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LOOKING BACK AND FORWARD

The Impact of COVID-19 on Transport and Logistics Operations in Zambia

Prepared by

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ACRONYMS

AERC	African Economic Research Consortium
ASYCUDA	Automated System for Customs Data
ATAG	Air Transport Action Group
COMESA	Common Market for Eastern and Southern Africa
COVID-19	Corona Virus Disease
CBTA	Cross Border Traders Association
ERB	Energy Regulation Board
EAC	East African Community
FGD	Focus Group Discussion
GRZ	Government of the Republic of Zambia
IAPH	International Association of Ports and Harbors
ICA	Impact Capital Africa
ICT	Information, Communications and Technology
IFC	International Finance Corporation
KII	Key Informant Interview
KKIA	Kenneth Kaunda International Airport
MSME	Micro, Small and Medium Enterprise
PACRA	Patents and Companies Registration Agency
PPE	Personal Protective Equipment
RECTDS	Regional Electronic Cargo Driver Tracking System
RTSA	Road Transport and Safety Agency
SADC	Southern Africa Development Community
TTFC	Transport and Trade Facilitation Committees
UNCTAD	United Nations Conference on Trade and Development
WHO	World Health Organisation
WPSP	World Ports Sustainability Program
ZAMRA	Zambia Medicines Regulatory Agency
ZCILT	Zambia Chartered Institute of Logistics and Transport
ZCSA	Zambia Compulsory Standards Agency
ZIPAR	Zambia Institute For Policy Analysis and Research
ZRA	Zambia Revenue Authority

ACKNOWLEDGEMENTS

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The COVID-19 pandemic imposed unprecedented stress on modern logistics supply chains globally, including in Zambia. Governments responded with various measures such as lockdowns, border closures, mandatory testing and quarantine to slowdown the virus's spread. While cargo movements were generally exempt from lockdowns, additional requirements for COVID-19 screening and quarantine, created operational challenges for transport and logistics operators, leading to delays, congestion, and increased costs.

The importance of sound logistics became evident during the pandemic, as it is a fundamental driver of trade and commerce, and key to an economy's competitiveness. Efficient logistics systems were crucial for ensuring the supply of essential goods such as food and medical supplies. In Zambia, the pandemic amplified existing challenges and vulnerabilities in supply chains and logistics systems. Despite some improvements in the Logistics Performance Index, inefficiencies remained, highlighting the need for further improvement.

This paper investigates the impact of COVID-19 on transport and logistics operations in Zambia. The study employed both qualitative and quantitative research methods, including a desk review, stakeholder consultations and a firm survey. The desk review summarised policy responses to COVID-19 at global, regional and national levels. Stakeholder consultation provided insights into the pandemic's impact on the management and performance of transport and logistics. The firm survey gathered data on the impact of COVID-19 on revenues, employment and general operations of transport and logistics operators in Zambia.

Key Findings

1 **Policy Response:** Globally, measures like lockdowns, travel bans and border closures disrupted mobility and the delivery of transport and logistics services. Similar impacts were observed in Africa, where border controls and quarantine requirements increased transit time and operational costs. In Zambia, measures included mandatory screening and quarantine for travellers and truck drivers. These measures, while essential for public health, created significant operational challenges for transport and logistics firms, leading to delays and increased costs;

2 Impact on Firms: The COVID-19 pandemic significantly affected employment within the transport and logistics sector, with 44% of firms reducing working hours in the second and third quarters of 2020. Revenue decline was widespread with approximately 74% of firms reporting reductions. Customs procedures became more cumbersome, with 52% of surveyed firms noting an increase of 5-10 clearance forms required for inspection and clearance. Processing times also lengthened,

with 25% of firms experiencing delays of 23-48 hours and 27% reporting even longer delays beyond 48 hours. However, the pandemic spurred digitalisation, as 75% of firms were able submit pre-clearance forms online, marking a positive shift in the modernisation of customs processes;

3 Broader Challenges: The pandemic amplified existing challenges in the transport and logistics sector, including high operational costs, inadequate infrastructure, and stringent regulations. Over 83.9% of firms reported that high operational costs such as road toll fees and fuel expenses, significantly diminish profitability and create barriers to entry. Additionally, 71.4% of firms expressed concerns about stringent government regulations negatively impacting operational efficiency. While regulations are important for sector oversight, stakeholders emphasised the need for a balanced approach that does not hinder operational efficiency.

4 Border Authorities' Experiences: Border authorities saw an increase in operational costs due to health protocols and staffing shortages, which slowed customs clearance processes. However, the pandemic also fostered innovation and increased collaboration among stakeholders. Investments in digitalisation and remote work capabilities were advanced at the height of the pandemic.

Recommendations

Based on these findings, the study recommends the following to improve peformance of the sector and enhance resilience going forward:

1 **Enhance Infrastructure:** Improving transport and logistics infrastructure can significantly enhance the resilience of transporters in the event of a health crisis such as the COVID-19 pandemic. Upgrading infrastructure, such as roads and bridges, as well as modernising border facilities, enables smoother and more effiicent movement of goods and people, reducing delays and congestion during health emergencies;

2 **Invest in Digitalisation:** Accelerating digitalisation efforts in transport and logistics, as well as customs procedures can improve efficiency and adaptability. The Government should support these efforts through financial incentives;

3 **Build Financial Resilience:** Transport and logistics operators should develop contigency plans and financial reserves to cushion against unforeseen disruptions and minimise the impact on operations and profitability. Diversifying revenue streams by entering new markets such as e-commerge logistics, last mile delivery services or providing warehousing solutions, can help build resilience; and finally,

4 **Strengthen Collaboration:** Fostering collaboration among industry stakeholders, government agencies and international partners is essential for effective crisis management and resilience building. Firms should seek to collaborate with industry peers, trade associations and supply chain partners to share best practices, insights and resources for navigating the challenges brought by COVID-19.

01 INTRODUCTION

The COVID-19 pandemic placed unprecedented stress on modern logistics supply chains, worldwide. Governments everywhere, including in Zambia, responded with various measures such as lockdowns, border closures, mandatory testing and quarantine to avert the virus's spread. While cargo movements generally remained exempt from lockdowns, additional requirements like mandatory COVID-19 screening and quarantine for cross-border crews created operational challenges for transport and logistics operators, leading to delivery delays, border congestion, and higher freight costs. Thus, the pandemic-related restrictions generally disrupted and reorganised logistics and supply chain management and essentially trade, with effects that persist to this day.

The importance of sound logistics became more glaring with the advent of the COVID-19 pandemic. Logistics, defined as the network of services including transport, warehousing and storage, port procedures and information management, that support the movement of goods and services within and across borders, is a fundamental driver of trade and commerce, and is key to an economy's competitiveness (World Bank, 2018). At the height of the pandemic, the need for efficient logistics systems to ensure the supply of essential goods such as food and medical supplies became very evident.

While the COVID-19 pandemic made the importance of efficient transport and logistics more apparent, the challenge of moving goods is not new for a country like Zambia. The COVID-19 pandemic and associated containment measures merely amplified existing challenges and vulnerabilities in Zambia's supply chains and logistics systems. Even though the country registered some improvements, with its Logistics Performance Index increasing slightly from 2.44 in 2007 to 2.48 in 2018, it still ranked 103 out of 160 countries in logistics quality and competence in 2018, indicating the existence of inefficiencies and the need for further improvement[1] . The disruptions in the supply of different commodities in the country, during the pandemic observed by the UNDP (2020), speaks to some of these inefficiencies.

This paper investigates the impact of COVID-19, on the management and performance of transport and logistics in Zambia. Using data collected through a survey of selected transport and logistics operators on the Zambia Chartered Institute of Logistics and Transport (ZCILT) register, the paper looks back and assesses the firms' perception of the impact of COVID-19on their revenues, employment and general operations. The paper yet again looks back and assesses the impact of COVID-19 on the management of transport and logistics operations in Zambia using information gathered from interviews with border authorities and industry stakeholders. Then, using a forward-looking approach, the paper proposes measures for supporting the sector's recovery and for building resilience to future pandemics or disasters.

[1] https://lpi.worldbank.org/international/scorecard/line/2/C/ZMB/2018/R/SSA/2018/I/LMC/2018#chartarea

The rest of the paper is structured as follows: in Section 2, we outline our methodological approach; in Section 3, we discuss the global, regional and Zambian experience and policy responses to the pandemic aimed at reducing disruptions to transport and logistics; in Section 4 we analyse how COVID-19 affected transport and logistics firms' revenues, employment and general operations; in Section 5 we discuss the impact of COVID-19 on the management of transport and logistics; and finally in Section 6 we conclude the paper and offer policy recommendations to support recovery and enhance resilience against future pandemics.

02
STUDY APPROACH

To assess the effect of COVID-19 on transport and logistics in Zambia, this study employed a mix of both qualitative and quantitative research methods. A review of existing literature was undertaken to understand the policy response to the pandemic as well as the initial impact on transport and logistics operations. The study relies on the ZCILT list of registered operators as the sampling frame for the survey. As we show below, the data collection process was met with some challenges.

2.1 Desk Review

A systematic review of literature was conducted to summarise the policy response to COVID-19, and to understand the impact of the pandemic on both the performance and management of transport and logistics operations. In addition to appreciating the policy response to COVID-19 in Zambia, this review was undertaken at both the global and regional level, to gain a wider perspective on the subject. In general, the study reviewed, assessed and summarised policy measures implemented by authorities to curb the spread of COVID-19 in in order to appreciate their intended purpose and assess their effectiveness. The aim was to understand how they changed the operations and management of transport and logistics.

2.2 Stakeholder Consultations

A systematic review of literature was conducted to summarise the policy response to COVID-19, and to understand the impact of the pandemic on both the performance and management of transport and logistics operations. In addition to appreciating the policy response to COVID-19 in Zambia, this review was undertaken at both the global and regional level, to gain a wider perspective on the subject. In general, the study reviewed, assessed and summarised policy measures implemented by authorities to curb the spread of COVID-19 in in order to appreciate their intended purpose and assess their effectiveness. The aim was to understand how they changed the operations and management of transport and logistics.

Table 2.1: List of Consulted Stakeholders

No.	Institutions	Interview Location
1	Zambia Revenue Authority (ZRA)	Nakonde, Kasumbalesa, Ndola & Chirundu
2	Road Transport and Safety Agency (RTSA)	Nakonde, Kasumbalesa, Ndola & Chirundu
3	Zambia Compulsory Standards Agency (ZCSA)	Nakonde, Kasumbalesa, Ndola & Chirundu
4	Zambia Medicines Regulatory Agency (ZAMRA)	Nakonde & Chirundu
5	Ministry of Health- Port Health	Chirundu
6	Ministry of Mines and Mineral Development-Inspectorate Dept.	Kasumbalesa
7	Mpulungu Harbour Corporation	Mpulungu
8	Cross Border Traders Association (CBTA)	Nakonde
9	Transport Associations	Nakonde, Kasumbalesa, Ndola & Chirundu
10	Selected Firms and Clearing Agents	Nakonde, Kasumbalesa, Ndola & Chirundu

Source: Constructed by Author from Project Inventory Data

2.3 Firm Survey

A systematic review of literature was conducted to summarise the policy response to COVID-19, and to understand the impact of the pandemic on both the performance and management of transport and logistics operations. In addition to appreciating the policy response to COVID-19 in Zambia, this review was undertaken at both the global and regional level, to gain a wider perspective on the subject. In general, the study reviewed, assessed and summarised policy measures implemented by authorities to curb the spread of COVID-19 in in order to appreciate their intended purpose and assess their effectiveness. The aim was to understand how they changed the operations and management of transport and logistics.

Out of the 492 firms on the ZCILT registry at the time of the survey, 75 firms were sampled, using simple random and purposive sampling techniques. Out of the sample of 75 operators, the survey recorded 57 completed questionnaires, translating to an overall response rate of approximately 76%. Significant challenges were encountered in reaching some of the sampled firms due to insufficient contact information. Additionally, some firms were not receptive, hindering researchers' ability to record responses from these entities. In some cases, because of the limited availability of reliable contact information for firms on the ZCILT registry, replacements were drawn from outside the sampling frame.

Both qualitative and quantitative data on transport and logistics firm characteristics including, employment, revenue and perceived impact of COVID-19 on operations, was collected using a structured questionnaire.

The sampled firms had the option of completing the survey online; where this was not possible, the questionnaires were administered in person. The collected survey data was cleaned and analysed using excel and STATA. Descriptive analyses were mainly used to present firm's views on how the pandemic affected their operations. Secondary data from credible sources such as the World Bank and United Nations agencies was also used to augment firm survey data.

2.4 Summary

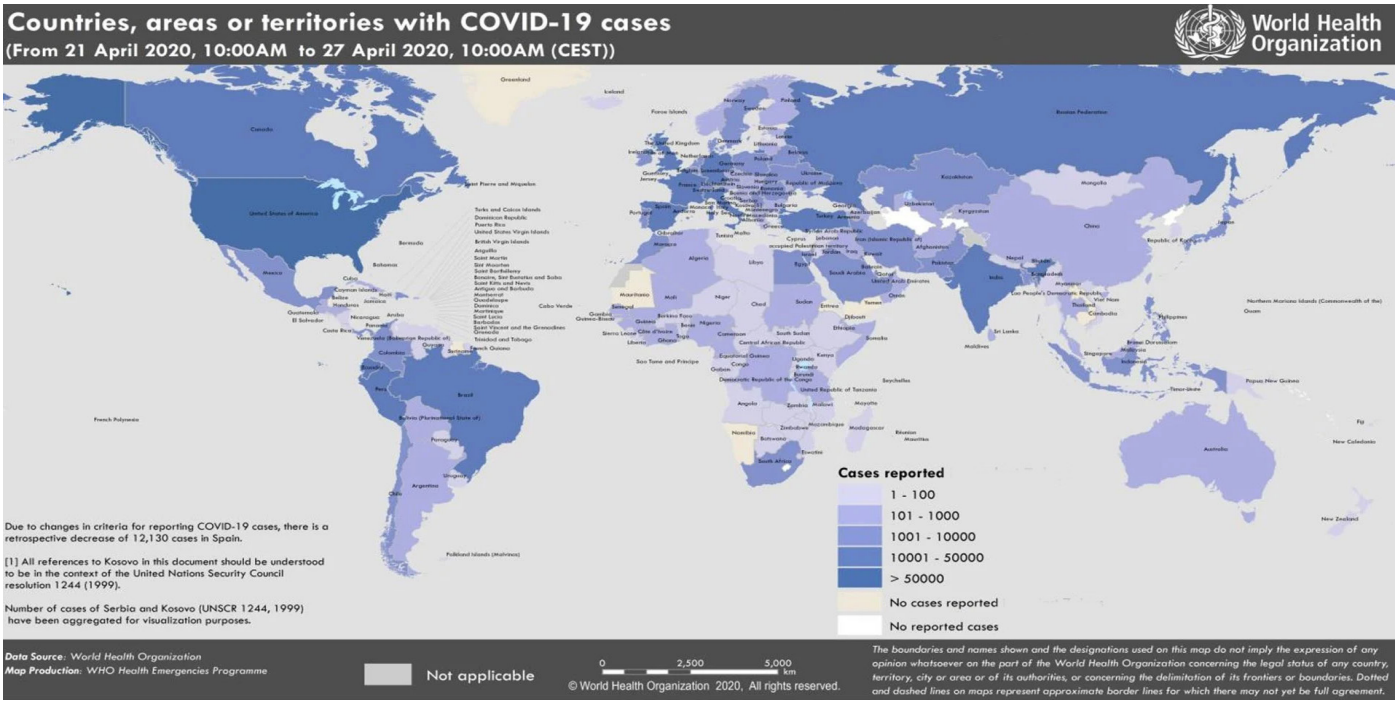
In this Section, we outlined the different methods the paper used to measure the impact of COVID-19 on transport and logistics operations in Zambia. A mix of both qualitative and quantitative tools were used to ensure a more balanced view of the subject. The primary survey of operators while successful, was still met with some challenges particularly related to insufficient contact information and less favourable response from some operators. In the next Section, we present the main findings of the study.

03

GLOBAL, REGIONAL AND LOCAL CHARACTERISATION OF POLICY RESPONSES TO COVID - 19

The COVID-19 pandemic has without doubt, left an indelible mark on transport and logistics. Following the guidance of the World Health Organisation (WHO) to restrict and trace movement of persons to curb the spread of the virus, many countries around the world responded with stringent measures which constrained transport and logistics operations. This Section provides an overview of the policy responses to COVID-19 and how these might have affected transport and logistics operations, through the global, sub-Saharan Africa and Zambian lens.

3.1 The Biggest Impact of Covid-19 on Transport And Logistics was First Felt in China



Source: Tettey, E. et al., (2020).

In March 2020, WHO declared COVID-19 a pandemic and nations across the world swiftly responded by implementing a host of measures including restrictions on public gatherings and nonessential business activities, travel bans, border closures and lockdowns to restrict the movement of people and goods (WHO, 2020). According to Koh (2020), China was the first country to implement a lockdown on 23 January, 2020, followed by Italy which declared a nationwide lockdown from 10 March 2020. These and other measures, albeit necessary, severely disrupted mobility and delivery of essential services, across the world. According to the International Finance Corporation (IFC) (2021), the impact of COVID-19 on transport and logistics, understandably, was first felt in China because of its unique position as the centre of global manufacturing. Cargo backlogs at its major ports, a shortage of truck drivers due to travel restrictions, and ocean carriers

cancelling sailings became common situations. Sail cancellations resulted in among other things uncertainty in schedules, port congestion, higher freight operating costs and ultimately an unprecedented drop of approximately 10.1% in total container volumes handled at the country's ports (IFC, 2021).

The impact of COVID-19 on the global air transport industry was notably more severe on passenger travel than on cargo movements. In April 2020, air passenger volumes dropped by over 94% compared to April 2019. Interestingly, disruptions in sea freight increased the demand for air freight. This increase, notwithstanding, the global passenger airline load factor still registered a significant decline, dropping to 57.6% in June 2020 from 84.4% in June 2019, primarily due to widespread closure of nonessential businesses. In other words, while there was a surge in demand for air cargo transport, it was not sufficient to offset the substantial decline in passenger travel, resulting in an overall decline in the global airline load factor (Air Transport Action Group, 2020).

Naturally, the long-haul trucking sector which ferries more than 80% of cargo, globally, was also severely impacted by the pandemic, mostly owing to sweeping border closures. For example, in China, long-haul trucking 2020 cargo volumes fell 15% below their 2019 level. Correspondingly, in the European Union, trucks formed 37-mile-long queues on the highway after Poland closed its border with Germany, in March 2020 (IFC, 2021). However, realising the need to facilitate the movement of essential goods (food, medicines, etc.,), most countries eventually opened-up their borders partially.

It therefore follows that COVID-19 had increased the transit time and operational costs of logistics operators worldwide. Border controls tightened, increasing the amount of time transporters spent in transit, thereby increasing their operation costs. To remain operational, some logistics firms had to adapt to new safety protocols to public health regulations, albeit financially costly. In addition to adopting costly health and safety protocols, firms faced reduction in the demand for their services, further compromising their sustainability (World Bank, June 2020).

3.2 Logistics Costs and Transit Times in Most Parts of Africa Increased due to COVID-19

As with the rest of the world, Governments across Africa responded to the COVID-19 pandemic by introducing several measures to contain the spread of the virus (World Bank, 2021). Regional bodies such as the Common Market for Eastern and Southern Africa (COMESA) recommended several measures to member states including travel bans and restrictions, quarantine enforcement on travellers, lockdowns, mandatory testing of drivers at border posts, bans on public gatherings, night curfews, closure of nonessential business activities, formation of COVID-19 task forces, integration of information, communications and technology (ICT), as well as sensitization and awareness campaigns, among others (COMESA, 2020).

While attempts were made to create uniformity in the management of COVID-19, notable differences in national approaches could be observed across the continent. For example, in East Africa, a study by the African Economic Research Consortium (AERC) (2021) observed that most countries in the region held their own standard of border interventions resulting in disputes, delays and congestion at the borders. To reduce these disputes, the East African Community (EAC) published Administrative Guidelines to facilitate the movement of goods and services within the region (EAC, 2020). These measures included the use of ICT for online submission of cargo documents, mandatory testing of truck drivers, relay driving, non-intrusive cargo verification, use of rail transport as a substitute and isolation of customs officers at border posts. Another measure implemented was the introduction of the Regional Electronic Cargo Driver Tracking System (RECTDS) which helped stop multiple testing of truck drivers as they moved cargo within the region (AERC, 2021).

While these measures were necessary to manage the pandemic, they were not without repercussions for transport and logistics operations, as we show in the case of East Africa. The AERC (2021) revealed that in general, East African countries' border crossing times and road freight rates increased in the Northern Corridor. Overall, transportation costs increased by an estimated 48% in the second quarter of 2020 compared to pre-covid levels. Similarly, O'Sullivan et al. (2020) found that COVID-19 containment measures caused major

delays and stoppages of long-haul truckers in some parts of eastern and southern Africa. As such, long queues were reported at border crossings such as Malaba, Beitbridge and Kazungula. The study further revealed that generally, volumes of cargo through the borders declined by between 10-15%.

In another survey, HELP Logistics revealed that the measures meant to minimize the spread of COVID-19 significantly impacted the capacity of freight transport across all modes. Approximately 74% of the respondents interviewed reported reductions in road freight capacity, while 71% and 61% noted reductions in air freight and sea freight capacity, respectively. Further, about 57% and 52% of the respondents indicated a reduction in warehouse and handling staff, and truck drivers, respectively, which they attributed to strict public health requirements for transport and logistics stuff. Lastly, 76% of the respondents perceived operational budgets to have dropped likely due to lower demand for transport and logistics services and higher operational costs, at the height of the pandemic.

3.3 COVID-19 Zambia Response

In Zambia, while the Government did not restrict travellers' entry into the country early in the pandemic, a Presidential directive issued on 25 March, 2020 instructed that all travellers entering the country be screened. Travelers exhibiting symptoms were to be quarantined in a medical facility for treatment while those without symptoms were to be quarantined for 14 days at their own cost. Non-essential travel particularly to countries with confirmed COVID-19 cases were also suspended, and international airports except for Kenneth Kaunda International Airport (KKIA) were closed[2] . These measures, collectively, contributed to the massive decline in air passenger travel. The Zambia Airports Corporation Limited (ZACL) (2021) reports that air passenger travel fell by close to 99% year-on-year (YoY) in April 2020.

As the pandemic continued to evolve, so did the Government's response. With time, all land entry points were subjected to severe immigration controls. From 28 March 2020, truck drivers entering Zambia through Katima Mulilo, Chirundu, Nakonde and Kasumbalesa were tested and detained at the border post pending results. Those that tested negative were released and allowed to proceed and deliver the cargo to the final destination. However, drivers that tested positive were quarantined for 14 days at designated sites including the University of Zambia and Makeni in Lusaka (Kanduza, 2020). Overall, the diversions of the trucks negatively impacted the distribution of cargo and caused commodity shortages in some parts of the country.

The Government acknowledged early on during the pandemic that extending the ban placed on international airports to land ports would be complex as the country shares borders with 8 other countries. The Zambian authorities also realised that managing the "importation" of COVID-19 without some form of collaborative effort with neighbouring countries would be a futile exercise, especially considering that decisions of neighbouring countries would inevitably affect entry into or exit out of Zambia. Regional cooperation was thus seen as essential to combating the COVID-19 pandemic. As such, Zambia committed to implementing protocols set-out by regional bodies, including the Southern African Development Community (SADC) procedures for harmonising and facilitating cross-border transport operations during the pandemic (SADC, 2020).

Following an increase in the number of recorded COVID-19 cases in Nakonde, the Zambian government announced the temporary closure of its border with Tanzania effective 11 May 2020, to facilitate mass

[2] https://zambiahighcommission.ca/wp/statement-by-his-excellency-dr-edgar-chagwa-lungu-president-of-the-republic-of-zambia-on-the-covid-19-pandemic-wednesday-25th-march-2020/

screening, cleaning and disinfection[3] . The closure of the Tunduma-Nakonde border meant the suspension of cross-border public passenger services, railway passenger services and cross-border cargo transportation[4] . Naturally, the closure of the border had an impact on transport and logistics, as it is the main transit point for copper and cobalt exports, as well as fuel imports. The closure of the border left cargo, passengers and drivers stranded for days.

To facilitate the clearance of truckers ferrying essential goods, the Zambian government released national guidelines for screening of COVID-19 and border authorities were directed accordingly. The list of essential goods given priority by customs, immigration and other border agencies included: protective equipment, medicines and medical supplies; food supplies; fuel and other energy related supplies; and security, emergency and humanitarian relief services, among others.

To further ease trade flows particularly in essential goods, Zambia introduced innovative and flexible measures to overcome logistical barriers. The measures included promotion of digital financial services usage to minimise cash money handling and minimise person to person contacts in conducting financial transactions. To that end, the Government waived charges for person-to-person electronic money transfers of up to K150; removing the transaction and balance limits on agents and corporate wallets; and reducing the processing fees for real time gross settlement system. Overall, pre-clearance and e-payment were strongly encouraged to reduce human contact (Kanduza, 2020).

The evidence presented above from both global and regional experiences suggests that a similar impact occurred at the national level as well. However, empirical evidence regarding this impact in Zambia remains limited. This paper endeavors to address this gap by providing insight into the effects of COVID-19 on transport and logistics within the Zambian context. Notably the survey conducted by Impact Capital Africa (ICA), that examined the impact of COVID-19 on firms' employment across different sectors in Zambia is another. The ICA survey revealed that roughly 65% of the transport and logistics firms cut down on their working hours, while 47% retrenched some workers. It is worth noting that when compared to other economic sectors, the transport and logistics sector had the largest number of firms that reported having laid-off their workers (UNCTAD, 2021).

[3] https://crisis24.garda.com/alerts/2020/05/zambia-government-closes-borders-with-tanzania-from-may-11-update-6

[4] https://crisis24.garda.com/alerts/2020/05/zambia-government-closes-borders-with-tanzania-from-may-11-update-6

3.4 Summary

It is clear from the foregoing that the COVID-19 pandemic had far reaching global, regional and local consequences for transport and logsitics operations. Most countries swiftly implemented preventive measures to contain the spread of the virus while also recognising the importance of maintaining the flow of essential goods, continued to support the transport and logistics sector. Despite efforts to mitigate the impacts of the pandemic on the sector, transit times, operational costs, and employment challenges still increased disproportionately. In the following sections, the report delves into assessing the impact of COVID-19 on the perfromance and management of Zambia's transport and logistics operations.

04

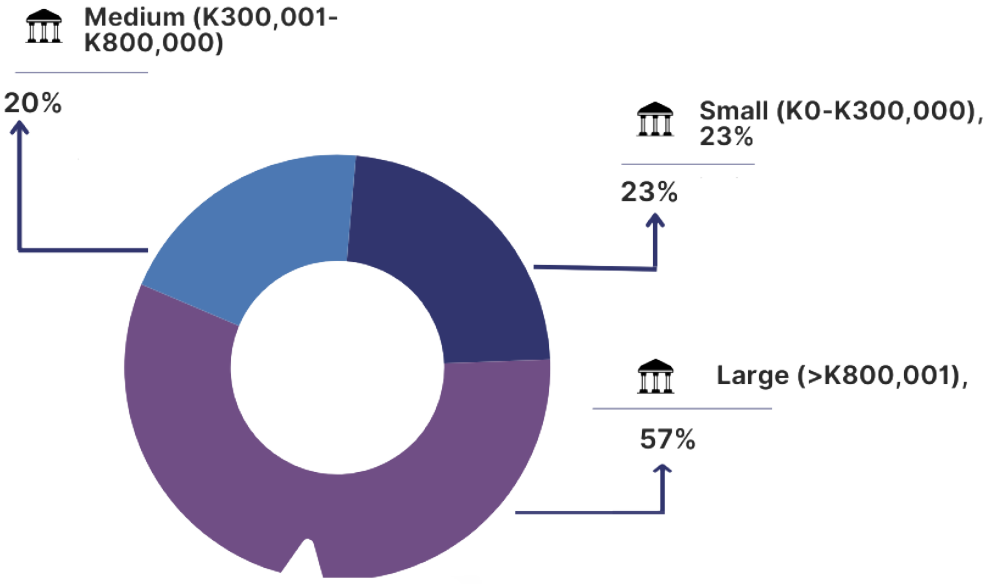
COVID - 19'S IMPACT ON TRANSPORT AND LOGISTICS FIRMS

In this Section, we describe key characteristics of the firms surveyed, and, using descriptive statistics, analyse transport and logistics firms' perceived impact of COVID-19 on different aspects of their operations, particularly employment and turnover. In addition, we analyse firms' perceived impact of changes in logistics management during the pandemic, on their operations. For the most part, the results reported in this Section are based on responses from 57 firms out of a targeted number of 75 firms; where possible, we use secondary data from credible sources to corroborate selected findings. As is typical of most firm surveys, some firms were unable to provide data on their revenues and employment.

4.1 Firm Characteristics: Size, Ownership and Distribution

The majority of firms surveyed were characterised by high turnover activities, with more than half of the firms, registering turnovers of more than K800,001. Premised on the Micro, Small and Medium Enterprise (MSME) Development Policy of 2008's classification of businesses, we categorise the firms in our sample according to their annual turnover (Ministry of Commerce, Trade and Industry , 2008). Out of the 57 transport and logistics firms surveyed, 57% were large, while medium-sized and small firms accounted for 23% and 20%, respectively (Figure 4.1). The dominance of large firms in our sample highlights the challenge of capturing smaller, informal firms, which are prevalent in many economic sectors in Zambia.

Figure 4.1: Firm Size (Annual Turnover)

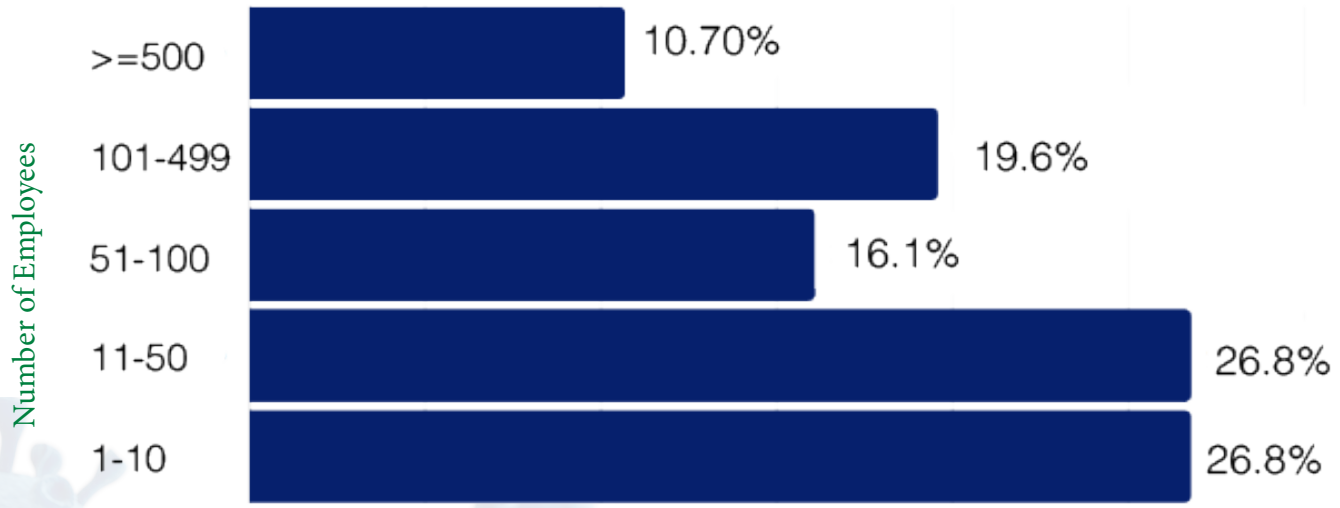


Source: Constructed by author from survey data

While the majority of firms are engaged in high-turnover activities, our findings show that the majority (69.7%) of them employed fewer than 100 individuals. Approximately 26.8% of the surveyed firms employ up to 10 persons, while an additional 26.8% employ between 11 and 50 individuals (Figure 4.2). Furthermore, 16.1% of the firms report employing between 51 and 100 persons. Notably, a combined 30.3% of firms, employed more than 100 individuals. Despite the dominance of large firms in our sample, it is observed that the majority of firms do not employ over 100 individuals, contrary to what might be expected.

These findings are consistent with the 2021 Labour Force Survey, which reveals that the Transport and Storage sector only contributes 4.4% to total employment (Zambia Statistics Agency, 2022). This contribution is significantly lower than the Wholesale and Retail Trade and Agriculture sectors, which contribute 25% and 23.6%, respectively. However, it is worth noting that the transport and storage sector is less labour-intensive compared to the other two sectors. Therefore, these results should be interpreted in consideration to the transport and logistics sector's unique employment dynamics.

Figure 4.2: Firm Employment



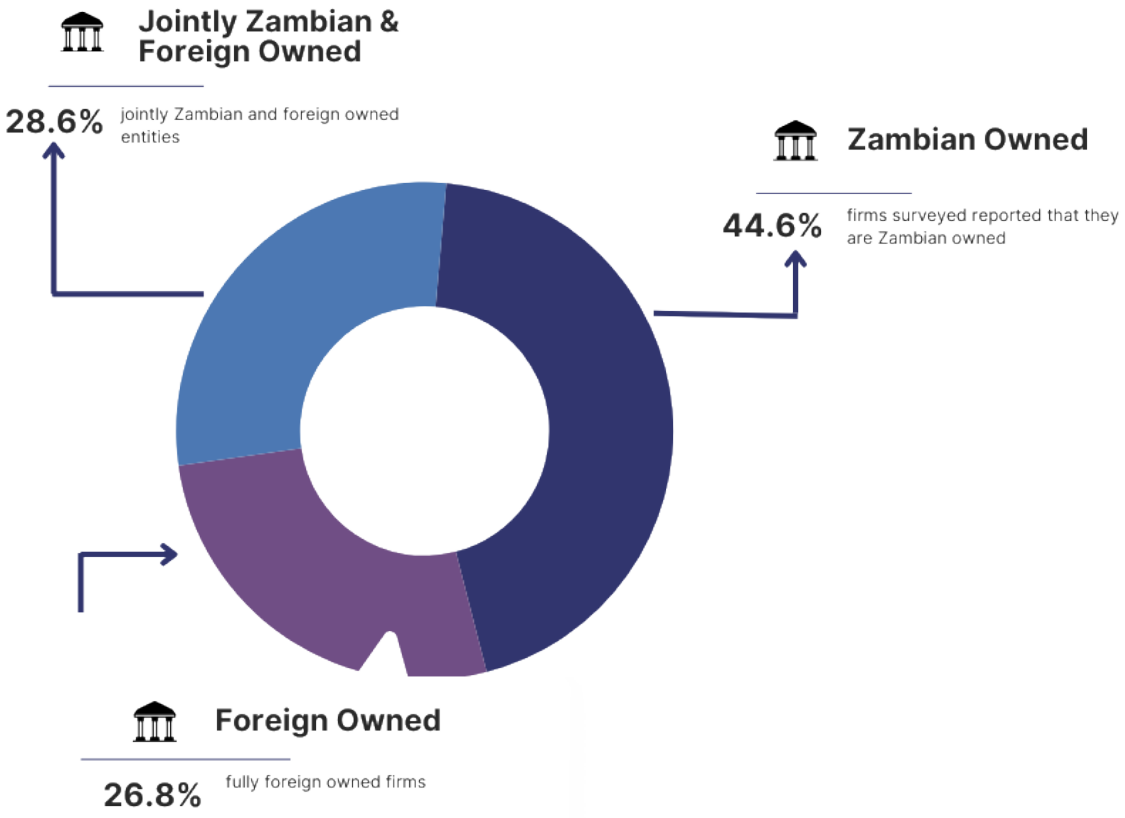
Source: Constructed by author from survey data

Our survey reveals that a significant portion of the firms we surveyed are entirely Zambian owned. Close to 45% of the firms surveyed reported that they are Zambian owned[5],

[5] The Companies Act of 2017 defines foreign companies as those incorporated outside Zambia but registered within its borders while local companies are locally incorporated and registered

with jointly Zambian and foreign owned entities comprising 28.6% and fully foreign owned firms, making-up 26.8% (Figure 4.3). This distinction in the ownership structure of transport and logistics firms carries regulatory implications, particularly when considering taxation, incentives and practices. Discussions with stakeholders in the sector revealed that some businesses, including those with substantial foreign investments, strategically opt to adopt local status to access regulatory advantages and benefits reserved for local entities. Thus, the higher representation of Zambian firms in our sample warrants a closer examination of the motivations behind their incorporation in Zambia, particularly in light of uncompetitive practices associated with firms having a substantial foreign stake.

Figure 4.3: Firm Ownership Structure

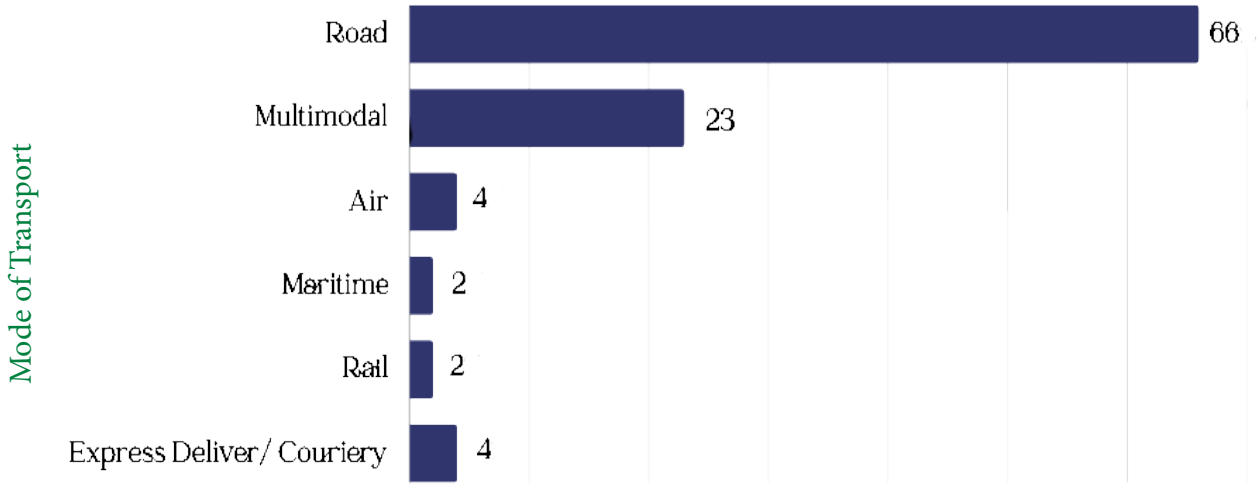


Source: Constructed by author from survey data

Our data suggests that road transport is the primary mode of transportation for firms in our sample. The survey sought to establish the predominant mode(s) of transport utilised by operators. As illustrated in Figure 4.4, a majority of firms (66.1%) primarily engage in road freight, with 23.2% engaged in more than one mode of (multimodal) freight transport services.

Firms specialising only in rail, air, water (maritime) freight services or newer options such as courier services, each constituted less than 4% of the surveyed entities. These results are expected given that more than 95% of Zambian cargo is transported by road, where as air, rail and maritime, collectively account for less than 5% of the country's freight movements (Ministry of Finance, 2021). Given that road transport remained the most flexible option at the height of the pandemic compared to air or maritime transport, it is also plausible that there was a general surge in demand for road freight services during that time.

Figure 4.4: Mode of Transport



Source: Constructed by author from survey data

When asked about the most frequently used transport corridors, the majority of firms (51.8%) indicated that they utilised multiple transport corridors located both in the northern and southern regions of the country. About 12.5%, 10.7% and 5.4% of the firms reported solely transiting through the port of Beira, the Dar es Salaam corridor, and Durban and Walvis Bay, respectively. These observations underscore the flexibility of road freight during the pandemic, as most land borders largely remained open. Understanding which transport corridors are predominantly used holds significance for decision makers, particularly in the context of resource allocation for road and border infrastructure development and maintenance, along these routes. Transport corridors experiencing high levels of congestion may require substantial investments to mitigate bottlenecks and reduce potential delays. Thus, decision makers should prioritise the optimisation of heavily congested transport corridors to ensure the seamless flow of trade and logistics operations.

Freight transport is the core business of the majority of the transport and logistics firms we examined. Given the diverse range of services within the transport and logistics sector, it was imperative to examine how the firms we surveyed were distributed based on their core business activities. Our findings reveal that approximately 70% of the surveyed firms primarily specialise in freight transport. Clearing and forwarding activities are the core focus for 26.8% of the firms, with a smaller proportion engaged in the distribution of goods to various destinations within the country. The predominant focus on freight transport services may indicate that Zambia is lacking in other critical areas of the transport and logistics value chain such as warehousing. The COVID-19 pandemic underscored the need for robust logistics infrastructure, highlighting the importance of warehousing and efficient distribution systems to manage supply chain disruptions effectively. The current distribution suggests a gap in comprehensive logistics services, essential for resilience during crises. Addressing these gaps is crucial for enhancing the country's overall logistics capabilities.

Most of the firms we engaged indicated that they offer logistics services for a wide range of cargo types, and are not limited to a single category. Nearly one-third of the surveyed firms reported that they offer transportation and logistics services for a variety of products, including agricultural inputs, medical supplies and equipment, manufactured goods, machinery, as well as minerals and related products. Among firms focusing solely on one category of cargo, the largest group (25%) exclusively handles imported manufactured products such as vehicles, parts and accessories. This is followed by 17.9% specialising in the shipment of minerals and related products (Table 4.1). This distribution, suggest that much of the demand for transportation services, is largely driven by manufactured products and minerals. This pattern largely aligns with our economic structure, where mineral exports constitute a major portion of outbound trade, while manufactured goods dominate imports.

Table 4.1: Classification of Cargo Transported

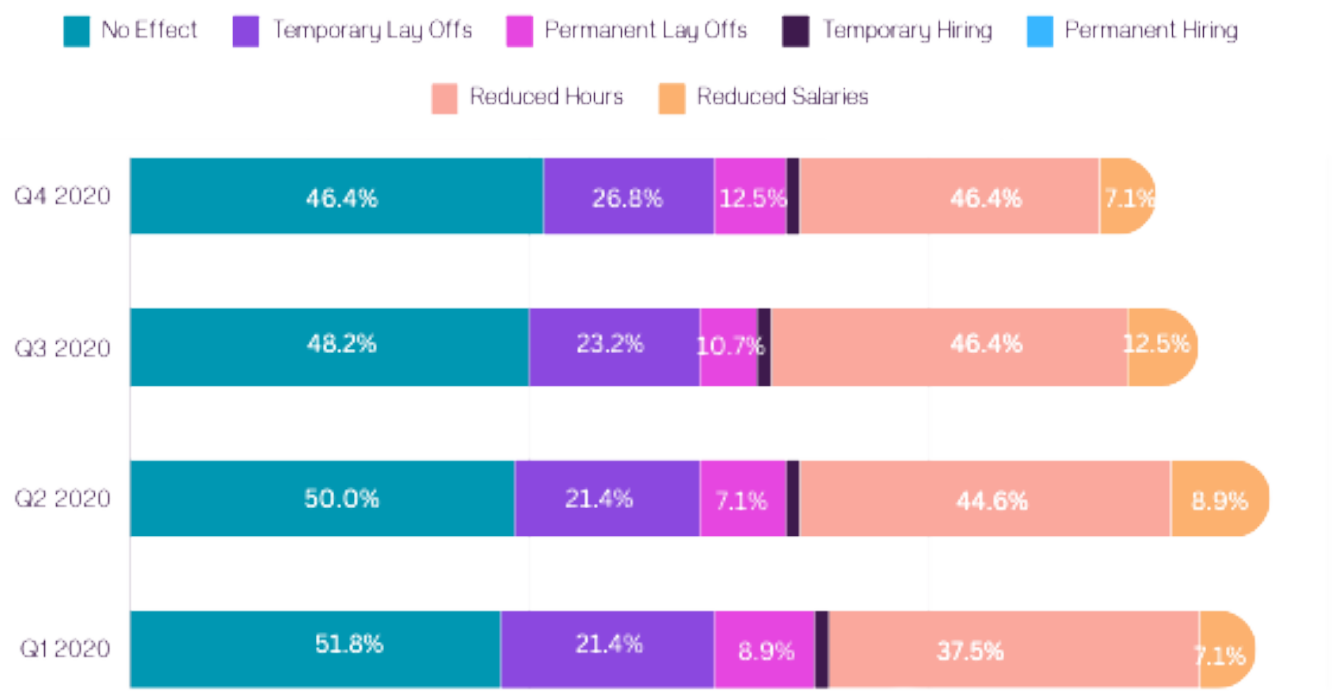
Classification of Cargo	Proportion of firms (%)
Most of the above	30.4
Manufactured Products	25.0
Minerals & Related Products	17.9
Other (specify)	14.3
Food	5.4
Agricultural Inputs	3.6
Medical Supplies & Equipment	1.8
Equipment & Machinery	1.8
Total	100

Source: Constructed by author from survey data

4.2 COVID-19's Impact on Employment

Approximately half of surveyed firms indicated that COVID-19 had an impact on their workforce. When asked about the impact of COVID-19 on their workforce, roughly 50.9% confirmed its effects. Among these firms, about 44% reduced the working hours of their employees in 2020, with the impact being particularly pronounced in the second (Q2) and third (Q3) quarters (see Figure 4.5). This was largely as a result of the requirement to implement compulsory work rotations, which were introduced in Q2 of 2020. While the survey results do not directly show the impact of work rotations on firms, discussions with some operators reveal that smaller firms implemented more significant work hour reductions compared to larger firms. In extreme cases, some smaller firms opted to engage family members during this period of adjustment.

Figure 4.5: Impact of COVID-19 on Employment by Quarter of 2020



Source: Constructed by author from survey data

Despite most firms reporting that they reduced work hours for their employees, only a handful (9%) reduced salaries for their workers. This to some extent demonstrates firms' significant focus in retaining employees during the pandemic, even if it meant reducing their work hours. For firms in the medical logistics maintaining their workforce was a priority due to the surge in demand for critical health supplies including personal protective equipment (PPE). Freight road transport was critical to ensuring uninterrupted flow of critical health supplies.

However, despite the important role road freight operators played in meeting the demand for medical equipment and supplies, some firms faced significant financial strain and had to make difficult decisions, including reducing their workforce to sustain their businesses. The survey data reveals that approximately 23% of the surveyed firms laid off their workers temporarily. This trend was most pronounced during the third and fourth quarters of 2020, coinciding with periods of heightened COVID-19 infection rates. Additionally, approximately one in ten (10%) of the firms, resorted to permanent layoffs as a strategy to navigate the

challenges posed by the pandemic and ensure financial stability. This trend was also particularly acute during the third (Q3) and fourth (Q4) quarters of 2020, reflecting the heightened impact of the COVID-19 pandemic during these periods.

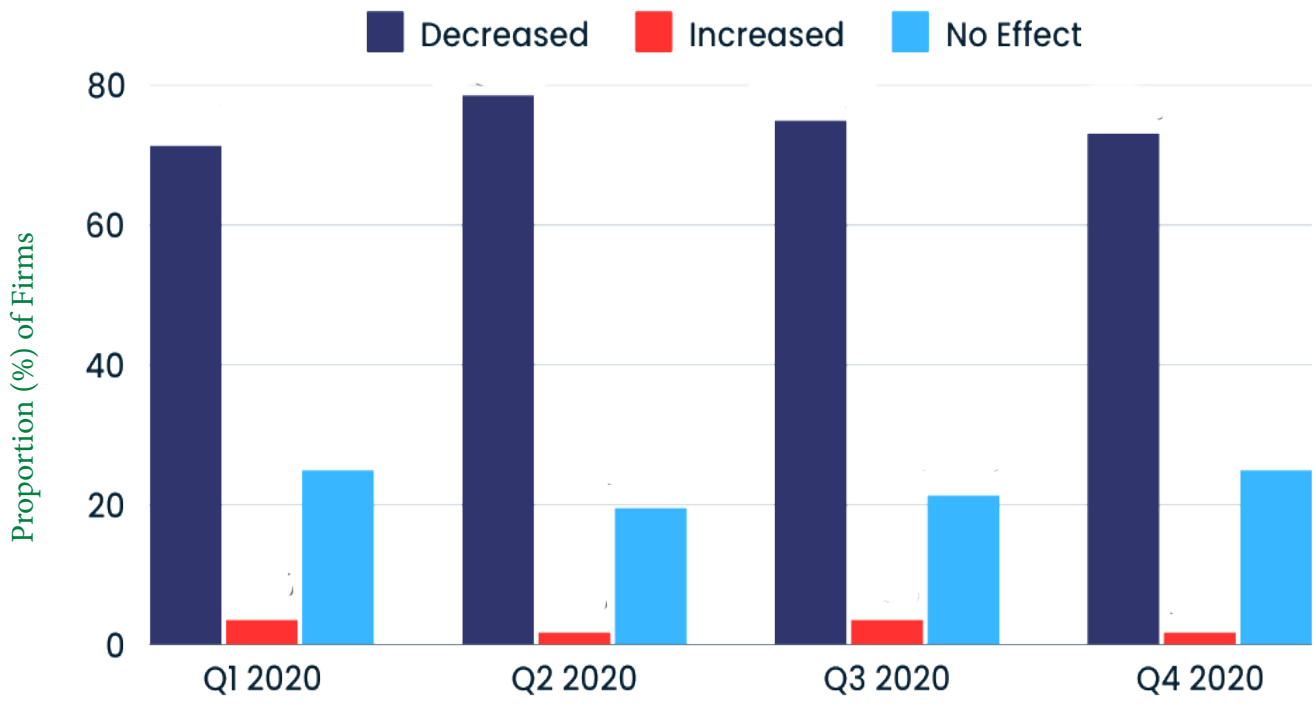
Interestingly, quite a considerable number of firms reported not having experienced any changes to their workforce during the pandemic. Roughly 48% of surveyed firms indicated no impact from COVID-19 on their employment levels, with this percentage gradually declining each quarter. Stakeholder interviews revealed that large firms with robust turnovers and diversified revenue streams, allowing them to pivot operations effectively were more resilient. Further, larger firms demonstrated greater capacity to leverage the rising demand for medical supplies and equipment.

4.3 COVID-19 caused Revenues to Fall for Many Firms

While a considerable portion of firms experienced minimal impact on their employment levels during the pandemic, a significantly larger proportion reported a detrimental effect on their revenues. As shown in Figure 4.6, almost three quarters (74.0%) of firms reported revenue reductions throughout 2020. This decline can be attributed to several factors, notably the decrease in demand for transport services resulting from disruptions in global supply chains. Additionally, subdued consumer demand, stemming from an ailing local economy exacerbated by lower than usual disposable incomes and export earnings, contributed to the decline. (International Road Transport Organisation, 2021) (Ministry of Finance, 2021)

A small number of firms, roughly 2.5%, reported an increase in their revenues during the pandemic in 2020. Several factors could have contributed to this rise, notably the heightened demand for essential goods, as mentioned earlier. Specifically, many countries, including Zambia saw a rise in demand for essential goods including food and medical supplies and equipment. Some road transport operators would have experienced higher service demand to transport essential goods. Similar with the results on employment, albeit to a lesser extent, at least one in five firms (20.0%) reported no effect on revenues in 2020. This subset of firms includes larger enterprises with the financial capacity to diversify their operations at the height of the pandemic (Anjumohan, 2020).

Figure 4.6: Impact of COVID-19 on Firm Revenues by Quarter

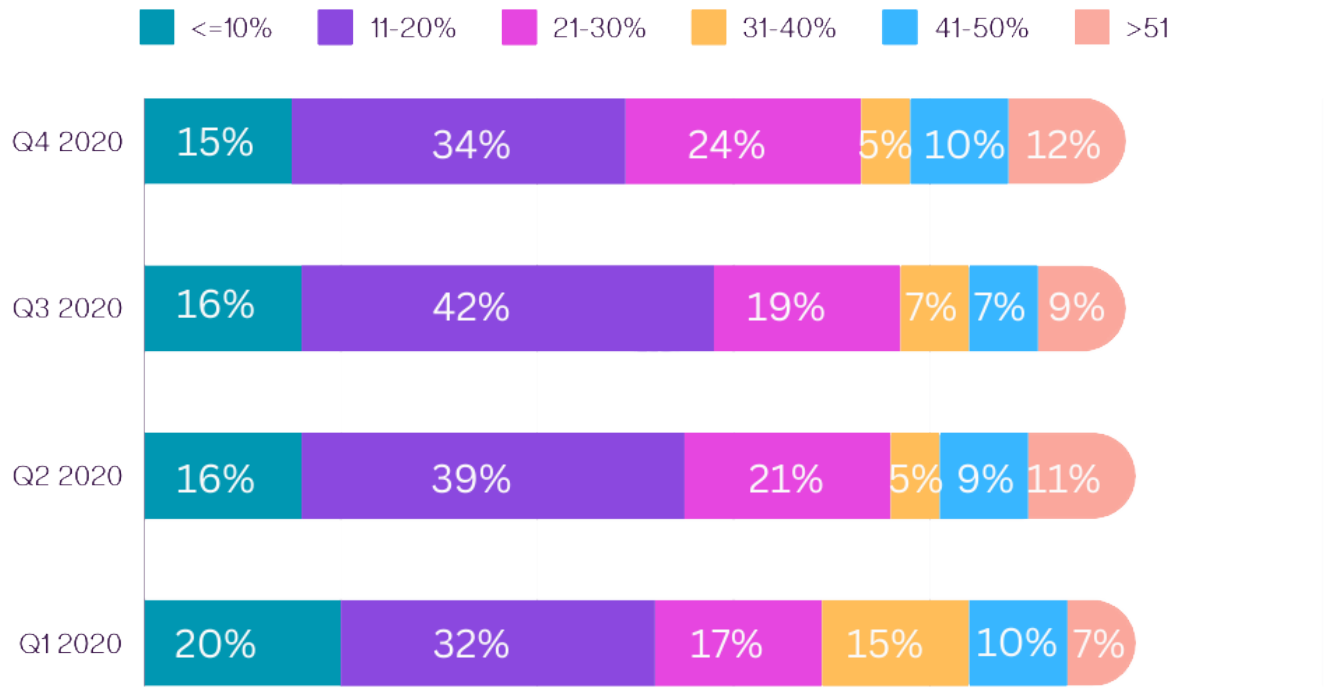


Source: Constructed by author from survey data

We categorised the extent of revenue declines among the firms that reported a decrease, with the majority experiencing reductions ranging between 11-20% in 2020 YoY. At least 32% of the T&L firms reported experiencing revenue reductions of between 11-20% as reflected in Figure 4.7. Similarly, about one (01) in five (05) firms (20.0%) reported revenues reductions ranging between 21-30%, especially during Q4 of 2020. Finally, only about 10.0% of firms on average reported revenue reductions of more than 50.0% in 2020 compared to the same period of the year in 2019.

The above figures demonstrate the varied impacts of the pandemic on the revenues of surveyed firms. Such a result highlights the need for nuanced strategies to support these firms.

Figure 4.7: Approximate percentage of Revenue Reductions by Quarter of 2020

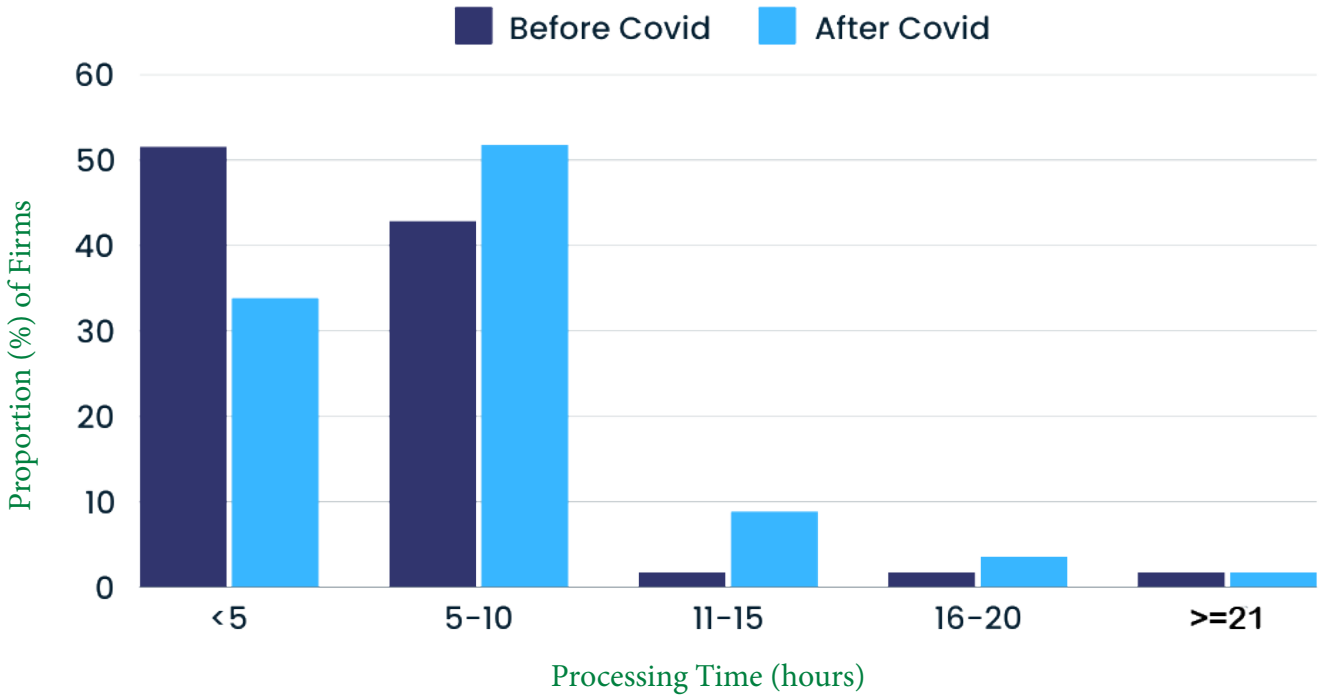


Source: Constructed by author from survey data

4.4 Implications of New Customs Protocols for Firm Operations

Our survey findings reveal an increase in the number of forms required for inspection and customs clearance. The onset of the COVID-19 pandemic brought with it a shift in customs procedures and trade facilitation practices. Driven by the need for stringent health measures, trade facilitation witnessed the emergence of new protocols, tighter border controls and new documentation requirements, impacting both transporters and traders. As shown in Figure4.8, more than half (52.0%) of the surveyed firms reported an increase of about 5-10 clearance forms at the height of the COVID-19 period. Further, almost one in ten firms (9.0%) reported that the forms required increased to as many as 15 during the pandemic. Notably, most of these forms were health-related aligning with the directives of the Ministry of Health.

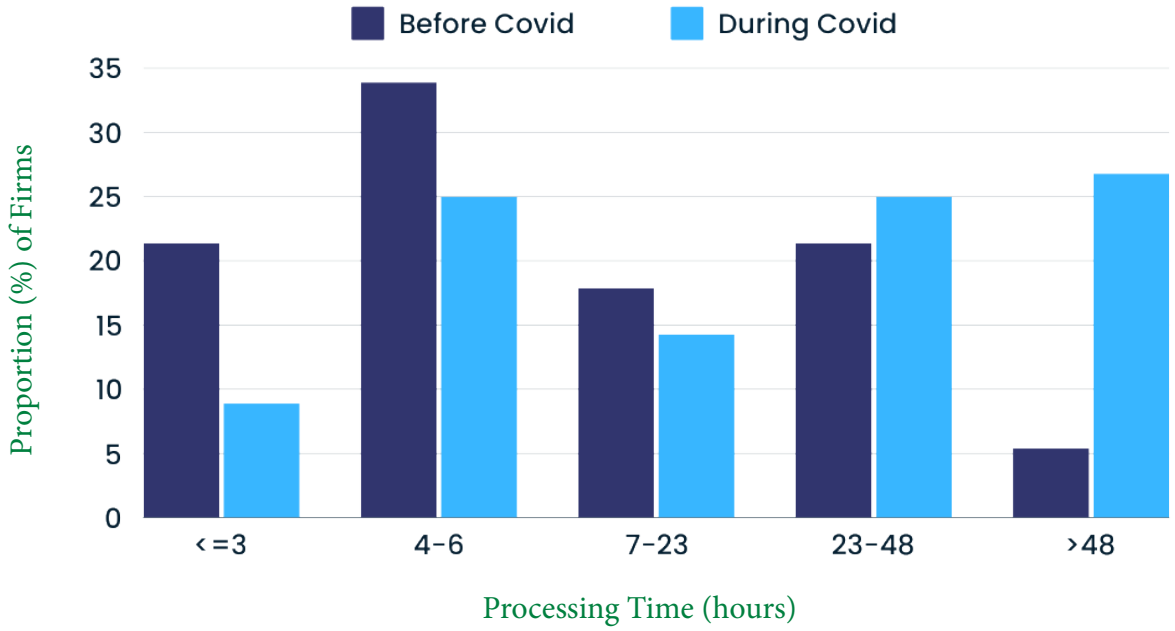
Figure 4.8: Number of Forms Required for Successful Inspection and Clearance of Goods



Source: Constructed by author from survey data

Transporters were particularly affected by pandemic-related restrictions, notably heightened border controls that caused traffic congestion, resulting in delays, a trend reflected in our survey findings. As shown in Figure 4.9, there was a noticeable increase in the processing time for inspection and clearance of goods during the pandemic compared to pre-pandemic levels. A quarter of the firms indicated that it took roughly 4-6 hours to finish processing goods at the border during the COVID-19 pandemic. Equally noteworthy is that a similar percentage of firms (25.0%) reported processing times of between 23-48 hours, with close to 27% indicating even longer processing times extending beyond 48 hours. These findings highlight the substantial service disruptions experienced as a result of tightened customs procedures during the pandemic.

Figure 4.9: Processing Time for Inspection and Clearance of Goods



Source: Constructed by author from survey data

With mounting pressure at the borders, customs authorities had to adopt digital customs systems to expedite clearance of essential goods required to address the pandemic, while keeping regular trade flows moving. To gauge the degree of digitalisation in customs procedures and operations, we asked respondents to rate the extent to which customs processes were digitalised. The majority, approximately 53.6% rated the system as moderately digitalised, while a combined 41.0% expressed that digitalisation was limited. Only 3.6% indicated significant digitalisation, with 1.8% indicating none at all. These findings underscore the need for policy interventions aimed at accelerating digitalisation efforts in customs operations to enhance efficiency, transparency and trade facilitation and to build resilience in the system to withstand global crises such as the COVID-19 pandemic.

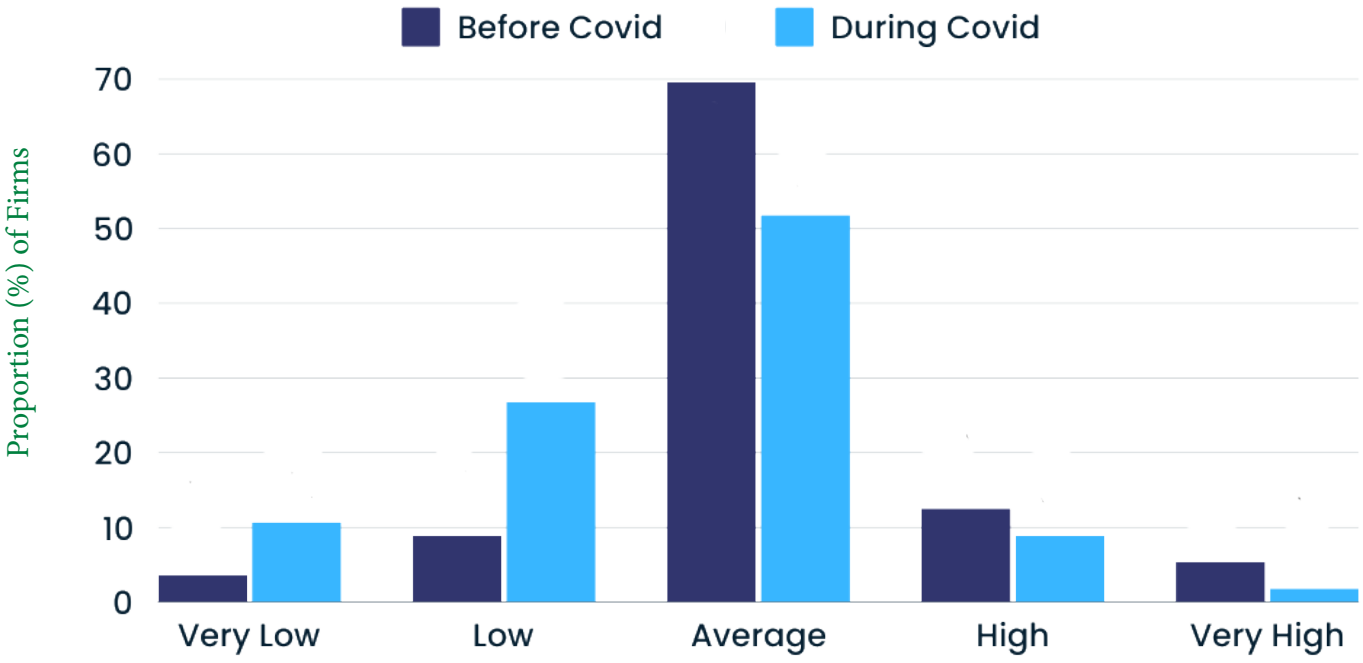
It should, however, be noted that a significant number of surveyed firms reported ability to submit preclearance forms online, signalling a positive advancement in certain aspects of customs processes towards digitalisation. For example, submission of forms that had to be made physically before the pandemic were submitted electronically during the pandemic wherever possible to encourage social distancing (International Road Transport Organisation, 2021). Approximately three-quarters (75.0%) of surveyed firms reported ability to submit preclearance forms online, while 5.4% reported inability to do so, and the remaining 19.6% were uncertain. While it is important to note that significant efforts had been made to transition customs operations to the Automated Systems for Customs Data (ASYCUDA) for online preclearance procedures, it is also noteworthy that some important operations had not been transitioned to ASYCUDA at the time of the survey.

When asked about improvements to the facility for online customs clearance, the majority of firms reported improvements; however, digitalisation gaps remain evident. More than half (57.1%) of the firms surveyed indicated improvements in the online facility, emphasising its importance during the COVID-19 pandemic, while nearly 20% noted a deterioration in the service. Additionally, 14.3% reported no change, and 9.5% were unsure. Nevertheless, the customs clearance delays mentioned previously reflect the persisting gaps in the digitalisation of customs procedures.

While some aspects of border procedures registered some improvements, others deteriorated, notably the duration of physical inspections for consignments. Survey results reveal that during the pandemic, more than a third (35.7%) of firms experienced an increase in the duration of physical inspections. Additionally, nearly a quarter (23.2%) noted no change, and a small fraction (3.6%) claimed a reduction in inspection times. Approximately 37.5% of the firms were unable to discern any changes in the duration of physical inspections. In general, border authorities introduced additional layers to the physical inspection and clearance of consignments to bolster health security and safeguard frontline personnel, potentially leading to the observed increase in inspection time reported by over a third of the respondents.

Additionally, our survey findings revealed that most firms perceived a reduction in the efficiency of customs procedures during the pandemic when compared to pre-COVID-19 levels. Approximately 70% of the firms rated the efficiency of customs procedures as average before the COVID-19 pandemic. However, during the pandemic, fewer firms considered customs procedures to be average. Notably, the percentage of firms rating customs procedures very low and low as seen in Figure 4.10, rises desiring the pandemic period. These findings underscore the importance of implementing strategies to streamline customs processes, reduce delays and enhance overall operational efficiency. Addressing these concerns will contribute to smoother trade flows, economic resilience and recovery in the face of future crises such as COVID-19 (Bank of Zambia, 2022).

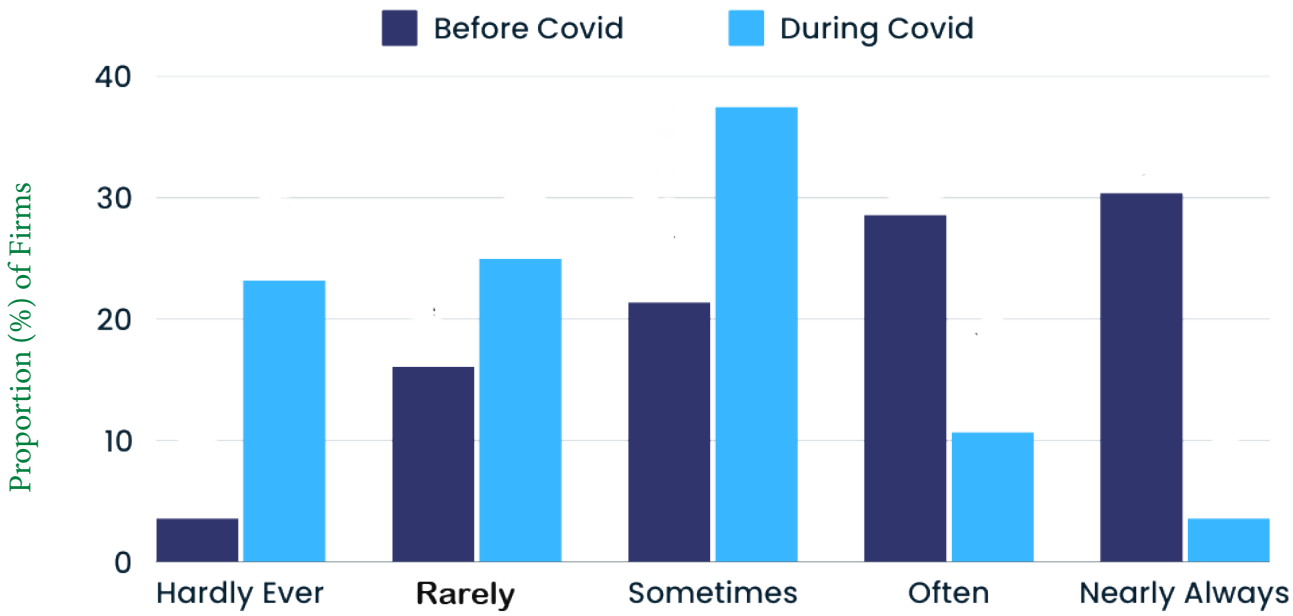
Figure 4.10: Overall Efficiency of the Clearance Process Before and During COVID-19



Source: Constructed by author from survey data

Firms' perceptions regarding the likelihood of their goods reaching the final destination on time during the pandemic, further underscore the perceived delays we observe above. Before COVID-19, 28.6% and 30.4% of firms reported that their consignments often or nearly always reached their final destination, respectively, but during the pandemic, these proportions significantly dropped, to 10.7% and 3.6%, respectively (See Figure 4.11). Conversely, there was a notable increase in the percentage of firms reporting that their consignments hardly ever, rarely or sometimes reached their destination during the pandemic, indicating significant delays experienced by a larger number of firms (Figure 4.16). Predictability of delivery lead times of goods to reach their final destinations is crucial for planning, both for end consumers relying on goods for final consumption and manufactures factoring the consignments into subsequent production processes (World Bank Group, 2020).

Figure 4.11: Likelihood of Goods Reaching their Final Destination on Time



Source: Constructed by author from survey data

4.5 Firms' Utilisation of Information and Communication Tecnologies (ICTs) During the COVID-19 Pandemic

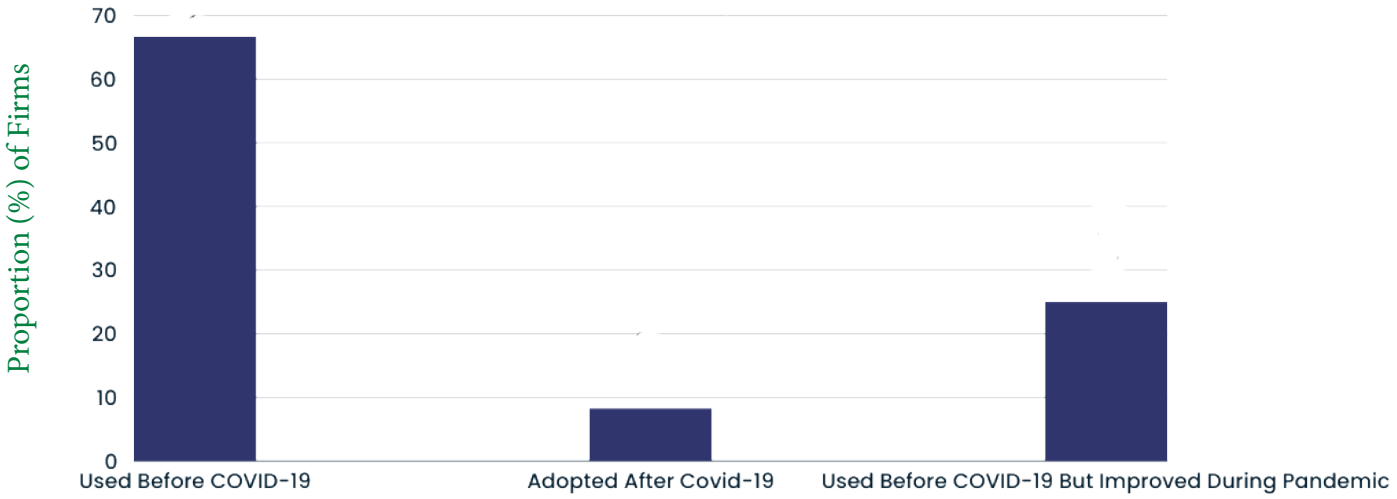
During the COVID-19 pandemic, there was an observable increase in the use of ICTs among transporters, worldwide. This was evident in the adoption of digital platforms for various purposes including remote communication, online document submission, and tracking of shipments. ICTs played a crucial role in enabling remote work and facilitating contactless transactions, thereby helping transporters adapt to the challenges posed by the pandemic and to maintain operational continuity. Social distancing meant that most assembly activities such as planning meetings, brainstorming sessions and other physical engagements had to be conducted online whenever possible (UNCTAD, 2020).

Our survey reveals that a significant portion of the firms we engaged had already integrated ICTs into their operations before the pandemic, the adoption of new technologies in response to COVID-19 was relatively limited. Approximately three quarters (75%) of firms had already incorporated ICTs into their operations before the pandemic, including the use of use of online banking and customs software were prevalent even prior to the pandemic. However, our results show that the adoption of new ICTs in response to the pandemic was modest, with only 33.9% of firms embracing technologies like virtual meeting platforms, online marketing tools and fleet management software, while the rest (66.1%) did not. This suggests that the sector's pre-

existing reliance on ICTs may have mitigated the need for significant technological adjustments during the pandemic.

Our data shows that the majority of firms surveyed were able to track and trace goods using digital platforms even before the COVID-19 pandemic. An overwhelming majority of firms (87.5%) confirmed their ability to track and trace their goods using digital platforms, compared to 10.7% and 1.8%, which do not and were uncertain, respectively. When queried about the presence of this facility pre-COVID-19 or its adoption due to the pandemic, 66.7% reported its existence prior to the outbreak (see Figure 4.12). However, a noteworthy 25% of respondents indicated that while they had this facility pre-COVID-19, its usage was enhanced and became more consistent during the pandemic. Additionally, approximately 8.3% of firms identified this technology as entirely new, introduced as a response to the uncertainties of the pandemic.

Figure 4.12: Usage of Tracking and Tracing of Goods Before and During COVID-19



Source: Constructed by author from survey data

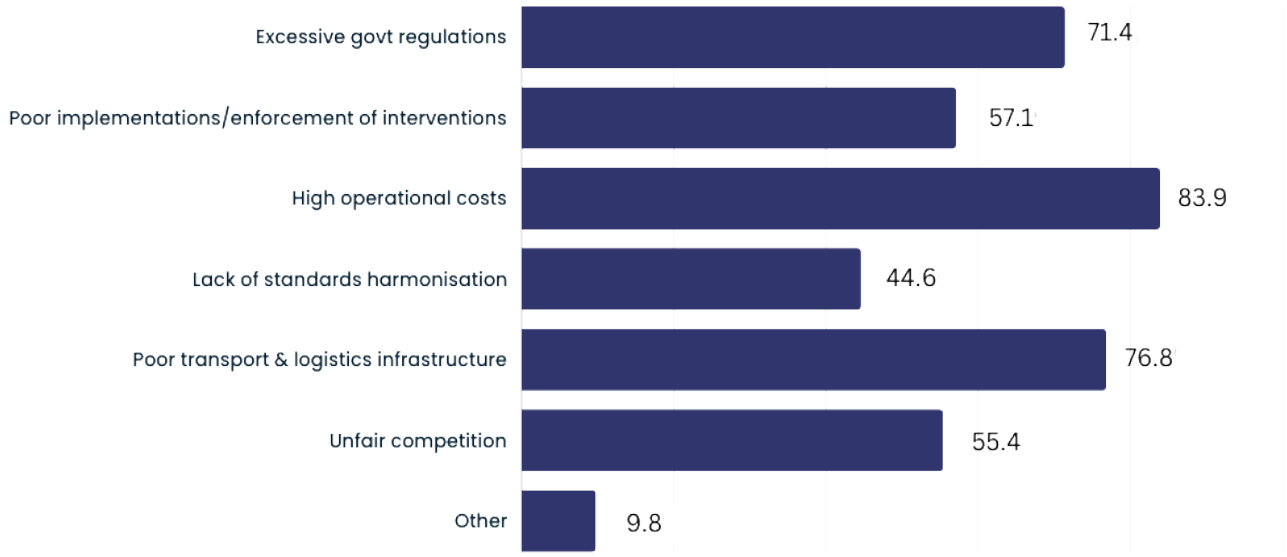
A broad conclusion from this data suggests that the majority of firms had already implemented digital merchandise tracking facilities before the onset COVID-19 pandemic. However, these observations appear contrary to Zambia's ranking on the ease of tracking and tracing of the World Bank's Logistics Performance Indicator (LPI). The country's score, trended downwards from 2.8 in 2007 to 1.9 in 2018, placing it at 158 out of 160 countries in 2018, contrasting sharply from its 2007 position of 64 out of 150. This disparity in results within our sample could potentially stem from the predominance of large firms, which are more likely to have already integrated such digital facilities. Conversely, smaller and medium-sized firms may lack the resources or capacity to adopt similar technologies.

4.6 COVID-19 Amplified Existing Challenges in the Transport and Logistics Sector

The COVID-19 pandemic brought to the fore challenges which were already extant within the transport and logistics sector (Figure 4.13). While the COVID-19 pandemic brought numerous challenges to the transport and logistics sector, several firms reported that the performance of the transport and logistics sector was already being hampered by a number of challenges. Over 83.9% of the firms indicated that the growth of the sector is hindered by high operational costs. These costs, particularly road toll fees and fuel expenses, significantly diminish profitability and create barriers to entry for potential new players. Additionally, respondents underscored the inadequate state of infrastructure, with 76.8% identifying challenges such as poorly maintained roads and inefficient border posts. They noted that deficient infrastructure leads to extended travel durations, consequently escalating operation expenses.

Further, 71.4% of the firms also voiced concerns regarding the stringent government regulations, citing their detrimental impact on operational efficiency. While acknowledging the necessity of regulations for sectoral oversight, respondents emphasised the importance of balancing regulatory frameworks with operational efficiency. Excessive requirements and procedural complexities were highlighted as impediments to seamless operations, with somesectors, such as petroleum transportation, citing burdensome licensing stipulations imposed by regulatory bodies like the Energy Regulation Board (ERB). This drawback underscores the need for regulatory reforms that prioritise efficiency and mitigate the transfer of excessive costs into businesses.

Figure 4.13: Challenges Impeding the Performance and Growth of the Sector



Source: Constructed by author from survey data

Additional challenges cited include unfair competition from foreign owned firms and inadequate implementation of government interventions such as Statutory Instrument No.35 of 2021, which mandates preference for local road transporters in domestic transit and the import and export of heavy and bulk commodities (GRZ, 2021). Going forward, addressing these challenges is crucial if the performance of the transport and logistics sector is to improve. Stakeholders emphasised that merely addressing pandemic-related issues will yield limited results if underlying challenges remain unaddressed.

4.7 Summary

As outlined in preceding sections, the COVID-19 pandemic had varied impacts on the transport and logistics sector. An overwhelming number of firms, experienced considerable revenue losses, leading to reduced work hours and permanent job losses in extreme cases. Moreover, the efficiency of customs procedures suffered too, resulting in delays in transport lead times and reduced reliability in goods reaching their destinations on schedule. Additionally, although some level of digitalisation was evident, especially among firms, further progress is needed, particularly for customs authorities. Beyond, the pandemic's direct effects, underlying challenges persist, including high operational costs, inadequate infrastructure and excessive government regulations.

05
INSIGHTS FROM BORDER AUTHORITIES

In the preceding Chapter, we extensively explored the impact of COVID-19 on transport and logistics operators based on insights gathered from the firms we interviewed. Notably, transport and logistics operators represent only one facet of the transport, supply chains, and logistics. Therefore, this Chapter shift the focus of the paper, also critical players in the overall value chain of transport and logistics, responsible for facilitating cross-border trade. Specifically, we delve into the experiences of selected port authorities in Zambia. Through interviews conducted with these authorities, our objective is to evaluate whether COVID-19 and its associated measures changed the way border clearance procedures were conducted and to uncover the major challenges encountered by the authorities during the pandemic.

5.1 COVID-19 Containment Measures Costed Border Authorities

While essential for public health, strict adherence to COVID-19 protocols imposed financial burdens on border authorities. In compliance with the Ministry of Health's guidelines, for all Zambians to adhere to the Five Golden Rules of COVID-19 which include wearing masks, practicing physical distancing, frequent hand washing or use of hand sanitiser, avoiding crowded places and staying home, and seeking medical attention when symptomatic, border agencies immediately implemented corresponding measures. However, these adjustments came at a cost for the agencies.

When asked about the impact of COVID-19 measures, a number of border agencies expressed concerns over the costs incurred. Essential supplies such as personal protective equipment (PPEs), masks and hand sanitisers had to be regularly procured, adding to operational expenses. Moreover, frequent fumigation of their premises imposed additional costs. In addition, to reduce in-person interactions, border authorities implemented rotational work schedules that minimised the number of staff at work at any given time.

In keeping with these guidelines, certain agencies found it necessary to purchase laptops and internet bundles to facilitate remote work for their employees. Further, border authorities incurred expenses by recruiting additional personnel, referred to as "COVID-19 Marshals", tasked with enforcing the mandated measures. For instance, one stakeholder mentioned modifying ablution blocks (toilets and showers) to provide single access for users in an effort to mitigate the spread of COVID-19. These actions demonstrate the financial burdens and operational adaptations necessitated by the pandemic's containment protocols.

> *... by locking people down, revenues are locked-up, money stops flowing and transport stops flowing...*

While COVID-19 containment measures were successful in curbing the spread of the virus, they affected the revenues of port authorities and by implication the Government's revenue collection efforts. Though quantifying the precise impact of COVID-19 on border authorities proved challenging, we endeavoured to gain insights into their perceptions regarding this impact. Interviews conducted with institutions operating at Zambia's major borders revealed a tangible impact on revenue streams. Consequently, border authorities have been compelled to strategize ways to mitigate revenue losses in anticipation of potential future pandemics.

> *... fewer trade flows meant fewer consignments and hence less revenues from fees for border authorities...*

Furthermore, the widespread closure of borders across the region, including those in Zambia, brought trade flows to a near standstill. This significantly reduced the operational scale of most border crossings. Given that customs clearance procedures constitute a crucial revenues source for the Zambian government, the decline in activities directly affected revenue generation. Parking and inspection fees, along with customs taxes, contribute substancially to the country's domestic revenue collection. Therefore the downturn in operational activity undoubtedly impacted reveneue collections from border authorities.

During the pandemic, border authorities imposed additional charges to cover the cost of adhering to COVID-19 measures. The Democratic Republic of Congo, for example, introduced a $30 fee for operators lacking a valid COVID-19 certificate. While the exact fee increases were unknown at the time of the interviews, border authorities we consulted confirmed the imposition of additional charges to offset heightened operational costs. In response to the financial strain of COVID-19 measures, Zimbabwean authorities doubled toll fees, leading to operators seeking alternative routes to avoid increased costs. This rerouting reduced traffic at certain borders, like Chirundu, with some operators opting to enter Zambia through Mozambique, impacting border operations and by implication revenues.

5.2 It was not Business as Usual for Border Authorities

As expected, the COVID-19 pandemic and its associated guidelines significantly changed the way border authorities conducted customs procedures. To begin with, a significant number of border agency staff contracted the virus, with some reportedly succumbing to it. Consequently, COVID-19 protocols mandated infected personnel self-quarantine for up to two weeks. This, coupled with remote work arrangements, led to a significant drop in on-site staff numbers.

In extreme cases, some border agencies had to cease operations at certain sites due to staffing shortages. Staff apprehension about the odds of catching the virus deepened making it challenging to fulfil staffing and customs clearance. As a result, customs clearance processes slowed significantly, exacerbating operational difficulties at the borders. This validates the discussion regarding the evident increase in the processing time for inspecting and clearing goods experienced by transport and logistics operators at the height of the pandemic.

The COVID-19 pandemic disrupted border processes and complicated the standard operational procedures for border authorities. Adhering to COVID-19 guidelines, such as mandatory testing and acquiring COVID-19 certificates, along with quarantine requirements, prolonged the time spent at borders. Consequently, customs clearance, typically a 2–3-day process, extended to 7 days or more, particularly for operators testing positive for COVID-19, at the height of the pandemic. These delays led to border congestion, and in extreme cases, riots, such as the riot at Kasumbalesa, lasting nearly 3 months. Such disruptions not only complicated border authorities' operations but also hindered normal logistics supply chains, resulting in considerable delays in consignment deliveries to their final destinations, and in the process, affecting businesses everywhere.

Port authorities had no choice but to adapt the way they conducted their business to comply with COVID-19 protocols. Prior to the pandemic, inspections were typically physical, but with social distancing measures in place, authorities reduced physical inspections to protect staff. Instead, they introduced new risk parameters for assessing which consignments required inspections, allowing only high-risk consignments to undergo physical inspections. The remaining consignments were assessed using submitted documents and historical risk assessments. Some authorities also granted conditional releases subject to inland inspection.

Some of the agencies we interviewed advocate for continuing risk-based inspections post-pandemic, arguing that inspecting every consignment is unnecessary given compliance histories.

5.3 The Silverlining of the Pandemic

Amidst the challenges brought about by COVID-19, the pandemic also spurred some positive development in supply chain management and trade facilitation. Notably, it fostered a coordinated response among border authorities. Recognising the importance of collaboration, border authorities united with all stakeholders to effectively respond to the pandemic and adhere to necessary guidelines.

Customs clearance procedures inherently call for some collaboration between institutions as each plays a unique role in trade facilitation. Often, one institution may need to consult another for specific information about a consignment of goods. During the pandemic, almost all the border authorities we engaged reported a notable improvement in communication among boarder agencies. Regular meetings involving all agencies played a crucial role in fostering this enhanced communication.

The ASYCUDA system played a pivotal role in facilitating customs administration during the pandemic by minimising face-to-face interactions while ensuring operational continuity. This automated platform enabled electronic submission and exchange of data and documentation, expediting clearance processes and trade transactions (UNCTAD, 2020). While almost all stakeholders acknowledged its significant contribution, they also identify areas for improvement. For example, although most stakeholders have viewing rights, not all possess the authority to resolve claims on the system, which is deemed counterintuitive. This limitation contradicts the systems purpose of streamlining operations and reducing bureaucratic delays, as it hampers efficient resolution of issues and detracts from the overall efficiency of the digital platform.

Another positive attribute that came with the COVID-19 pandemic was the increased innovation and integration of ICT technologies in customs administration. Many port authorities invested in laptops to facilitate remote work for their staff, albeit limited to institutions with the financial means to do so. Additionally, as most meetings could only be held virtually, border agencies subscribed to virtual meeting platforms, as face-to-face interactions became restricted. At the time of the survey, several stakeholders interviewed revealed that they had continued to hold their meetings virtually.

Stakeholders universally emphasised the need for continuous integration of ICT in customs administration, acknowledging the substantial work that remains. Many highlighted the necessity for greater financial accessibility, particularly in border towns, to facilitate remote transactions and reduce the risk of virus transmission from crowded areas. For instance, in Nakonde, the absence of ATMs accepting cash deposits centralises payments, increasing the risk of exposure. Additionally, stakeholders advocated for leveraging ICT advancements in physical goods inspections. Investments in advanced scanning technologies could enable non-intrusive inspections, effectively mitigating the risks associated with COVID-19 inspections.

5.4 Lessons Learned and Future Preparedness

> *"... The COVID-19 pandemic has opened our eyes and has helped us prepare for future pandemics..."*

The majority of stakeholders we engaged, emphasised the importance of learning from the COVID-19 pandemic to better prepare for future crises. Many border authorities acknowledged that the pandemic had served as a valuable lesson in crisis management prompting them to implement measures to mitigate the impact of similar events in the future. Some committed to ongoing staff training to enhance preparedness and response capabilities, focusing on infection control and prevention strategies.

Moreover, some highlighted the need to maintain and reinforce COVID-19 guidelines, such as hand hygience, social distancing and prompt medical attention in the event of illness. They stressed the importance of raising awareness among traders and personnel to prevent further outbreaks and ensure the safety of all staekholders involved in border operations. In addition, some institutions emphasised the importance of aggressive and widespread information sharing to minimise the risk of future outbreaks. Some even considered establishing permanent COVID-19 response teams to facilitate swift and coordianted responses to any future emergencies.

5.5 Summary

This Chapter underscores the profound impact of the COVID-19 pandemic on customs administration, mirroring the challenges faced by transport operators. Insights gathered from discussions with various border authorities highlight the substantial costs incurred in adhering to health protocols at the height of the pandemic. Moreover, compliance with protocols, coupled with staff apprehension, exacerbated personnel shortages, prolonging the duration of physical inspections and consignment clearances. However, amidst these challenges, innovations such as the revised risk criteria for inspections emerged to alleviate the burden. Notably, the pandemic fostered unprecedented stakeholder collaboration among border authorities, underscoring the importance of stakeholder coordination in crisis management. Most importantly, authorities pledged to implement proactive measures to enhance preparedness for future crises.

06

PUTTING IT ALL TOGETHER: CONCLUSION AND RECOMMENDATIONS

6.1 Looking Back

In this Chapter, we reflect on the main findings of our study regarding the impact of COVID-19 on the transport and logistics sector in Zambia. Throughout our analysis, several key insights emerged:

1 **Operational Challenges:** In general, a substantial number of firms reported workforce adjustments, notably reduced work hours, mostly due to physical distancing requirements. While most avoided salary cuts, about a quarter resorted to permanent layoffs. Further, revenue reductions were reported in close to three-quarters of the firms. COVID-19 protocols added compliance burdens for many of the firms. Heightened border controls led to congestions, extending clearance and delivery times for goods;

2 **Adaptation Strategies:** Despite encountering numerous challenges, firms demonstrated some level of resilience through the adoption of adaptive measures including digitalisation and remote work, among others. Although it is important to acknowledge that some of these measures came a cost for firms. Our findings indicate that many firms had already integrated ICT technologies in their operations, potentially enhancing their ability to withstand the impacts of the pandemic. Additionally, most firms reported that they were already utilising digital platforms to track and trace their consignments;

3 **Challenges for Customs Adminstration:** The COVID-19 pandemic did not just affect operators' experiences with customs administration; it also had a significant impact on customs administrators. Border authorities faced substantial costs in adapting to and complying with COVID-19 measures. In addition, staff apprehension about contracting the virus, combined with social distancing measures, led to a notable reduction in on-site personnel, affecting border operations. This reduction in staff contributed to delays and congestion at some borders across the country;

4 **Spotlight on Existing Challenges:** COVID-19 exacerbated pre-existing challenges facing transport and logsitics operators. Foremost among these is the burden of high operational costs, primarily stemming from elevated fuel expenses and toll fees. Additionally, inadequate road infrastructure maintenance and inefficient border processes continue to impede operators' activities. Moreover, operators idenitfy stringent government regulations as inhibiting, alongside the ineffective enforcement of statutory measures intended to protect local transporters from unfair competition posed by foreign operators.

6.2 Looking Forward

Looking ahead, it is imperative for both transport and logistics operators and administrators to proactively prepare for future pandemics and similar disruptions. Based on our findings, we recommend the following strategies to enhance resilience:

1 **Enhance Transport and Logistics Infrastructure:** Improving transport and logistics infrastructure can significantly enhance the resilience of transporters in the event of a health crisis such as the COVID-19 pandemic. Upgraded infrastructure, including well-maintained roads, bridges, and ports, enables smoother and more efficient movement of goods and people, reducing delays and congestion during health emergencies. Additionally, improved infrastructure enhances connectivity between regions and countries, ensuring continuous access to critical supply chains and markets, even when certain areas are affected by health crises. Modernising border infrastructure and streamlining customs procedures can facilitate faster clearance of goods, minimising delays and bottlenecks at borders during emergencies. Initiatives such as the Transport Facilitation Agreements for the Walvis Bay – Ndola – Lubumbashi Development Corridor and the Lobito Corridor demonstrate promising steps towards improvement;

2 **Invest in Digitalisation:** Transport and logistics operators should accelerate efforts to digitise their operations, including supply chain management, documentation processes and communication channels, to enahnce flexibility and adaptability. Digitalisation enables remote monitoring and management of operations, allowingstaff to work from home during outbreaks. Minimising the risk of virus transmission among employees. Further, digital platforms facilitate contactless transactions and interactions, reducing the need for physical contact during cargo handling, documentation and payments, thereby lowering the risk of virus spread. In addition, digital platforms can facilitate seamless communication and collaboration among stakeholders in the usupply chain, enabling swift coordination of response efforts during pandemics. Overall, investing in digitalisation can equip transport and logsitcs operators with the tools and capabilities needed to adapt, respond and mitigate the risks posed by future pandemics. The Government can support these efforts by providing financial support such as grants, subsidies or low interest loans to assist operators in investing in digitalisation initiatives.

3 **Build Financial Resilience:** Transport and logistics operators need to develop contigency plans and financial reserves to cushion against unforeseen disruptions and minimise the impact on operations and profitability. Firms can do this by exploring opportunities to diversify revenue streams by entering new markets such as e-commerge logistics, last-mile delivery services or providing warehousing solutions. Implementing cost-cutting measures to reduce operational expenses without compromising quality. For example, transitioning to electric trucks could help manage the resick. The removal of import duty on hybrid and electric vehicles is a promising target. Lastly, taking advantage of government support progrommes, grants and financial assistance initiatives can help provide relief;

4 **Strengthen Collaboration:** Efforts to solidify stakeholder collaboration efforts already witnessed. Fostering collaboration among industry stakeholders, government agencies, and international partners to coordinate response efforts to share best practices, can help sustain the moment for collaboration. Firms should also seek to collaborate with industry peers, trade associations, and supply chain partners to share best practices, insights, and resources for navigating the challenges brought about by COVID-19.

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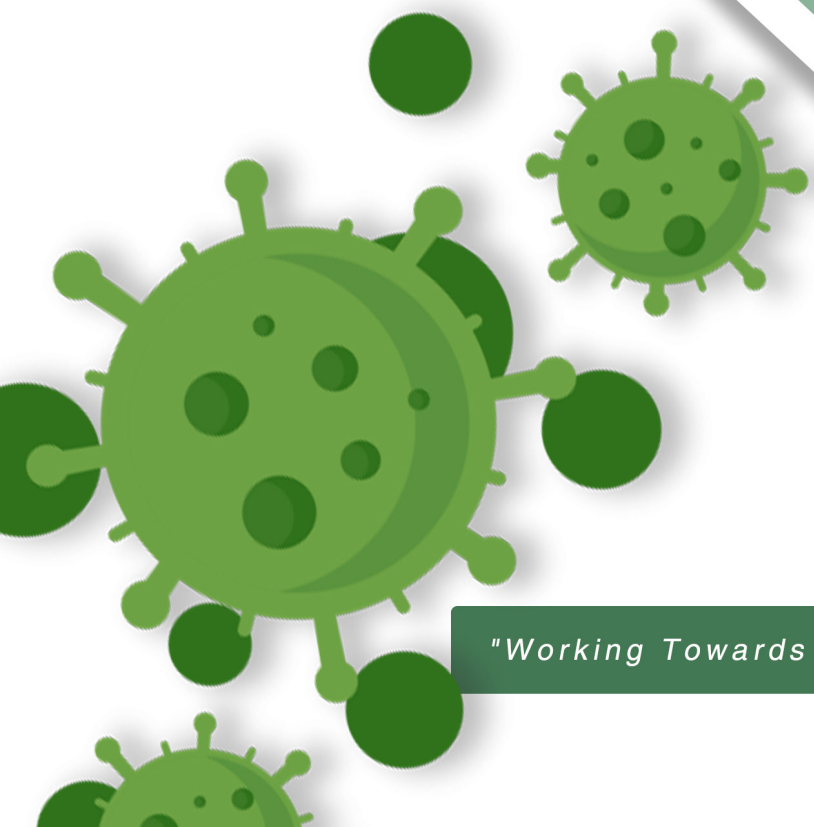
LOOKING BACK AND FORWARD

The Impact of COVID-19 on Transport and Logistics Operations in Zambia



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