Chirundu border post, Zambia	0,00	0,00%	R0,00	R0,00
i. Immigration	0,00	0,00%	R0,00	R0,00
ii. Customs	0,00	0,00%	R0,00	R0,00
Zambia Weighbridges	0.20	0.21%	R33.70	R720.20
Roadblocks in Zambia	0.50	0.52%	R84.26	R1,783.35
Total standing time in Zambia	0.70	0.73%	R117.96	R2,503.55
Total standing time	96,42	100,00%	R16 247,73	R433 900,60

Source: C-BRTA. Cost of Doing Business by Cross-Border Road Freight Operators along the North South Corridor. 2021

4.5.2 Total Standing Time

Table 22 shows that:

- The total standing time of the cross-border truck journey between Johannesburg and Lusaka was 141.77 hours on the northbound leg. Thus, for every single cross-border truck trip on the northbound, the same truck consumed $R168,51 \times 141,77 = R23,889.66$ idling (standing time) which is 80% of the total truck mileage costs of R29,657.76 per cross-border trip (see table 23).
- The analysis on the southbound confirmed that the total standing time of the cross-border truck journey from Lusaka to Johannesburg was 96.42 hours and the same truck disbursed $R168,51 \times 96.42 = R16 247,73$ of standing time per cross-border single trip (see table 24).

4.5.3 Total Standing Costs

4.5.3.1 Standing Costs on the South African Side

Cross-Border Northbound trip at the Beitbridge Border Post

Table 23 shows that:

- The total standing time of the cross-border truck on the northbound was 34,17 hours in the South African side of the border. This standing time recorded about 24% of the total standing time of 141,77 hours per cross-border trip on the northbound along the NSC;
- From Johannesburg to the Beitbridge border post (Musina), the cross-border truck expended about R5 757,41 idling per cross-border truck trip. When annualising the standing costs, the cross-border truck consumed R123 976,99 idling on the South African side of which 95,85% (R5 518,51 per trip and R118 832,71 per annum) is the time that was spent at the Beitbridge border post stamping passport and clearing cargo;
- On the northbound, the standing time of SARS Customs for clearing cargo was approximately 32 hours, recording 22.57% the total standing time of R23 889,66 per cross-border northbound trip along the NSC. On the South African side, SARS customs clearance processes contributed about 94% of the waiting time per cross-border northbound trip. This waiting time costed the cross-border operator about R5,391,90 per cross-border northbound trip along the NSC, and approximately R116 106,25 per annum on the northbound leg of the NSC.
- The total standing time of the cross-border truck in the South African side from Johannesburg to Beitbridge border post, Musina on the northbound was R123 976,99 which was 24% of the total waiting time of the cross-border truck per annum (R514 427,33) along the NSC.

Cross-border Southbound trip at the Beitbridge border post

Tables 22 and 24 reveals that:

- The total standing time of a cross-border truck on the southbound leg was 29,58 hours in the South African side. This standing time in the South African side recorded about 30,7% of the total standing time of 96,42 hours per cross-border trip on the southbound leg along the NSC from Lusaka to Johannesburg.
- From Beitbridge border post at Musina to Johannesburg, the cross-border truck expended about R4 984,53 idling (at border post, weighbridges, and roadblocks) per single cross-border truck trip. When annualising the standing costs, the cross-border truck consumed R105,217.54 idling on the South African side, which was 31% of total standing costs (R433,900.60) per annum along the NSC.
- On the southbound leg, the standing time of SARS Customs for clearing cargo was 28 hours and R4 718,28 of the standing costs, recording 29% of the total standing time of R16 247,73 per cross-border southbound trip along the NSC.
- On the South African side, SARS customs clearance processes contributed about 94% of the waiting time at the border precinct per cross-border southbound trip (R4 718,28 out of R4 984,53) and R101,719.43 of standing costs at SARS out of R105,217.54 per annum (table 24).

4.5.3.2 Standing costs on the Zimbabwean side

a) Cross-border Northbound trip at Beitbridge border post

Table 24 shows that:

- Total standing time of a cross-border truck in the Zimbabwean side (from Chirundu border post to Beitbridge border post) on the South bound leg was 66,14 hours counting waiting times at border posts, at roadblocks and at weighbridges. The total percentage waiting time of the cross-border truck in the Zimbabwean side was 68,6% (R11 145,25) out of the total standing time of 96,42 hours per cross-border truck trip on the southbound along the NSC (R16 247,73).
- The total standing time of the cross-border truck at Beitbridge border post on the northbound was 65,50 hours in the Zimbabwean side. This standing time recorded about 46,2% of the total standing time of 141,77 hours per cross-border trip on the northbound along the NSC.
- When the cross-border truck was in operation on the northbound leg, it expended $R168,51 \times 65,50 = R11\ 037,41$ which was 46,2% of the total standing time of R23 889,66 per cross-border trip along the NSC.
- On the northbound leg, the standing time of Zimbabwe Revenue Authority (ZIMRA) for clearing cargo at Beitbridge border post was 65 hours, recording 45,9% the total standing time of R23 889,66 per cross-border northbound trip along the NSC. On the Zimbabwean side, ZIMRA's clearance processes contributed about 99% of the waiting time per cross-border northbound trip with expense of R10 953,41 out of R11 037,41.
- The total standing time of the cross-border truck in the Zimbabwean side at Beitbridge border post, on the northbound was R237 665,43, which was 46.2% of the total waiting time of the cross-border truck per annum (R514 427,33) along the NSC.

b) Cross-border southbound trip at the Chirundu border post

Tables 24 portrays that:

- When the cross-border truck was in operation on the southbound leg, it exhausted about $R168,51 \times 16,37 = R2,758.51$ (Immigration and Customs) which was 17,0% of the total standing cost of R16 247,73 per cross-border trip along the NSC.
- On the southbound leg, the standing time for clearing cargo at Chirundu border post in the Zimbabwean side was 16 hours, recording 16,6% of the total standing time of 96,42 hours per cross-border southbound trip along the NSC. Within the border precinct at Beitbridge border post on the southbound in the Zimbabwean side, ZIMRA's clearance processes contributed about 99,2% of the waiting time per cross-border southbound trip with expense of R8,080.48 out of R8,155.88.
- The total standing time of the cross-border truck in the Zimbabwean side at Beitbridge border post, on the southbound leg was 48,4 hours per trip and costed the freight operator about R170,721.28 out of 172,721.38 per annum.

c) **Cross-border Southbound trip at the Beitbridge border post**

Table 24 illustrates that:

- The total standing time of the cross-border truck on the Zimbabwean side (from Chirundu border post to Beitbridge border post) on the southbound was 66,14 hours counting waiting times at border posts, at roadblocks and at weighbridges. The total percentage waiting time of the cross-border truck in the Zimbabwean side was 68,6% (R11 145,25) out of the total standing time of 96,42 hours per cross-border truck trip on the southbound along the NSC (R16 247,73).
- The total standing time of the cross-border truck at Beitbridge border post on the southbound was 48,40 hours in the Zimbabwean side. This standing time recorded about 50,2% of the total standing time of 96,42 hours per cross-border trip on the southbound along the NSC.
- When the cross-border truck was in operation on the southbound leg, it exhausted about $R168,51 \times 48,40 = R8,155.88$ which was 46,2% of the total standing cost of R16 247,73 per cross-border trip along the NSC.
- On the southbound leg, the standing time of Zimbabwe Revenue Authority (ZIMRA) for clearing cargo at Beitbridge border post was 48 hours, recording 49,8% of the total standing time of 96,42 hours per cross-border southbound trip along the NSC. Within the border precinct at the Beitbridge border post on the southbound (Zimbabwean side), ZIMRA's clearance processes contributed about 99,2% of the waiting time per cross-border southbound trip with expense of R8,080.48 out of R8,155.88.
- The total standing time of the cross-border truck in the Zimbabwean side at Beitbridge border post, on the southbound leg was 48,4 hours per trip and costed the freight operator around R170,721.28 out of 172,721.38 per annum.

4.5.3.3 **Standing costs on the Zambian side**

a) **Cross-border northbound trip at the Chirundu border post**

Table 23 depicts that:

- The total standing time of a cross-border truck in the Zambian side from Chirundu border post to the destination in Lusaka on the northbound was 40,4 hours including waiting times at border post, at roadblocks and at weighbridges. The total percentage waiting time of the cross-border truck in the Zambian side was 28,5% out of the total standing time of 141,77 hours per cross-border truck trip on the northbound along the NSC.
- The total standing time of the cross-border truck at Chirundu border post precinct on the northbound was 39,43 hours (together with immigration and customs combined) on the Zambian side. This standing time recorded about 27,8% of the total standing time of 141,77 hours per cross-border trip on the northbound along the NSC.
- When the cross-border truck was in operation on the northbound, it expended $R168,51 \times 39,43 = R6\ 643,72$ at Chirundu border precinct out of the total standing cost of R23 889,66 per cross-border trip along the NSC.
- On the northbound leg, the standing time for the cross-border truck to clear consignment (Customs) at Chirundu border post in the Zambian side was 39 hours, recording 27,5% the total standing cost of R23 889,66 per cross-border northbound trip along the NSC. On the Zambian side, customs clearance processes contributed about 97% of the waiting time from the border precinct to the destination in Lusaka, per cross-border northbound truck trip with expense of R6 572,05 out of R6 799,00.

- The total standing time of the cross-border truck in the Zambian side from Chirundu border post to the destination in Lusaka, on the northbound was 40,4 hours and costed the freight operator about R143 062,24 per annum constituting 28,5% of the total waiting costs of the cross-border truck per annum (R514 427,33) along the NSC.

4.7 Conclusion

The C-BRTA developed a cost estimation model to assess and quantify the key factors that contribute to the high cost of road freight operations along the NSC between Johannesburg and Lusaka. The findings of the cost model reveal that the total average annual hours a cross-border trucks spend in operation is 6,360 hours over 265 days per annum, costing the operator around R1 071 718,83, which is 17% of the cross-border truck annual operating costs of R6 182 474,50.

Truck life expectancies correlate with annual mileage totals meaning that the higher the annual mileage total, the shorter the lifespan of the truck. According to the findings of the study, the costs of truck mileage registered the highest with the cross-border truck recording between 48% (R2 974 833,83) of the cross-border truck annual operating costs (R6 182 474,50).

A major cost item in cross-border road transport operations is fuel that comprises around 30% (R1 843 673,83) of the cross-border truck annual operating costs. (R6 182 474,50). Fuel costs are followed by the cost of repaying a truck-tractor and trailer (R 794,517.00 per annum) constituting 13% of the cross-border truck annual operating costs.

Time delays at strategic border posts (Beitbridge and Chirundu) along the NSC contribute to the high cost of doing business for cross-border truck operators. The total travel time for a cross-border truck from Johannesburg to Lusaka on the northbound leg of the NSC was 176 hours of which 81% (141,77 hours) of the journey time was spent at government regulatory stoppages (border posts, weighbridges, and at roadblocks). Customs processes took lion's share of 77% (136 hours) of total standing time.

On the southbound leg of the NSC, the total travel time for a truck moving from Lusaka to Johannesburg was 176 hours of which 55% (96,42 hours) of the journey time was spent at government regulatory stoppages per single cross-border truck trip. Customs processes appropriated the clear majority of 93% (92 hours) of total standing time per cross-border truck single trip.

The lengthy processes associated with clearing goods at border posts emphasises that border inefficiencies are the greatest detractor of logistics performance along regional transport corridors. The status quo calls for the adoption and implementation of trade and transport interventions (e.g. single-window systems, OSBPs) to improve border processes and reduce time losses at inland borders. Eliminating, or reducing regulatory/ administrative bottlenecks will enhance export competitiveness and boost intra-regional trade.

5. CROSS-BORDER TRADE VOLUMES AND VALUES PASSING THROUGH SOUTH AFRICAN COMMERCIAL BORDER POSTS

5.1 Introduction

Most cross-border movements in the SADC, takes place in road vehicles. Currently, South Africa has more than fifty official border posts of which nineteen are used for commercial purposes. Most trade between countries in the region takes place across the nineteen commercial border posts.

Trade between SADC countries has increased significantly in recent years. In some cases, traffic has doubled, particularly at the Beitbridge and Lebombo border posts. Due to the unavailability of data on cross-border road transport movements, the C-BRTA was not equipped in the past to generate updated data that relates and reflects cross-border growth. This has resulted in the following challenges:

- Inability of the C-BRTA to provide updated information to the Minister of Transport, road transport operators, and industry role players on trade and traffic movements moving through commercial borders into, and out of South Africa;
- Restrict the participation of the C-BRTA in infrastructure planning and development to better respond to the needs of the road transport industry; and
- Failure of the C-BRTA to plan appropriately for activities relating to border operations (law enforcement inspection and traffic counts).

To address the above-mentioned challenges, the C-BRTA has recently initiated a trade volumes study that provides consolidated information pertaining to trade volumes (in different units of measurement) and values (in South African Rand) of cross-border road traffic passing through commercial border posts that link South Africa with the following countries:

- Botswana;
- eSwatini;
- Lesotho;
- Mozambique;
- Namibia and
- Zimbabwe.

Data for the trade volumes study is obtained from SARS and complemented with secondary sources (e.g. journals and trade statistics released by MS). Results of the analysis are presented in descriptive statistics, in the form of tables, figures and histograms. The discussions of this chapter provide a bird's eye view of trade volumes moving through the above-mentioned border posts, and is structured as follows:

- Country Overview; and
- Trade analysis / statistics of identified border posts.

5.2 Country Analysis

Section 5.2 provides a synopsis of *trade volumes* and *values* that moved between South Africa and neighbouring countries in commercial road transport vehicles for the period 2019 – 2020. The discussion does not give a breakdown of trade volumes per different units of measurement, nor does it give a monthly breakdown of trade volumes and values. For more information, the reader is advised to access the following report “*Statistics on Trade Volumes and Values Flowing through South African commercial border posts and destination countries 2020/21*” that is available on the C-BRTA website.

5.2.1 South Africa’s Trade with Botswana

5.2.1.1 Overview

Botswana is a small land-locked country in the SADC region that has several border posts that link this land-locked country with South Africa. Table 25 displays information on Botswana / South African border posts and their operating hours.

Table 25: South Africa / Botswana Border Posts and Operating Hours

South Africa / Botswana	Operating Hours
Pont Drift / Mashatu	08:00 – 16:00
Platjan	08:00 – 16:00
Zanzibar	08:00 – 16:00
Groblers Bridge / Martin’s Drift	06:00 – 22:00
Stockpoort / Parr’s Halt	08:00 – 18:00
Derdepoort / Sikwane	06:00 – 19:00
Kopfontein / Tjokweng Gate	06:00 – 24:00
Swartkoppie / Ramotswa	08:00 – 22:00
Skilpadshek / Pioneer Gate	06:00 – 24:00
Twee Rivieren – Two Rivers	07:30 – 16:00
Gemsbok – Bokspits	08:00 – 16:30
Ramatlabama	06:00 – 22:00
Makgobistad / Phitshane Molopo	07:00 – 16:00
Bray	07:00 – 16:00
Makopong	08:00 – 16:00
McCarthy’s Rest	08:00 – 16:00
Middleputs	07:30 – 16:30

Source: C-BRTA. *Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021*

5.2.1.2 Trade Volumes through Botswana Commercial Border Posts

Botswana has 4 commercial border posts, and these borders are known as:

- Groblers Bridge / Martins Drift border post;
- Kopfontein / Tlokweg border post;
- Pioneer Gate /Skilpadshek border post; and
- Ramatlabama border post.

a) Groblers Bridge/ Martins Drift Border Post

Table 26 depicts South Africa's total export and import values in monetary terms that passed through Grobler's Bridge Border post between 2019 and 2020.

Table 26: South African exports and imports (Rand value) to Botswana via the Groblers Bridge Border Post

EXPORTS		IMPORTS	
2019	2020	2019	2020
21,599,970,197	15,849,766,811	2,962,182,965	1,906,242,740

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

South Africa's total exports processed at Gorbler's Bridge border post documented around R21,6 billion in 2019, while in 2020, exports valued almost R15,9 billion, which is a reduction of 36%. Goods imported from Botswana through Groblers Bridge registered almost R3,0 billion in 2019, while imports dropped by 36% in 2020 to R1,9 billion.

b) Kopfontein/ Tlokweng Border Post

Table 27 show's South Africa's total export and import values in monetary terms that passed through the Kopfontein border post to South Africa during 2019 and 2020.

Table 27: South African exports and imports (Rand value) to Botswana via the Kopfontein Border Post

EXPORTS		IMPORTS	
2019	2020	2019	2020
26,812,180,556	24,895,729,531	3,108,242,016	2,242,656,618

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

South Africa's exports handled at Kopfontein border post registered around R26,8 billion in 2019, whereas exports dropped by 7% in 2020 to almost R24, 9 billion. Imports followed a similar trend and reduced by 28% from R3,1 billion worth of goods in 2019 to around R2,2 billion in 2020.

c) Pioneer Gate /Skildpadshek Border Post

Table 28 shows South Africa's total export and import values in monetary terms that passed through the Pioneer Gate / Skilpadshek border post between 2019 and 2020.

Table 28: South African exports and imports (Rand value) to Botswana via the Pioneer Gate / Skildpadshek Border Post

EXPORTS		IMPORTS	
2019	2020	2019	2020
39,423,367,307	26,290,652,565	3,795,494,874	1,859,151,068

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

South Africa's exports administered at the Pioneer Gate border post documented around R39,4 billion in 2019. Exports reduced drastically in 2020 (by 33%) to around R26,3 billion. Imports also reduced by 51% from R3,8 billion in 2019 to around R1, 9 billion in 2020.

d) Ramatlabama Border Post

Table 29 portrays South Africa's total export and import values in monetary terms that passed through the Ramatlabama border post between 2019 and 2020.

Table 29: South African exports and imports (Rand value) to Botswana via the Ramatlabama Border Post

EXPORTS		IMPORTS	
2019	2020	2019	2020
7,483,284,710	6,918,649,352	1,288,560,654	1,297,423,623

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

South Africa's total exports handled at Ramablabama border post amounted to almost R7,5 billion in 2019. Exports reflected a decrease of 8% in the following year, reaching R6,9 billion in 2020. Goods imported from Botswana via the Ramatlabana border post remained almost the same for the period under review (R1,3 billion).

5.2.1.3 South African Exports to Botswana

Table 30 depicts South Africa's total exports through all 4 commercial border posts that link South Africa with Botswana. This table also reflects total volumes recorded at the commercial border posts between 2019 and 2020.

Table 30: South African Exports (value and volume) to Botswana

Year	Value	Volume
2019	95,318,800,751	9,800,993,286
2020	73,954,796,239	6,492,891,673

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

The total value of South African exports registered at all 4 commercial borders, totalled around R95,3 billion in 2019, while exports decreased by 22% in 2020 to approximately R74 billion. South Africa's total volumes exported to Botswana through the 4 commercial border posts documented around 9,8 billion pieces of goods in 2019 and in 2020, exports documented around 6,5 billion pieces, reflecting a decline of 34%

5.2.1.4 South African Imports from Botswana

Table 31 shows South Africa's total imports (monetary values) and volumes through all 4 commercial border posts for the years 2019 and 2020.

Table 31: South African Imports (value and volume) from Botswana

Year	Value	Volume
2019	11,154,480,509	1,061,532,963
2020	7,304,474,049	998,670,032

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

South Africa's total imports processed at the 4 commercial border posts documented around R11,2 billion in 2019. In 2020, South African imports declined by 35% to approximately R7,3 billion. South Africa's total volumes imported from Botswana through the same commercial border posts documented about 1,1 billion pieces of goods in 2019 and in 2020 imports registered around 999 million pieces, reflecting a decline of 6%.

Based on the statistics presented in tables 30 and 31 South Africa has an exceptionally healthy trade balance with Botswana. In 2020, South Africa exported goods to the value of just below R74 billion to Botswana, while the country only imported goods to the value of R7,3 billion from its neighbour, resulting in a trade surplus of around R66,7 billion. The decline in trade between South Africa and Botswana in 2020 was driven by restrictions imposed by both MS (e.g. prohibition on the transportation of non-essential commodities) to curb the spread of the COVID-19 pandemic.

5.2.2 South Africa's Trade with eSwatini

5.2.2.1 Overview

eSwatini is a small land-locked country in the SADC. Several border posts provide access to its neighbours (South Africa and Mozambique). Table 32 provides more detail on the South African/ eSwatini border posts and their operating hours.

Table 32: South Africa/eSwatini Border Posts and Operating Hours

Countries	Border Posts	Operating Hours
South Africa		
	Ngwenya (Oshoek)	07:00 – 00:00
	Bulembu (Joseffsdal)	08:00 – 16:00
	Matsamo (Jeppes Reef)	07:00 – 20:00
	Golela (Lavumisa)	07:00 – 22:00
	Sicunusa (Houtkop-Emahlathini)	08:00 – 18:00
	Mananga	07:00 – 18:00
	Gege (Bothashoop)	08:00 – 16:00
	Lundzi (Waverly)	08:00 – 16:00
	Mahamba	07:00 – 22:00
	Salitjie (Overwacht)	08:00 – 16:00
	Sadlane (Nerston)	08:00 – 18:00
Mozambique		
	Lomashasha (Namaacha)	07:00 – 20:00
	Mhlumeni (Goba)	24 hours

Source: C-BRTA. *Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021*

5.2.2.2 Trade Volumes through eSwatini Commercial Border Posts

Listed below are the commercial border posts that link South Africa and eSwatini:

- Golela/ Lavumisa border post;
- Jeppes Reef /Matsomo border post;
- Mahamba border post;
- Mananga border post;
- Nerston /Sandlane border post; and
- Oshoek /Ngwenya border post

a) Golela/ Lavumisa Border Post

Table 33 reveals South Africa's total export and import values in monetary terms that passed through Golela/ Lavumisa border post between 2019 and 2020.

Table 33: South African exports and imports (Rand value) to eSwatini via the Golela Border Post

EXPORTS		IMPORTS	
2019	2020	2019	2020
6,276,153,719	5,837,963,368	4,931,138,275	4,521,819,604

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

South Africa's total exports processed at Golela border post in 2019 documents around R6,3 billion, while in 2020, exports decreased by 7% to around R5,8 billion. In 2019 South Africa imported goods of around R4,9 billion from eSwatini, whereas, in 2020, imports registered around R4,5 billion, reflecting a decline of 8%.

b) Jeppes Reef/ Matsomo Border Post

Table 34 divulges South Africa's total export and import values in monetary terms that was processed at Jeppes Reef /Matsomo border post between 2019 and 2020.

Table 34: South African exports and imports (Rand value) to eSwatini via the Jeppe's Reef border post

EXPORTS		IMPORTS	
2019	2020	2019	2020
413,668,058	403,950,426	187,254,697	162,986,504

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

As illustrated in the table above, South Africa's total exports handled at Jeppe's Reef border post in 2019 recorded around R414 million, and in 2020, exports reduced slightly by 2% to around R404 million. South Africa's imports from eSwatini through Jeppes Reef border post valued around R187 million in 2019, while imports through the same border reduced by 13% to almost R163 million in 2020.

c) Mahamba Border Post

Table 35 illustrates South Africa's total export and import values in monetary terms that was processed at Mahamba border post during 2019 and 2020.

Table 35: South African exports and imports (Rand value) to eSwatini via the Mahamba border post

EXPORTS		IMPORTS	
2019	2020	2019	2020
933,254,105	993,298,870	669,690,665	666,153,681

Source: C-BRT gA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

South African exports processed at Mahamba border post recorded around R933 million in 2019, while exports increased by 6% to R993 million in 2020. Regarding goods imported from eSwatini to South Africa through the Mahamba border, South Africa imported around R670 million worth of goods in 2019, whereas in 2020, imported reduced by 1% to R666 million.

d) Mananga Border Post

Table 36 illustrates South Africa's total export and import values in monetary terms that was processed at Mananga border post between 2019 and 2020.

Table 36: South African exports and imports (Rand value) to eSwatini via the Mananga border post

EXPORTS		IMPORTS	
2019	2020	2019	2020
699,727,131	584,997,371	673,333,078	808,797,387

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

South Africa's total exports handled at Mananga border post registered around R700 million in 2019. In 2020, exports decreased by 16% to approximately R585 million. South Africa's imports from eSwatini that passed through Mananga border in 2019 valued at R673 million. In 2020 imports increased by 20% in to R809 million.

e) Nerston Border Post

Table 37 unveils South Africa's total export and import values in monetary terms that was processed at Nerston border post between 2019 and 2020.

Table 37: South African exports and imports (Rand value) to eSwatini via the Nerston border post

EXPORTS		IMPORTS	
2019	2020	2019	2020
140,766,685	39,841,098	163,248,497	28,835,319

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

South Africa’s total exports that passed through Nerston border post documented around R141 million in 2019, while in 2020, exports valued to almost R40 million. Nerston was one of the border posts that the President of South Africa instructed to be closed during the lockdown period in 2020. As a result, this border only operated for 3 months (January – March). This is in main, the reason for the sharp decline in exports (72%) between 2019 – 2020.

Likewise, goods imported from eSwatini to South Africa through the Nerston border valued around R163 million in 2019. In 2020, this border only operated for three months and only registered about R29 million, which reflects a reduction of 82%.

f) Oshoek Border Post

Table 38 below unveils South Africa’s total export and import value in monetary terms that passed through Oshoek /Ngwenya border post between 2019 and 2020.

Table 38: South African exports and imports (Rand value) to eSwatini via the Oshoek border post

EXPORTS		IMPORTS	
2019	2020	2019	2020
11 342,206, 434	11 244,520,255	12 532,613,136	12 190,200,198

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

South Africa’s total exports processed at the Oshoek border post in 2019 valued around R11,3 billion in 2019, while exports declined marginally (by 1%) in 2020 to R11,2 billion. South Africa imported goods to the value of around R12,5 billion through the Oshoek border post in 2019, while imports reduced by 3% to around R12,2 billion in 2020.

When comparing the data projected in tables 33-38 it is apparent that Oshoek border post recorded the highest export volumes of all 6 commercial border posts that link eSwatini with South Africa. In 2020, 52% of all export volumes (R11,2 billion) were recorded at Oshoek. This border also recorded the highest import values of around R12,2 billion in 2020, contributing to around 66% of eSwatini’s total imports to South Africa.

5.2.2.3 South African Exports to eSwatini

Table 39 summarises South Africa's total exports through all 6 commercial border posts that link South Africa with eSwatini for 2019 and 2020. This table also reflects total volumes recorded at the 6 border posts over the same period.

Table 39: South African Exports (value and volume) to eSwatini

Year	Value	Volume
2019	19 805,776,132	1 661,406,525
2020	19 104,571,388	1 872, 923, 695

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

From table 39 it is clear that South Africa's total value of exports that passed through all six commercial border posts recorded approximately R19,8 billion in 2019, whereas, in 2020, exports valued at around R19,1 billion, representing a decrease of 4%. South Africa's total volumes exported to eSwatini through the same border posts registered around 1,7 billion pieces of goods in 2019. In 2020, exports increased by 13% to approximately 1,9 billion pieces.

5.2.2.4 South African Imports from eSwatini

Table 40 summarises South Africa's total imports through all 6 commercial border posts that link South Africa with eSwatini for 2019 and 2020. Also reflected in the table is the total volumes recorded at the 6 commercial border posts.

Table 40: South African Imports (value and volume) to eSwatini

Year	Value	Volume
2019	19,157,278,348	1,618,320,275
2020	18,378,792,693	1,398,955,135

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

South Africa's imports processed at the 6 commercial border posts documented around R19,2 billion in 2019 while in 2020, imports valued at approximately R18,4 billion, representing a decrease of 4%. South Africa's total volumes imported from eSwatini through the same border posts documented about 1,6 billion pieces of goods in 2019, while in 2020, imports registered approximately 1,4 billion pieces of goods, resulting in a decline of 14%.

The data depicted in tables 39 and 40 depicts that South Africa has an exceptionally healthy trade balance with eSwatini. In 2020, South Africa exported good to the value of R19,1 billion to eSwatini, while the country only imported goods to the value of R18,4 billion. Consequently, South Africa enjoyed a trade surplus of R700 million.

The decline in trade between South Africa and eSwatini in 2020 were mainly driven by measures imposed by SADC MS to contain the spread of the COVID-19 pandemic that restricted the movement of people and certain goods across strategic borders in the region.

5.2.3 South Africa's Trade with Lesotho

5.2.3.1 Overview

The Kingdom of Lesotho, also known as the Mountain Kingdom, is a small land-locked country surrounded by South Africa. Lesotho has several border posts that allow the country to link up with South Africa. (see table 41 below).

Table 41: South Africa/Lesotho Commercial Border Posts and Operating Hours

Lesotho	South Africa	Operating Hours	Contact number
Maseru Bridge	Maseru Bridge	24 hours	+27(0) 51 924 4300
Peka Bridge	Peka Bridge	08:00 – 16:00	+27(0) 51 933 3951
Maputsoe	Ficksburg Bridge	24 hours	+27(0) 51 933 2760
Caledonspoort	Caledonspoort	06:00 – 22:00	+27(0) 58 223 8400
Monontsha Pass	Monontsha Pass	08:00 – 16:00	+27(0) 58 713 1600
Sani Pass	Sani Pass	08:00 – 16:00	+27(0) 33 702 1169
Ramats'ilitso	Ramats'ilitso	08:00 – 16:00	+27(0) 39 256 4443
Quacha's Nek	Quacha's Nek	08:00 – 10:00	+27(0) 39 256 4391
Ongeluksnek	Ongeluksnek	08:00 – 16:00	+27(0) 39 256 7001
Tele Bridge	Tele bridge	06:00 – 22:00	+27(0) 39 256 7001
Makhaleng Bridge	Makhaleng Bridge	08:00 – 16:00	+27(0) 51 673 1484
Sepapus Gate	Sepapus Gate	08:00 – 16:00	+27(0) 52 332 ask for 190
Van Rooyens Gate	Van Rooyens Gate	06:00 – 22:00	+27(0) 51 583 1525

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

5.2.3.2 Trade Volumes through Lesotho Commercial Border Posts

The following commercial border posts link South Africa and Lesotho:

- Caledonspoort border post;
- Ficksburg border post
- Maseru Bridge border post;
- Quacha's Nek border post; and
- Van Rooyen's Gate border post.

a) Caledonspoort Border Post

Table 42 discloses South Africa' total exports and imports in monetary terms that passed through the Caledonspoort border post between 2019 and 2020.

Table 42: South African exports and imports (value) to Lesotho through Caledonspoort Border Post

EXPORTS		IMPORTS	
2019	2020	2019	2020
2,204,969,188	1,930,403,282	245,436,789	162,779,464

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

South Africa's total exports processed at Caledonspoort border post recorded around R2,2 billion in 2019, and in 2020, exports valued at around R1,9 billion resulting in a decrease of 12%. South Africa imported around R245 million worth of goods in 2019, whereas imports reduced by 34% in 2020 to approximately R163 million pieces of goods.

b) Ficksburg Border Post

Table 43 discloses South Africa' total exports and imports in monetary terms that passed through Ficksburg border post between 2019 and 2020.

Table 43: South African exports and imports (value) to Lesotho through the Ficksburg Border Post

EXPORTS		IMPORTS	
2019	2020	2019	2020
3,303,379,113	3,088,210,077	2,256,700,382	2,017,283,564

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

Table 43 shows that South African total exports through the Ficksburg border post recorded around R3,3 billion in 2019. Exports through the same border reduced by approximately 7% in 2020 to R3,1 billion. South Africa imported around R2,3 billion worth of goods in 2019, whereas in 2020, imports declined by 11% to just over R2,0 billion.

c) Maseru Bridge Border Post

Table 44 discloses South Africa's total exports and imports in monetary terms that passed through the Maseru Bridge border post between 2019 and 2020.

Table 44: South African exports and imports (value) to Lesotho through Maseru Bridge Border Post

EXPORTS		IMPORTS	
2019	2020	2019	2020
12,209,420,187	11,122,945,732	1,935,952,644	2,150,503,258

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

South African total export and import values in monetary terms that crossed through Maseru bridge border post between 2019 and 2020 recorded just over R12 billion in 2019, while total exports decreased by 9% in 2020 to R11,1 billion. South African imports handled at the same border valued around R1,9 billion worth of goods in 2019, while in 2020, imports increased by 11% to approximately R2,2 billion.

d) Qacha’s Nek Border Post

Table 45 illustrates South Africa’ total exports and imports in monetary terms that passed through Qacha’s Nek border between 2019 and 2020.

Table 45: South African exports and imports (value) to Lesotho through Qacha’s Nek Border Post

EXPORTS		IMPORTS	
2019	2020	2019	2020
92,600,031	71,492,521	4,566,271	36,356,594

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

As reflected in the table above, South Africa’s total exports processed at Qacha’s Nek documented around R92,6 million in 2019, and in 2020, exports valued at approximately R71,5 million, reflecting a decline of 23%. South African imports moving through the same border valued around R4,6 million worth of goods in 2019, whereas in 2020, imports recorded a significant growth of 696% to R36, 4 million.

e) Van Rooyen’s Gate Border Post

Table 46 reflects South Africa’s total exports and imports in monetary terms that passed through the Van Rooyen’s Gate border post in 2019 and 2020.

Table 46: South African exports and imports (value) to Lesotho through Van Rooyen’s Gate Border Post

EXPORTS		IMPORTS	
2019	2020	2019	2020
749,838,243	745,606,024	4,290,061	55,684,565

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

Table 46 shows that South Africa’s total exports at Van Rooyen’s Gate totalled just below R750 million in 2019, while the figures dropped marginally by 1% in 2020 to around R746 million. South African imports that were handled at the same border totalled around R4,2 million worth of goods in 2019, whereas in 2020, imports recorded almost R56 million, which represents an increase of 1198%.

A comparison of the data provided in tables 43- 47 for the year 2020 shows that Maseru bridge processed the highest South African export volumes (61%) and value (66%). Ficksburg border post followed with 23% of volumes of goods cleared, while goods that this border post valued around R3,1 billion, amounting to 18% of South Africa’s total exports to Lesotho.

Caledonspoort border post came in third position. The total value of goods administered at Caledonspoort during 2020 amounted to R1,9 billion (11% of South African total exports) and processing 10% of total South African volumes to Lesotho. The last two borders processed the smallest volume of South African exports (between 1 – 5%) and the value of goods did not exceed 4%

5.2.3.3 South African Exports to Lesotho

Table 47 summarises South Africa’s value and volume of total exports through all 5 commercial border posts for 2019 and 2020.

Table 47: South African Exports (value and volume) to Lesotho

Year	Value	Volume
2019	18,560,206,762	1 475,346,683
2020	16,958,657,636	1,521,203,900

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

It is evident from the above table that South Africa’s total exports processed at the 5 commercial border posts documented around R18,6 billion in 2019, whereas in 2020, exports valued at around R17 billion, reflecting a decrease of 9%.

Total volumes exported to Lesotho via the 5 commercial border posts documented nearly 1,5 billion pieces of goods in 2019, and in 2020, exports documented around 1,5 billion pieces of goods, resulting in an increase of 3%.

5.2.3.4 South African Imports from Lesotho

Table 48 depicts South African imports from all 5 commercial border posts that link Lesotho with South Africa for 2019 and 2020.

Table 48: South African Imports (value and volume) from Lesotho

Year	Value	Volume
2019	4 444, 946,147	193,866,887
2020	4 422,607,445	177,214,744

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

South Africa's total imports processed at all 5 commercial border posts documented around R4,4 billion in 2019, while in 2020, imports reflected a marginal decline of 1%. South Africa's total volumes imported from Lesotho through the same border posts documented approximately 194 million pieces of goods in 2019 and in 2020, imports registered approximately 177 million pieces of goods, resulting in a decline of 9%.

A comparison of data (tables 42- 46) for the year 2020 shows that Maseru Bridge processed the highest export volumes constituting about 61% of South Africa's total exports to Lesotho. Maseru bridge also recorded the highest value accounting to 66% (R11,1 billion). Ficksburg border post followed in second place with 23% of volumes of goods cleared. These pieces of goods valued over R3,1 billion in 2020.

The information presented in section 5.2.3 clearly shows that South Africa has an exceptionally healthy trade balance with Lesotho since South African exports to Lesotho outweigh imports by far. In 2020, South African exports amounted to almost R17 billion, while the country only imported goods to the value of R4,4 billion from Lesotho, leaving South Africa with a trade surplus of approximately R12,6 billion.

5.2.4 South Africa's Trade with Mozambique

5.2.4.1 Overview

The Republic of Mozambique is a country in Southeast Africa that shares borders with Tanzania, Malawi, Zambia, Zimbabwe, eSwatini and South Africa. Mozambique is divided by the following three (3) development corridors that link seaports to inland countries:

- Maputo Development Corridor (in the South)
- Beira Corridor (in the Centre); and
- Nacala Corridor (in the North).

The above corridors include multiple transport logistics sub-sector industrial developments. Four border posts are distinguished. Three inland are in the northern segment, while one border is in the southern segment. Table 49 displays more information on South African / Mozambique border posts.

Table 49: South Africa/ Mozambique Border Posts and Operating Hours

Mozambique	South Africa	Operating Hours	Distance
Pafuri	Pafuri	08:00 – 16:00	532 km from Johannesburg
Giriyondo	Giriyondo	08:00 – 16:00 Only open for 4x4 vehicles, not open to commercial traffic	595 km from Johannesburg
Ressano Garcia	Lebombo	06:00 – 24:00 (passengers) 06:00 – 22:00 – commercial	461 km from Johannesburg
Ponta do Ouro	Kosi Bay	08:00 – 17:00	630 km from Johannesburg 460 km from Durban

Source: C-BRTA. *Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021*

The main border crossing is at the Ressano Garcia/ Lebombo border where the Maputo corridor highway and the railway cross the border. The main road on the South African side is the N4, a two- to four lane national toll road. In Mozambique, the N4 becomes the EN4 that leads to Maputo. The EN4 is connected to the port of Maputo by a special access road. The entire network is built to carry 56-ton trucks and are used by commercial cross-border road transport operators for the conveyance of heavy commodities, destined for international markets to the ports of Maputo and Matola.

5.2.4.2 South African Exports to Mozambique

Table 50 below shows the total exports in monetary terms and quantities moving from South Africa to Mozambique via the Ressano Garcia/ Lebombo border post between 2019 and 2020.

Table 50: South African exports (value and volume) to Mozambique

Year	Value	Volume
2019	55,590,584,682	16,607,593,231
2020	53,560,101,250	13,604,225,043

Source: C-BRTA. *Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021*

South Africa's total exports administered at the Lebombo border post recorded around R55,6 billion in 2019 and in 2020, exports valued at R53,6 billion, resulting in a decrease of 4%. South Africa's total volumes exported through the Lebombo border documented around 16,6 billion pieces of goods in 2019 and in 2020, exports documented approximately 13,6 billion pieces, resulting in a decline of 16%.

5.2.4.3 South African Imports from Mozambique

Table 51 below shows the value and volume of imports moving from Mozambique to South Africa via the Ressano Garcia/ Lebombo border post for 2019 and 2020.

Table 51: South African imports (value and volume) from Mozambique

Year	Value	Volume
2019	4,279,582,967	618,613,563
2020	4,128,335,826	568,427,925

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

South Africa's total imports processed at the border documented around R4,3 billion in 2019, and decreased to approximately R4,1 billion in 2020, resulting in a decline of 4%. South Africa's total volumes imported from Mozambique through the Lebombo border post documented nearly 619 million pieces of goods in 2019 and in 2020, imports documented around 568 million pieces of goods, resulting in a decline of 8%.

When comparing the statistics of tables 50 and 51 with each other, it is evident that trade between South Africa and Mozambique favours South Africa, since South Africa exports more goods and services to Mozambique than it imports from its neighbour. For example, in 2020, South Africa exported goods to the value of R53,6 billion to Mozambique, while South Africa only imported goods to the value of R4,1 from Mozambique. South Africa therefore enjoyed a trade surplus of approximately R49,5 billion.

The decline in inter-trade between South Africa and Mozambique in 2020 were mainly driven by border post closures that targeted the movement of people and non-essential goods across inland borders. Essential supplies and emergency services were allowed under strict conditions, which included the mandatory testing of truck drivers, sanitisation of trucks and designated transit resting areas.

5.2.5 South Africa's Trade with Namibia

5.2.5.1 Overview

The Republic of Namibia is on the south-west coast of Africa. Namibia link to South Africa through 6 border posts. Table 52 provides more information on these borders.

Table 52: South Africa /Namibia Border Posts and Operating Hours

Namibia	South Africa	Operating Hours	Contact Number
Oranjemund	Alexander Bay	06:00 – 22:00	+27(0)831 1662
Sendelingsdrift	Sendelingsdrift	08:00 – 17:00	+27(0)831 2203
Noordoewer	Violsdrift	24 hours	+27(0)761 8760
Vellersdrift	Onseepkans	08:00 – 17:00	27(0)549 51 0014
Ariamsvlei	Nakop	24 hours	+27(0) 54571 0008
Klein Menasse	Rietfontein	08:00-16:30	+27(0) 54531 0084

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

The main border crossing is the Violsdrift/ Noordoewer border crossing. Noordoewer Border Control is situated between Namibia (Noordoewer) and South Africa (Violsdrift).

5.2.5.2 South African exports to Namibia

Table 53 depicts total exports in monetary terms and volumes that moved from South Africa to Namibia via the Vioolsdrift /Noordoewer border post during 2019 and 2020.

Table 53: South African exports (value and volume) to Namibia

Year	Value	Volume
2019	10 254 019 946	470 261 920
2020	9 666 887 186	377 638 638

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

South Africa's total exports administered at Vioolsdrift border post recorded around R10,2 billion in 2019, while exports decreased to approximately R9,7 billion in 2020, representing a 6% decline. South Africa's total volumes exported to Namibia through the said border documented nearly 470 million pieces of goods in 2019, while total volumes declined to around 378 million pieces in 2020, representing a decline of 20%.

5.2.5.3 South African Imports from Namibia

Table 54 outlines the value and volume of imports moving from Namibia to South Africa via the Vioolsdrift/ Noordoewer border post for 2019 and 2020.

Table 54: South African imports (value and volume) from Mozambique

Year	Value	Volume
2019	1,809,987,490	148,323,911
2020	1,367,141,295	147,774,472

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

South Africa's total volumes imported from Namibia through the said border documented around R1,8 billion in 2019, while in 2020, imports valued nearly R1,4 billion, resulting in a decline of 24%. South Africa's total volumes imported from Namibia through the said border documented nearly 148 million pieces of goods in 2019, while the number stayed more or less the same in 2020.

The information displayed in tables 53 and 54 shows that South Africa has an exceptionally healthy trade balance with Namibia. In 2020, South Africa exported approximately R9,7 billion to Namibia, while the country imported approximately R1,4 billion, resulting in a trade surplus of approximately R8,3 billion.

The decline of inter-trade between South Africa and Namibia in 2020 were mainly driven by the spread of the corona virus, national lockdowns in MS, disruptions in supply chains and lower external demand for exports and imports that curtailed economic activity.

5.2.6 South Africa's Trade with Zimbabwe

5.2.6.1 South Africa's Trade with Zimbabwe

Zimbabwe, officially known as the Republic of Zimbabwe is a landlocked country in Southern Africa. Beitbridge border post is the only land crossing from South Africa and operates 24 hours per day. This border is one of the heaviest trafficked border crossings in the region and as a result, border delays as a common phenomenon.

5.2.6.2 South African exports to Zimbabwe

Table 55 reveals South Africa/s total exports (in monetary terms and volumes) that passed through Beitbridge border post between 2019 and 2020.

Table 55: South African exports (value and volume) to Zimbabwe

Year	Value	Volume
2019	55,590,584,682	16,607,593,231
2020	53,560,101,250	13,604,225,043

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

Table 55 shows that exports recorded around R55,6 billion in 2019, but decreased by 4% to R53,6 billion in 2020. South Africa's total volumes exported to Zimbabwe through the Beitbridge border documented nearly 16,6 billion pieces of goods in 2019 and in 2020, exports documented approximately 13,6 billion pieces of goods, resulting in a decline of 18%.

5.2.6.3 South African imports from Zimbabwe

Table 56 illustrates South Africa's imports from Zimbabwe for the period under review.

Table 56: South African Imports (value and volume) from Zimbabwe

Year	Value	Volume
2019	4,279,582,967	618,613,563
2020	4,138,335,826	568,427,925

Source: C-BRTA. Statistics on Trade Volumes and Value flowing through South African Commercial Border Posts and Destination Countries. 2021

Table 56 illustrates that the value of imports processed at the Beitbridge border post amounted to around R4,3 billion in 2019, while in 2020 total imports decreased slightly (by 4%) to 4,1 billion. The volume of imports followed a similar trend with almost 619 million pieces of goods

documented in 2019. In the following year (2020) imports dropped by 8% to around 568 million pieces of goods.

Tables 55 and 56 clearly shows that South Africa has an exceptionally healthy trade balance with Zimbabwe. In 2020, South Africa exported around R53, 6 billion and imported around R4,1 billion, resulting in a trade surplus of around R49,5 billion.

The decline in trade between South Africa and Zimbabwe during 2020 were mainly driven by lockdowns in South Africa and Zimbabwe to contain the spread of the COVID-19 pandemic. Several restrictions were imposed at all border posts in the region, including the closure of several inland border posts.

5.4 Conclusion

Cross-border road transport plays an important role of facilitating trade between South Africa and countries in the SADC region. An analysis of trade volumes and values passing through commercial border posts linking South Africa with neighbouring countries, i.e. Botswana, eSwatini, Lesotho, Mozambique, Namibia and Zimbabwe revealed that South Africa has an exceptionally healthy trade balance with all its neighbours.

In all instances South African exports exceed imports from its neighbours by far. Therefore, South Africa enjoys a trade surplus with all its neighbours. Botswana was the top export destination in 2020, with South Africa exports to Botswana totalling R74 billion. During the same year, South Africa imported more of its goods (R8,4 billion) from eSwatini.

The decline in inter-trade between South Africa and its neighbours during 2020 were mainly driven by border post closures that targeted the movement of people and non-essential goods across inland borders. Essential supplies and emergency services were allowed under strict conditions, which included the mandatory testing of truck drivers, sanitisation of trucks and designated transit resting areas.

The COVID-19 pandemic has resulted in mass production shutdowns and supply chain disruptions. The effects of restrictive trade facilitation measures (e.g. closure of border road transport and trade posts and prohibitions on the transportation on non-essential commodities) is clearly demonstrated in the decline in traffic volumes and values of imports and exports between South Africa and its six neighbouring countries.

As a key player in the cross-border road transport environment, the C-BRTA will continue to work with its partners in the SADC to ensure all role-players harmonise their responses to the pandemic and reduce disruptions to cross-border road transport operations.

6. STATE OF CORRIDOR PERFORMANCE MONITORING IN SADC

6.1 Introduction

Previous chapters of this report outlined the existence of several infrastructure constraints that undermine the unimpeded flow of cross-border road transport movements. The absence of reliable, real-time data on cross-border road transport movements is regarded as a reason for the slow pace in which infrastructure inefficiencies in the SADC are attended to.

Corridor impediments can only be addressed if they are correctly measured. In this regard, the availability of real-time data can assist decision-makers in pinpointing those components of regional corridors that are not working well to target infrastructure, regulatory and institutional interventions to addressing higher-order needs.

Corridor data is a key requirement for measuring corridor performance. The absence of commonly agreed set of Corridor Performance Indicators (CPI) in the SADC is a cause for concern as the measurement of the performance of regional corridors is a critical part of facilitating cross-border road transport movements. Existing corridor monitoring systems use different parameters to monitor performance and they all seem to be nodal based as they give little or no regard to the end-to-end analysis of corridors.

To bring about improvement in the region, the C-BRTA joined hands with the TKCS in 2019 to develop a set of CPIs for the TKC that measures the performance of the entire corridor, from the port of Walvis Bay in Namibia to South Africa where this corridor terminates. To date several milestones have been met, including the development of a corridor performance measurement framework that was determined and agreed by TKC stakeholders from Namibia Botswana and South Africa, and agreement on CPI's that will be used to measure the performance of the corridor. More information on the project status of this joint initiative is discussed in later sections of this chapter.

The discussions of this chapter focus on the following key-areas:

- Approaches to Corridor Performance Monitoring;
- Identification of Corridor Categories and CPI's used to monitor the performance of transport corridors;
- Status of Corridor Performance Monitoring in the SADC; and
- Progress made towards implementing Corridor-Wide Monitoring in the SADC.

6.2 Approaches to Corridor Performance Monitoring

Corridor performance monitoring can take one of two forms, namely:

- Corridor-wide monitoring; and
- Monitoring at specific locations or choke-points, along transport corridors

Corridor wide monitoring involves data collection and surveys covering the length of a corridor, while choke-point monitoring on the other hand, comprises data collected at specific locations (e.g. border crossings) that constraint transit movement. Corridor-wide monitoring in Africa is conducted regularly on the Northern and Central Corridors in East Africa, while detailed micro-level monitoring has been carried out in the past at the Beitbridge and Chirundu border posts along the NSC.

A corridor performance measurement system must be designed and implemented to suite the specific needs of corridor role-players. MS may implement manual or automated systems to collect road transport data (e.g. through surveys or data provided by trucking companies). However, ultimate success depends on the existence of robust ICT infrastructure, supported by automated processes.

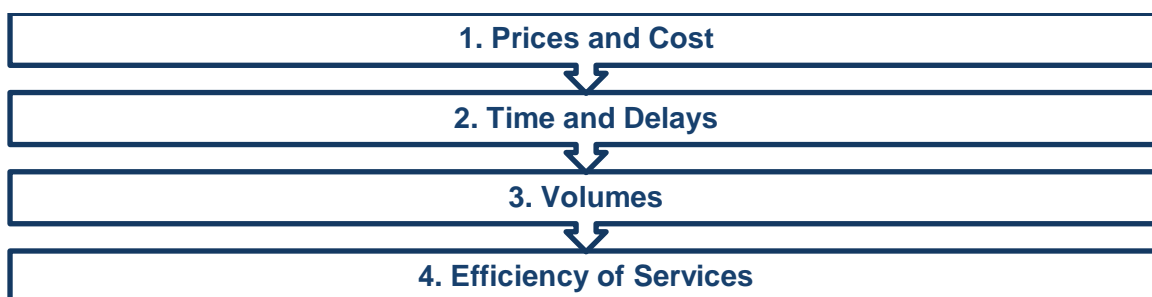
The technologies available today include real-time monitoring systems, servers capable of hosting the information exchange and/ or data exchange interface, cloud computing, mobile technologies, advanced analytics and information management. All these technologies help to reduce processing time for transit operations, reduce trade and transport costs, improve revenue collection and stimulate economic growth.

Essentially the main idea behind the automation of processes and setting up of ICT infrastructure is to achieve uniformity, transparency and predictability of corridor formalities/ processes. When setting up ICT infrastructure, corridor role-players should consider its ability to save and re-launch processes interrupted by power outages, weak internet connections and other emergency situations.

6.3 Identification of Corridor Categories and Corridor Performance Indicators

Transport corridors in the SADC have different characteristics and the detailed nature faced by transporters differ from one corridor to the next. At analytical level, those differences are likely to result in prioritising different sets of indicators and measurements to understand the root causes of challenges. According to Hartman (2013:7), corridor performance can be measured according to 4 categories (also referred to as dimensions), as illustrated in Figure 5 below.

Figure 5: Corridor Categories



Source: Hartman. 2013, as amended

Essentially, a corridor performance indicator is a summary of various observations that vary from one shipment to another and from one route to the next. Table 57 presents examples of CPIs for each of the 4 corridor categories.

Table 57: Corridor Indicators for the Various Corridor Categories

Category	Indicators
Prices / Cost	<ul style="list-style-type: none"> ✓ Port charges; ✓ Charges by customs and transit agencies; ✓ Cost of road transport; ✓ Road maintenance cost.
Time & Delays	<ul style="list-style-type: none"> ✓ Stoppage time at weighbridges; ✓ Stoppage time at police checks; ✓ Stoppage time at border posts; ✓ Transit time to destination; ✓ Average number of stops per truck per country.
Volumes	<ul style="list-style-type: none"> ✓ Overall cargo traffic at sea port; ✓ Volume of imports by country; ✓ Volume of exports by country; ✓ Ratio of trucks per country.
Efficiency	<ul style="list-style-type: none"> ✓ Dwell time; ✓ Customs release time; ✓ Ship turnaround time; ✓ Truck turnaround time.

Source: Hartman. 2013, as amended

Table 57 reveals that most sets of corridor indicators include measures of time and costs that differ from one corridor to the next. Cost for example could be measured by tonnage, consignment, truck, container or Twenty-foot equivalent unit (TEU). As far as volumes are concerned, there is an increasing focus globally on pricing services according to the number of TEUs transported. However, the measure used by many customs administrators, or even by transporters in Africa is still to price transport services per ton, or per consignment.

While corridor role-players in the SADC should consider the corridor categories and indicators when designing corridor performance monitoring systems for strategic corridors that traverse the region, affected parties should remember that CPIs are not only important in measuring performance, but also in determining the drivers of inefficiencies, which is key in determining the areas in which interventions are required and the nature of interventions needed.

6.4 Status of Corridor Performance Monitoring in the SADC

6.4.1 Traditional Approach - Choke Monitoring

A formal corridor-wide performance monitoring system has not yet been implemented along any of the strategic road transport corridors that traverse the SADC. Since inland border posts continue to act as the greatest impediment to intra-regional trade and travel, several studies have been conducted at strategic inland border posts (e.g. Beitbridge and Chirundu) to date to monitor delays at border posts and pinpoint the causes of such delays.

The C-BRTA is one of the players that monitors cross-border road traffic movements along regional road transport corridors. In line with its mandate that focuses on facilitating the seamless movement of commercial freight and passenger movements by road, the Research team of the Agency conducts choke-point monitoring studies on a regular basis to quantify the cost of time delays at fixed delays point along transport corridors (e.g. border posts and weighbridges). The findings of completed studies have been presented to regional and

national stakeholders with the aim to direct infrastructure spending to specific locations / choke-points where most time losses are experienced by cross-border road transport operators. The next chapter sheds more light on key findings of a study, undertaken by the Research Division of the C-BRTA in 2020 that quantifies the economic cost of delays along a section of the TKC.

6.4.2 Movement towards Corridor-Wide Monitoring

Corridor-wide monitoring covers the entire length of the corridor and focuses on solutions that will optimise corridor efficiency. This method involves the establishment of on-line corridor platforms (observatories) that continuously measure corridor performance according to pre-determined corridor categories and indicators. Information is gathered from focal points, such as customs, weighbridges and through the “trip-sheet” system used by many transport operators.

Corridor-wide monitoring is yet to be implemented in the SADC. The successful implementation of this initiative depends on the existence of efficient and financially sustainable Corridor Management Institutions (CMI) to monitor transport activities along the entire corridor. This poses a problem for the region as several strategic transport corridors (e.g. NSC, Lebombo and Beira) do not have functioning CMIs. The TKC is an exception to the rule, having an efficient CMI, the TKCS that acts as tripartite trans-boundary corridor management institution.

6.5 Moving towards Corridor-wide Monitoring – The TKC Case Study

Several attributes make the TKC an ideal candidate for developing, piloting and implementing a corridor-wide performance monitoring system. Key strengths include, but are not limited to:

- Existence of an efficient CMI to oversee the development, piloting and implementation of a formal corridor-wide monitoring system;
- Well-developed road infrastructure;
- Year-on-year growth in traffic volumes along the corridor;
- Active private sector involvement in stakeholder discussion platforms, as well as in financing infrastructure programmes along the corridor; and
- Successful implementation of several trade facilitation programmes (e.g. Single Administrative Document) at selected border posts along the TKC; and
- Infrastructure improvements at the Port of Walvis Bay

The port of Walvis Bay that offers direct access to many shipping routes serving international trade, has witnessed the completion of several infrastructure improvement projects in recent years. Programmes ranged from the deepening of berths to expanding capacity through the building of a new container terminal which boasts a massive coverage area of 40 hectares.

The completion of the container terminal project in 2019 increased container capacity to 750 000 TEUs per annum (<https://www.ship-technology.com/projects/port-walvis-bays-new-container-terminal/>). Infrastructure upgrades and expansion at the port of Walvis Bay are being supplemented with the maintenance of the four Walvis Bay corridors that link the ports of Walvis Bay and Luderitz to several SADC MS by road and rail networks.

Given the inherent strengths of the TKCS and the C-BRTA entered into a partnership in 2019 to develop a corridor performance monitoring system for the TKC in a phased manner that, over time, would lead to the implementation of an online monitoring system that measure the

performance of the entire corridor, between origin and destination points - from the port of Walvis Bay in Namibia to Gauteng in South Africa where the TKC terminates.

To date the following milestones have been achieved in developing a corridor performance monitoring system for the TKC:

- Development of a stakeholder engagement plan;
- Identification of Corridor Categories and CPI's (like those displayed in table 60);
- Environmental scanning, corridor data collection and assessment;
- Presentation of the Corridor Categories and CPIs to the TKCS in March 2019;
- Engagements with several corridor role-players during 2019 and 2020;
- Refinement of Corridor Categories / Indicators according to input received from TKC role-players; and
- On-going planning activities in support of the piloting exercise.

6.5.1 Stakeholder Engagement Process

During FY 2020 the TKCS and the C-BRTA conducted engagements with several TKC role-players with a view to:

- Present preliminary findings from the initial corridor assessment conducted on the TKC during 2019 for validation;
- Obtain input and expert opinion on CPI parameters;
- Update CPI parameters according to stakeholder input; and
- Agree on parameters that will be used to measure the performance of the entire TKC.

Tables 58 depicts the names of key stakeholders consulted and the role each party performed in the engagement process.

Table 58: Key Stakeholders Consulted

STAKEHOLDER	ROLE
TKCS	➤ Coordinate the implementation of the project.
C-BRTA	➤ Provide technical leadership and support the TKCS in mobilising stakeholders.
WBCG	➤ Provide relevant data; ➤ Serves as custodian to coordinate various parties (users and port operator).
Customs authorities in Namibia, Botswana and South Africa	➤ Provide relevant data; ➤ Facilitate access to border posts and cargo clearing points
Clearing Agents	➤ Provide relevant data; ➤ Act as agents for cargo owners and process cargo documentation
Immigration authorities in Namibia, Botswana and South Africa	➤ Provide relevant data; ➤ Enable access to border facilities; ➤ Control the movement of people.
Security agents in Namibia, Botswana and South Africa	➤ Provide relevant data; ➤ Conduct / provide law enforcement.

STAKEHOLDER	ROLE
Operators	<ul style="list-style-type: none"> ➤ Provide relevant data. ➤ Provide vehicle equipment and partners
Regulatory authorities (Transport)	<ul style="list-style-type: none"> ➤ Provide relevant data. ➤ Provide information and support

Source: C-BRTA. 2021. Corridor Performance Indicators Report for Trans-Kalahari Corridor.

6.5.2 Key Findings Emanating from the Stakeholder Engagement Process

Consultations with stakeholders in Namibia was conducted in Windhoek and Walvis Bay in October 2019 and attended by representatives from:

- Road Fund,
- Trans-Namib Railways,
- Customs,
- WBCG,
- Police,
- Shipping line(s),
- Freight Forwarding Association,
- The Namibia Ports Authority (Namport); and
- Traffic law enforcement.

Discussions with Botswana role-players took place in February 2020 at the office of the Department of Road Transport and Safety (DRTS) in Gaborone. The following role-players participated in the meeting:

- DRTS,
- Motor Vehicle Accident Fund;
- Botswana Unified Revenue Service;
- Botswana Railways;
- Botswana Police

The same corridor categories and indicators as those presented in Table 60 was presented to Namibian and Botswana audiences for approval. Although stakeholders approved the CPI's they suggested that additional categories / CPIs be added to the list in line with their experience with the corridor. For instance, stakeholders felt that safety is a critical parameter that has a bearing on the performance of the corridor. They also noted the relationship between the delay parameter and the safety parameter - drivers endure long driving hours to compensate for lost time which may lead to an increase in accidents due to driver fatigue.

Stakeholders also proposed that truck stops / resting facilities be added as a parameter since it has a bearing on road safety. They argued that the positioning of truck stops at regular intervals along the TKC would improve the safety parameter in terms of the driver, goods transported and equipment.

Stakeholder consultations were followed up with a series of *one-on-one interviews* with prioritised parties. The purpose of interviews was to obtain the views of selected stakeholders around corridor constraints, as well as recommended solutions to impediments. During

discussions the safety parameter was once again raised as a critical determinant of corridor performance and the importance of adding the safety parameter to the list of corridor categories, emphasised. Table 59 depicts the input received by TKC stakeholders around Corridor Categories and CPIs for the TKC.

Table 59: Proposed Corridor Categories and Indicators

Proposed Category	Indicator
Safety	<ul style="list-style-type: none"> ➤ Number of Road accidents; ➤ Theft and loss of goods; ➤ Torching of vehicles.
Truck Stops	<ul style="list-style-type: none"> ➤ Number of rest stops; ➤ Adequate ablution/ resting facilities at truck stops; ➤ Number of fuel stations with space for trucks to park.
Security	<ul style="list-style-type: none"> ➤ Theft and loss of goods; ➤ Hijacking incidents; ➤ Vandalising of equipment.
Infrastructure Developments	<ul style="list-style-type: none"> ➤ Timeous completion of prioritised infrastructure programmes
Weighbridges	<ul style="list-style-type: none"> ➤ Number of fixed weighbridges ➤ Number of mobile weighbridges ➤ Availability of adequate manpower at weighbridges to facilitate traffic movements
Border Posts	<ul style="list-style-type: none"> ➤ Availability of adequate manpower on both sides of the border; ➤ Establishment of OSBPs to improve transit times.
Border Post Performance	<ul style="list-style-type: none"> ➤ Comparative assessment (one side of the border against the other side, and between border posts).
Insurance	<ul style="list-style-type: none"> ➤ Cost of third-party insurance.
Trade Facilitation Initiatives	<ul style="list-style-type: none"> ➤ Number of trade initiatives implemented.
Harmonise road traffic rules, standards and laws	<ul style="list-style-type: none"> ➤ Implementation of harmonised vehicle and driver standards.
Rail transport	<ul style="list-style-type: none"> ➤ Implementation of rail programmes

Source: C-BRTA. 2021. Corridor Performance Indicators Report for Trans-Kalahari Corridor.

6.5 Mapping the Way Forward

Engagements with TKC stakeholders proved valuable insofar it resulted in an updated list of corridor categories and indicators that will be used to measure the performance of the TKC. The implementation of a corridor performance measuring system in future will provide invaluable intelligence vis a vis, chokepoints on the corridor that increase transport and logistics costs. Furthermore, the release of real-time data will inform decision-makers of higher-order needs (sections along the corridor where investment should be direct to) to ensure choke-points along the corridor are addressed in a timeous fashion.

TKC stakeholders are committed to driving this initiative forward. However, it is important that role-players continue to work concert to ensure the timeous implementation of the following outstanding actions:

- Establishment of a Task Team that will drive the development of a corridor performance measurement system;
- Piloting of CPIs along a stretch of the TKC corridor (port of Walvis Bay and section of the road transport corridor);
- Data analysis and refinement of CPIs after the piloting exercise;
- Follow-up engagements with corridor role-players; and
- Extend the pilot exercise across the entire corridor.

It is foreseen that the task team will act as the corridor performance advisory arm of the TKCS as it will constantly be making recommendations through its work on corridor performance monitoring. The TKCS on the other hand is expected to play a leading role as the custodian of the corridor and will coordinate initiatives aimed at enhancing the performance of the corridor.

It is recommended that the TKCS work jointly with the Walvis Bay Corridor Group (WBCG) in coordination outstanding actions. The C-BRTA will continue to provide technical expertise to drive this initiative towards implementation. Corridor performance measurement surveys will initially be conducted on a quarterly basis, with the option to increase the frequency of monitoring to a monthly basis.

Once CPIs have been piloted, tested and refined, this initiative can be elevated to the next level that encompasses the development of an electronic platform (transport observatory) that monitor traffic flows along the entire stretch of the TKC. This on-line platform will have the capabilities to capture information received from various parties (e.g. port of Walvis Bay, cross-border operators, customs authorities), process corridor information and distribute real-time data to interest groups. Once implemented, the TKC corridor performance measuring system can serve as a prototype that can may be used by other CMI's in the region to measure the performance of strategic transport corridors in the region.

Although the benefits associated with online monitoring systems are well documented (e.g. reduction in cargo dwell time at seaports, decrease in border crossing time(s), increase in operator compliance) the development of transport observatories is expensive and require political buy-in from all role-players in putting systems in place that allows the online exchange of relevant corridor information. Against this background, the following Critical Success Factors (CSF) should be met:

- Adequate funding is required to enable the phased development of a web-based corridor performance monitoring system for the TKC;
- Agreement should be reached amongst corridor players on the type of ICT software and systems used to share corridor information; and
- Technical resources should be appointed to develop, refine, implement and manage the web-based platform.

7. ECONOMIC IMPACT OF CORRIDOR DELAYS IN SADC

7.1 Introduction and Background

Previous sections of this report outlined that infrastructure impediments along regional road transport corridors obstruct the seamless movement of cross-border traffic. Hard and soft infrastructure constraints materialise in excessive time delays and high transportation costs for cross-border operators that undermine the growth of the cross-border road transport industry.

Since transport costs account for the bulk of trade logistics costs in the SADC, it is imperative that efforts are directed towards lowering transportation costs. The C-BRTA developed a Cross Border Flow Calculator (C-BFC) to determine border-crossing transit times at selected border posts, while also calculating the economic impact of corridor delays. The model was piloted on the TKC and sections below provide information on outcomes from the pilot.

7.1.1 Background

The C-BRTA developed a C-BFC model during FY 2017/18. The purpose of developing a C-BFC was to:

- Quantify transit time and identify bottlenecks to the seamless flow of cross-border traffic;
- Estimate the economic impact of long transit times and delays; and
- Propose solutions for addressing corridor bottlenecks and reducing transit times.

To test the functionality of the C-BFC, the C-BRTA identified several points along the TKC for piloting of the calculator and commissioned surveys aimed at collecting data to pilot the tool. The following nodes (all located in South Africa) were included in the survey:

- Skilpadshek/ Pioneergate border post;
- Zeerust truck stop;
- Bapong Traffic Control Centre (TCC);
- Zeerust TCC.

The C-BRTA conducted surveys at the above nodes over a seven-day period in 2019. Traffic observations were conducted over 18 hours at all nodes, except at Bapong TCC where observations were extended to 24 hours per day. In addition to interviews with truck drivers, vehicle registration numbers and arrival/ departure times were recorded at designated points.

The objective(s) of surveys was to:

- Establish segregated and block transit time baselines for the time taken by trucks to pass through the Skilpadshek/ Pioneergate border post through gathering arrival and departure times of trucks at entry and exit points; exit;
- Establish if the time spent at border post(s) is due to formal clearance processes, or other reasons;
- Identify specific issues that impede the free movement of vehicles across borders; and

- Identify problems encountered by trucks that use border posts.

7.2 Cross-Border Flow Calculator Model

The C-BFC has three levels. Each level provides different levels of analysis, depending on the depth of detail required to calculate transit times and selected border posts. The three levels are:

- Block Transit Time;
- Segregated Transit Time; and
- Detailed Analytical Transit Time.

The pilot of the C-BFC was restricted to the analysis of block transit time and segregated transit time at the Skilpadshek/Pioneergate border post only, based on the surveys that was conducted.

7.2.1 Block Transit Time

Block transit time provides block time taken to between the start time of border processes on one side of the border and the time the vehicle is acquitted on the other side of the border. It does not analyse how much time is spent on either side of the border, or for border processes.

This model can be applied to establish overall transit time at a border post or conduct comparative assessment of border post performance (e.g. between border posts). It can also track the performance of a specific border post over time.

7.2.2 Segregated Transit Time

This model breaks down transit time into the following two portions

Segregated transit time is established by calculating the time taken between the starting time of border processes (when the vehicle arrives at the border) and the time the vehicle is cleared and cross the border to the other side. It also adds the time taken between starting time of border processes (when the vehicle arrives on the other side) and the time the vehicle is cleared leaves the second side of the border to continue its journey.

Further to the above explanation, the segregated transit time model provides a basic level of analysis that determines the time spent on each side of the border. Thus, it can be applied to provide information on the level of inefficiency associated with each side of the border. However, it does not determine the processes that cause inefficiencies.

7.2.3 Detailed Analytical Transit Time

This model breaks down transit time into two portions:

- Time spent on both sides of the border; and
- Break-down of exact time spend conducting border crossing processes / procedures on both sides of the border.

Detailed Analytical Transit Time sums up the time taken to execute border crossing processes on both sides of the border. This model enables the establishment of time duration associated

with each border process, calculating time taken between the start time of border processes (when the vehicle arrives at the border) and the time the vehicle is cleared and leaves one side of the border to cross to the other side.

It then adds the time taken between start time of border processes (when the vehicle arrives on the other side of the border) and the time the vehicle is acquitted and leaves the second side of the border to continue its journey. An outstanding feature of detailed analytical transit time is that it provides information on the level of inefficiencies associated with each process and enable targeted interventions and improvements.

7.3 Research Design and Methodology

A mixed methods approach was used that involved *qualitative* and *quantitative* methods to calculate truck transit time along a section of the TKC. Quantitative data consisted of vehicle transit times recorded at the Northbound and Southbound gates at the Skilpadshek border post. Interviews with truck drivers (conducted by C-BRTA officials) formed the basis of qualitative data.

The C-BFC study also involved the use of *secondary data*, i.e. data that had been collected for another purpose and which can be further analysed to infer additional or different knowledge, interpretations and conclusions Two sets of secondary data were supplied.

- The first set focused on transit times through the Skilpadshek border post;
- The second set centred on providing freight flow volumes and commodity groups.

7.3.1 Data Collection and Analysis

Data collection involved the use of qualitative and quantitative data that was supplemented with secondary data to derive trade logistics costs for a section of the TKC.

7.3.1.1 Transit Time Calculation

The CBRTA recorded the transit times of cross-border trucks at four points at the Skilpadshek border post, capturing the entry and exit times of vehicles moving through the Northbound and Southbound gates at the Skilpadshek border post. Recordings in the data stretched over a period of one week.

Recordings for each individual vehicle's entrance and departure was captured with *time* being the variable of interest documented on each vehicle. Data was recorded manually and involved the positioning of individuals at various points across the border to measure the:

- Time that it took for vehicles passing through the Northbound and Southbound gates by noting the arrival time and exit time, and
- Number of days cross-border trucks spent at the border.

The *date of entry and exit of vehicles* was recorded along with the *vehicle registration number*. Maximum and minimum transit times were provided, as well as the average daily segregated transit times. The process for capturing transit times at the Skilpadhek/Pioneer Gate border post is illustrated in figures 6 and 7.

Figure 6: Recording Points for Capturing Transit Times of Vehicles leaving South Africa and entering Botswana (Northbound)



Source: C-BRTA. Cross-Border Flow Calculator Economic Impact Assessment Report. 2021

Figure 7: Recording Points for Capturing Transit Times of Vehicles leaving Botswana and entering South Africa (Southbound)



Source: C-BRTA. Cross-Border Flow Calculator Economic Impact Assessment Report. 2021

Data entries were recorded for 566 vehicles passing through the Southbound points and 579 vehicles for the Northbound points, over a one-week period in November 2019.

7.3.1.2 Completion of Questionnaires and Interview with Truck Drivers

Along with vehicle transit times, questionnaires were completed by truck drivers who answered questions pertaining to:

- Origin and destination points;
- Types of commodities transported;
- Frequency of vehicles passing through TKC borders; and
- Average time spent at TKC borders

Qualitative data was validated through the means of cross-checking the most relevant reasons for delays sourced from interviews with truck drivers.

7.3.1.3 Freight Flow Data

Freight flow data focused on freight flow volumes through Botswana, as well as a breakdown of commodities travelling through the Skilpadshek border. Figures explored through this data set were in respect to import and export activities to and from Botswana.

7.4 Research Findings / Results

Section 7.4 provides key results obtained from surveys at the Skilpadshek border post and interviews with truck drivers. Key findings of this exercise were shared with the University of Stellenbosch and complemented with another data set (freight/ commodity flows) through Botswana to derive trade logistics costs.

7.4.1 Recorded Truck Transit Time

Using the segregated transit time data (captured over a one-week period) it was possible to calculate the average time a truck spent at the entry and exit points moving through the Skilpadshek/ Pioneer gate border post. Tables 60-64 show the transit times recorded. The tables include minimum transit time, average transit time, median transit time and maximum transit time.

Table 60: Skilpadshek Northbound – 1

Skilpadshek Northbound - 1 (572 vehicles)	Days	Hours	Min
Minimum Transit Time (days: hours: min)	0	0	4
<i>Average Transit Time (days: hours: min)</i>	<i>0</i>	<i>12</i>	<i>24</i>
Median Transit Time (days: hours: min)	0	5	18
Maximum Transit Time (days: hours: min)	6	11	32

Source: C-BRTA. Cross-Border Flow Calculator Economic Impact Assessment Report. 2021

Table 61: Pioneer Gate – Northbound 2

Pioneer Gate Northbound - 2 (752vehicles)	Days	Hours	Min
Minimum Transit Time (days: hours: min)	0	0	1
<i>Average Transit Time (days: hours: min)</i>	<i>0</i>	<i>7</i>	<i>3</i>
Median Transit Time (days: hours: min)	0	0	41
Maximum Transit Time (days: hours: min)	6	13	30

Source: C-BRTA. Cross-Border Flow Calculator Economic Impact Assessment Report. 2021

Table 62: Pioneer Gate – Southbound 3

Pioneer Gate Southbound - 3 (820 vehicles)	Days	Hours	Min
Minimum Transit Time (days: hours: min)	0	0	1
<i>Average Transit Time (days: hours: min)</i>	<i>0</i>	<i>3</i>	<i>51</i>
Median Transit Time (days: hours: min)	0	0	9
Maximum Transit Time (days: hours: min)	6	5	16

Source: C-BRTA. Cross-Border Flow Calculator Economic Impact Assessment Report. 2021

Table 63: Skilpadshek – Southbound 4

Skilpadshek southbound - 4 (560 vehicles)	Days	Hours	Min
Minimum Transit Time (days: hours: min)	0	0	3
<i>Average Transit Time (days: hours: min)</i>	<i>0</i>	<i>6</i>	<i>52</i>
Median Transit Time (days: hours: min)	0	0	23
Maximum Transit Time (days: hours: min)	6	14	24

Source: C-BRTA. Cross-Border Flow Calculator Economic Impact Assessment Report. 2021

When analysing the transit time tables in the above tables it is evident that for northbound trips, it took on average 12 hours 24minutes to travel from the South African entry point to the South African exit point, while it took on average 7hours 3 minutes to travel from the Botswana entry point to the Botswana exit point.

For Southbound trips, it took on average 3 hrs 51 minutes to travel from the Botswana entry point to the Botswana exit point, while it took on average 6 hours and 52 minutes to travel from the South African entry point to the South African exit point.

7.4.2 Bock Transit Time

Tables 64 and 65 display the Block Transit Time for Skilpadshek /Pioneer Gate (Northbound) and for Pioneer Gate/ Skilpadshek (Southbound).

Table 64: Skilpadshek to Pioneer Gate – Northbound Transit Time

Skilpadshek/Pioneer Gate Northbound (498 vehicles)	Hours	Min
Average Transit Time (hours: min)	12	50

Note: Source: C-BRTA. Cross-Border Flow Calculator Economic Impact Assessment Report. 2021

Table 65: Pioneer Gate to Skilpadshek: Southbound Block Transit Time

Pioneer Gate/Skilpadshek Southbound (665 vehicles)	Hours	Min
Average Transit Time (hours: min)	8	23

Source: C-BRTA. Cross-Border Flow Calculator Economic Impact Assessment Report. 2021

7.4.3 Zeerust Truck Stop

The Zeerust truck stop is a mandatory checkpoint for all commercial trucks moving cargo up north. Transit times were recorded at the Zeerust truck stop for both Northbound and Southbound freight movements. The average transit time through the Zeerust truck stop in a Northbound direction was 8 hours 55 minutes, while the average transit time through the same truck stop in a Southbound direction was 5 hours 25 minutes.

Table 66: Zeerust Truck Stop Average Transit Time

Average Transit Time (hours: min)	Hours	Min
Northbound (317 vehicles)	8	55
Southbound (197 vehicles)	5	25

Source: C-BRTA. Cross-Border Flow Calculator Economic Impact Assessment Report. 2021

7.4.4 Bapong and Zeerust Traffic Control Centres

Observers noted that very little delays are experienced at the Bapong and Zeerust Traffic Control Centres to the extent that they were insignificant. For this reason, time delays at both traffic control centres were not considered in the final analysis.

7.4.5 Combined Transit Time Data

To calculate accurate trade logistics costs, the full delay that a truck experiences when passing through a border post must be accounted for. The average transit time for a truck passing through the Skilpadshek border post, as well as the delay experienced at the Zeerust truck stop is illustrated in table 67.

Table 67: Combined Transit Time

Average Transit Time (hours: min)	Hours	Minutes
Northbound	21	45
Southbound	13	48

Source: C-BRTA. Cross-Border Flow Calculator Economic Impact Assessment Report. 2021

7.4.6 Driver Questionnaires

- **Origin and Destination Points of Trucks**

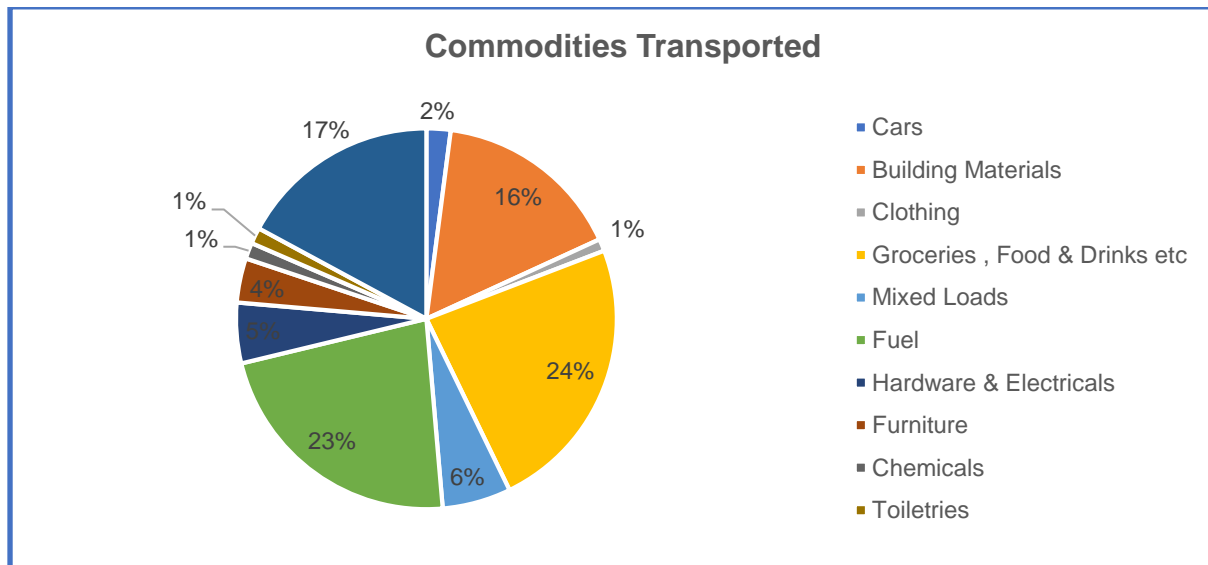
Based on the answers provided by truck drivers it was found that seventy-three percent (73%) of trucks departed from South Africa, whilst only eight (8%) departed from Botswana. Ten (10%) of trucks departed from Namibia and the remainder departed from other Southern African countries. Botswana was the most popular destination for trucks, accounting for 57%

of the total, with South Africa accounting for 16% and Namibia accounting for 20%. The rest of the traffic were bound to other Southern African destinations.

- **Commodities transported through the Skilpadshek Border Post**

Figure 8 outlines commodity types transported along the TKC, through the Skilpadshek border post.

Figure 8: Percentage Contribution of Commodities transported along the TKC



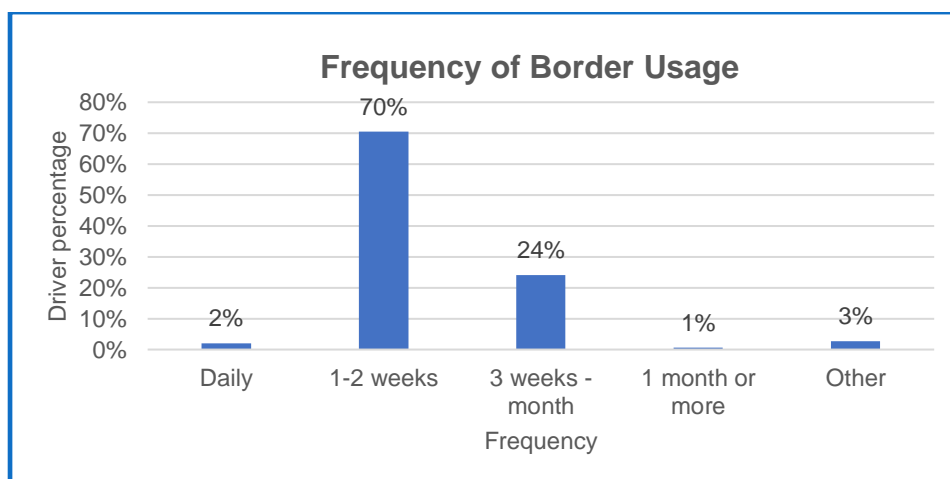
Source: C-BRTA. Cross-Border Flow Calculator Economic Impact Assessment Report. 2021

As indicated in the figure above, groceries, food and drinks had the highest percentage contribution (24%), followed by fuel (23%) and hardware and electricals (17%).

- **Border usage frequency and average time at border**

This section of the questionnaire was answered by 294 respondents. Blank answers were filtered out of the pivot table. The answers from the drivers were analysed and grouped into subsets for simpler visual interpretation. Figure 9 indicates how often respondents passed through the Skilpadshek border post.

Figure 9: Frequency of Border Usage



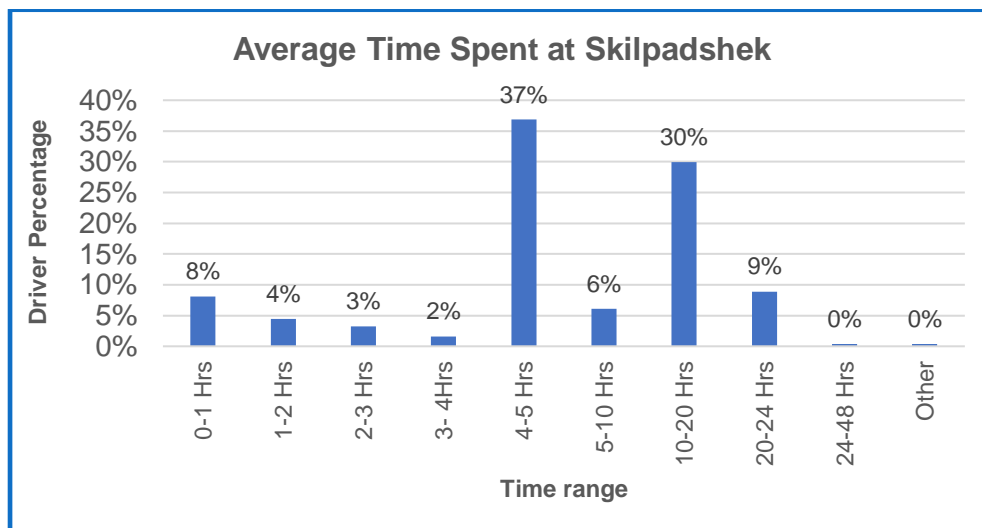
Source: C-BRTA. Cross-Border Flow Calculator Economic Impact Assessment Report. 2021

Seventy percent (70%) of cross-border drivers pass through the Skilpadshek border on a weekly or two-weekly basis, whereas around twenty-four (24) percent of drivers use the border every three weeks. Only two (2) percent travel through this border on a daily basis.

- **Average Time Spent at the Skilpadshek Border Post**

Figure 10 displays the average time spend at Skilpadshek border post.

Figure 10: Average Time Spent at Skilpadshek Border



Source: C-BRTA. Cross-Border Flow Calculator Economic Impact Assessment Report. 2021

Figure 10 shows that a large percentage (around 37%) of drivers spend between four (4) to five (5) hours at the Skilpadshek border, followed by thirty percent (30%) of drivers that spend between ten (10) to twenty (20) hours at the border.

7.4.7 Freight Flows

An analysis of freight flow volumes through Botswana display vital information regarding the volumes of imports and exports that moved through the Skilpadshek/ Pioneer Gate border post. Updated road freight flow data was supplied by the University of Stellenbosch for calculating new trade logistics costs that incorporates time delays at the Skilpadshek border post.

Southbound freight movements are imports into South Africa from Botswana, while Northbound freight movements are exports from South Africa to Botswana. Table 68 depicts export and import volumes passing through the Skilpadshek border post in 2018.

Table 68: Export and Import Volumes moving through the Skilpadshek Border Post

Sum of Road Tons	Total (2018 volumes)	Percentage of total
Export	3 294 813	77.3%
Import	969 651	22.7%
Grand Total	4 264 464	100%

Source: C-BRTA. Cross-Border Flow Calculator Economic Impact Assessment Report. 2021

It is evident from the statistics displayed in the above table that South Africa exports much more to Botswana (at 77.3%) than what the country imports from Botswana (22.7%).

The large percentage of freight moving Northbound from South Africa to Botswana is matched by a longer transit time delay than the Southbound movement. From this pattern, it is assumed that more tons of freight are being transported Northbound, resulting in longer delays in transit time at the border to vehicles travelling North.

7.5 Trade Logistics Costs

Trade logistics costs is calculated according to the Logistics Cost Model (LCM) and the Freight Demand Model (FDM), encompassing all costs involved in the movement of freight from point-of-origin, across border posts, to point of destination. The unit of measure for the trade logistics costs is in South African Rand. The variables relating to trade logistics costs include:

- Transport costs;
- Inventory carrying costs;
- Management and administrative costs; and
- Additional logistics costs due to cross border delays.

Transport costs are comprised of both the fixed and variable costs involved in the transportation leg of the journey. Additional logistics costs due to border delays include costs of lost driver productivity. This is the opportunity cost of the driver doing something productive, when this is not possible due to the border delays.

Calculating new logistics costs that incorporate lengthy border delays at the Skilpadshek/ Pioneer Gate border post, required updating transit time delays. The University of Stellenbosch updated the variables, freight volumes and time delays to determine more accurate logistics costs of border delays at Skilpadshek.

7.5.1 Assumption for Freight Flow Splits

Percentage weights were assigned to the Skilpadshek and Kopfontein border post to determine the breakdown of how many trucks passed through this strategic inland border that links South Africa with Botswana.

The percentages in Table 69 are proportional to the vehicle counts that passed through the Skilpadshek/Kopfontein border. The assumption is made that the Zeerust truck stop freight flow percentage is equal in percentage to the Skilpadshek border post.

Table 69: Freight Flow Percentage Split between Skilpadshek and Kopfontein

	Skilpadshek	Kopfontein
Import (Southbound)	51.21%	48.79%
Export (Northbound)	43.38%	56.62%

Source: C-BRTA. Cross-Border Flow Calculator Economic Impact Assessment Report. 2021

7.5.2 Trade Logistics Cost for Skilpadshek

Table 70 illustrates logistics costs for the Skilpadshek border that incorporates delays encountered at the border post.

Table 70: Logistics Cost for Skilpadshek

	Import (Southbound)	Export (Northbound)	Total
Skilpadshek logistics costs	R18 257 887	R78 022 510	R96 280 397

Source: C-BRTA. Cross-Border Flow Calculator Economic Impact Assessment Report. 2021

Skilpadshek border contributes 8.67% to total trade logistics costs. The southbound delay costs (imports) contribute 6.09% and northbound (exports) contribute 9.60% to the greater total of trade logistics costs.

Additional costs were calculated for the Zeerust truck stop, by looking at the delay times encountered at the truck stop. Table 71 illustrates the truck stop delay cost for the Zeerust truck stop.

Table 71: Zeerust Truck Stop Delays Costs

	Import (southbound)	Export (northbound)	Total
Zeerust truck stop costs	R11 796 845	R54 210 445	R66 007 290

Source: C-BRTA. Cross-Border Flow Calculator Economic Impact Assessment Report. 2021

From the statistics displayed in table 71 the assumption is made that the Zeerust truck stop is adding R66 007 290 per annum for commercial road freight vehicles due to time delays at this facility. It is also important to incorporate truck delay time at the Zeerust truck stop. New trade logistics costs have been calculated by adding the Zeerust truck stop delay time, onto the existing block transit time in both the required Northbound and Southbound directions. Table

72 illustrates the trade logistics costs for Skilpadshek for 2019, which include the delay time at the Zeerust truck stop.

Table 72: Trade Logistics Costs for Skilpadshek

	Import (southbound)	Export (northbound)	Total
Skilpadshek logistics costs	R30 054 732	R132 232 955	R162 287 687

Source: C-BRTA. Cross-Border Flow Calculator Economic Impact Assessment Report. 2021

Exports moving in a Northbound direction accounted for a large portion of total logistics costs, totalling R132 232 955. The reason for this trend is that freight flow data was higher for exports, than for imports. Another factor adding to the significantly large export value was that the total Northbound delay was longer in comparison to the Southbound delay. Due to unnecessary border delays at Skilpadshek border, trade logistics costs totalled R162 287687 in 2019.

7.6 Conclusion

The C-BRTA developed a C-BFC to obtain a better understanding of the impact of infrastructure impediments on trade logistics costs. According to the findings of surveys conducted at the Skipadshek/ Pioneergate border post during 2019, block transit time for Northbound traffic amounted to 12 hours 50 minutes, while block transit time for Southbound traffic was 8 hours 23 minutes.

Cross-border road transport operators are also subjected to lengthy delays at the Zeerust truck stop. For vehicles moving in a Northbound direction the time delay was 8 hours 55 minutes, while the delay for Southbound vehicles was 5 hours 25 minutes. The combined transit time (time delays at the border and Zeerust truck stop) amounted to 21 hours 45 minutes for Northbound movements, and 13 hours 48 minutes for vehicles moving in a Southbound direction.

The reason for longer delay times for commercial vehicles moving in a Northerly direction is simply because SADC MS imports more goods from South Africa than what South Africa imports from its neighbours. As a result, more traffic (tons of freight) is moving Northbound, resulting in longer delays at fixed delay points, especially during peak-periods. Given the imbalance in traffic flows, many vehicles moving Southbound carry empty loads, resulting in faster clearance at the border posts in a Southerly direction.

The findings of the surveys at the Skilpadshek border posts was analysed by the University of Stellenbosch who used their own data base sets to calculate new trade logistics cost that incorporates delay costs at the Skilpadshek border and the Zeerust truck stop Total logistics costs amounted to R30 054 732 for commercial traffic movements moving Southbound and R132 232 955 for vehicle moving in a Northbound direction.

The research findings emphasise the fact that the transport supply chain is severely affected by delays at nodes along transport corridors. Although the C-BRTA survey focused on a component of the TKC only, other transport corridors in the region experience similar problems

insofar significant time delays are also experienced at fixed points along regional corridors, especially at inland border posts.

The next chapter sheds light on corridor interventions that should be considered by decision-making authorities in the region for implementation to address, or at least minimise corridor constraints (e.g. lengthy delays) that drive trade logistics costs up.

8. KEY FINDINGS AND RECOMMENDED CORRIDOR REFORMS

This section presents the findings and recommendations. The recommendations should be implemented to address cross-border road transport and trade facilitation challenges in SADC. It is important to note that support will be required from stakeholders in the respective trade and transport value chains if the recommendations are to be successfully implemented.

This will enable decision-making bodies within their respective jurisdictions to introduce or provide support for the implementation of the reforms (interventions), thereby enabling transport corridors to fulfil their rightful role in fostering sustainable cross-border trade, economic growth and development in the region. It is envisaged that the downstream impact of these interventions will go a long way towards improving the socio-economic conditions in the region.

8.1 Findings

Key study findings are listed in no order of importance below.

8.1.1 Regional Transport Corridors

- Cross-Border road transport is the dominant mode of transport in the SADC (and Africa) accounting for over 80% of total freight and passenger transport movements;
- All transport corridors are plagued by numerous infrastructure constraints that undermine the seamless flow of cross-border road transport movements. Infrastructure inefficiencies include, but are not limited to:
 - Missing road links that result in poor network connectivity and accessibility to regional economic hubs;
 - Poorly maintained road sections along regional road transport corridors;
 - Insufficient border posts;
 - Disjointed regulatory frameworks characterised by variability in regulatory requirements between MS;
 - Insufficient funds for infrastructure construction and maintenance;
 - Discrepancy in the level of RUC imposed on cross-border road transport operators;
 - Existence of several official and unofficial road blocks and inspections points along road transport corridors that increase the occurrence of corrupt practices;
 - Uncoordinated implementation of measures aimed at containing the spread of the COVID-19 virus.

8.1.2 Strategic Border Posts

- Due to various hard and soft infrastructure constraints experienced at strategic border posts, inland borders in the SADC have emerged as one of the greatest impediments to intra-regional trade and travel;
- Various hard and soft infrastructure challenges are experienced at strategic border posts. Inadequate approach roads to borders, limited parking within the border precinct, a lack of separation between freight and passenger movements and the duplication of border post processes result in significant delays for cross-border road transport operators;
- Since regional transport corridors stretch across national territories, it is imperative that strategic border posts along a corridor function at more or less the same operational level to optimise trade and transport flows along the entire corridor;
- Border management reforms in the SADC are often corridor segment focused, which negates the overall impact of improvements on the entire corridor. Although time delays

at the Chirundu border post decreased dramatically after its transformation into an OSBP, the impact of this initiative on the entire NSC was marginal since delays have been shifted to other points along the same corridor. This clearly illustrates that border management reforms that are implemented in isolation have a limited impact on trade and transport facilitation across regional transport corridors;

- In response to the poor performance of strategic border posts, the OSBP initiative has been approved at regional level to improve the uninterrupted flow of traffic across SADC borders. Despite the inherent advantages of transforming two-stop borders into OSBPs only a few borders (Chirundu, Kazungula, Tunduma / Nakonde) has been transformed into functioning OSBPs. At the Lebombo / Ressa Garcia border, the construction work of the OSBP facility has been completed. Outstanding is the ratification of legal instruments to enable the operationalisation of the OSBP;
- The establishment of strong political will amongst MS, is a pre-requisite to success. Without a shared belief that OSBP's is the solution, the implementation of OSBP projects will not materialise; and
- At national (South African) level, several border post initiatives are currently taking place. The BMA was proclaimed by the President of South Africa in July 2020 to fulfil the country's need for integrated and coordinated border management in accordance with the Constitution, international and domestic law. The BMA will be incrementally rolled-out between 2021 and 2024. As part of the roll-out process, functions performed by immigration, port health, border facility management and agriculture will be incorporated into the BMA.;
- The C-BRTA supports the BMA drive since the Agency believes that the consolidation of border management functions under a single lead agency will not only improve safety at border posts but will also speed up the clearance of commercial freight vehicles, with associated time savings for cross-border road transport operators.

8.1.3 Trade and Transport Facilitation Initiatives

- Several trade and transport facilitation reforms have been approved at Continental and regional level to address the multiplicity of impediments facing the continent and RECs.
- Some initiatives are corridor-focused (e.g. establishment of truck stops along the TKC) while other initiatives (e.g. TTTFP) cover a greater geographical area that incorporates several RECs, including the SADC;
- The SADC has a bad track record insofar the implementation of strategic regional infrastructure programmes is concerned. An example is witnessed in the poor implementation of OSBPs in the region. Various reasons are cited for this tendency, including poor political will, funding constraints, a lack of sanctions against defaulting MS and weak enforcement and implementation capacity at MS and regional level;
- Infrastructure reforms are large-scale and long-term in nature and capital-intensive. It is thus important the public-sector role-players adopt a holistic approach and engage with corridor role-players regularly to obtain and maintain support for the implementation of strategic regional initiatives;
- CMC's can fulfil an important role in bringing corridor role-players together and in advocating supporting for strategic reforms.

8.1.4 Cost of Doing Business along a Section of the North South Corridor

- The C-BRTA develop a cost estimation model during to assess/ quantify the key factors that result in the high cost of doing business for cross-border road freight operators along the NSC;
- The findings of the cost model reveal that it costs a cross-border road freight operator around R1 071 718,83 per annum to conduct cross-border road transport operations on the NSC. This equates to 17% of the cross-border truck annual operating costs (R6 182 474,50);
- Truck life expectancies correlate with annual mileage totals meaning that the higher the annual mileage total, the shorter the lifespan of the truck. According to the findings of the study, the costs of truck mileage registered the highest total, recording around 48% (R2 974 833,83) of the cross-border truck annual operating costs;
- Time delays at strategic border posts (Beitbridge and Chirundu) along the NSC are a main cause of the high cost of doing business for cross-border truck operators. The total travel time for a cross-border truck travelling from Johannesburg to Lusaka on the Northbound leg of the NSC was 176 hours of which 81% (141,77 hours) of the journey time was spent at government regulatory stoppages (border posts, weighbridges, and at roadblocks) per single cross-border truck trip. Customs processes took the lion's share of 77% (136 hours) of total standing time.
- On the Southbound leg of the NSC, the total travel time for a truck moving from Lusaka to Johannesburg was 176 hours of which 55% (96,42 hours) of the journey time was spent at government regulatory stoppages per single cross-border truck trip. Customs processes appropriated the clear majority of 93% (92 hours) of total standing time per cross-border truck single trip.
- The lengthy processes associated with clearing goods at border posts underpins that border inefficiencies are the greatest detractor of logistics performance along regional transport corridors. The status quo calls for the adoption and implementation of trade and transport interventions (e.g. single-window systems, OSBPs) to improve border processes and reduce time losses at inland borders.

8.1.5 Trade Volumes and Values flowing through South African Commercial Border Posts and Destination Countries by Road

- Cross-border road transport plays an important role of facilitating trade between South Africa and countries in the SADC region. An analysis of trade volumes and values passing through commercial border posts linking South Africa with its six neighbours - Botswana, eSwatini, Lesotho, Mozambique, Namibia and Zimbabwe revealed that South Africa has an exceptionally healthy trade balance with all its neighbours;
- In all instances South African exports to neighbouring countries exceed imports from its neighbours by far. As such, South Africa enjoys a trade surplus with all its neighbours. Botswana was the top export destination in 2020, with South African exports to Botswana totalling R74 billion. During the same year, South Africa imported most of its goods (R8,4 billion) from eSwatini;
- The decline in inter-trade between South Africa and its neighbours during 2020 were mainly driven by border post closures that targeted the movement of people and non-essential goods across inland borders. The transportation of essential supplies and emergency services were allowed under strict conditions, which included the mandatory testing of truck drivers and the sanitisation of trucks;

- The COVID-19 pandemic has resulted in mass production shutdowns and supply chain disruptions. The effects of restrictive trade facilitation measures (e.g. closure of border road transport and trade posts and prohibitions on the transportation on non-essential commodities) is clearly demonstrated in the decline in traffic volumes and values of imports and exports between South Africa and its six neighbouring countries;
- As a key player in the cross-border road transport environment, the C-BRTA will continue to work with its partners in the SADC to ensure all role-players harmonise their responses to the pandemic to reduce disruptions to cross-border road transport operations.

8.1.5 Corridor Performance Indicator

- Accurate data on cross-border flows in the SADC and other African RECs is not readily available;
- The absence of reliable corridor data makes it difficult for cross-border operators to pre-plan their journeys and to adjust their trips according to traffic conditions;
- Within the SADC, the TKCMS has joined hands with the C-BRTA and is currently developing a corridor performance monitoring system for the TKC that upon completion, will measure the performance of the entire corridor from the port of Walvis Bay until it terminates in Gauteng province in South Africa;
- The Tripartite has recently launched a web-based corridor performance monitoring system that measure border crossing and route trucking times for several corridors in the East and Southern African region. Cross-border operators whose countries are members of the Tripartite alliance can access this online monitoring tool to obtain real-time data on traffic flows at choke-points (e.g. border crossings). Although the Tripartite system is useful insofar it performs detailed monitoring a delay points, it does not perform corridor-wide monitoring (end-to-end analysis);
- The COMESA-EAC-SADC developed an electronic corridor trip monitoring system (CTMS) during the COVID-19 pandemic to facilitate the continuation of cross-border trade of essential goods during the pandemic. The CTMS ensure that cross-border transport is performed by healthy drivers/ crew who upload their well-being, daily, using cell-phones. Apart from measuring the health of drivers and crew, this online monitoring tool also enables the tracking of cross-border vehicles based on data, released by truck drivers. To date the CTMS has been piloted along sections of strategic regional corridors, notably the TKC and NSC;
- Success developing an online system(s) depends on strong political will to maintain momentum and the ability of MS to secure sufficient funds for project execution and monitoring.

8.1.6 Cross-Border Flow Calculator

- The C-BRTA collaborated with the University of Stellenbosch to develop a C-BFC that measures transit time and delays at fixed nodes (border posts, traffic control centres and truck stops) along regional road transport corridors;
- The C-BFC was piloted along a section of the TKC (stretch within South Africa) during 2019 to determine trade logistics costs for the Skilpadshek/ Pioneer Gate border and the Zeerust truck stop that include transit delay time;
- Total trade logistics costs (that includes transit delay time at the Skilpadshek border post and delay cost at the Zeerust truck stop) amounted to R30 054 732 for commercial traffic movements moving Southbound and R132 232 955 for vehicles moving in a Northbound direction.

- The reason for longer delay times for traffic moving in a Northerly direction lies in the fact that SADC MS imports more goods from South Africa than what South Africa imports from its neighbours. As a result, more traffic (tons of freight) is moving Northbound, resulting in longer delays at fixed delay points, especially during peak-periods.

8.2 Recommendations

8.2.1 Hard Infrastructure Reforms

8.2.1.1 Implement Prioritised SADC RIDMP Projects

- **Description of Reform**

The condition of road transport infrastructure in the region varies quite significantly. South Africa has the best road network, while road infrastructure in countries in the Northern and Western parts of the region (e.g. Zimbabwe and DRC) are in a poor condition. Connectivity is compromised in areas where there are missing road links. This problem is particularly severe in Angola, Tanzania and the DRC. Missing road links increase the distance travelled by vehicles, leading to longer journey times and higher operation costs, while also increasing the risk of vehicle breakdowns, accidents, cargo damage, increased fuel consumption and longer journey times.

The SADC Regional Infrastructure Development Master Plan (RIDMP) prioritises several road projects for the region to improve the condition of transport infrastructure and eliminate missing links along the RTRN. Although information pertaining to the project status of prioritised road transport projects is not readily available, engagements with several role-players (e.g. SADC Secretariat) revealed that many projects are still in the project planning / conceptual phases. These projects await funding to prepare them for bankability.

- **Actions associated with Implementing the Reform**

The following steps are associated with implementing the reform:

- Stakeholder engagements should be conducted with relevant role-players to obtain political will for implementation;
- Member States affected by regional infrastructure projects should conclude formal agreements with each other (e.g. MoU) that sets out the rules and obligation of each party;
- Member States should collaborate with the private sector to obtain funding for infrastructure programmes. Public sector institutions should employ adequate technical resources to prepare projects for bankability;
- Once funding has been secured, Terms of Reference (ToR) drafted and Service Provider (SP) appointed, the actual construction of SADC RIDMP projects can commence. During this phase, technical and political champions should be appointed at MS level to champion projects as political level, as well as to fast-track progress;
- Affected Member States should monitor project progress throughout the project life-cycle to detect problems and address problems at an early stage. This will also assist in managing/ minimising corrupt practices.

- **Responsibility for Implementing the Reform**

The implementation of prioritised regional transport projects / programmes involves several role-players, including:

- Public-sector role-players (e.g. Ministries of Transport);
- Development Finance Institutions;
- Development Assistance (donor agencies);
- Private Sector; and
- Developing Countries (China and India).

- **Envisaged Impact of Reform**

The following benefits are associated with implementing prioritised SADC RIDMP projects:

- Improved cross-border road transport movements;
- Enhanced regional integration;
- Time and cost savings for cross-border road transport operators;
- Just-in-time deliveries and quicker turnaround times; and
- Improved economic growth and development.

8.2.1.2 Establish Ranking Facilities in SADC Member States

- **Description of Reform**

Dedicated cross-border ranking facilities are found in a few SADC MS only. As a result, cross-border commuters are forced to use public transport facilities provided for domestic travel, which are busy and over-crowded. Insufficient safety and security measures at most ranking facilities and inadequate loading spaces for cross-border vehicles often result in the late departure of cross-border buses and minibus taxis. To improve service-delivery and safety, this reform proposes that dedicated cross-border ranking facilities to established in all SADC MS (island states excluded) that engage in the transportation of cross-border passenger transport in the region.

- **Actions associated with Implementing the Reform**

The actions/steps associated with implementing this reform include:

- Undertake comprehensive planning (e.g. demand analysis & traffic impact studies) to assess the condition of ranking facilities in MS and to determine current and future demand requirements for cross-border road passenger services;
- Factor infrastructure requirements into local development plans, integrated transport plans and spatial development plans to ensure that cross-border infrastructure support existing and anticipated future demand for cross-border road transport services;
- Next, funding should be allocated, preferably in the form of PPPs with the private sector to construct ranking facilities in MS;
- Once funding has been secured, ToR drafted, and SP appointed, the actual construction of cross-border ranking facilities can commence at suitable locations. Actual and future demand levels will guide decisions on the size the type of facilities required.

- **Responsibility for Implementing the Reform**

The following parties should work together to implement dedicated cross-border ranking facilities in SADC MS:

- Ministries of Transport);
- Provincial and Local authorities;
- Road Transport Regulators; and
- Private Sector.

- **Envisaged Impact of Reform**

The following benefits can be obtained once dedicated cross-border ranking facilities have been implemented across the region:

- Provision of quality, safe and accessible ranking facilities, including storage, ablution, booking offices and adequate lightning;
- Provision of secure off-street loading holding facilities for cross-border vehicles;
- Timeous departure of cross-border vehicles; and
- Eliminating of on-street ranking for cross-border services.

8.2.1.3 Establish One Stop Border Posts

- **Description of Reform**

Inland border posts are regarded as a major stumbling block to the unimpeded flow of cross-border traffic. Delays at border crossings, sometimes amounting to days contribute to increased transport costs due to commercial traffic hold-up. This represents a major obstacle to trade resulting from increased transit times, low equipment productivity and high cost of doing business.

The establishment of OSBPs requires attending to both hard and soft infrastructure components simultaneously. Further to the constructing approach roads to border posts, offices and housing for border officials, parking space and restrooms, soft issues, which impact directly on service levels (e.g. ICT systems integration) should be addressed at the same time.

- **Actions associated with Implementing the Reform**

Important actions/steps associated with transforming traditional two-stop borders into OSBPs are as follows:

- Stakeholder engagements should be conducted with all role-players (e.g. border agencies, private sector, communities) to obtain political will for the establishment of OSBPs;
- A review of legal and regulatory frameworks should materialise in the conclusion of bilateral agreements between MS in which the parameters for establishing OSBPs are spelled out. This arrangement should preferably also be entrenched in the domestic laws of MS by way of an appropriate Act of Parliament with an overriding effect over all border control legislation to give legal effect to the provisions of the MoU and the principles of extra-territoriality and hosting arrangements;
- Joint Technical working groups should be established, comprising of representatives of all border agencies operating at the border;

- The OSBP initiatives goes hand in hand with the establishment of collaborative single window systems. ICT serves as a critical component of collaborative single window systems that enable the online submission and processing of customs declarations and other supporting documents;
- Next, baseline surveys should be conducted at all prioritised OSBPs to assess the situation on both sides of the border that are to be merged into a OSBP. Information should be collected on traffic flows through the border, disaggregated as much as possible (distinguish between passenger vehicles, minibus taxis, buses, container and break-bulk vehicles), and average time taken to clear the border for each class of vehicle. This information should be used to project traffic flows over the short-, medium and long-term period;
- Once soft infrastructure components have been attended to, hard infrastructure should be built to facilitate the seamless movement of traffic through the border post. Construction activities will commence once funding has been secured, ToR drafted, and the SP appointed.

- **Responsibility for Implementing the Reform**

The implementation of OSBPs is capital-intensive and require collaboration between public and private sector bodies, including:

- SADC Member States;
- Public-sector role-players (e.g. Ministries of Transport);
- Development Finance Institutions;
- Development Assistance (donor agencies); and
- Private Sector.

- **Envisaged Impact of Reform**

The following benefits can be derived after OSBPs have been operationalised.

- Improved border management processes;
- Reduction in time spent at OSBPs;
- Reduction in travel time and cost;
- Increase in intra-Africa trade and transport flows; and
- Enhanced economic growth and development.

8.2.1.4 Establish Formal Truck Stops along Regional Transport Corridors

- **Description of Reform**

Africa, like the rest of the world is experiencing a road safety crisis. With the highest per capita rate of road fatalities in the world, the implementation of interventions, aimed at improving road safety is imperative. The establishment of formal truck stops along strategic corridors in the region, equipped with ablution, rest, basic maintenance and excellent safety and security features will go a far way towards improving road safety in the region. It is proposed that CMI's drive this initiative towards implementation.

- **Actions associated with Implementing the Reform**

Several actions are associated with the implementation of formal truck stops along strategic transport corridors in the region. Of specific importance are the following steps:

- The first step involves bringing all stakeholders together (public and private sector, CMI, transport operators, freight forwarders) for discussion to obtain approval from all parties for the establishment of truck stops;
- Once political will has been obtained, detailed feasibility studies and Environmental Impact Assessments (EIAs) should be performed along selected corridors to establish whether this initiative should be moved forward. The location of truck stops will be informed by factors such as land availability, zoning and ownership, bulk utility services and condition of existing infrastructure;
- If the outcome of studies is successful, funding should be obtained to move this initiative forward in the project life-cycle. Given the capital-intensive nature of this reform, private sector involvement is a prerequisite to success, not only to avail funding, but also to provide technical/ managerial skills throughout the project life-cycle;
- Once funding has been secured, Terms of Reference (ToR) drafted and Service Provider (SP) appointed, the actual construction of truck stops can commence. During this phase, technical and political champions should be appointed at MS level to champion projects as political level, as well as to fast-track progress.
- M&E throughout the project life-cycle is required to detect problems when they occur, and to apply mitigation measures when needed.

- **Responsibility for Implementing the Reform**

The implementation of truck stops is capital-intensive. Success depends on collaboration between public and private sector bodies, including:

- SADC Member States;
- Relevant public-sector institutions (e.g. Ministries of Transport and Public Works);
- Corridor Management Institutions;
- Donor Agencies;
- Road transport operators; and
- Private sector.

- **Envisaged Impact of Reform**

The establishment of formal truck stops along strategic road transport corridors can yield the following benefits:

- Reduction in driver fatigue;
- Improved safety along regional transport corridors;
- Growth of local communities with a continuous stream of travellers passing through;
- Reduction in crim/ fraudulent activities along transport corridors; and
- Protection of truck drivers against the transfer of HIV/AIDS and other sexually transmitted infections.

8.2.1.5 Development of Rail Infrastructure along Regional Transport Corridors

• Description of Reform

Increasing interconnectivity in SADC is not only important to increase engagement in global value chains, but also to increase intra-regional trade. Cross-border road transport is the dominant mode of transport in the region, carrying between 80 and 90% of total freight and passenger transport movements.

Railways in the region are currently operating below capacity and function as a collection of national systems rather than as an integrated regional rail network. Following the deregulation of road transport in the SADC, railway traffic subsided and, coupled with the high fixed costs of operations, stagnated at its current level of efficacy. The SADC RIDMP prioritises 31 railway projects to restore rail infrastructure in the region. Success in transforming transport corridors into SMART corridors depends on integrated road and rail networks.

• Actions associated with Implementing the Reform

The actions / steps associated with implementing this reform include:

- Stakeholder engagements should be conducted with relevant role-players to obtain political will for the implementation of prioritised rail projects;
- Affected parties should conclude formal agreements with each other (e.g. MoU) that sets out the rules and obligation of each party;
- Member States should collaborate with the private sector to obtain funding for rail infrastructure programmes. Public sector institutions should employ adequate technical resources to prepare projects for bankability;
- Once funding has been secured, Terms of Reference (ToR) drafted and Service Provider (SP) appointed, the actual construction of prioritised rail transport projects can start. During this phase, technical and political champions should be appointed at MS level to champion projects as political level, as well as to fast-track progress;
- Affected Member States should monitor project progress throughout the project life-cycle to detect problems and address problems at an early stage.

• Responsibility for Implementing the Reform

The execution of rail infrastructure projects is capital-intensive. It is thus imperative that the public-sector join hands with the private sector to ensure prioritised rail projects are packaged for bankability to reach implementation. Other important role-players include:

- Ministries of Transport;
- Regional bodies (Southern African Railways Association);
- Private Sector; and
- Development Finance Institutions.

- **Envisaged Impact of Reform**

The implementation of multi-modal infrastructure can yield the following benefits:

- Diversion of traffic most suitable for rail transport from road to rail;
- Improved traffic flows along road transport corridors;
- Reduction in road accidents;
- Improved handling and delivery time efficiency;
- Increased transport security; and
- Easier freight tracking.

8.2.2 Technology Driven Reforms

8.2.2.1 Implement Cross-Border Telematics in Cross-Border Vehicles

- **Description of Reform**

It is imperative that on-going developments in the region (e.g. establishment of corridor performance monitoring systems) be supported by the mandatory deployment of telematics in cross-border road transport vehicles to enable the tracking of cross-border vehicles along regional transport corridors.

This reform poses several benefits, including improved monitoring of cross-border vehicles by transport regulators, enhanced safety and security and a reduction in delays along road transport corridors. This recommendation can be implemented as a stand-alone initiative although more benefits may be obtained if this reform is integrated with other on-going initiatives (e.g. development of corridor performance monitoring systems).

- **Actions associated with Implementing the Reform**

Several actions /steps are associated with the fitness of telematics in cross-border road transport vehicles. Of specific importance is:

- Stakeholder engagements should be held with all affected parties (road transport operators, regulatory authorities, private sector) to convince interest groups, especially transport operators to install telematics as a standard practice in cross border vehicles;
- Next, ICT infrastructure/ systems should be harmonised to enable the sharing of relevant data (e.g. traffic flows) with relevant stakeholders;
- Regulatory frameworks/ instruments (e.g. cross-border regulations and laws) should be reviewed to legalise the use of telematics in cross-border vehicles. The cost of telematics may be included in the permit issuing fee and be handed to cross-border operations when they collect their permits at the offices of regulatory authorities;
- Lastly, telematics should be implemented in cross-border vehicles, where-after Monitoring and Evaluation (M&E) should be conducted on a regular basis to identify glitches and to update/refine software.

- **Responsibility for Implementing the Reform**

The implementation of implementing telematics in cross-border vehicles require collaboration between all affected parties. Of specific importance is:

- Regulatory authorities in SADC MS;
- Ministries of Transport;
- Cross-border road transport operators; and
- Private Sector.

- **Envisaged Impact of Reform**

The implementation of telematics in cross-border vehicles can materialise in the following benefits:

- Improved visibility of cross-border vehicles;
- Improved law enforcement;
- Improved compliance and road safety; and
- Time and cost savings for cross-border road transport operators.

8.2.2.2 Implement Corridor Performance Monitoring Systems

- **Description of Reform**

Real-time data on road transport traffic flows in the SADC is not readily available. In terms of on-going developments, the Tripartite recently implemented a web-based corridor performance monitoring system that measures border crossing and route trucking time for several corridors in the East and Southern African region. As a member of the Tripartite Alliance, cross-border operators who conduct business for reward in the SADC can access this online monitoring tool to obtain real-time data on traffic flows at selected choke-points (e.g. border posts) along regional road transport corridors. A limitation of this system is that it only collects data at fixed delay points and therefore does not provide an accurate picture of overall corridor performance between origin and destination points.

At SADC level, a CTMS was developed and implemented during 2020 to obtain information on driver and crew welfare, and to track the movement of cross-border vehicles along selected regional routes. This reform supports the development of on-line corridor performance monitoring systems for all strategic transport corridors that traverse the region. System developers should ensure that new monitoring systems can interface with existing systems (Tripartite monitoring tool).

- **Actions associated with Implementing the Reform**

The actions associated with the implementation of a Regional Legislature are listed below:

- Strategic engagements with relevant stakeholders (including CMIs) should be conducted to agree on the need for the development and implementation of online monitoring systems along strategic regional road transport corridors;
- To enable the online sharing of relevant corridor data between different parties, online platforms ((ICT systems / applications) should be harmonised. During this phase strong institutional support will be required. Oversight may be provided by existing CMIs, or new structures should be established to perform this role;

- Upon completion, online monitoring system(s) should be piloted along a section of a well-functioning corridor (e.g. between seaport and first border post) to test for system failures and to update the system;
- Corridor progress should be monitoring regularly according to several CPIs to improve/update existing corridor performance monitoring systems.

- **Responsibility for Implementing the Reform**

Several role-players should work in concert to develop and implement online corridor performance monitoring systems. Of specific importance are the following role-players:

- Public sector role-players (e.g. customs authorities, regulatory authorities and Ministries of Transport);
- Selected private sector role-players (e.g. freight forwarders);
- Research institutions;
- Corridor Management Institutions (e.g. TKCS); and
- Development Finance Institutions.

- **Envisaged Impact of Reform**

Listed below are benefits associated with the implementation of online corridor performance monitoring systems in the SADC:

- Availability of real-time data on traffic flows;
- Improved traffic flows along regional road transport corridors;
- Evidence-based decision-making by public sector role-players in the region;
- Improved facilitation of traffic flows along regional road transport corridors;
- Improved transport competitiveness; and
- Sustainable economic growth and development.

8.2.2.3 Transform Transport Corridors into SMART Corridors

- **Description of Reform**

The SMART corridor initiative is currently unfolding in Africa. This continental initiative, which is still in the early phases of the project life-cycle proposes that all transport corridors in Africa be converted into SMART corridors in a phased manner over time. SMART corridors entail the use and application of Intelligent Transport Systems (ITS) to improve corridor efficiency.

As is the case with OSBPs, the transformation of transport corridors into SMART corridors require attending to soft and hard infrastructure matters simultaneously. Apart from construction activities, ICT connectivity is a pre-requisite track to movement of vehicles along road transport corridors.

- **Actions associated with Implementing the Reform**

The actions associated with the implementation of SMART corridors are listed below:

- Extensive stakeholder engagements should be conducted throughout the project life cycle to ensure political will amongst all role-players;
- The ToR and MoU for the implementation of SMART corridors has been finalised. On-going actions include the development of the technical architecture of the SMART programme;
- The SMART corridor initiative will be piloted over the NSC and Dar es Salaam corridors. This stage has not yet been completed;
- Once the piloting exercise has been completed, prioritised transport corridors can be transformed into SMART corridors. This stage has not yet commenced;
- The last step involves M&E to measure performance and to enable improvements.

- **Responsibility for Implementing the Reform**

The successful implementation of this strategic continental initiative depends on support and collaboration from various public and private sector role-players, including:

- Ministries of Transport in African countries;
- Road Transport Regulators;
- Corridor Management Institutions;
- Operator Associations; and
- Cross-border road transport operators.

- **Envisaged Impact of Reform**

Numerous benefits are associated with the establishment of SMART corridors, including:

- Improved operator compliance, safety and security;
- Improved corridor performance;
- Improved safety and security along transport corridors;
- Time and cost savings for cross-border road transport operators;
- Increases in intra-Africa trade; and
- Enhanced economic growth and development.

8.2.3 Soft Infrastructure Reforms

8.2.3.1 Establish a Regional Legislature (Parliament)

- **Description of Reform**

Although eight RECs are recognised by the AU as African RECs, not all of them have a regional legislative assembly that holds MS accountable for the implementation of continental and regional decisions. The SADC does not have a regional Parliament in place and has experienced less success with the implementation of strategic transport projects/programmes than other African RECs (e.g., EAC) that has a regional parliament. Currently the implementation of continental and regional reforms in the SADC depends on the willingness and political will of SADC governments to carry out regional decisions at MS level.

Progress towards establishing a SADC Legislature is noted in on-going talks amongst key regional role-players to restructure the governance paradigm. Given its autonomous legal character the regional Parliament will be able to enforce the implementation of regional decisions (reforms) and impose sanctions upon defaulting MS. Until this reform is operationalised, the SADC Parliamentary Forum (SADC-PF), composed of Members of Parliament from national parliaments in MS provides a framework for dialogue on issues of regional interest and concern.

- **Actions associated with Implementing the Reform**

The actions associated with the implementation of a Regional Legislature are listed below:

- Strategic engagements should continue and intensify at regional level to gain support from all parties for the establishment of a regional Parliament;
- Once buy-in has been obtained from all parties, a draft protocol should be developed around the establishment of a regional Parliament that defines the powers, functions and relational linkages among the proposed Parliamentary body, national Parliaments and other organs in the SADC;
- Upon completion, the draft Protocol should be presented to SADC MS for approval and ratification;
- Lastly, the SADC-PF should be elevated into a fully-fledged regional Parliament that will have the powers to enforce the domestication of regional laws at MS level;

- **Responsibility for Implementing the Reform**

The responsibility of the establishment of a Regional Parliament vests with all SADC MS.

- **Envisaged Impact of Reform**

The following benefits are associated with the establishment of a regional Parliament:

- Improved governance, transparency and accountability at MS level; and
- Improved delivery of regional commitments.

8.2.3.2 Establish a Regional Monitoring & Evaluation Body

- **Description of Reform**

Given the poor implementation status of infrastructure projects, this reform proposes the establishment of an independent M&E body at regional level to observe and review progress of key regional infrastructure projects, particularly those outlined in the SADC RIDMP and PIDA, and to develop mitigation strategies to accelerate performance, as and when required.

- **Actions associated with Implementing the Reform**

Several actions are associated with establishing a regional R&E body. Of specific importance are: the following:

- Sufficient funds should be secured to enable the establishment of a regional M&E body. Strong political will should be displayed by political leaders to convince financiers of the long-term benefits associated with this reform;
- Agreement should be reached on the type of M&E systems that will be used by a M&E body to monitor progress and track project performance;

- Next a governance framework should be established that outlines key requirements for a M&E body to ensure M&E becomes part of and remains part of key decision-making processes;
- Lastly a R&M should be established. This body can resort under existing structures (e.g. SADC Secretariat or CBRT-RF) or can be a stand-alone structure.

- **Responsibility**

SADC MS are collectively responsible for the successful implementation of this reform.

- **Envisaged Impact of Reform**

The establishment of a regional M&E body to provide oversight and oversee the timeous implementation of strategic regional reforms pose several benefits, including:

- Timeous delivery of strategic regional transport projects through continuous monitoring and evaluation;
- Availability of credible, results-based information;
- Improved decision-making processes; and
- Existence of a robust basis/platform for raising funds.

8.2.3.3 Implement Risk-Based Regulatory Systems

- **Description of Reform**

Several risk-based trade and transport initiatives are unfolding in the region, including the OCAS (driven by the C-BRTA) and Authorised Economic Operator (AEO) programme, driven by the South African Revenue Services (SARS).

Risk based systems seek to improve the regulatory environment through enhancing regulatory efficiency, operator compliance and road safety. These systems reward compliant traders and transport operators through subjecting them to fewer inspections (stops) along transport corridors and faster clearance processes at border posts that materialise in time savings for compliant parties.

- **Actions associated with Implementing the Reform**

Key actions associated with implementing risk-based systems are depicted in bullet format below:

- Stakeholder engagements at national and regional level are imperative to educate all role-players on the need for and benefits associated with risk-based regulatory systems;
- The implementation and operation of risk-based regulatory systems in the region is guided by the MCBRTA. It is therefore important that MS review and align existing national legal instruments (laws and regulations) to the MCBRTA;
- Next, MS should design domestic regulatory tools that conform to the MCBRTA. The tools must re-define the regulatory requirements, procedures, standards and systems for regulatory authorities. Legal frameworks should also set out the technologies that should be implemented and used in cross-border vehicles to support regulatory and law enforcement operations;

- Once developed, risk-based regulatory systems should be piloted at regular intervals to test for system errors and to refine the systems. Continuous M&E should be performed to monitor performance and improve system(s).

- **Responsibility**

Several parties are responsible for the implementation of risk-based regulatory systems, including:

- Ministries of Transport in SADC MS;
- Road Transport Regulators;
- Law enforcement agencies;
- Private sector; and
- Cross-border road transport operators.

- **Envisaged Impact of Reform**

The following benefits can be obtained once risk-based regulatory systems have been implemented:

- Decrease in delays and transit times along regional road transport corridors;
- Optimisation of resources;
- Improved compliance by cross-border road transport operators; and
- Reduction in bribery and corrupt activities along road transport corridors.

8.2.3.4 Establish a Regional Law Enforcement Academy

- **Description of Reform**

The development of customised training programmes for law enforcement officials in the SADD region will improve the level of professionalism in the law enforcement industry. Law enforcement officers in the SADC generally lack essential skills (e.g. how to use modern technology during law enforcement checkpoints) that in some cases, undermine the integrity of law enforcement inspections. Law enforcement officials will greatly benefit from training, provided by a regional law enforcement academy that offers standardised, customs-made law enforcement programmes to concerned parties.

- **Actions associated with Implementing the Reform**

Several actions are associated with establishing a regional law enforcement academy.

- The first step involves conducting engagements with law enforcement role-players in the region to lobby support for the development of customised law enforcement training programmes, aimed to improve the level of professionalism in the law enforcement environment;
- The next step involves developing tailor-made law enforcement programmes that incorporate emerging continental and regional developments (e.g. SMART corridor initiative, creation of integrated corridor platforms). The purpose is to upskill law enforcement officers to improve the quality of law enforcement inspections; and

- Once training modules have been developed and certified, the next action is to establish a regional law enforcement academy. Given its expertise in this area, it is strongly proposed that the C-BRTA act as the implementation agent.

- **Responsibility**

All role-players in the law enforcement environment are collectively responsible for implementing a regional law enforcement training academy.

- **Envisaged Impact of Reform**

The benefits associated with the establishment of a regional law enforcement academy include, but are not limited to:

- Improved skills transfer to law enforcement officials;
- Time savings during law enforcement checkpoints;
- Collection and distribution of real-time data;
- Shorter journey times;
- Savings in transport costs for cross-border operators; and
- Improved performance of corridor value chain.

8.2.3.5 Establish Single-Stop (Joint) Law Enforcement Inspections

- **Description of Reform**

In the SADC, joint law enforcement inspections are the exception, rather than the rule. Most law enforcement inspections are still conducted in silo by several law enforcement agencies at different locations along regional road transport corridors. This reform proposes the establishment of joint law enforcement inspections in the SADC, preferably at fixed delay points (e.g. formal weighbridge stops and traffic control centres) and staggered at regional intervals to minimise disruption and unnecessary stops for operators.

- **Actions associated with Implementing the Reform**

Key actions associated with implemented single stop, joint law enforcement inspections along strategic regional road transport corridors include, but may not be limited to:

- Engagements should be conducted with national and regional law enforcement authorities to agree on hosting joint law enforcement inspections. Discussions should focus on the harmonisation of processes/systems to enable the online sharing of intelligence, and identifying locations (spread over even distances along corridors) for joint law enforcement inspections;
- Once role-players have approved this reform, a framework should be crafted that sets out infrastructure and operational requirements, as well as guidelines for conducting joint law enforcement inspections. Guidelines should stipulate the distance interval between locations where law enforcement inspections will be conducted;
- The next step involves purchasing SMART technologies that will be used by law enforcement officers to capture and process information and share intelligence with relevant interest groups (e.g. regulatory authorities). Prior to implementing SMART technologies, law enforcement officers should undergo training so that they can familiarise themselves with the applications / use of such technologies; and

- Prior to implementing joint law enforcement inspections along strategic regional road transport corridors, this initiative should be piloted over one, maybe two less-trafficked corridors only to identify and rectify inefficiencies before the full-scale roll-out to other transport corridors in the region.

- **Responsibility**

SADC MS are collectively responsible for the successful implementation of this reform.

- **Envisaged Impact of Reform**

The benefits associated with single-stop law enforcement inspections include:

- Reduction in delays at transit times;
- Reduction in duplicated law enforcement processes along regional road transport corridors;
- Improved sharing of real-time data; and
- Reduction in the cost of doing business.

8.2.3.6 Harmonise Permit Issuing Processes and Systems in the SADC

- **Description of Reform**

Cross-border operators apply for cross-border permits at the offices of regulatory authorities in SADC MS. Long queues and regular service disruption, due to inadequate ICT connectivity at centralised service points, undermine service delivery and lower the demand for cross-border permits.

Inefficiencies with the issuing of cross-border road transport permits SADC encourage cross-border operators to obtain fraudulent permits. In some countries, it is cheaper for operators to pay a penalty for non-compliance if they are caught with fraudulent permits, that it is to go through the tedious and costly process to apply for a valid cross-border permit.

Matters are aggravated by the non-alignment of tariffs to obtain cross-border permits. Currently, South African road freight operators pay much more for a cross-border freight permit than what operators from other SADC countries pay. The status quo creates an uneven playing field that penalises South African operators. It also calls for intervention to re-engineer permit issuing processes in the region.

The Cross-Border Road Transport Agency has taken the lead in the SADC with the development of an electronic permit issuing system that was launched during FY 2021. The new permit issuing system enables South African road transport operators to apply for permits from the comfort of their work / homes. Supporting documents can be submitted electronically. Operators can either collect e-permits from the offices of the C-BRTA in Highveld, South Africa, or can authorise the Agency to distribute permits to them via courier services

- **Actions associated with Implementing the Reform**

Several actions are associated with harmonising permit issuing processes and systems, as indicated below:

- Regulatory authorities should harmonise regulatory requirements pertaining to the application and issuing of for cross-border permits. Harmonisation goes hand in hand with the adoption of common standards and the alignment of permit fees throughout the region. Alignment should be done according to the requirements of the TTTFP;
- The re-engineering of permit issuing processes goes hand in hand with the development of integrated ICT systems. As such agreement should be reached on the type of ICT systems / software that will be used by all role-players who issue cross-border permits;
- Regulatory authorities should collaborate with the private sector go come on board with funding, preferably through concluding PPPs. The private sector can also provide technical (project management) expertise throughout the entire project, even after implementation (monitoring and evaluation);
- Once system specifications have been set and adequate resources (funds and technical expertise) been obtained, SADC MS can go-ahead with the development and implementation of improved permit issuing systems. Since South Africa took the lead in this area, it is proposed that regulatory authorities collaborate with the C-BRTA to draw on lessons learnt and to investigate the possibility of customising/ using the South African permit issuing system in SADC MS.

- **Responsibility**

Regulatory authorities in the respective SADC MS are responsible for implementing this reform.

- **Envisaged Impact of Reform**

The following benefits can be accrued once regulatory authorities have implemented online permit issuing systems:

- Improved regulation of cross-border road transport movements;
- Improved harmonisation of the regulatory environment;
- Increased value-add to cross-border road transport operators; and
- Improved competitiveness of the cross-border road transport industry.

8.2.3.7 Development of Funding Frameworks by SADC MS

- **Description of Reform**

Within the SADC, public financing still constitutes the bulk of resources allocated towards infrastructure projects, with tax revenues making up a large portion of these funds. Reality indicates that public funds along are not enough to close the infrastructure gap. SADC countries should therefore look beyond public funds for financing infrastructure programmes. The current state underpins the importance of SADC MS developing funding frameworks that ensure investors their returns will be proportionate to the risk they take.

- **Actions associated with Implementing the Reform**

The following actions are associated with the development of funding frameworks:

- MS should appoint skilled resources to develop funding frameworks that provide debt and equity providers to returns that are proportionate to the risk they take;
- Funding frameworks should set out how risk allocation is conducted. This requires that SADC MS liaise with financial and legal advisors with substantial expertise in project financing. It is imperative that MS governments understand the risk from the private sector perspective, allocate those risk and provide appropriate risk-adjusted returns;
- MS should also create stable legal and tax systems that give investors comfort that their investments is safe. Stabilisation clauses should be incorporated into contracts that guarantee investors that any change in law, including tax law, that has an adverse impact on the project(s) will not apply to the project;

- **Responsibility**

All SADC MS are responsible for implementing this reform

- **Envisaged Impact of Reform**

The following benefits can be accrued once SADC MS have developed funding frameworks:

- Improved delivery on regional infrastructure projects/ programmes;
- Introduction of private sector technology and innovation through PPPs;
- Improved trade and transport flows;
- Enhanced economic growth and development.

8.3 Conclusion

The implementation of reforms presented in this chapter will go a long way towards creating efficient, integrated transport corridors that facilitate intra-regional trade, investment opportunities, regional economic development and regional integration. Many reforms (e.g. establishment of OSBPs and SMART corridors) encompasses hard and soft infrastructure and technology elements that should be attended to in a similar fashion to fully execute the said reforms.

Ultimately, success depends on the ability of role-players to secure political will and adequate funding to execute infrastructure reforms. All African RECs (including SADC) faces a huge infrastructure gap where the costs associated with eliminating the infrastructure gap is beyond the capacity of governments and donor agencies. It is imperative that the private sector comes on board in funding infrastructure programmes, preferably through PPPs, with funding secured from either conventional, or innovative financing sources.

Moving forward, SADC Heads of State should adopt a new mind-set that incorporates the private sector in funding and executing infrastructure programmes in the region. It is also important that all affected role-players are consulted during, and even after project execution. Since many reforms display a regional character, MS's must mobilise stakeholders in their jurisdictions to act as implementation agents, while at regional level, coordination will be required to ensure that there is a common purpose and convergence to the approach that should be taken to implement reforms. Continuous M&E is also important to ensure sound project management is maintained throughout the entire project life-cycle – from inception to implementation – as well as measuring the impact of reforms there-after.

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