



Road Transport and Safety Agency

2021 ROAD TRANSPORT AND SAFETY STATUS REPORT

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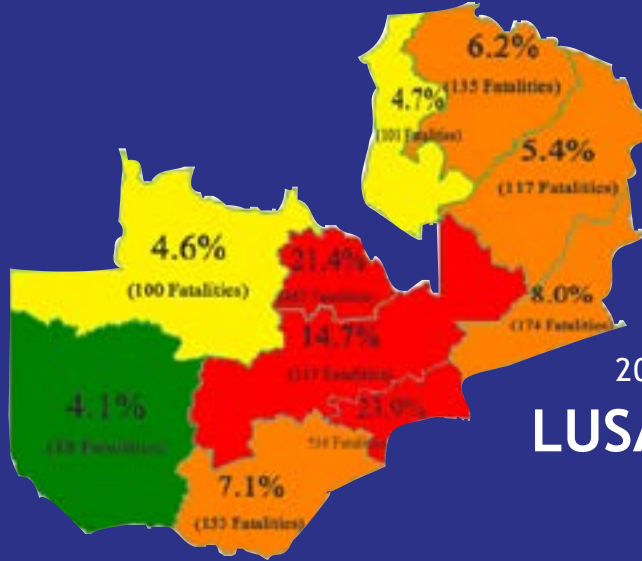
2021 ANNUAL ROAD TRAFFIC CRASH STATISTICS

2,163

ROAD TRAFFIC
DEATHS
were recorded in the
year **2021**

28%↑

compared to the year
2020

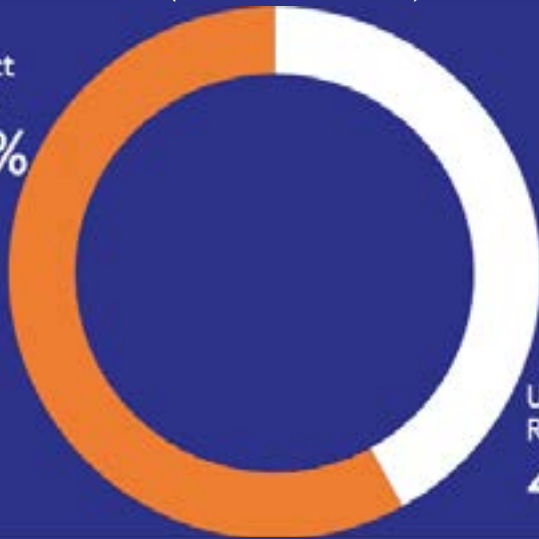


23.9%

of all fatalities in the year
2021 were recorded in
LUSAKA PROVINCE

Fatalities by Urban Roads Vs Rural Roads (Inter Districts)

Inter District Roads
58%



Urban Roads
42%

10%

of persons killed were
CHILDREN



66%

 of fatalities were among
VULNERABLE ROAD USERS

49%



12%



5%

Classification of Casualties 2020 & 2021



■ 2021 Number ■ 2020 Number ● 2021 Percent ● 2020 Percent

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FOREWORD



It is my pleasure to present the 2021 road transport and safety status report based on road traffic crash data compiled by Zambia Police stations across the country.

The purpose of this report is to present an overview of the road safety situation, risk factors, the burden of road traffic injuries on society and possible ways of reducing these road traffic crashes, fatalities and injuries.

This report on the other hand will serve as a handy decision making tool on road safety. Road traffic crashes place a heavy burden on global and national economies and household finances. Many families are driven into poverty by the loss of breadwinners and the added burden of having to care for members who become disabled as a result of injuries sustained in road traffic crashes.

In 2021, Zambia recorded a total of 32,396 road traffic crashes, which resulted into 2,163 fatalities and 5,307 serious injuries. The number of road traffic crashes, fatalities and serious injuries during the period under review rose in comparison to the previous year. The road stretch between Lusaka and Copperbelt had the highest number of crashes. This road stretch associated with high traffic volumes, with some sections of the road stretch in bad condition characterized by edge breaks, deep



2,163 fatalities in year 2021

Number for fatalities increased from 1,690 in 2020 to 2,163 in 2021, a 28% increase in fatalities.

23.4% Decrease in fatalities from 2016 to 2020



11.2: Make cities and human settlements inclusive, safer, resilient and sustainable

7 NDP 2017 - 2021

7.9: Development outcome 6: improved transport systems and infrastructure

49% Pedestrians

Pedestrians are the most vulnerable users, accounted for 49% in the year 2021

88% Human error

Human error predominantly leading cause of RTCs accounting 88% in the year 2021

potholes and ruttings due to heavy cargo transported by road. Travel speeds have also reduced between Lusaka and Ndola to lower than the 100km/h permissible speed limit resulting increased travel time.

This results into panic driving, which has led to excessive speeding, improper overtaking, misjudging clearance distance among drivers and has culminated into head-on collision crashes. Construction of a dual carriage way between Lusaka and Ndola will address the current road safety situation along this road stretch.

Although a high number of crashes were recorded in urban areas due to high traffic volumes, rural areas recorded a high number of fatalities most likely due to high impact of crashes at high speed.

Pedestrian have predominantly been ranking high in road traffic casualties.

A larger proportion of these casualties are recorded on inter urban roads. This pattern has been the same for the past years, suggesting that pedestrians are the most vulnerable road users. Human error is still the leading cause of RTCs in Zambia.

It is my hope that this report will be a useful tool not only for the transport sector but also for other members of the general public.

I now invite you to read the 2021 Annual Report on Road Transport and Safety Status in Zambia.



Gladwell Banda,

Director and Chief Executive Officer
Road Transport and Safety Agency

Executive Summary

This report gives an analysis of road traffic crashes recorded in Zambia from the 1st January to 31st December 2021. Road traffic crashes in Zambia are compiled the Zambia Police traffic section. Road traffic crashes, injuries and fatalities are a growing public health concern which severely affect the poor and vulnerable sections of society. The number of road traffic death have remained unacceptably on Zambia roads.

During the period under review, a total of 32,372 road traffic crashes were recorded on Zambian roads. This number represents a 13.6% increase from 28,484 road traffic crashes recorded in the year 2020. These road traffic crashes resulted in 2,163 road traffic deaths. The number of road traffic deaths increased by 28% from 1,690 in 2020. The analysis, revealed that 66% of the road traffic deaths were among vulnerable road users which includes pedestrians (49%), motorcyclists (12%) and pedal cyclists (5%) who comprise the category of vulnerable road users whose road safety needs have not been adequately catered for in road designs.

A total of 5,307 serious injuries were recorded compared to 4,427 serious recorded in 2020. Slight injuries stood at 9,182 in 2021 compared to 8,190 in 2020.

Lusaka province ranked high and accounted for 17,774 road traffic crashes, while Northern Province had the least with 614 road traffic crashes. Urban roads accounted for 76% of the road traffic crashes while inter district roads contributed 24%. It was established that, of the total fatalities recorded, inter district roads accounted for 58% of fatalities while urban roads recorded 42% of the fatalities.

Results also showed that human errors were the leading contributory factor to road traffic crashes and accounted for 87.85%, other factors included motor vehicle defects (1.25%), road defects (0.32%), weather condition (0.18%) and wandering animals (1.14%) and cause not traced stood at 5.4%. Among human errors, driver error was the

leading contributory factor. The top five predominant driver errors were excessive speed, misjudging clearance distance, failing to keep to near side, cutting in and reversing negligently.

The report further established that the highest number of road traffic crashes occurred at night between 18:00hrs and 20:00hrs while Fridays and Saturdays recorded more crashes compared to other days of the week.

Out of the ten provinces of Zambia, 60% of the fatalities were recorded from Lusaka (23.9%), Central (14.7%) and Copperbelt (21.4%) Provinces. The road stretch between Lusaka and Ndola recorded higher number of road RTCs compared to any road stretch country wide. This road stretch is associated with high traffic volumes, some sections of the road stretch are in bad condition characterised by rutting, edge breaks and deep potholes. Travel speeds have reduced between Lusaka and Ndola to lower than the 100km/h permissible speed limit resulting increased travel time. This resulted into panic driving, which has led to excessive speeding, improper overtaking, misjudging clearance distance among drivers and has culminated into head-on collisions related crashes.

Other risk factors on the rest of the core road network include unsecured broken vehicles which cause obstruction, destructed driving (using mobile while driving, applying markup for ladies), built up areas coupled with road side trading along major highways resulting in high pedestrian exposure, inadequate safe crossing zones in urban areas for cyclists and pedestrians which has increase conflict in road usage with motorists.

Despite an increase in the number of road traffic crashes, injuries and fatalities, the Agency put in various road safety interventions aimed at reducing road carnage, such as road safety education, road traffic law enforcement and road safety engineering. These interventions are highlighted in later section of the report.

Acronyms

CEO	Chief Executive Officer
E-ZamTIS	Electronic Zambia Transport Information System
ICT	Information, Communication and Technology
LMIC	Low and Mid Income Level Countries
MV	Motor Vehicle
NRFA	National Road Fund Agency
RDA	Road Development Agency
RTA	Road Traffic Accident
RTC	Road Traffic Crash
RTSA	Road Transport and Safety Agency
UN	United Nations

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Definitions of Key terms

TERM	DEFINITION
Bus	Includes 'State Transit Authority' bus and long distance/tourist coach.
Car	Includes sedan, station wagon, utility (based on car design), panel van (based on car design), coupe, hatchback, sports car, passenger van and four wheel drive passenger vehicle.
Casualty	Any road user involved in a road crash or an accident.
Damages only	Road Traffic Crashes which do not involve any bodily harm.
Driver	A controller of a motor vehicle other than a motorcycle.
Fatal crash	A crash for which there is at least one fatality
Fatality	A person who dies within 30 days of a crash as a result of injuries received in that crash.
Heavy rigid truck	Comprised of rigid lorry and rigid tanker with a tare weight in excess of 4.5 tones
Heavy truck Injured	A person who is injured as a result of a crash, and who does not die as a result of those injuries within 30 days of the crash
Killed	See Fatality
Light truck	Includes panel van (not based on car design), utility (not based on car design) and mobile vending vehicle.
Motorcycle driver	A person occupying the controlling position of a motorcycle.
Motorcycle passenger	A person on but not controlling a motorcycle
Motorcycle	Any mechanically or electrically propelled two or three-wheeled machine with or without side-car. Includes solo motorcycle, motorcycle with sidecar, motor scooter, mini-bike, three-wheeled special mobility vehicle and moped (motorized 'pedal cycle')
Motor vehicle	Any road vehicle which is mechanically or electrically powered but not operated on rails.
Passenger	Any person, other than the controller, who is in, on, boarding, entering, alighting or falling from a road vehicle at the time of the crash, provided a portion of the person is in/on the road vehicle
Pedal cycle	Any two or three wheeled device operated solely by pedals and propelled by human power except toy vehicles or other pedestrian conveyances. Includes bicycles with side-car, trailer or training wheels attached
Pedal cycle driver	A person occupying the controlling position of a pedal cycle.
Pedal cycle passenger	A person on but not controlling a pedal cycle.

Pedestrian	Any person who is not, boarding, entering, alighting or falling from a road vehicle at the time of the crash.
Road traffic crash	Any apparently unremediated event reported to the police and resulting in death, injury or property damage attributable to the movement of a road vehicle on a road.
Road users	These include all motor vehicle drivers, pedestrians, passengers (motor vehicle, motor cycle and bicycle), motor cycle drivers and cyclists.
Rural accidents	Accidents or crashes occurring outside a radius of 10Km of a Municipal or Township Council.
Serious injury	An injury of severe nature arising from a road traffic crash or accident that usually requires emergency evacuation to a nearest or specialised Hospital or health center.
Slight injury	An injury of less severity in nature arising from a road traffic crash or an accident that is usually in the category of minor bruises which do not lead to evacuation to a nearest specialised hospitalization or health centre.
Urban accidents	Accidents or crashes occurring within a radius of 10Km of a Municipal or Township Council.
Vulnerable road Users	These include all road users' pedestrians such as children, the disabled, the aged, the insane and cyclists who are always competing for road use with motorists.



Introduction

1.0 INTRODUCTION

With about forty five percent (45%) of the population in Zambia living in urban setting and globally about seventy percent (70%) expected to live in urban settings by 2030, increased demand for urban mobility will exceed the capacity of systems that rely largely on private vehicles such as cars and motorcycles (World Bank, 2021).



Zambia's population has increased in the last five (05) years by **22%** from 15,033,833 in 2016 to 18,400,556 in 2021.

With an increase in population, transport plays a crucial role in socio-economic development by providing access for people to markets, healthcare, education, employment, recreation and other key facilities and services.

Zambia has also seen an increase in the motor vehicle population by **29%** from 696,474 in 2016 to 899,186 in 2021.



Investment in public transport systems to facilitate safe and efficient movement of large and growing populations is therefore critical to addressing this issue.

Public transport systems such as buses carry more people compared to private cars and are generally more affordable. They reduce exposure to crashes and are a key avenue to improve safety, as stressed in Sustainable Development Goal (SDG) target 11.2. It has been noted that most people in African countries use road transport and as such many road traffic accidents are reported which results in at least one person being injured or killed.

Multimodal transport and land-use planning may be an important starting point for implementing a Safe System. It establishes the

optimal mix of motorised and non-motorised transport modes to ensure safety and equitable access to mobility, while responding to the diverse needs and preferences of a population.

The World Health Organisation (WHO) in its 2018 Global Status Report on Road Safety, reports that, the number of deaths on the world's roads remains unacceptably high, with an estimated 1.35 million people dying every year. Further, road traffic injuries are the eighth leading cause of death for all age groups as more people now die as a result of road traffic injuries than from HIV/AIDS, tuberculosis or diarrhoea diseases (WHO, 2018). Road traffic injuries are currently the leading cause of death for children and young adults aged 5 to 29 years globally, signalling a largely neglected road safety (WHO, 2018).

In Zambia, despite the number of road traffic fatalities reducing by 3.2% from 1,746 in 2019 to 1,690 in 2020, the overall number of road traffic accidents recorded countrywide are still high standing at 28,484 in 2020 (RTSA, 2021). Lusaka province contributed 15,871 road traffic accidents accounting for 56% of the total road traffic accidents. A total of 14,307 casualties were recorded, of which 12% were fatalities, 31% were seriously injured and 57% sustained slight injuries. A total of 1,690 men, women and children lost their lives with 46% of the road fatalities being pedestrians (RTSA, 2021).

Like many developing countries, Zambia is experiencing a steady increase in motorisation without having adequate road safety systems in place to control the rising number of road traffic crashes. The scale and the severity of this problem is increasing from year to year and adversely affecting the economy of the country in general and the livelihood of individuals in particular. Road traffic injuries

and fatalities cause substantial economic losses to individuals, families, and to the nation as a whole. The cost in terms of human trauma, both physical and emotional may not be quantified and the economic impact that these crashes have on society as a whole is also considerable.

WHO estimates RTCs cost most countries around 3% of their gross domestic product. It is further estimated that the direct cost of road traffic crashes, globally, is something around US\$ 518 billion a year.

In SDG 3.6 road traffic safety is specifically identified.



The road transport system is human-made and the road safety level we have can be controlled. Any organisation influencing the design and function of the transport system should take its part of the responsibility. This approach gives many actors using and acting in the road transport system a new role in delivering safety in products and services. From 2015 and the introduction of SDGs, road traffic safety is an element of health and further, an element of sustainability.

The United Nations General Assembly proclaimed the period 2011-2020 as the Decade of Action for Road Safety, “with a goal to stabilise and then reduce the forecast level of road traffic fatalities by 50% by 2020”. Without interventions, the forecasted fatalities stood at 3,234 implying that by the definition of the decade of action Zambia performed relatively well between 2011 and 2020 towards meeting the target of reducing fatalities by 50% by 2020. In the year 2020 Zambia recorded 1,690 fatalities compared to the decade of action forecasted 1,617 fatalities. The results show that Zambia managed to reduce the fatalities by 48% of the projected fatalities by the year 2020.

Although, there is clearly a certain amount of achievement but still much more remains to be done.

The Road Transport and Safety Agency (RTSA) was established through an act of parliament under the Road Traffic Act No. 11 of 2002 11 of 2002 as a corporate body with a perpetual



succession and common seal with a responsible for implementing the Policy on road transport and traffic management, road safety and enforcement of road transport and safety laws in Zambia. The Agency is mandated by the Road Traffic Act to implement

and coordinate road safety programs that are aimed at reducing the likelihood and impact of road crashes. The Agency is also mandated to undertake activities relating to road transport and traffic.

Effective interventions to this scenario, include designing safer infrastructure and incorporating road safety features into land use and transport planning. This will ensure all roads in cities and many other Zambian towns have enough space for walkways and cycling tracks. These may ensure safety and better health for people that choose to or are obliged to commute through walking.

The increased use of motorised vehicles in Low and Medium Income Countries (LMIC) countries has resulted in greater motor vehicle related injuries and fatalities. For the purpose of ensuring safety for all road users, the Agency has different units in place that take care of road user needs. The Enforcement unit enforce road traffic and safety rules, laws and regulations of Zambia to all Zambian road users through motorized patrols and mounting check points randomly. The Education and Publicity unit conduct awareness campaigns

to all road users to change road user behaviour and attitude, nurture the level of knowledge in order to escalate road safety. The Road Safety Engineering unit conducts routine road safety audits to ensure that all roads are safe for all road users. The Planning, Research and Development unit undertakes various research, monitoring and evaluation of road safety interventions.

The 2021 annual report presents statistics on the road traffic crashes recorded in Zambia. This report also highlights the measures that the Agency is putting in place to mitigate road traffic crashes and makes some recommendations on measures and interventions which needs to be taken.





**Measure Taken by the
Road Transport
and
Safety Agency
in Reducing
Road Traffic Crashes**

2.0 MEASURES TAKEN BY THE ROAD TRANSPORT AND SAFETY AGENCY IN REDUCING ROAD TRAFFIC CRASHES

The Road Transport and Safety Agency (RTSA) implemented its just ended 2019 to 2021 Strategic Plan, whose vision was “A safe, inclusive and economically enabling road transport system” with the mission “To deliver a safe, efficient, client focused and inclusive road transport system which supports socio - economic development”. Strategic Objective number One (SO1) of the Strategic Plan calls for the improvement of Road Transport and has five strategic programmes of which four of them relate to the Agency’s road safety mandate as follows:

- i. Demonstrating leadership role in transport system and safety management;
- ii. Broadening road user education on safety;
- iii. Enhancing the safety of road infrastructure; and
- iv. Enhancing compliance through registration, examination and licensing.

A key focus under SO1 for the strategic period was to ensure that the Agency responds to dynamically expanding transport sector by ensuring improved policies in the development of road infrastructure by learning from on-going road safety audits and inspections and translating findings into improved standards and practices. The Agency will also intensify road safety education programmes and enhance enforcement activities to improve driver behaviours and lower traffic crashes. Success for SO1 will be reflected in the overall reduction of traffic infringements and most importantly, road traffic crashes and fatalities.



In order to increase road safety activities conducted at the national, regional and global levels, the United Nations General Assembly proclaimed the period 2021-2030 as the Decade of Action for Road Safety whose goal is to stabilise and then reduce the forecast level of road traffic crashes and fatalities world wide by 50%.

The United Nations appealed to Member States, civil society, organisations, private and public sector to ensure that the Decade of Action for Road Safety leads to a real improvement. The Global Plan describes what is needed to achieve that target, and calls on governments and partners to implement an integrated safe system. Sustainable transport is essential to achieving most of the goals in the 2030 Agenda for Sustainable Development.

SAFE SYSTEM APPROACH

The Safe System approach is a core feature of the Decade of Action 2021-2030 and recognises that road transport is a complex system and places safety at its core. It also recognises that humans, vehicles and the road infrastructure

must interact in a way that ensures a high level of safety. The Global Plan for the Decade of Action for Road Safety 2021-2030 rejects business as usual and calls on governments and stakeholders to take a new path one that prioritises and implements an integrated Safe System approach that squarely positions road safety as a key driver of sustainable development. It also calls for actions that help the world attain the target of a 50% reduction in the number of road traffic deaths and serious injuries by 2030.

This section of the report presents key areas for action undertaken by the Road Transport Agency to contribute to a safe system. These key areas are;

NATIONAL ACTIVITIES
PILLAR 1 Safe road infrastructure
PILLAR 2 Safer vehicle
PILLAR 3 Safe road user behaviour
PILLAR 4 Multimodal transport and land-use planning
PILLAR 5 Post-crash response
INTERNATIONAL COORDINATION OF ACTIVITIES

The Road Transport and Safety Agency is already implementing activities as follows;

2.1 SAFE ROAD USER BEHAVIOUR



Institutions, civil society organisations and the media to communicate its vision and commitment to safety and service delivery.

2.1.1 BROADENING ROAD USER EDUCATION ON SAFETY

The Road Transport and Safety Agency during the year 2021 concentrated on equipping road users with information and skills on how to avoid risks on shared roads at various levels. The following were the major activities undertaken by the Agency during the year under review;

2.1.1.1 ROAD SAFETY SCHOOL PROGRAMMES

Child pedestrians are amongst vulnerable road users as they have a tendency to dash across roads when crossing. Those of school-going age are placed at a higher risk as a result of exposure to different traffic conditions as they move to and from schools unsupervised. The transport system and road environment is dangerous because children at a tender age tend to play on the roads without taking time to understand the complexities of different traffic situations. They are also vulnerable as passengers because they have little or no control over the persons operating the vehicles they are in. It is against this background that the Road Transport and Safety Agency conducted school road safety education activities in 2021 which were aimed at training and preparing children to become safety conscious road users through the following programmes:

2.1.1.1.1 Road Safety Clubs/Traffic Warden Schemes

During the year under review, the Agency monitored a total number of 267 schools in order to check how the road safety school clubs and traffic warden schemes were performing as well as to evaluate on how the schools were implementing road safety in the school curriculum. Some of these schools were provided with Road Safety materials which included t - shirts for patrons and club members, traffic wardens' uniform, traffic cones, and School Manuals among others.

2.1.1.1.2 Traffic Warden Training

During the year under review, two (2) traffic wardens training were conducted in Lusaka and Solwezi. A total number of thirty-two (32) workers from Chudleigh House School were trained as School Traffic Wardens while twenty-four (24) teachers were trained as traffic wardens from eighteen (18) schools in Solwezi with support from First Quantum Minerals (FQM).

The objectives of the trainings were to equip the wardens with knowledge and skills that would enable them to effectively control traffic and assist learners to cross the roads around school areas. The trainings were also conducted in order to mitigate the Road Traffic Crashes (RTCs) occurring due to the road rehabilitations

and the high volume of traffic along busy roads near the schools.

A total of fifty six (56) traffic wardens were trained from nineteen (19) schools in Lusaka and Solwezi in the year under review.

2.1.1.1.3 Road Safety Sensitisation in Schools

The Agency visited various schools to sensitise learners on road safety during the year under review.

Table 1 shows that a total of 44 schools were sensitised with 12,246 learners reached out to compared to 2020 where 20 schools were sensitised with a total number of 4,193 learners reached out to.

Table 1: Learners sensitised in schools

S/N	QUARTER	2020		2021	
		NUMBER OF SCHOOLS	NUMBER OF LEARNERS	NUMBER OF SCHOOLS	NUMBER OF LEARNERS
01	First	13	1,062	04	972
02	Second	Nil	Nil	17	2,573
03	Third	03	1,421	15	7,089
04	Fourth	04	1,710	08	1,612
	Total	20	4,193	44	12,246



Figure 1: Education Officer sensitising learners at Primary School in Lusaka

2.1.1.1.3 Road Safety School Park

A total of 946 learners from 24 schools were sensitised on Road Safety at the Road Safety School Park during the year under review. There were more learners reached out to at the

School Park in 2021 compared to 2020 where 508 learners from 16 schools were sensitised. The total number of schools that visited the School Park in the year 2021 was 24 and number of learners reached out to was 946.

Table 2: Number of Schools/Organisations and learners sensitised at the Road Safety School Park

S/N	QUARTER	2020		2021	
		NUMBER OF SCHOOLS	NUMBER OF LEARNERS	NUMBER OF SCHOOLS	NUMBER OF LEARNERS
01	First	11	401	05	139
02	Second	Nil	Nil	09	
03	Third	Nil	Nil	01	18
04	Fourth	05	107	09	475
	Total	16	508	24	946



Figure 2: Road safety Sessions at RTSA's School Park

2.1.1.2 ROAD SAFETY SENSITISATION

ACTIVITIES

2.1.1.2.1 Sensitisation of Drivers at Bus Stations and Taxi Ranks

During the year 2021, the Agency conducted road safety sensitisations in various bus stations and taxi ranks. This was done to promote road safety awareness amongst Public Service Vehicle (PSV) drivers. The total number of drivers reached out was 513 compared to the same period in 2020 where 608 drivers were sensitised. The reduction in 2021 could be attributed to the increased number of road safety activities which were sponsored by other stakeholders.



2.1.1.2.2 Workplace Orientation

The RTSA conducted road safety sensitisations in various organisations aimed at equipping their staff with road safety information in order to reduce road traffic crashes and promote good road user behaviour. The workplace orientation programme focused on road safety awareness and basic defensive driving skills. A total of 528 employees were sensitised from 12 organisations in 2021 compared to 446 sensitised from 12 organisations in 2020. The total of organisations reached out to in the year 2021 was 12 with a total number of staff reached out to being 528.



Figure 3a: Road safety sensitisation



Figure 3b: Education Officer conducting road safety sensitisation

2.1.1.2.3 Road Safety Corners in Public Libraries

During the year under review, the Agency set up Road Safety Corners in three (03) public libraries. The following libraries had Road Safety Corners set up:

- i. Mansa College of Education in Mansa
- ii. National Institute of Public Administration (NIPA) Burma Road Campus Library in Lusaka
- iii. Zambia Library Service Library at the Curriculum Development Centre (CDC) in Lusaka.

The Agency provided the libraries with various road safety materials which included thematic brochures, the Zambian Highway Code, newsletters, emergency line cards, National Guidelines for Road Traffic Signing, and Annual Reports. Three (03) Road Safety Corners were set up at libraries both in 2020 and 2021.

2.1.1.3 PUBLIC EVENTS

2.1.1.3.1 United Nations Global Road Safety Week (UNGRSW)

The Agency with support from the United Nations Development Programme (UNDP) commemorated the 6th United Nations Global Road Safety Week which was held from 17th to 23rd May, 2021 under the theme “**Managing Speed**”. Activities during UNGRSW included media activities, installation of thirty six (36) road signs along Great East Road from Kenneth Kaunda traffic circle to Sinjela area (90km) and two (2) road signs along Lumumba road near Matero Boys Secondary School. The road signs were mounted before, during and after the UNGRSW and these included warning signs, information signs and pedestrian crossing signs. The procurement and installation of the road signs was financed by the Road Development Agency (RDA).



Figure 4: Installation of Road Signs

Other activities included speed management and sensitisations in Chirundu District. Promotion of non-motorised transport such as walking, bicycle riding and earmarking pedestrian Spaces during the Car Free Day organised by the Zambia Road Safety Trust (ZRST) which was held in the Central Business District in Lusaka.

2.1.1.3.2 Traditional Ceremonies

The Agency participated at the Coronation Ceremony of Senior Chief Mukuni Ng'ombe at his palace in Chibombo District. The Agency also facilitated for Luapula Province Agency officers to participate in the Mini Mutomboko Ceremony which took place in Mwanabombwe. Various Information, Education, and Communications (IEC) materials were distributed at both events

2.1.1.3.3 World Day of Remembrance for Road Traffic Victims

The Agency joined the rest of the world in commemorating the World Day of Remembrance for Road Traffic Victims 2021. Child pedestrians are among the most vulnerable road users as they have a tendency to dash across.

The event was held on Sunday, 21st November, 2021 under the theme, 'ACT for LOW SPEEDS/

ACT for LOW SPEED STREETS'.

The commemoration was conducted countrywide with the support of various Faith Based Organisations (FBOs). As part the commemoration countrywide, the public gathered at churches and held church services with the clergy taking the lead. The families and accident victims shared their experience about what they have gone through due to injury or loss of a loved one due to road traffic crashes.

The Minister of Transport and Logistics Hon. Frank Museba Tayali, MP, launched commemoration of the event on Zambia National Broadcasting Corporation (ZNBC) TV 1 on Saturday, 20th November, 2021. Hon. Tayali also handed over two (02) electric wheel chairs to survivors of the Kawambwa road traffic accident which claimed the lives of 44 learners of Kawambwa High School on 8th April, 2005.

The Agency facilitated for the World Day Remembrance for Road Traffic Victims to be commemorated in twenty four (24) districts.

2.1.1.3.4 Road Safety Week

The Agency commemorated the 2021 Road Safety Week from 5th to 11th December, 2021 under the theme 'Be a Road Safety CHAMPION - Slow Down!'

2.1.1.4 MEDIA ACTIVITIES

2.1.1.4.1 Radio Programmes

The Agency facilitated for staff and stakeholders to feature on Millennium Radio, ZNBC Radio 2, 5 FM, Live Radio, Modern Voice Radio, and Hone FM Radio where various road safety thematic topics were discussed. The radio programmes focused on road safety matters, the United Nations Road Safety Week, and how to acquire the RTSA Services. The Agency also partnered with Lusaka City Council (LCC) and featured on Millennium Radio and 5 FM Radio to discuss the topic 'Road Safety on Newly Constructed and Expanded Roads'.

A total of 95 radio appearances were made in the year 2021 compared to 139 in 2020. The reduction in the number of radio appearances in 2021 was as a result of the adjustment of the radio schedule from the initial three (03) appearances per week in 2020 to two (02) in 2021 on Millennium Radio.

2.1.1.4.2 Road Safety Radio Dramas

The Agency facilitated for the airing of Road Safety Radio Dramas in various radio stations in the ten (10) provinces of the country. Various radio stations were engaged to air the Road Safety Radio Dramas and a total of twenty (20) radio stations countrywide aired the Road safety dramas.

2.1.1.4.3 Television Advertisements

The Agency facilitated for the airing of Road Safety Television Advertisements on Zambia National Broadcasting Corporation TV1. The advertisements were on the use handheld mobile phone while driving, driving under the influence of alcohol, over speeding, non-use of the seatbelt and inappropriate overtaking.



Figure 3: Print Media in Daily Nation

2.1.1.4.4 Television Drama

During the year under review, the Agency procured for the production of a 13 series road safety television drama. The drama had various road safety themes which included child Safety, drunk driving, over speeding and overloading. The production of the drama was finalised and is yet to be aired. The Agency has also engaged Zambezi Magic for the airing of the drama.

2.1.1.4.5 Print Media

During the year under review, the Agency utilised the print media to promote road safety. It procured road safety columns in the Zambia Daily Mail for the placement of eleven road safety articles, once a week. Some of the articles that appeared in the Daily Nation newspaper during the quarter under review include the following captions.

2.1.1.4.5 Billboards

The Agency installed nine (9) billboards with various Road Safety messages along the Great North Road between Mkushi and Mpika through Media 4 Africa.



Figure 5: Road Safety Billboards

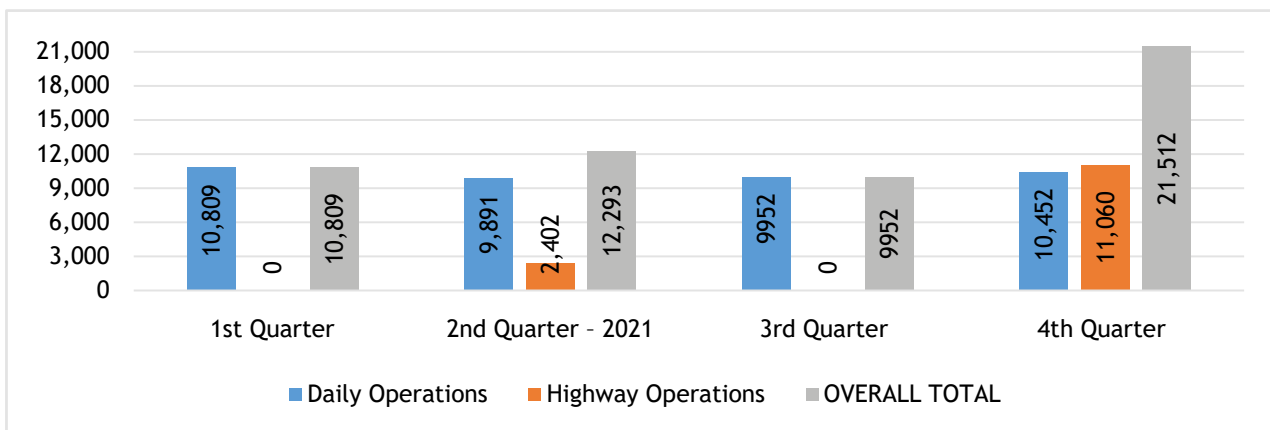


Figure 7: Traffic Offence per Quarter in 2021

2.1.1.5 ENHANCING THE COMPLIANCE THROUGH ENFORCEMENT

Traffic Law Enforcement may be vital in promoting road safety as the Traffic Laws without enforcement cannot achieve the intended objectives.

2.1.1.5.1 Road Traffic Offences Recorded

A total of 54,566 traffic offences were recorded in the year 2021. All these offences were recorded from the daily station operations, highway operations and Smart enforcement using the mobile phone enforcement application. In 2020 a total of 61,488 traffic offences were recorded, hence comparing the two consecutive years we have a reduction in the total number of offences by 11.26%.

2.1.1.5.2 Joint Highway Operations

The Agency conducted four (4) highway operations during the year under review, recording a total of 13,462 offences compared to 2020 which recorded a total of 10,598 offences from the highway operations that were conducted. The patrols were conducted along the Great North Road (GNR) from Ndola to Lusaka to reduce the number of accidents along the said stretch.

2.1.1.5.3 Fast Track Court

During the year 2021, the Lusaka fast track court

dealt with 7,701 compared to 7,656 traffic offences compared with traffic offences in 2020 and 11,126 traffic offences in 2019.

2.1.1.6 COORDINATING ROAD SAFETY AWARENESS WITH OTHER STAKEHOLDERS

2.1.1.6.1 World Bank - Improved Rural Connectivity Project (IRCP)

The Agency conducted road safety awareness campaigns under the Improved Rural Connectivity Project (IRCP) in Chibombo and Mkushi Districts in the year 2021. The campaigns were funded by the World Bank under the Improved Rural Connectivity Project (IRCP). The exercise was designed to educate the communities on road safety and proper road usage in order to prevent Road Traffic Crashes (RTCs).

2.1.1.6.2 World Bicycle Relief

The Agency conducted road safety awareness during the World Bicycle Relief (WBR) bicycle distribution programme in Mumbwa District. The exercise was designed to sensitise learners, parents/guardians, teachers, and other community members on cyclist safety and road safety in general in order to prevent Road Traffic Crashes (RTCs).

Table 3: List of schools sensitised

S/N	Name of School	Number of Teachers	Number of Learners	Number of Parents
01.	Chikanda Primary School	12	500	150
02.	Nakanjoli Primary School	8	580	200
03.	Chipa Primary School	7	546	150
04.	Mobe Secondary School	4	101	134
05.	Nalusanga Primary/Secondary School	6	210	222
	Total	37	1,937	856

The table above shows the sensitisation which were conducted in five (05) schools with total number of 2,830 reached out.

2.1.1.6.3 Lusaka National Museum

The Agency made road safety presentations at the Literacy Programme which was held at the Lusaka National Museum. Forty-five (45) learners were sensitised from Libala and Lotus Primary Schools.

2.1.1.6.4 Zambian Breweries PLC, Drug Enforcement Commission (DEC), and Lusaka City Council (LCC)

The Agency participated in a joint festive season sensitisations initiated by Zambian Breweries PLC. The sensitisations were conducted in collaboration with Drug Enforcement Commission (DEC) and Lusaka City Council (LCC). The sensitisations were conducted on Hone FM, Millennium Radio, Diamond TV and 5 FM Radio. The Drug Enforcement Commission's (DEC) focus area was abuse of alcohol and other drugs during this year's festive season while the RTSA discussed the dangers of drink/drunk driving or driving under the influence of alcohol and general road safety and Zambia Breweries was focusing on responsible drinking.

2.2 SAFE ROAD INFRASTRUCTURE



In order to contribute to the attainment of safer and inclusive roads, the Road and Safety Agency (RTSA),

through the Road Safety Engineering Unit, carries out

Road Safety Audits (RSAs) and Road Safety Inspections (RSIs) and makes recommendations for safety improvement for all road users.

2.2.1 ENHANCING THE QUALITY OF ROAD INFRASTRUCTURE FOR SAFETY AND INCLUSIVENESS

2.2.1.1 Road Safety Audits (RSAs)

A Road Safety Audit (RSA) is a formal procedure for independent assessment of the accident potential and likely safety performance of a specific design for a road or traffic scheme - whether new construction or an alteration to an existing road. The principle behind it is that '*prevention is better than cure*'. A Road Safety Audit identifies any road safety deficiencies in the design stage and recommends ways in which these can be overcome. During the year under review, the Agency conducted five (05) RSAs. The Road Safety Audits included;

- a. Road Safety Audit - Final Design Report for Upgrading to Bituminous Standards of

- Approximately 55km Of Unpaved Roads in Chongwe District
- b. Road Safety Audit Report for The Improved Rural Connectivity Project Package 8 In Northern Province
- c. Rehabilitation/Reconstruction on Approximately 62 KM of the Mazabuka to Monze Town in Southern Province
- d. Road Safety Audit Report for Draft Preliminary Design Report for Upgrading to Dual Carriageway of Approximately 25km Of The Twin Palm Road In Lusaka Province Final Design for Rehabilitation/ Reconstruction on Approximately 62 KM of the Mazabuka to Monze Town in Southern Province
- e. Road Safety Audit Report for Draft Final Design Report for Upgrading to Dual Carriageway of Approximately 25km of The Twin Palm Road In Lusaka Province

2.2.1.2 Road Safety Inspections (RSIs)

A Road Safety Inspection (RSI) is a formal safety performance examination of an existing road. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvement in safety for all road users. During the year under review the RTSA undertook sixteen (16) RSIs while thirty nine (39) RSIs were undertaken in 2020. The inspections conducted included;

- a. Lusaka Decongestion Project - Munali Flyover Bridge, Traffic lights on various roads, Makeni West Outer Ring Road, Sharp curve on Nangwenya Road, Great East Road - Lubuto Road Junction
- b. L400 Project - Lilayi Road 5A and Lilayi Road 5B
- c. District Road Lusaka - Kabwe Road Road Traffic Signs Gap Assessment
- a. Improved Rural Connectivity Project
 - i. RD4-1 between Chimala (junction

- with D1) and Kayambi
- ii. RD61 between Chilundumuzi and Chele Village
- iii. R5 between Chimpemba (junction with M3) and Chipampa
- iv. R337 continuing from R5 at Chipampa

2.2.1.2 Remedial Engineering Measures

During the year under review, Steward Globe (AFRISEED) procured on behalf of the RTSA eighteen (18) assorted road signs. The Road Development Agency (RDA) installed the road signs between Kabwe and Kapiri Mposhi. In the year 2021, the Agency delivered ten (10) warning signs to Road Development Agency Copperbelt Region for installation on the T2 Road between Kabwe and Kapiri Mposhi and the T3 Road between Kapiri Mposhi and Ndola. The Agency also facilitated the installation of six (06) pedestrian crossing warning signs on Lumumba Road as part of remedial engineering measures.

2.2.1.3 Development of the Rural Road Safety Strategy

Road Safety in Zambia is a challenge, with traffic related deaths one of the top causes of unnatural deaths. Fatalities have stabilised at an average of 1,900 per annum (2020 RTSS Report, 2021). Statistics on road traffic crashes in the past few years have indicated an increase of road crashes on inter-district roads compared to urban roads. As part of the implementation of the Improved Rural Connectivity Project (IRCP), the road Sector, through the Agency developed the strategy for rural road safety.

During the year under review, the RTSA printed and distributed 700 copies of the rural road safety strategy to stakeholders. The strategy addresses road safety on rural roads in Zambia to ensure the provision of a long term

safe environment for all users of rural roads and contribute to the overall reduction in road crashes, injuries and fatalities.

2.2.1.4 Crash Risk Mapping (Mapping of Traffic Hotspots in Lusaka)

A cross sectional descriptive quantitative study was undertaken to collect data by means of semi structured interviews from 21 Police stations in Lusaka Province (Lusaka district, Chilanga, Mumbwa and Chisamba). The study aimed at mapping of road traffic hotspots by conducting an analysis of minor, serious and fatal crashes on all the roads of Lusaka for the period 2018-2020. The study was conducted in collaboration with the Zambia Police Service and University of Zambia School of Public Health (UNZA) with funding from United Nations Development Programme (UNDP).

Spatial analysis as a point processing framework, was used to assess the distribution of Road Traffic Crashes (RTC) and identify the Road Traffic Crash Hotspots using spatial statistics in QGIS v 3.20. This analysis involved the combination of methods and techniques of Kernel Density estimation (KDE) and Local indicators of Spatial Association (LISA) to identify areas or locations of highest density of RTCs.

A total of 7,918 RTCs were analysed in which the nature of the crash was stratified in an

ordinal form as slight accidents (crash), serious crash and fatal crash. Out of 7, 918 RTCs 5,411 (68.34%) were slight injuries, 1,644 (20.76%) were serious RTCs and 863 (10.90%) were fatal RTCs. The findings indicated that most of the casualty type for fatal crash were pedestrians with 12.72% of the total crashes, for serious crashes the category other had the highest with 33.33%. For the slight injuries the pedestrians and cyclists accounted for 77.67%. There was evidence of an association between type of casualty and nature of the crashes $p\text{-value} < 0.001$. From the best fit model above, results that after adjusting for confounding variables, only gender, time of accident, types of casualties, number of casualties involved and motor vehicles involved and age were statistically significant.

2.2.1.4.1 Casualty Type and Nature of Crashes

The distribution of the nature of road traffic crashes by casualty type is displayed in the figure below. The figures shows that, predominately, pedestrians were the more vulnerable to road traffic crashes amongst all road users and accounted for a total of 4,246 road traffic crashes between 2018 and 2020, which is distributed as follows, 540 fatal, 927 serious and 2,779 slight.

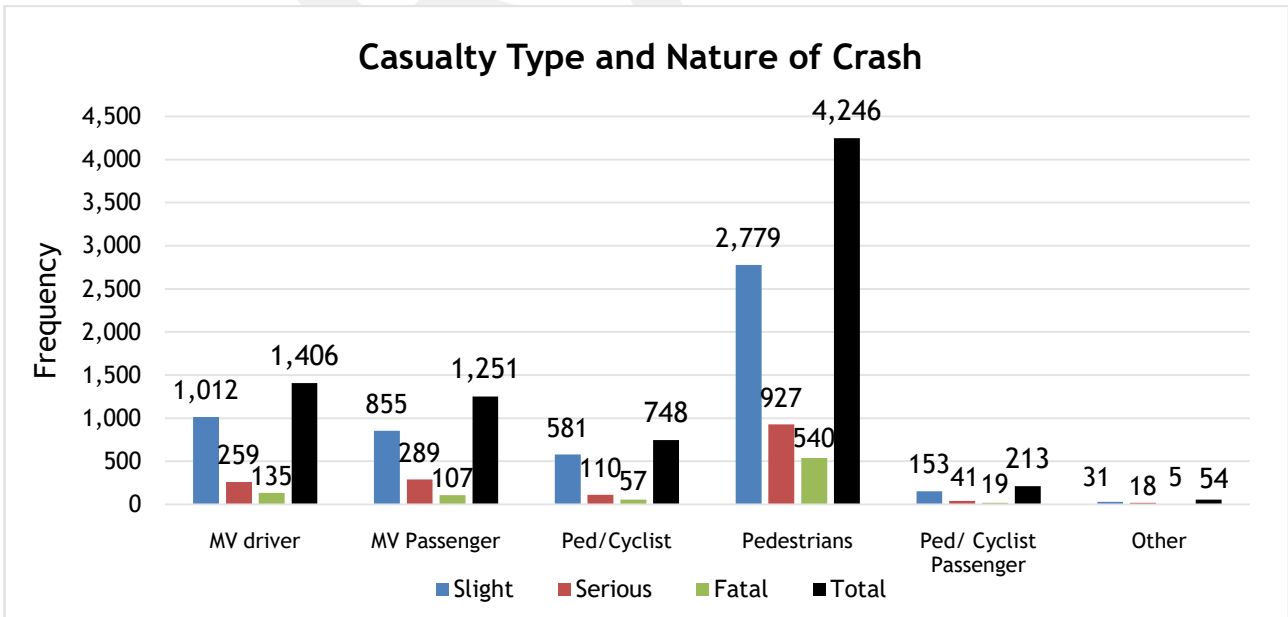


Figure 8: Casualty Type and Nature of Crash (from Hotspots)

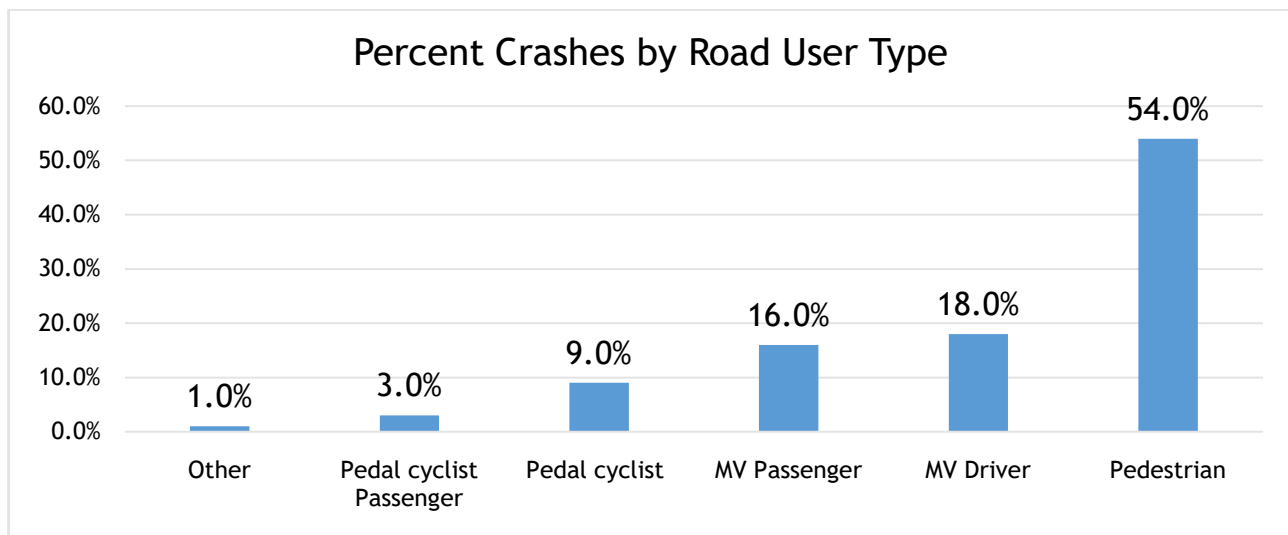


Figure 9: Percent Crashes by Road User Type

A total of 1,406 motor vehicle (MV) drivers were involved in road traffic crashes with 135 classified as fatal road traffic crashes, 259 as serious road traffic crashes and 1,012 as slight road traffic crashes.

Motor vehicle passengers accounted for 1,251 road traffic crashes of which 107 were fatal,

289 serious and 855 slight. The results in the figure shows that pedestrians accounted for 54% of the road traffic crashes followed by motor vehicle drivers represented by 18%. Motor vehicle Passengers were at 16% out of the total 7,918 road traffic crashes recorded in the three years recorded.

Table 4: Top ten hotspots from the survey

SN	ROAD TRAFFIC CRASHES (RTC'S) HOTSPOTS	COORDINATES	FREQUENCY OF RTCs			
			2018	2019	2020	Total RTCs
1	LUMUMBA BUS STATION PREMISES Along mumbwa road, 190m from Lumumba/ Mumbwa road junction Severity: Slight Road Type: Urban	GPS: -15.415507951230692 28.275771997869015 0.0 0.0 Latitude: -15.415507950000000 Longitude: 28.275772000000000	11	26	30	67
2	Kafue Road Mike's Car Wash Severity: Serious Road Type: Urban	GPS: -15.443701615982564 28.272919803857803 0.0 0.0 Latitude: -15.443701620000001 Longitude: 28.272919800000000	23	11	13	47
3	Great east road at Hybrid round about Severity: Slight Road Type: Urban	GPS: -15.38016084320649 28.36381182074547 0.0 0.0 Latitude: -15.380160840000000 Longitude: 28.363811819999999	13	13	18	44
4	Tokyo way and Kasama road Junction Severity: Fatal Road Type: Urban	GPS: -15.456695234971317 28.328620903193954 0.0 0.0 Latitude: -15.456695229999999 Longitude: 28.328620900000001	31	6	5	42
5	Lumumba Road at Buseko Market Severity: Slight Road Type: Urban	GPS: -15.387465624296853 28.267505429685116 0.0 0.0 Latitude: -15.387465620000000 Longitude: 28.267505430000000	16	3	19	38
6	Los Angeles road opposite city Market Severity: Slight Road Type: Urban	GPS: -15.420765284657728 28.277544602751732 0.0 0.0 Latitude: -15.420765279999999 Longitude: 28.277544599999999	11	12	15	37
7	Kafue Road Misisi Foot Bridge Severity: Serious Road Type: Urban	GPS: -15.434794208541268 28.277409151196476 0.0 0.0 Latitude: -15.434794210000000 Longitude: 28.277409150000000	24	10	3	37
8	Los Angeles Road Near City Market Severity: Slight Road Type: Urban	GPS: -15.421317965983524 28.27777225524187 0.0 0.0 Latitude: -15.421317970000000 Longitude: 28.277772259999999	9	11	13	33
9	Nationalist road and Burma road Junction Severity: Serious Road Type: Urban	GPS: -15.437057777247134 28.312101848423477 0.0 0.0 Latitude: -15.437057780000000 Longitude: 28.312101850000001	4	17	11	32
10	Mosi O Tunya Road at Arthur Wina School Severity: Slight Road Type: Urban	GPS: -15.45590933289156 28.34993038326502 0.0 0.0 Latitude: -15.455909330000001 Longitude: 28.349930380000000	4	14	13	31

2.3 SAFE VEHICLES



The government through the Agency has published mechanisms for the periodic assessment of vehicles to ensure that all new and in-use vehicles comply with basic vehicle safety regulations. This includes the mandatory certification and registration systems for new and used vehicles based on established safety requirements and combined with routine inspections. The Agency enforces the regulations for import of used vehicles that are accompanied by inspections at entry points, and mandatory periodic technical inspection of vehicles.

2.3.1 Examinations of Motor Vehicles and Trailers

The Agency conducts examinations of motor vehicles, trailers and drivers. The table below

shows the number of examination transactions recorded. The transactions include

roadworthiness, driver tests among others as shown in table 5. The lowest number was that of mobile examinations and instructor competency tests at 96 (0.02%) and 46 (0.01%) respectively. From the examination transactions recorded, a total revenue of K32.4 million was collected compared to K31.46 million in 2020.

A total number of examinations for the period under review were 652,152 compared to 613,631 in the year 2020 showing 6.3% increase in the number of transactions. The increase was attributed to the moderately increased economic activities and sustained traffic law enforcement during the period under review.

Table 5: Number of Examination transactions for the period under review

No.	Type of transactions	Number of Transactions	Revenue (K)	Percentage (%)
1	Roadworthiness (Test Certificates)	271,508	12,760,876.00	41.633
2	Physical Inspections	142,477	6,696,419.00	21.847
3	Driver practical test	99,306	7,745,868.00	15.227
4	Driver theory test	96,809		14.845
5	Roadworthiness (Certificate of fitness)	40,009	1,889,423.00	6.135
6	Road Traffic Crash (RTC) examinations	1,901		0.291
7	Mobile examinations	96	3,306,244.00	0.015
8	Instructor competency test	46	7,728.00	0.007
Total		652,152	32,406,558.00	100

The highest number of transactions recorded was that of roadworthiness (test certificates) at 271,508 representing 41.6%, followed by physical inspections at 142,477 representing 21.8%, Driver practical test at 99,306 (15.23%), Driver theory test at 96,809 (14.8%), roadworthiness (Certificate of fitness) at 40,009 (6.14%) and Road Traffic Crash (RTC).

2.3.1.1 Examination of motor vehicles and trailers (Roadworthiness test)

The examination of motor vehicles and trailers was conducted in order to ensure that all vehicles that were driven on public roads were roadworthy and to deter the use of unsafe vehicles which compromise road safety.

Two (2) types of tests were conducted namely private (Test Certificate) and Public Service Vehicles (Certification of fitness).

A total number of 271,508 motor vehicles and trailers were examined for road worthiness for the issuance of test certificates against a target of 265,000 of which 263,646 passed while 7,862 failed. Comparatively, 269,081 motor vehicles were examined and 257,941 passed while 11,601 failed in 2020 whereas 267,223

were examined in the 2019 of which 251,941 passed and 15,282 failed. There was a marginal increase in the number of motor vehicles examined for roadworthiness from 269,081 to 271,508 by 0.9% compared to 2020.

a. Private Vehicle Examinations

The figure below shows the number of transactions for roadworthiness examinations conducted on private vehicles for issuance of Test Certificates.

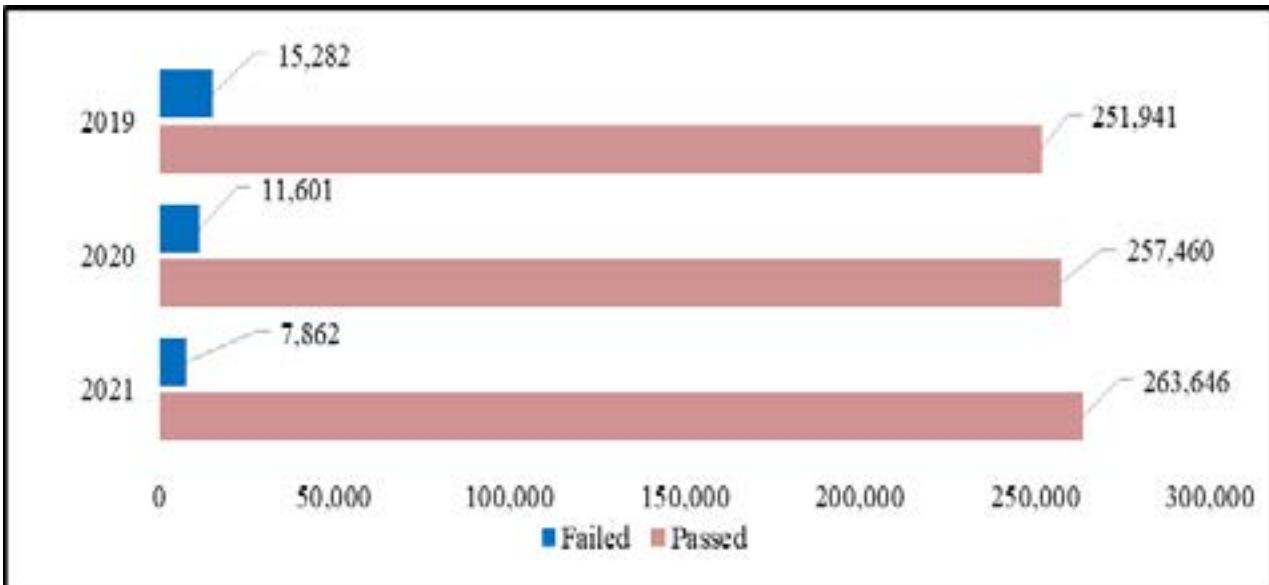


Figure 10: Number of transactions for roadworthiness examinations (Test Certificates)

Lusaka Province recorded the highest number of vehicles subjected to roadworthiness examination with 134,698 (49.61%), followed by Copperbelt Province with 68,003 (25%) and Western Province had the lowest with 3,299 (1.38%).

Comparatively, in 2020, 49,198 Public Service Vehicles were examined and 45,825 passed while 3,373 failed and 40,401 Public Service Vehicles were examined, 36,608 passed while 3,783 failed in 2019. The decrease in number of vehicles tested by 9,189 (23%) was attributed to decreased traffic law enforcement. Copperbelt Province had the highest number of Public Service Vehicles (PSV) subjected to roadworthiness examination with 17,432 (43.6%),

a. Public Service Vehicle (PSV) examinations

Figure above shows the number of transactions for roadworthiness examinations conducted on Public Service Vehicles (PSV) for issuance of Certificate of Fitness (CoF). A total of 40,009 Public Service Vehicles (PSV) were examined for issuance of Certificate of Fitness. Comparatively, in 2020, 49,198 Public Service Vehicles were examined and 45,825 passed while 3,373 failed and 40,401 Public Service Vehicles were examined, 36,608 passed while 3,783 failed in 2019. The decrease in number of vehicles tested by 9,189 (23%) was attributed to decreased traffic law enforcement. Copperbelt Province had the highest number of Public Service Vehicles (PSV) subjected to roadworthiness examination with 17,432 (43.6%), followed by Lusaka Province with 14,200 (35.5%) and Muchinga Province had the lowest with 430 (1.1%).

2.3.1.2 Mechanised Motor Vehicle Inspections

During the period under review a total of 886 vehicles were examined using the mechanised

motor vehicle equipment and 771 motor vehicles passed while 116 failed.



Figure 11: Number of transactions for roadworthiness examinations (Certificate of Fitness)



Figure 12: Vehicle being examined using the mechanised equipment at RTSA Mimosa Station

2.4 POST-CRASH RESPONSE



Post-crash care and survival is extremely time-sensitive: delays of minutes can make the difference between life and death. For this reason, appropriate, integrated and coordinated care should be provided as soon as possible after a crash occurs.

2.4.1 Increase Coverage of Emergency Care

As part of the implementation of the Memorandum of Understanding (MoU) on Road Safety, the Ministry of Health has procured 150 ambulances

some of which will be used solely for emergency response. Further the Road Transport and Safety Agency has procured four sets of crash extraction equipment and will ensure appropriate training of technicians in rescue operations and handling of crash extraction equipment.

Zambia is in the process of introducing a motor vehicle accident fund (MVAf) fashioned on the models found in Botswana, Namibia and South Africa. Coming from the fuel levy, this fund will be designed to take care of needs of road traffic accidents' victims from the accident scene surveillance and rescue through medical care, trauma care, rehabilitation and re-integration.

Some of the interventions undertaken in an effort to increase coverage of emergency care include;

2.4.1.1 Hospital capacity building in Trauma Management

1. Creation and strengthening of trauma teams through regular short courses
 - a. Zambia Trauma Management Course
 - b. Basic Emergency Care Course
 - c. Primary Trauma Care Course
 - d. Advanced Trauma Life Support etc.
2. Introduction of Emergency and Trauma Nursing in 2019
 - a. First and second classes of 38 and 18 respectively graduated in 2019 and 2020 and deployed in various facilities
3. Supporting of training for Emergency Physician (Doctors)
 - a. Three (3) so far graduated from South Africa and deployed at Ndola Teaching Hospital, Levy Mwanawasa University Teaching Hospital and University Teaching Hospitals

2.4.1.2 Development of Long Term Trauma care and rehabilitation capacity

As part of capacity building in trauma care and rehabilitation, the Ministry of Health is constructing and upgrading trauma centers at Liteta, Kabwe General Hospital, UTH, Nyimba, Ndola and Chitambo Hospitals.

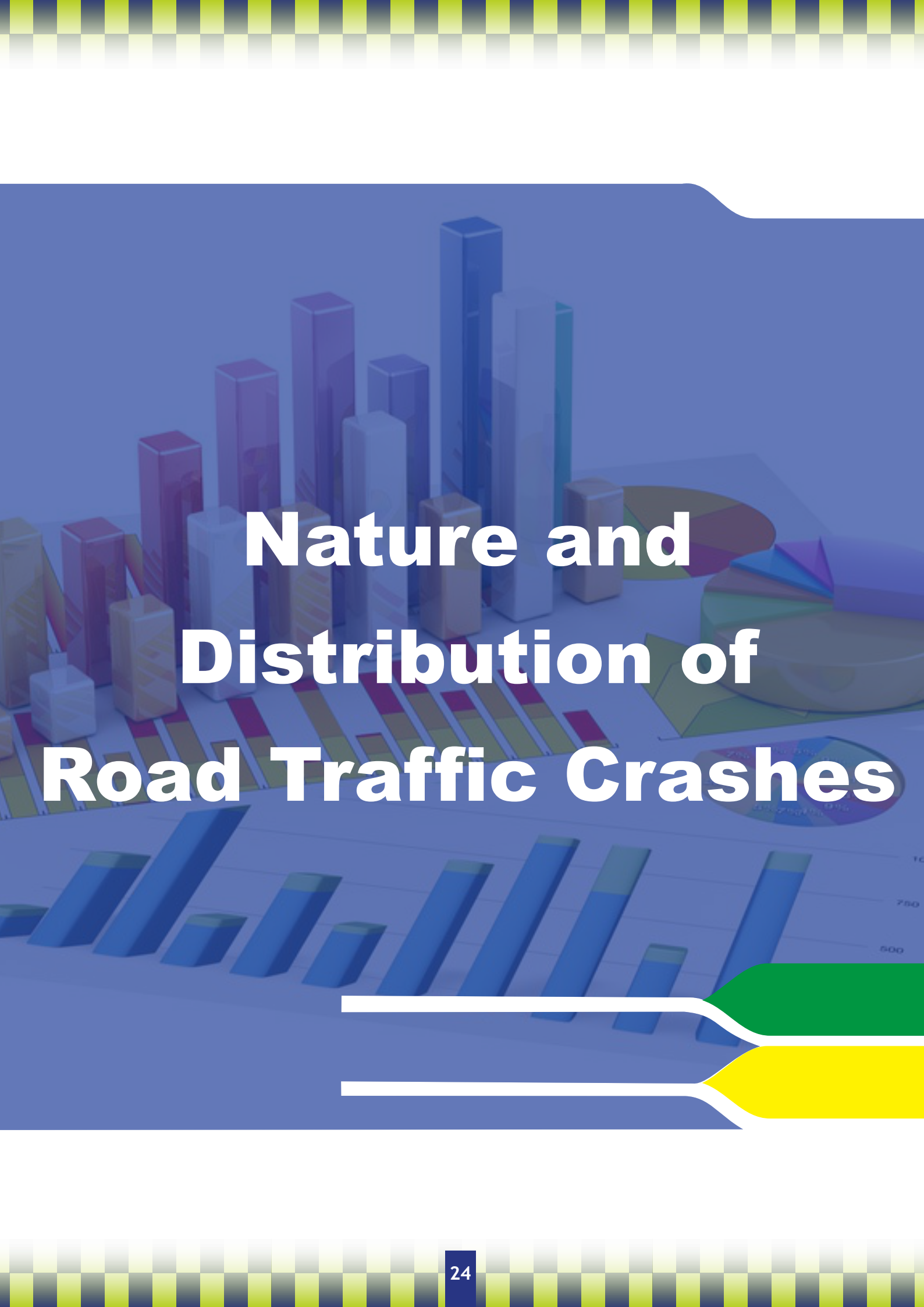
In addition, there is an initiative being mooted between the Agency and the Surgical Society of Zambia to conduct trauma care training for PSV drivers as they are likely to be the first persons at an accident scene involving a PSV vehicle. Lay person responders have been trained along the road stretch from Mazabuka toimba by the Ministry of Health. RTSA has also trained first Aid responders in schools.

The Agency is in the process of concluding a MoU with the Defence Forces in order to co-operate in emergency situations with a view to implementing the 4th Pillar of the UN 2021-2030 Decade of Action and Road Traffic Law Enforcement. It is intended to cooperate in a bid to reduce road carnage through road traffic law enforcement and the handling of emergencies that follow a road traffic accident through the provision of post-crash care by air lifting road traffic accident victims.

2.5 MULTIMODAL TRANSPORT AND LAND-USE PLANNING



With a larger proportion of the Zambian population expected to live in urban areas by 2030, increased demand for urban mobility will exceed the capacity of systems that rely largely on private vehicles such as cars. Investment in public transport systems to facilitate safe and efficient movement of large and growing populations is therefore cardinal towards addressing this issue. Public transport systems such as buses and commuter trains carry more people compared to private cars and are generally more affordable. They also reduce exposure to crashes and are a key avenue to improve safety, as stressed in SDG target 11.2. Zambia is in the process of introducing mass bus transits to decongest the central business district.

The background features a 3D visualization of data. On the left, there is a cluster of vertical bars in various shades of blue and purple. On the right, there are several pie charts, some of which are exploded to show individual segments. The overall scene is set against a dark blue gradient background.

Nature and Distribution of Road Traffic Crashes

3.0 NATURE AND DISTRIBUTION OF ROAD TRAFFIC CRASHES

This section describes the nature and distribution of the road safety statistics during the year under review.

3.1 Road Traffic Crashes by Province

The road traffic crashes in Zambia are classified according to the severity of the

crash, which can be a fatal crash, serious injuries, slight injuries and/or damages only. During the year 2021, a total of **32,372** road traffic crashes were recorded in the countrywide. This number represents a 13.6% ($n = 3,888, N = 28,484$) increase from 28,484 road traffic crashes recorded in the year 2020.

Table 6: Distribution of Road Traffic Crashes

PROVINCE	FATAL	SERIOUS	SLIGHT	DAMAGE ONLY	TOTAL
Lusaka	488	792	2,924	13,570	17,774
Copperbelt	273	510	1,036	3,286	5,105
Central	267	388	547	1,508	2,710
Southern	120	224	417	928	1,689
Eastern	160	209	359	423	1,151
Northern	102	128	161	223	614
Luapula	89	203	188	299	779
North Western	94	201	286	612	1,193
Western	74	157	178	326	735
Muchinga	90	176	135	221	622
TOTAL	1,757	2,988	6,231	21,396	32,372

The table above displays the nature and distribution of road traffic crashes by province. Predominately, Lusaka province recorded the topmost in all classifications of road traffic crashes recording a total of 17,774. Northern province recorded the least number of road traffic crashes with a total 614 crashes. Lusaka province recorded the highest number of fatal road traffic crashes standing at 488 while Luapula province recorded the least fatal crashes with 89 fatal crashes.

Figure 10 compares the number of road traffic crashes by province that were recorded in 2020 compared to the year 2021. The larger proportion of road traffic crashes were recorded in Lusaka province followed by the Copperbelt province. Nine provinces recorded an increase in the road traffic crashes while for Muchinga province recorded a slight reduction in the number of crashes.

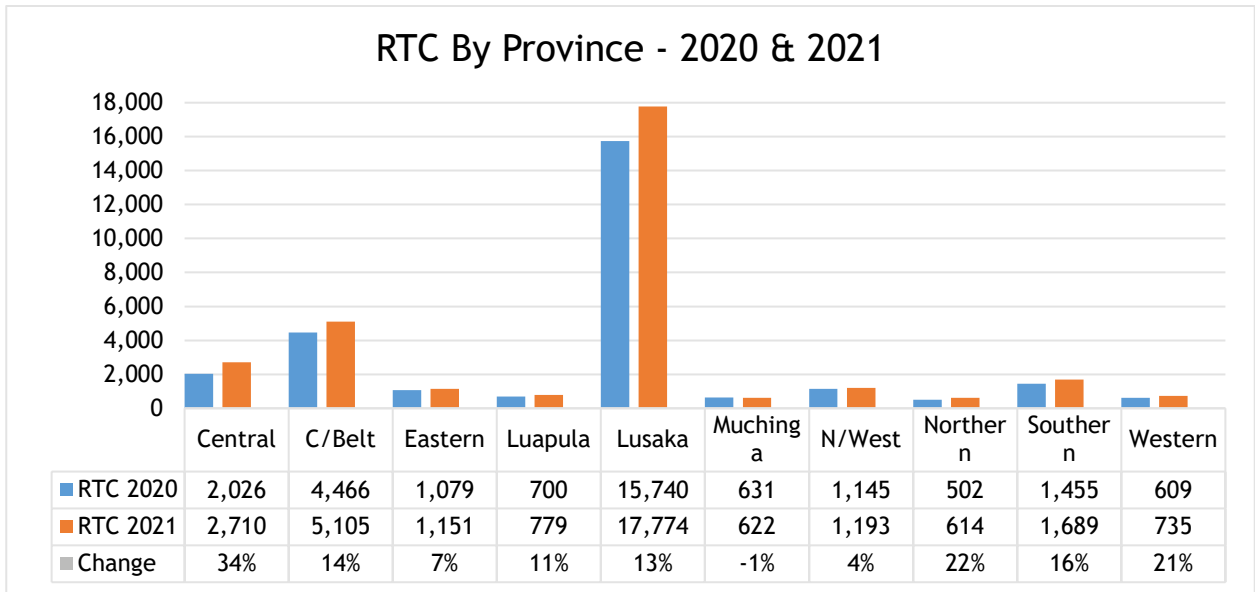


Figure 13: RTC by Province in 2020 and 2021

The map below (figure 14) shows the percent distribution of road traffic crashes by province and with Lusaka contributing the uppermost of

54.9% of the total crashes. Copperbelt seconded with 15.8% and the least was Northern province with 1.9%.

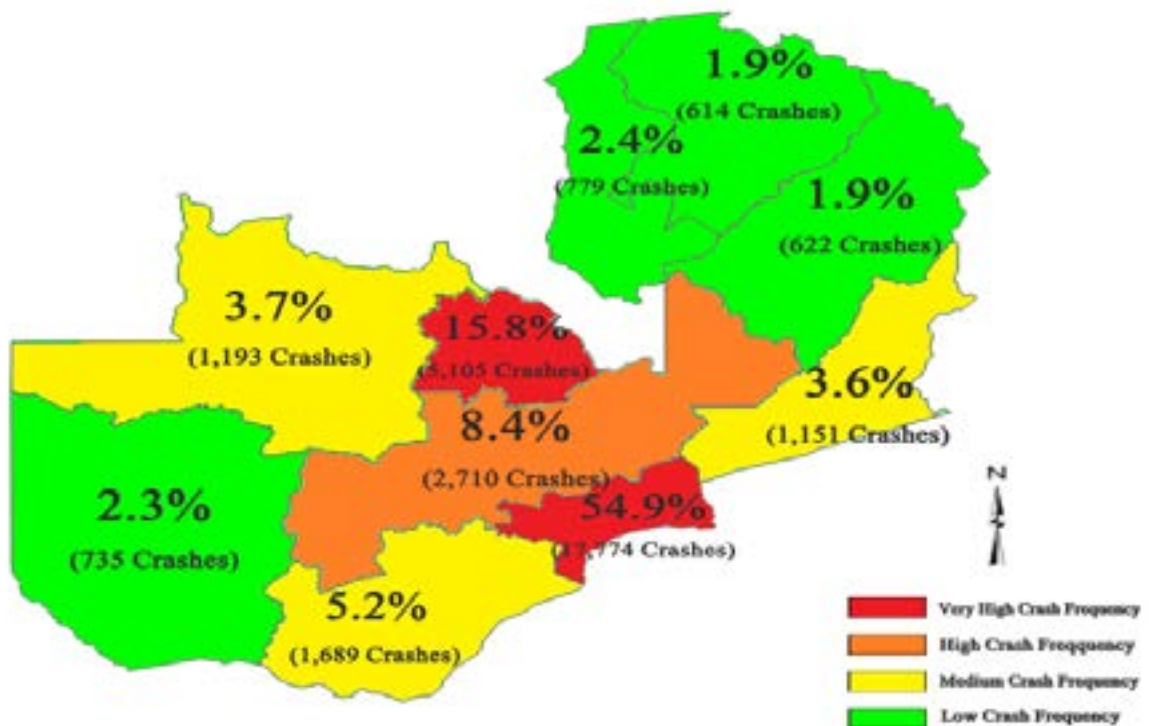


Figure 14: Distribution of RTCs in Zambia

The percent change are shown in figure 8 were Muchinga province had the decrease change in

the number of road traffic crashes comparing 2020 and 2021 having a decrease of 1%.

3.2 Road Traffic Crashes Severity

Road traffic accidents often result in injury, death, and property damage. From the 32,372

total crashes recorded, 1,757 (5%) were fatal, 2,988 (9%) were serious, 6,231 (19%) were slight and 21,396 (67%) were damages only as shown in figure 15.

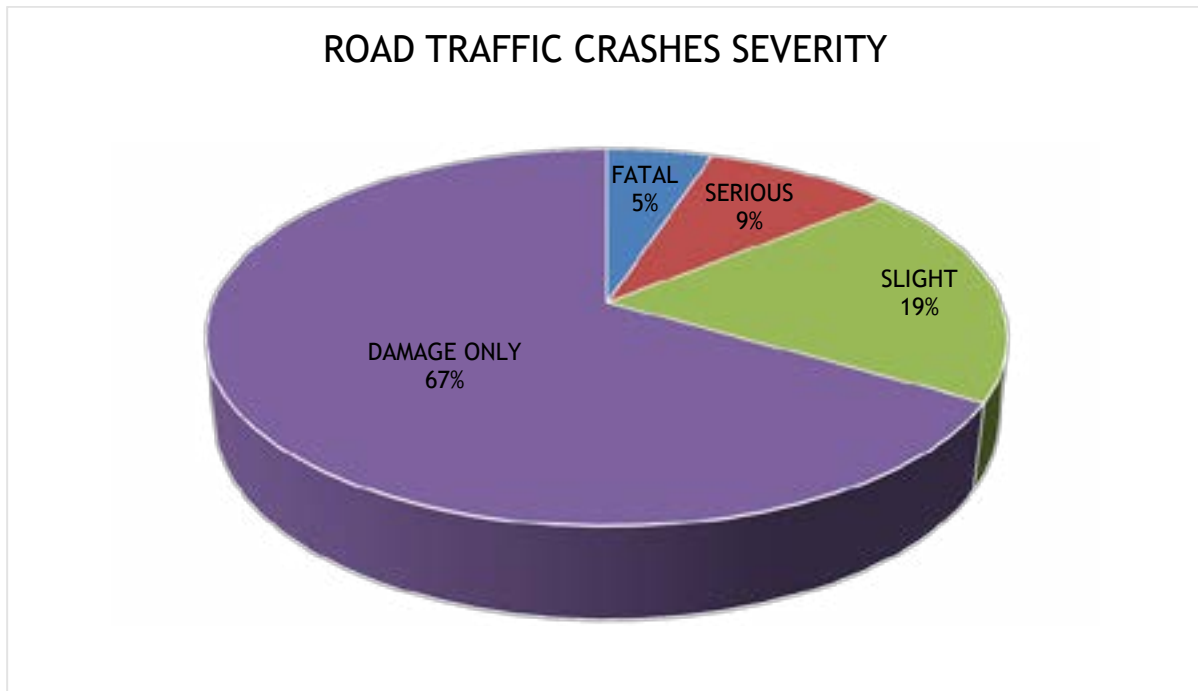


Figure 15: Road Traffic Crashes Severity

Figure 16 shows a comparison of road traffic crashes severity in 2020 and 2021. The figure shows an increase in all extents of severity; in fatal crashes, serious injuries, slight injuries and damages only. The rise may be attributed

to an increased number of newly registered motor vehicles in 2021 compared to 2020 and the removal of Zambia Police officers on major high way roads.

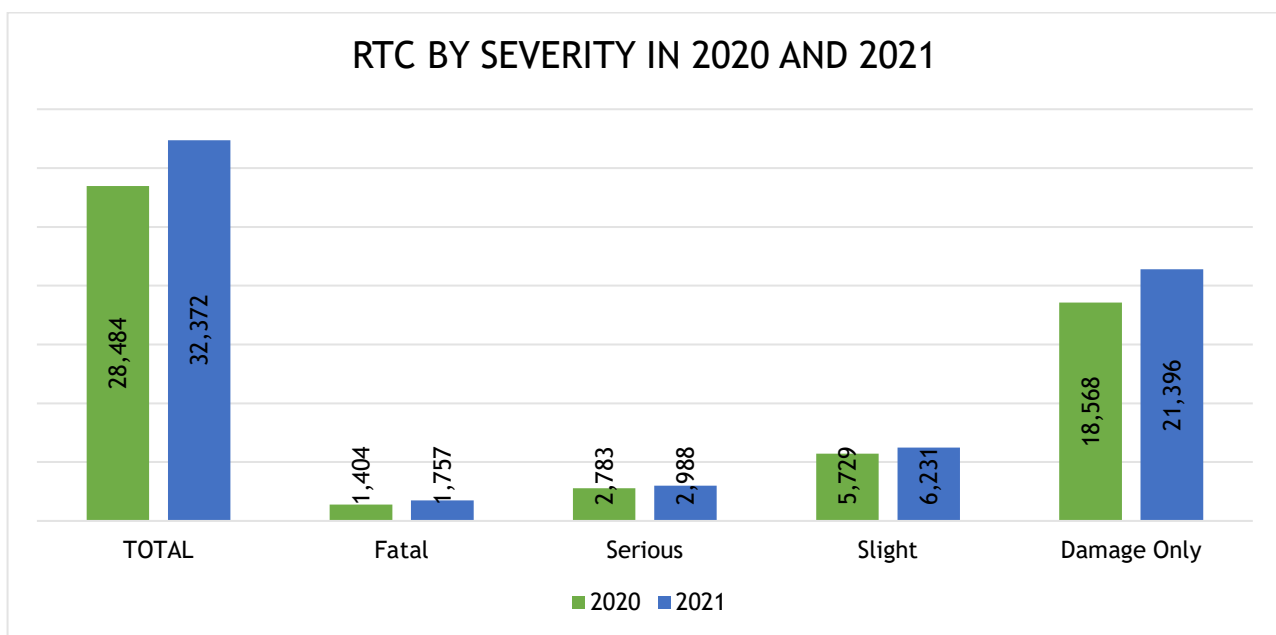


Figure 16: Road traffic crashes severity in 2020 and 2021

The changes are depicted in figure 17 showing the percent change in the road traffic crashes for 2020 and 2021. Fatal road crashes had the greatest change with 25% (353 crashes) increase compared to 2020 statistics, crashes that are damages to property increase by 15%

(2,828 crashes) while slight injuries increased by 9% (502 crashes), serious injuries increased by 7% (205 crashes). Overall, the number of road traffic crashes increased by 14% (3,888 crashes) compared to 2020 statistics.

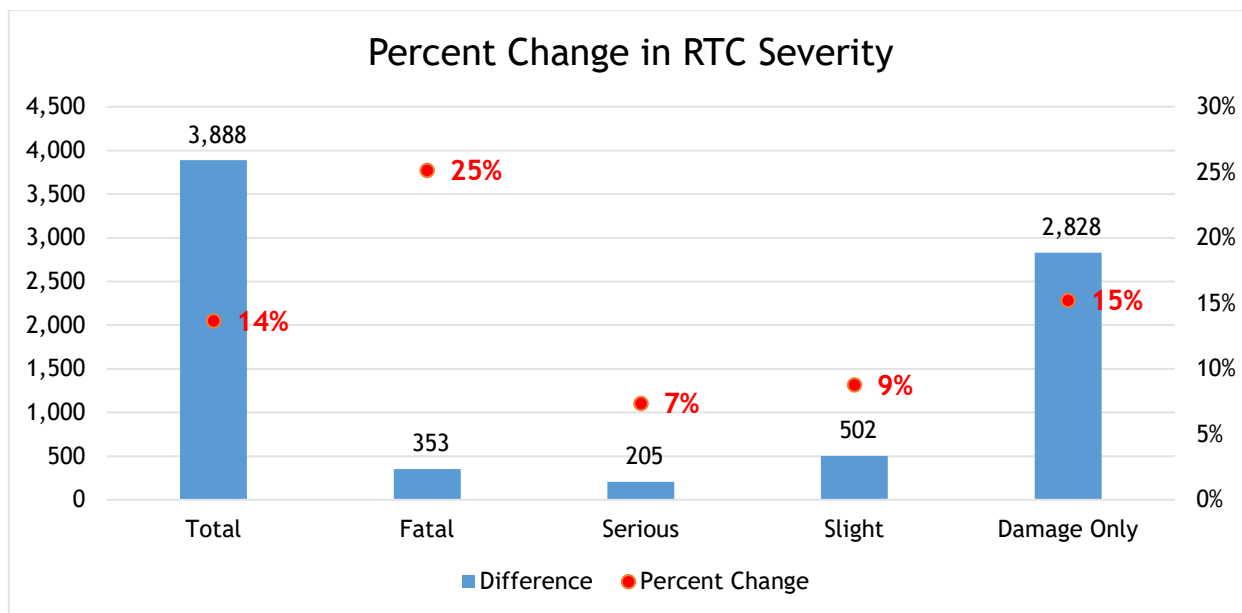


Figure 17: Percent Difference in RTC Severity

3.3 Road Traffic Crashes and Fatalities by Urban and Inter District Roads

The figures 18 and 19 shows the road traffic crashes by urban and inter district roads in Zambia respectively. The charts shows that 76% of traffic crashes occurred in urban roads

and 24% were in inter district roads. In spite of urban areas having a high human population compared to rural areas, more fatalities occur in inter district roads compared to urban roads. In 2021, 58% of the fatalities were on inter district roads while urban roads recorded 42%.

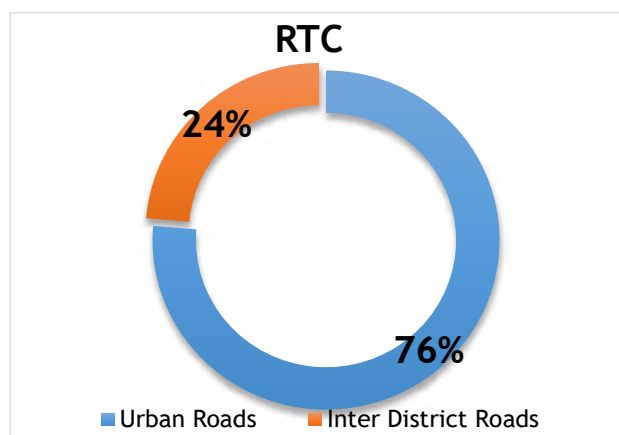


Figure 18: RTC - Urban & Inter District Road

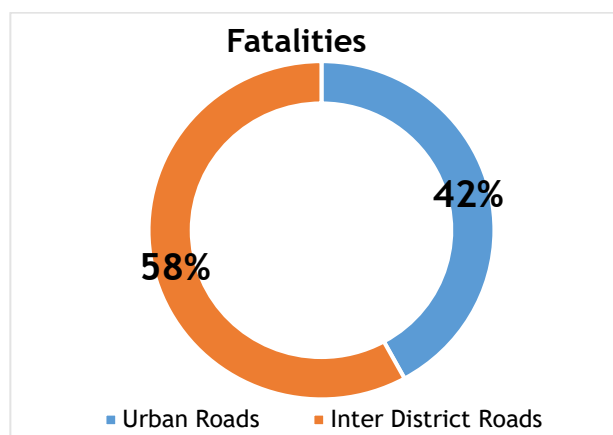


Figure 19: Fatalities - Urban & Inter District Road

These statistics may be attributed to the shorter distances to health care services and the availability of better quality health care services and post-crash care in urban areas. On the other hand, inter district roads are

associated with speeding and high impact crashes on the road compared to urban roads. Figure 20 shows how each of the values contributes to the total category.

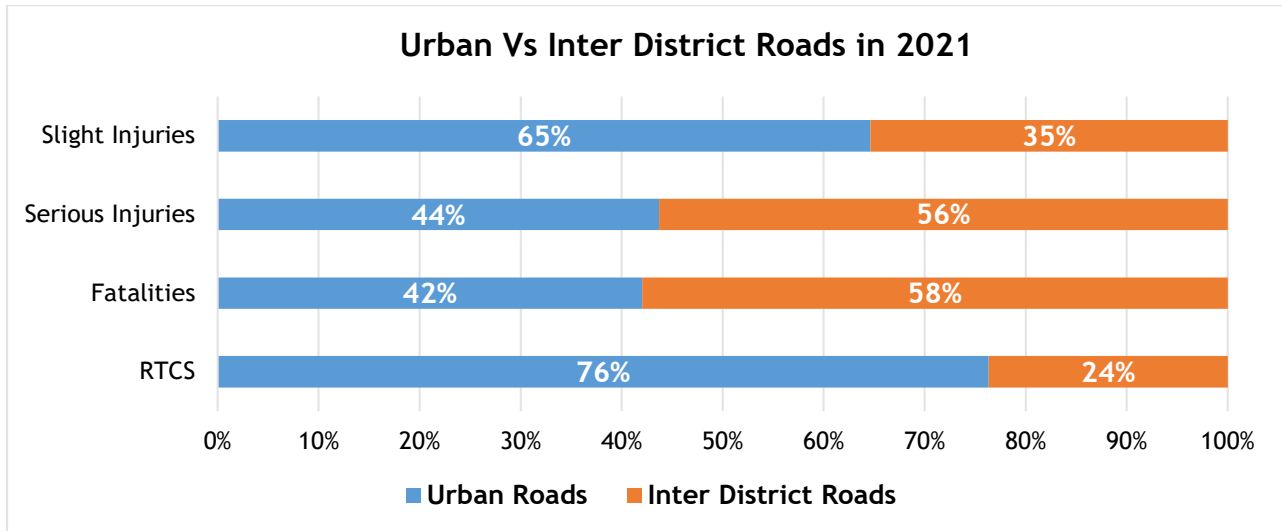


Figure 20: Urban Vs Inter District Roads RTCS

The chart shows that 56% of the serious injuries occur on inter district roads compared to urban roads with 44%.

fatal, serious injuries, slight injuries and damages only depending on their severity. The figure 21 shows a comparison of the road traffic crashes that were recorded by quarter in the years 2020 and 2021.

3.4 Quarterly Road Traffic Crashes

Road traffic crashes in Zambia are classified as

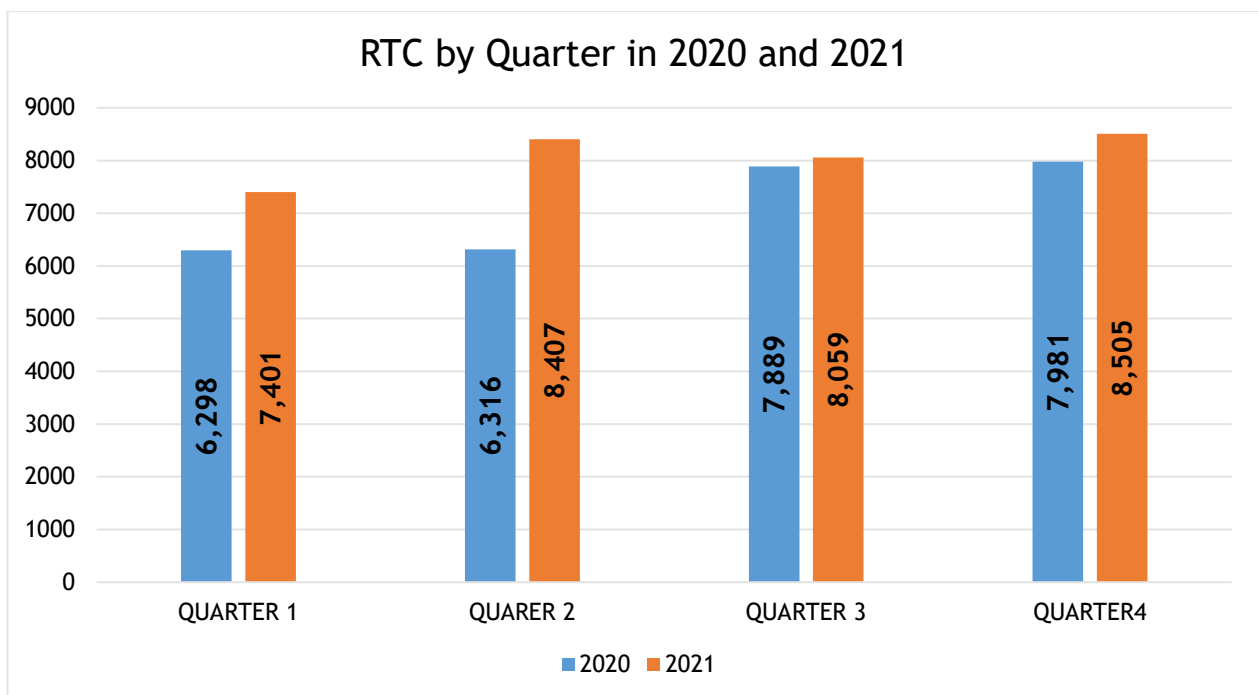


Figure 21: Road Traffic Crashes by Quarters

Comparison of road traffic crashes recorded in the different quarters of 2020 and 2021 is shown figure 21. The figure shows a rise in road traffic crashes in all 4 quarters of 2021 compared to quarters of 2020.

3.5 Trends in Road Traffic Crashes

The country recorded a decline in the number road traffic crashes from 2015 to 2020. In the year 2021, the number of road traffic crashes were 32,372. Figure 22 shows the trends in the road traffic crashes.

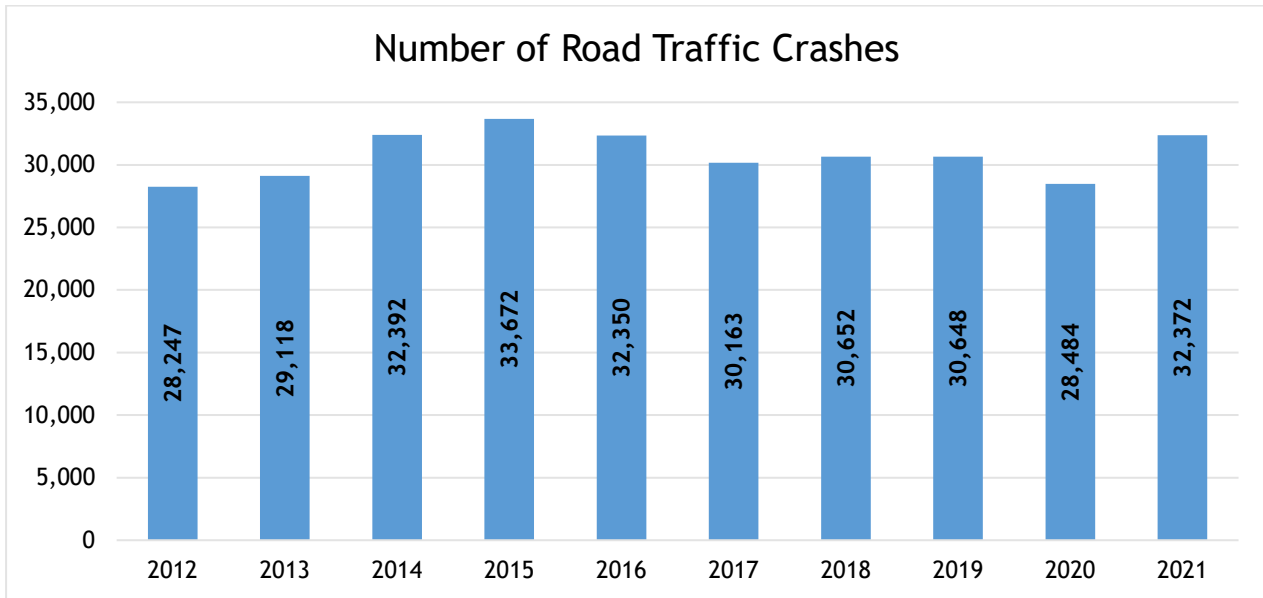


Figure 22: Trend in road traffic crashes

3.6 Trends in Road Traffic Fatalities

Fatalities had also shown declining from the year 2016 to 2020 trend as shown in figure 23.

The year 2021 saw a rise in the number of road traffic fatalities to 2,163. This shows a **28%** increase in the number of fatalities from 2020 to 2021.

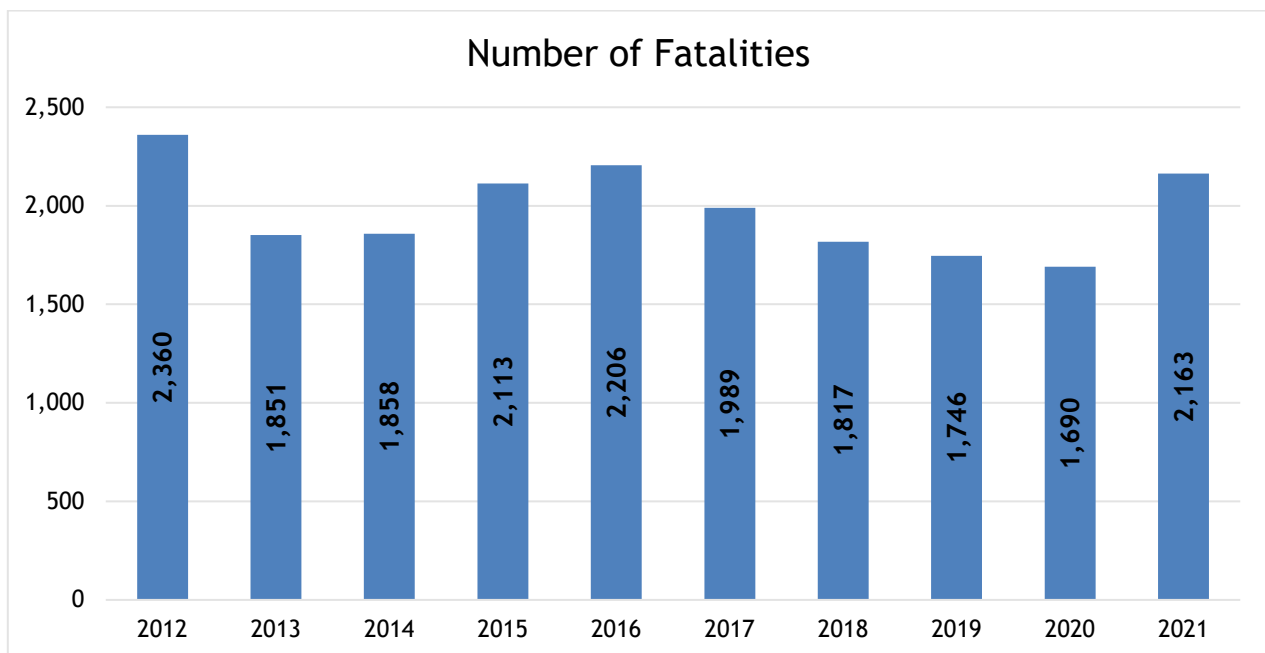


Figure 23: Number of fatalities from 2012 to 2021

Figure 23 shows the trends in the road traffic fatalities due to road traffic accidents and a steady decline can be seen from the year 2016 to the year 2020

3.7 Trends in Human Population

Figure 24 shows the trends in population from 2012 to 2021. The population of Zambia for the year 2021 is projected at 18,400,556 by the Zambia Statistical Agency (Population and Demographic Projections 2011-2035, ZAMSTATS, 2013).

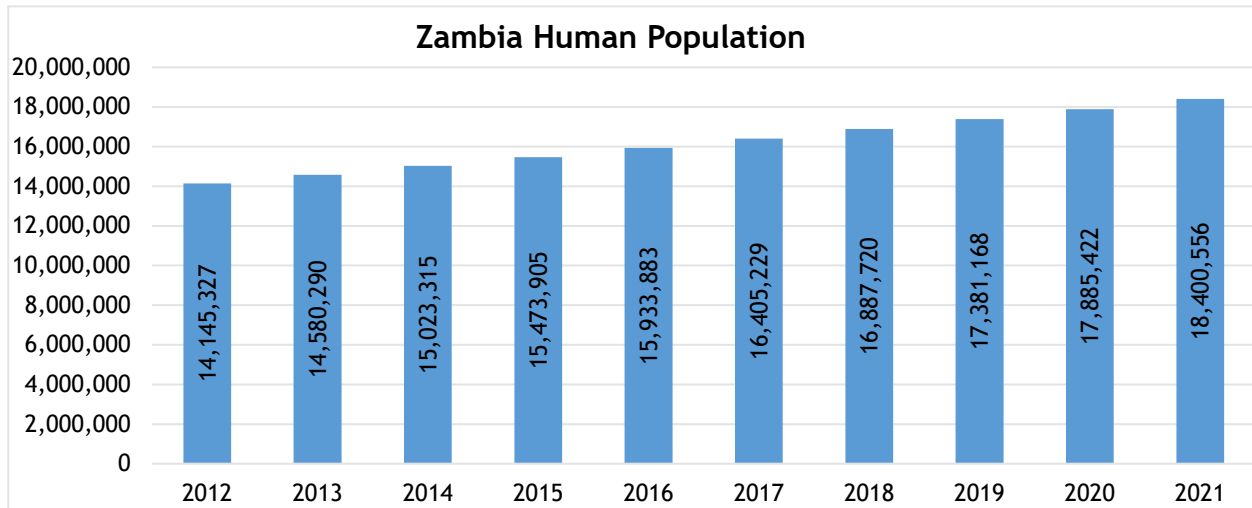


Figure 24: Zambia Population
(Source: ZAMSTATS 2013, Population Projections)

3.8 Trends in Motor Vehicle Population

Figure 25 shows the cumulative number of motor

vehicles registered in Zambia by the Agency across 10 years. The number of vehicle current stands at 899,186 vehicles.

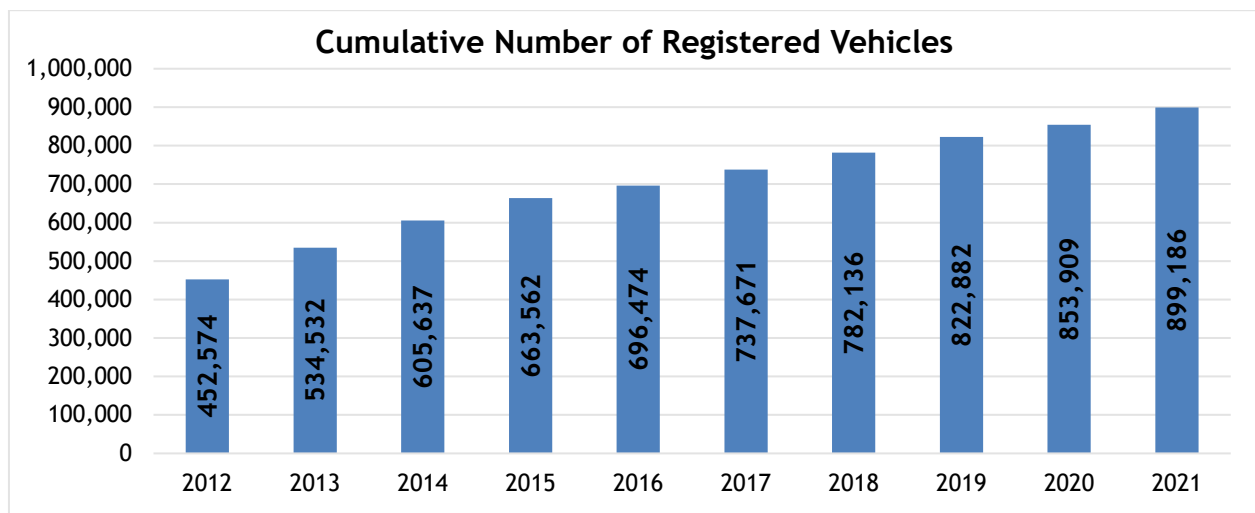


Figure 25: Cumulative number of MV Population

3.9 Crash Rate per Human and Motor Vehicle Population

The road traffic crashes and fatalities trends from 2012 to 2020 shows that the number of fatalities per 100,000 population show a

steady decline from 17 fatalities per 100,000 population in 2012 to 9 in 2020. However, the year 2021 recorded an increase to 12 in terms of the number of fatalities per 100,000 human population.

Table 7: Crash Rate per Human and MV Population

Year	Cumulative No. of Registered Motor Vehicles	Zambia Population	No. of accidents	No. of Fatalities	No. of accidents per 10,000 vehicles	No. of Fatalities per 10,000 vehicles	No. of accidents per 100,000 population	No. of fatalities per 100,000 population
2012	452,574	14,145,327	28,247	2,360	624	52	200	17
2013	534,532	14,580,290	29,118	1,851	545	35	200	13
2014	605,637	15,023,315	32,392	1,858	535	31	216	12
2015	663,562	15,473,905	33,672	2,113	507	32	218	14
2016	696,474	15,933,883	32,350	2,206	464	32	215	15
2017	737,671	16,405,229	30,163	1,989	409	27	184	12
2018	782,136	16,887,720	30,652	1,817	392	23	182	11
2019	822,882	17,381,168	30,648	1,746	372	21	176	10
2020	853,909	17,885,422	28,484	1,690	334	20	159	9
2021	899,186	18,400,556	32,372	2,163	360	24	176	12

Results show that there has been progress in the fight against road carnage from 2012 to 2020, however, it is quite alarming at how there was an increase in the number of traffic crashes in the year 2021. Therefore, more concerted efforts among stakeholders in the fight needs to be up scaled if this progress is to be sustained.

3.10 Types of Motor Vehicle in Road Crashes

Figure 20 shows the type of motor vehicles that were involved in the 32,372 road traffic crashes that occurred in 2021. The highest proportion (61%, 26,471) of vehicles involved in crashes were private motor vehicles, cars, and vans. Goods vehicles represented 6,341(14.5%) of vehicles involved in road crashes while 4,313 (10%) was represented by Omni buses.

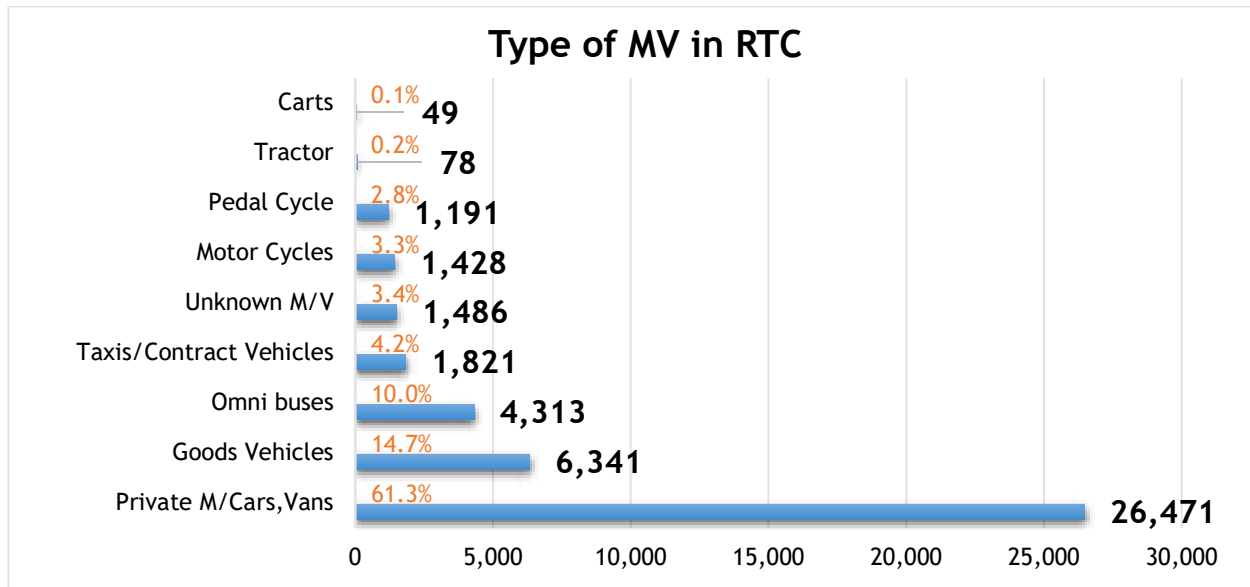


Figure 26: Type of Motor Vehicles in Road traffic crashes

Taxi's/contract vehicles accounted for 4.2% (1,821). These statistics suggest that the chances of being involved in a crash in a private motor vehicle/car etc were high.

3.11 Road Traffic Crash Time of the Day

The distribution of road traffic crashes by time of the day is displayed in figure 27. The figure shows that a larger number of RTCs were recorded between 18:00 hours and 20:00 hours. This trend is similar in both 2020 and 2021.

The least number of crashes were between

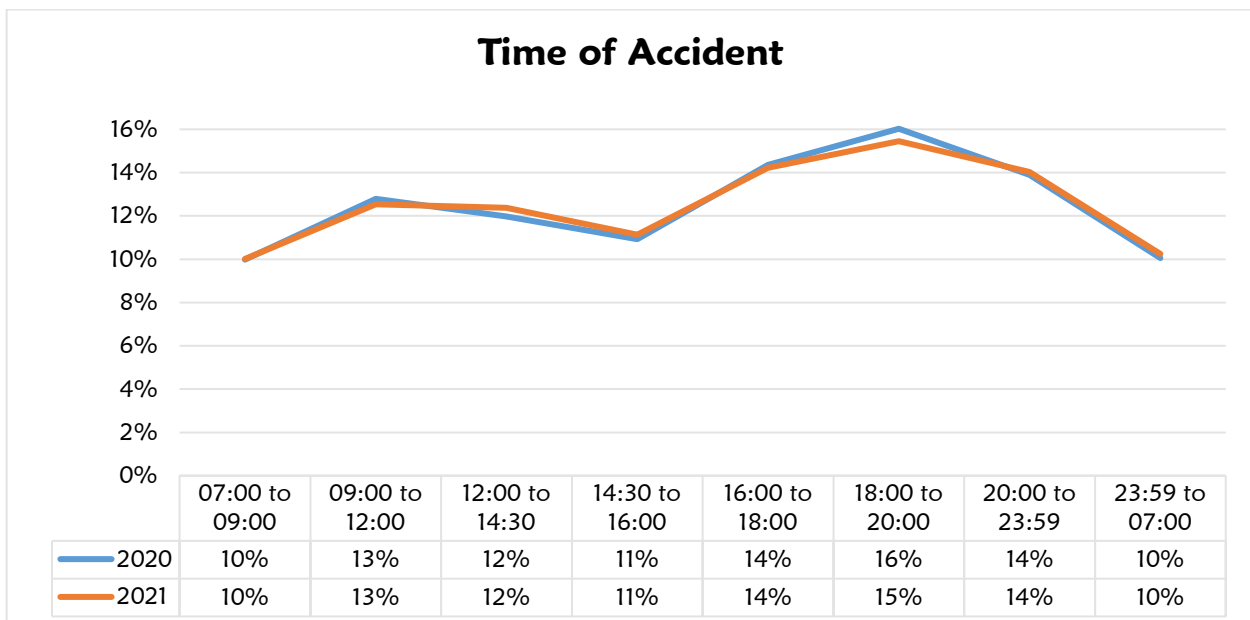


Figure 27: Road traffic crashes by time of the day

07:00-09:00 hours and the highest number of crashes occurred between 18:00-20:00 hours in the year 2021. The statistics of the number of

crashes by time of the day are also presented in the chart below.

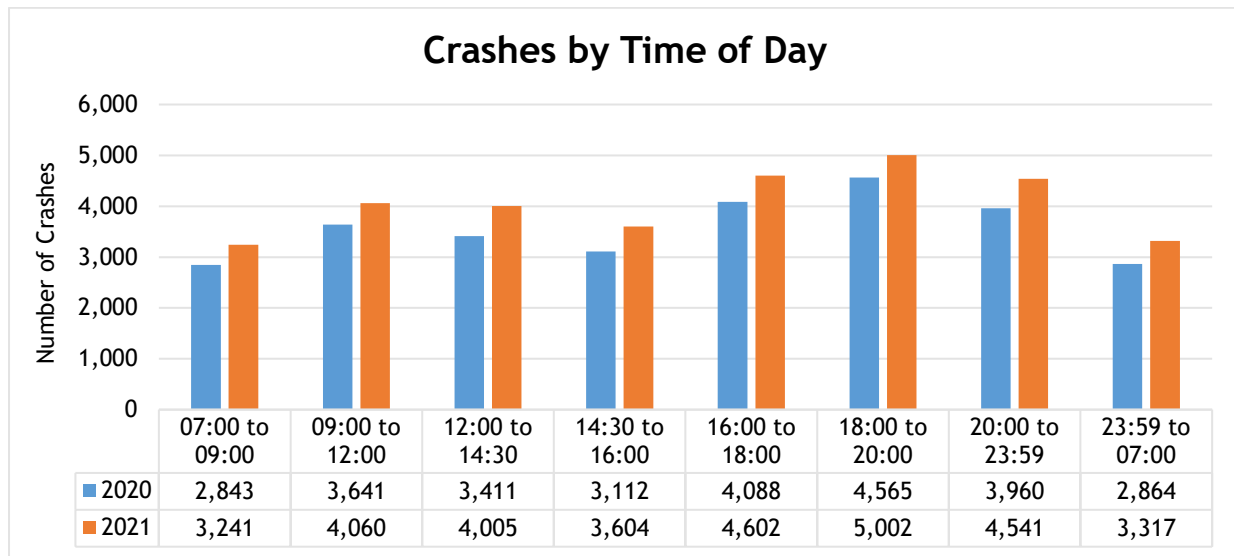


Figure 28: Road traffic crashes by time of the day

3.12 Road Traffic Crashes by Day of the Week

Figure 29 shows the distribution of RTC's by days of the week in the year 2020 and 2021.

The Highest number of RTC's in 2021 occurred on Saturdays with 5,311 (16.4%) RTCs recorded, Fridays recorded 5,234 (16.2%). The lowest number of RTC's occurred on Tuesdays with 4,220 (13%) road crashes.

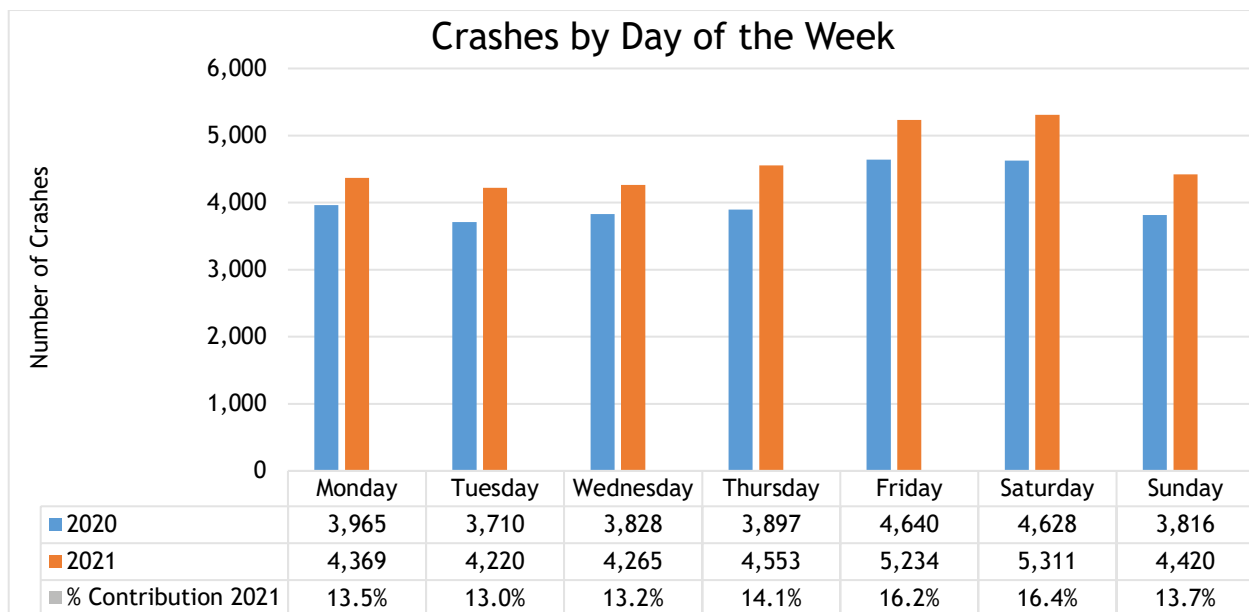


Figure 29: Road Traffic Crashes by Day of the week

3.13 Classification of Casualties

A total of 2,163 lives were lost on Zambian roads in the year 2021. This number represents

a 28% increase in the number of persons who died in RTC compared to those recorded in the year 2020.

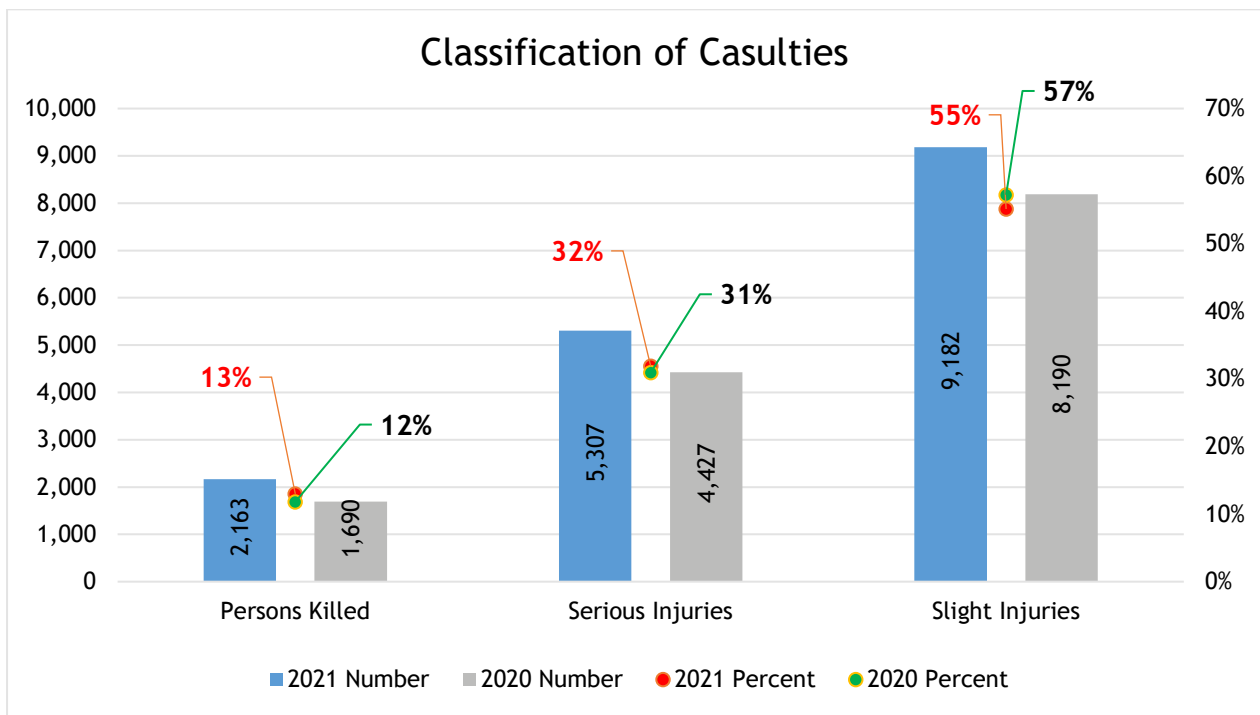


Figure 30: Classification of Casualties in 2020 and 2021

From the total 16,652 casualties recorded, slight injuries were 9,182 showing an increase from 8,190 in 2020 while serious injuries were 5,307 which was an increase from 4,427 in 2020. Figure above presents the 2021 classification of casualties. Figure 30 shows that persons with slight injuries accounted for the majority of the casualties having 55% while seriously injured were 32% and slightly injured were 13%.

3.14 Fatalities by Province

The map (figure 31) shows the distribution of fatalities due to road traffic accidents in Zambia in the year 2021. Lusaka recorded the highest with 23.9% followed by Copperbelt with 21.4% and Central with 14.7%. Western province recorded the least numbers of fatalities with 4.1% of the total.

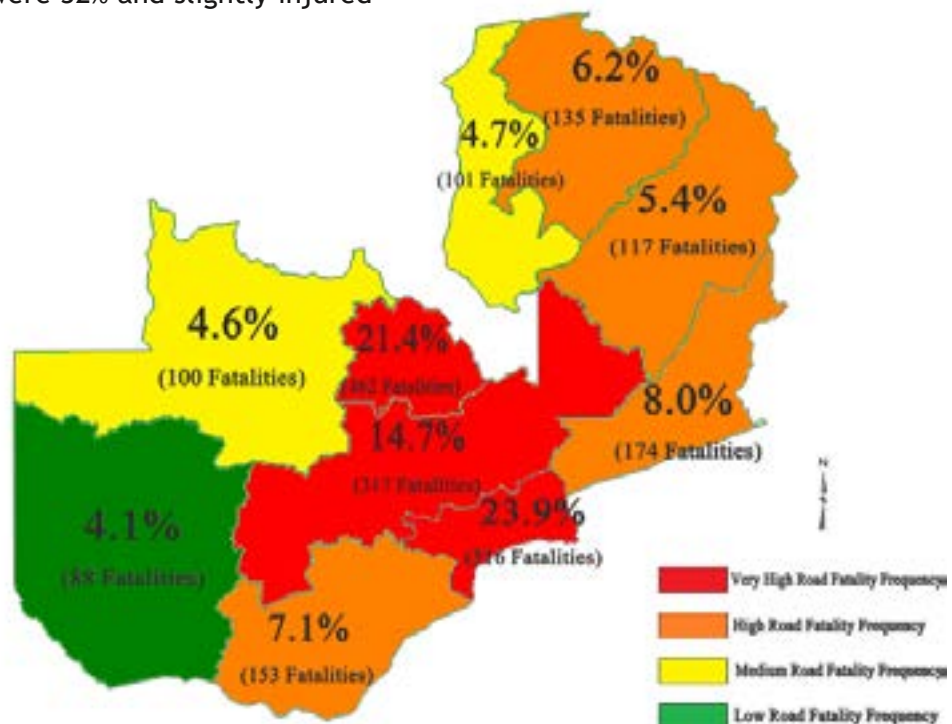


Figure 31: Distribution of Fatalities in Zambia

With a total of 2,163 lives lost as a result of road traffic accidents in 2021, Lusaka province recorded the highest having 516 fatalities representing 23.9%, followed by Copperbelt

with 462 (21.4%), Central with 317 fatalities (14.7%), Eastern with 174 (8%) and the least was Western province with 88 fatalities (4.1%).

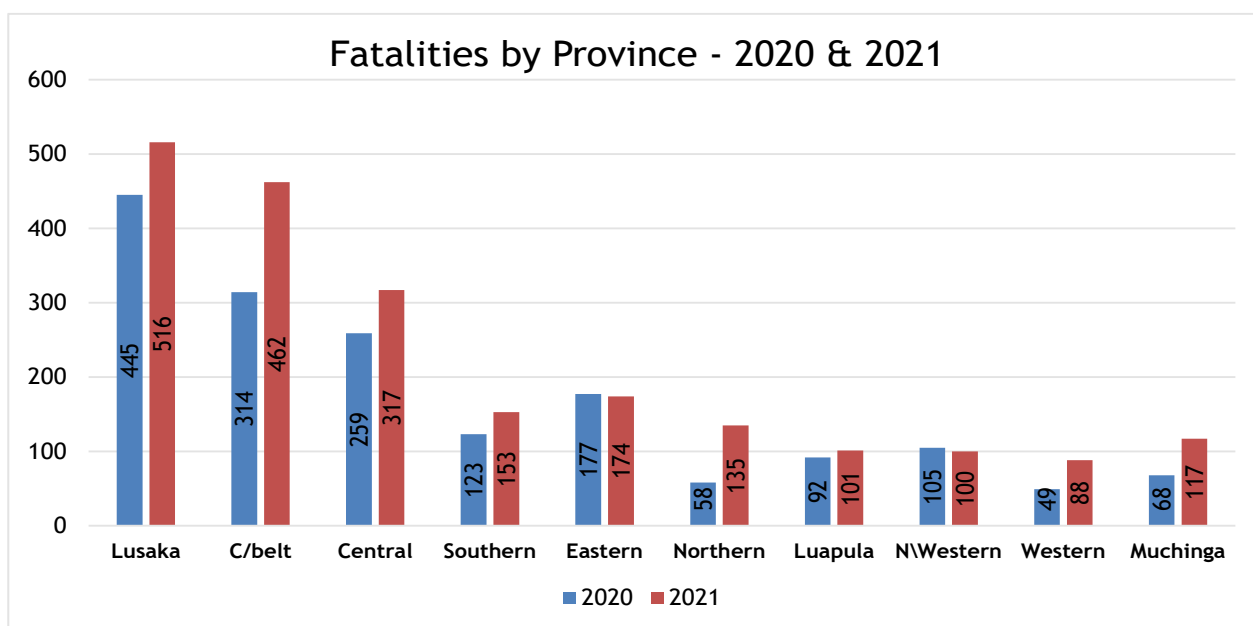


Figure 32: Fatalities by Province

The percent change are shown in figure 33 were Northern recorded the greatest change with 133% increase followed by Western province with 80% increase each. Only two province

recorded reductions in road traffic fatalities which included Eastern province with 2% and North Western with 5% decreases.

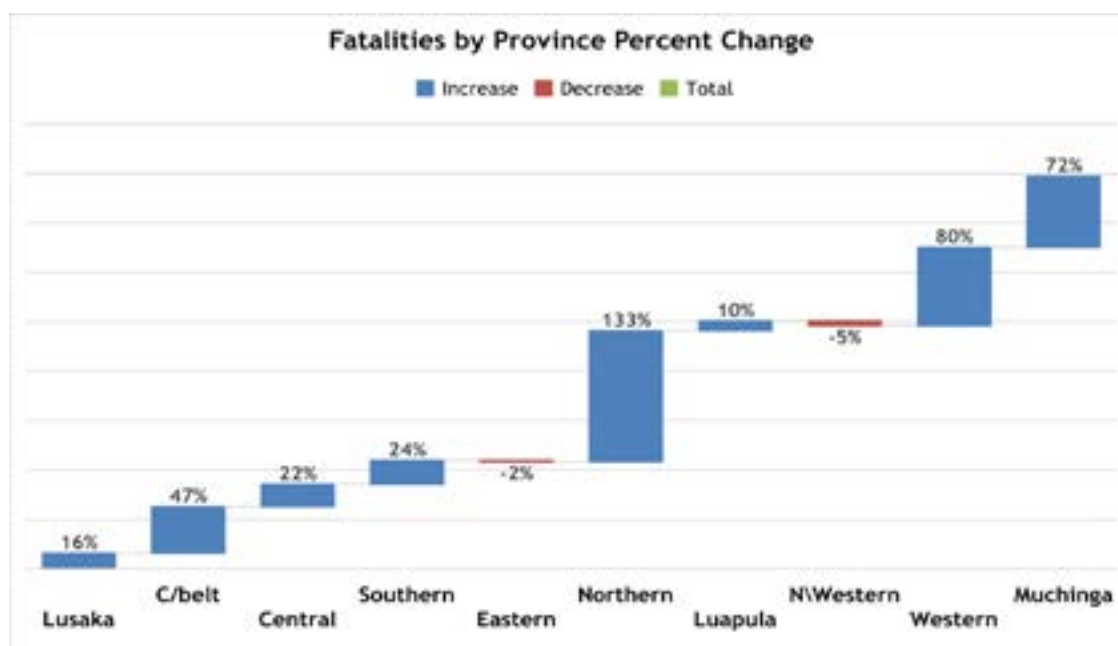


Figure 33: Percent Change in Fatalities by Province

3.15 Fatalities by Road User Type

Figure 34 shows that pedestrians accounted for the majority of the fatalities with 48.6% of the fatalities followed by Motor Vehicle passengers representing 24.5%. Motor Vehicle Passenger

fatalities stood at 531 out of the total 2,163 road traffic fatalities recorded. MV Passenger fatalities accounted for 24.5% of the total fatalities and was the second highest after pedestrians which was 48.6%.

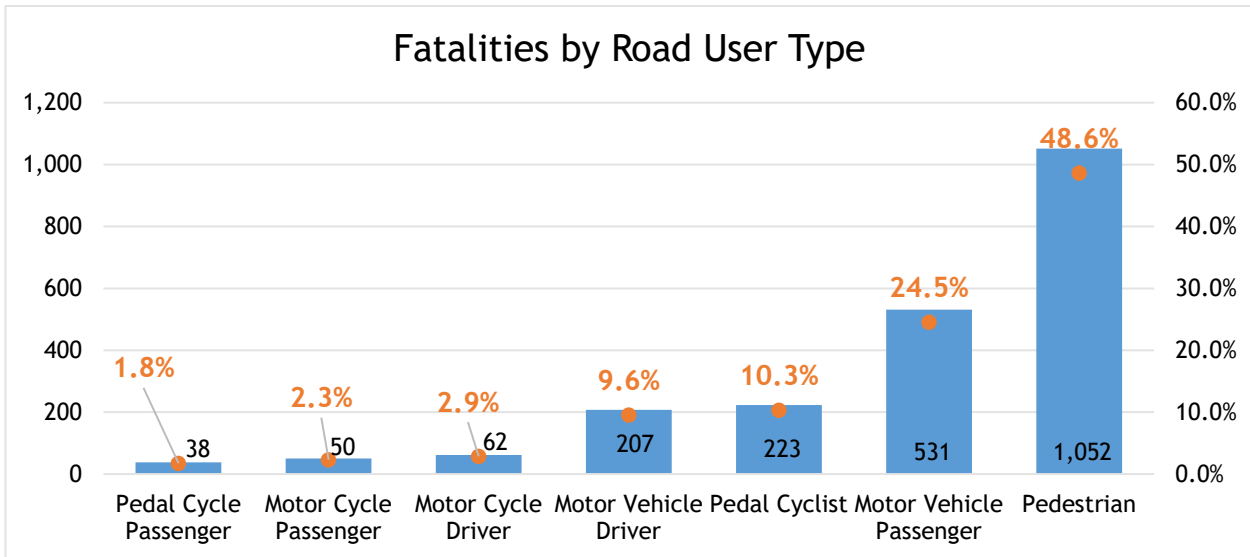


Figure 34: Fatalities by Road User Type

Figure 35 shows that the year 2020 recorded a lower number of pedestrian fatalities compared

to 1,052 in 2021 indicating an increase in the number of pedestrians killed.

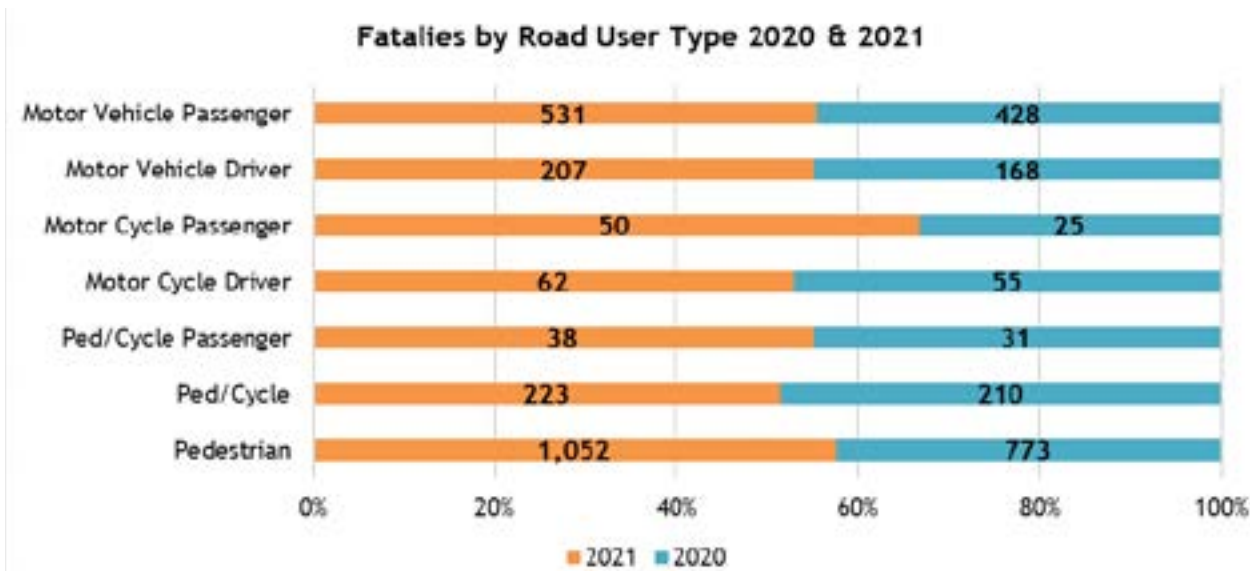


Figure 35: Fatalities by road user type in 2020 and 2021

3.16 Serious Injuries by Province

The map (figure 36) shows the distribution of fatalities due to road traffic accidents in Zambia in the year 2021. Lusaka recorded the highest

with 20.8% followed by Central with 15.5%. Northern province recorded the least numbers of fatalities with 5.1% of the total.

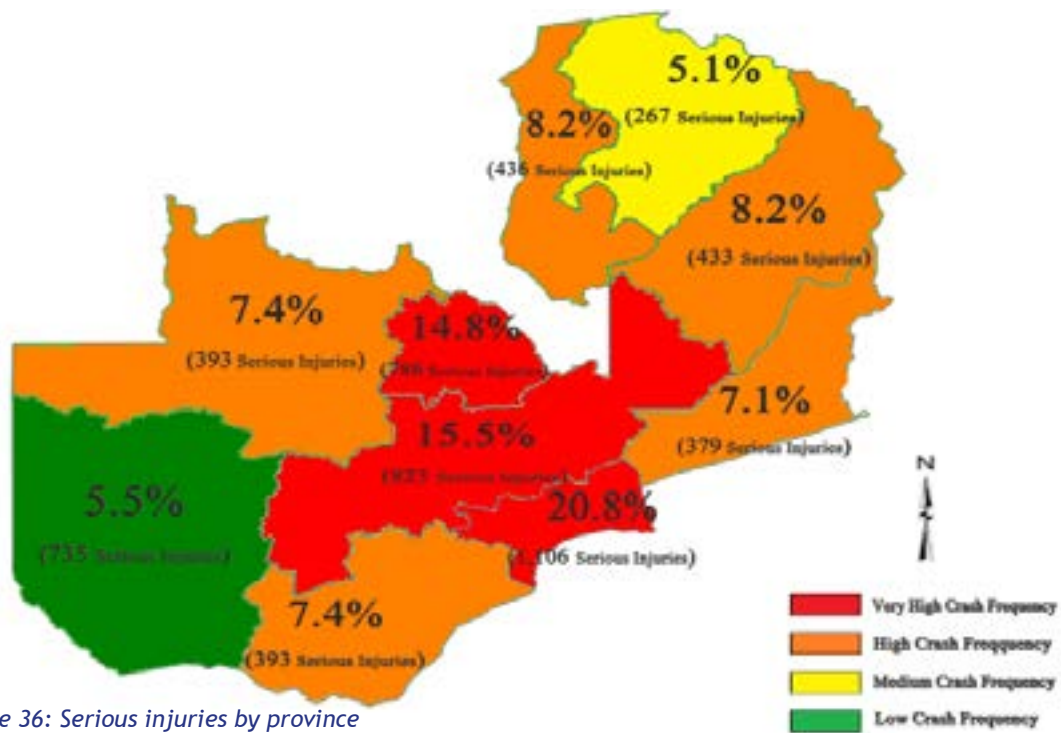


Figure 36: Serious injuries by province

3.17 CHILDREN CASUALTIES

3.17.1 Children fatalities by Gender

Figure 37 shows that male children had a higher number of casualties compared to their female counterparts in every casualty category, the

numbers show that more males died in RTCs (151) as compared to females (62), more males were seriously injured (290) as compared to females (235) and more males were slightly injured (418) as compared to males (301) in 2021.

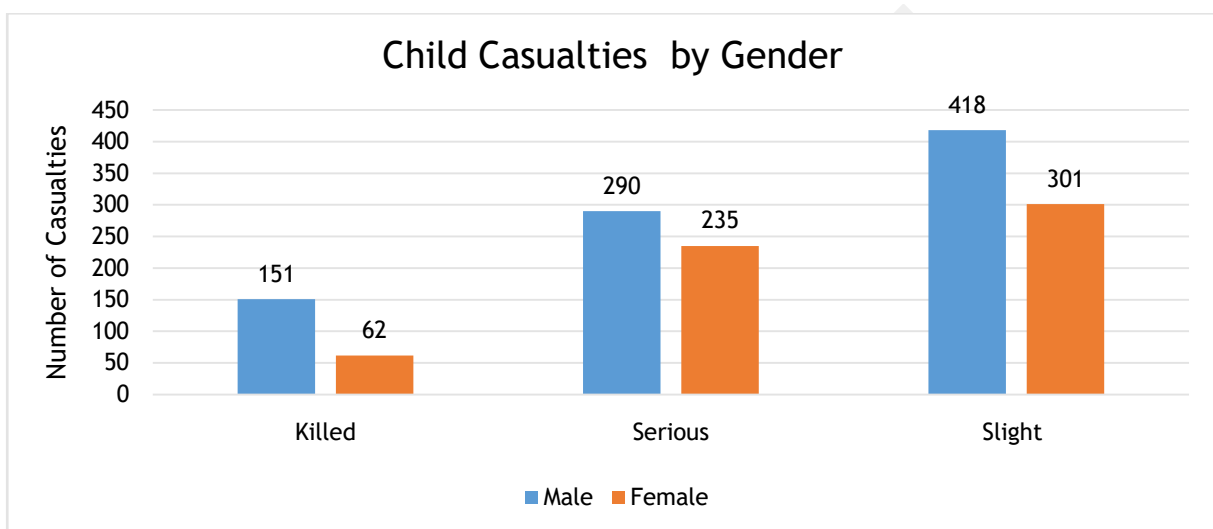


Figure 37: Child Casualties by Gender

Child fatalities are compared for the years 2020 and 2021 In figure 38, data shows that

fatalities for males were higher in both years compared to females.

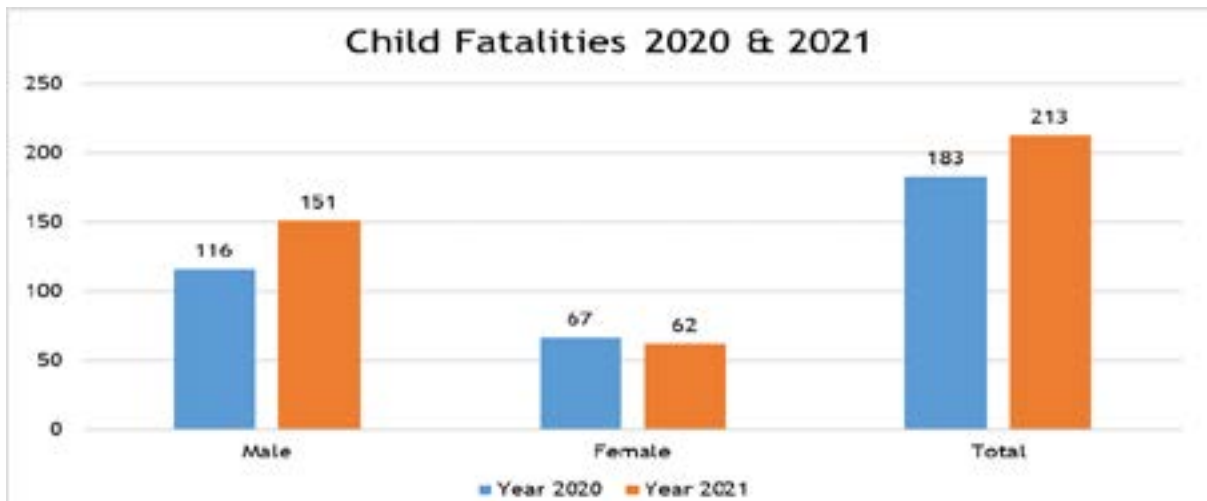


Figure 38: Child fatalities in 2021 and 2022

3.17.2 Classification of Child Fatalities

Figure 39 shows that slight injuries comprised of the majority of child casualties having 49%

followed by serious injuries with 36% and fatalities (died) with 15%.

3.18.1 Driver Errors

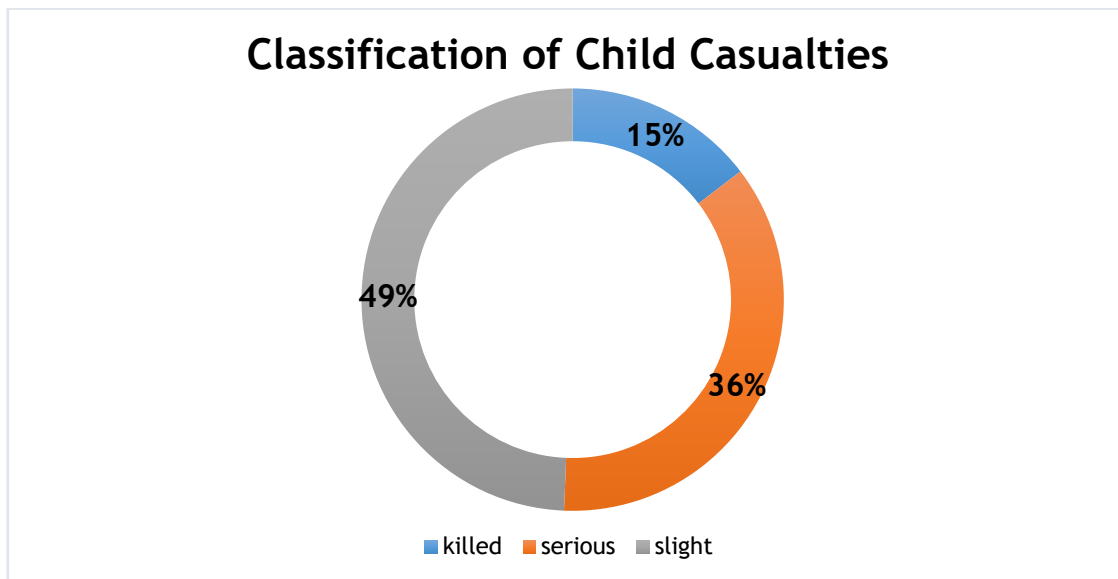


Figure 39: Child casualties classification

3.17.3 Child Fatalities by Road User Type

The general trend on fatalities for all road users is the same for child fatalities as child

pedestrian accounted most of the fatalities with 73% followed by motor vehicle child passengers with 21%.

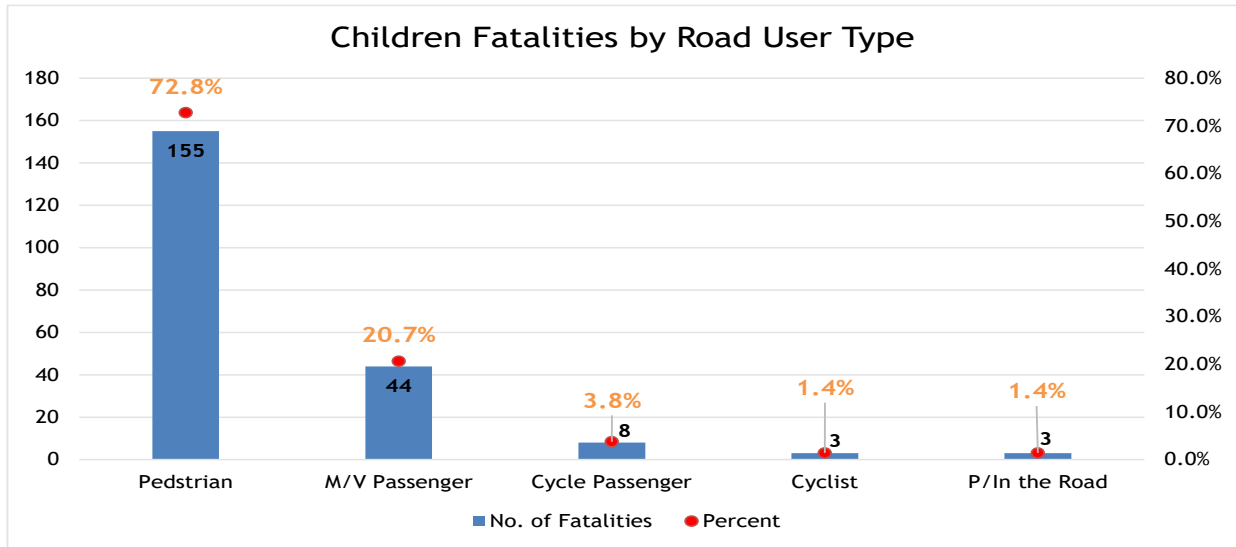


Figure 40: Child Fatalities by Road User Type

3.18 CONTRIBUTORY FACTORS

Figure 41 shows the distribution of contributory factors to road traffic crashes. The figure shows that, Human errors are leading

contributor to road traffic crashes and accounted 87.85%, while weather condition was the least with just 0.18%.

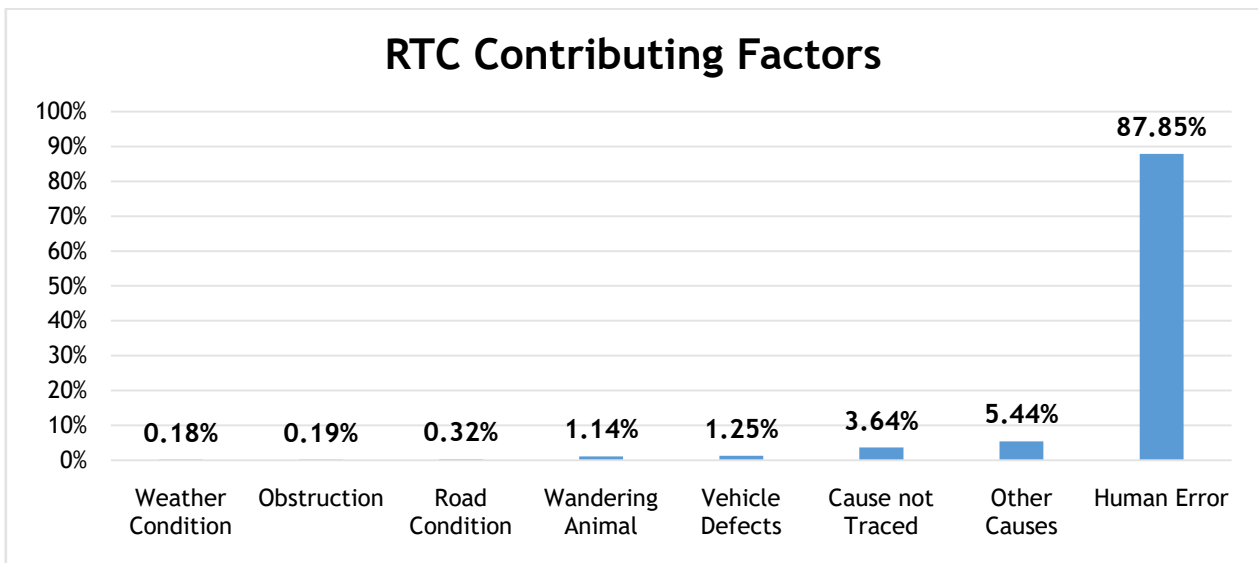


Figure 41: Contributing Factors

3.18.1 Human Error

Human errors were singled out and analysed. Figure 42 shows that of the total Human errors, 92.01% road traffic crashes were driver

errors, 6.97% were pedestrian errors and the least was cyclist errors with 0.36%.

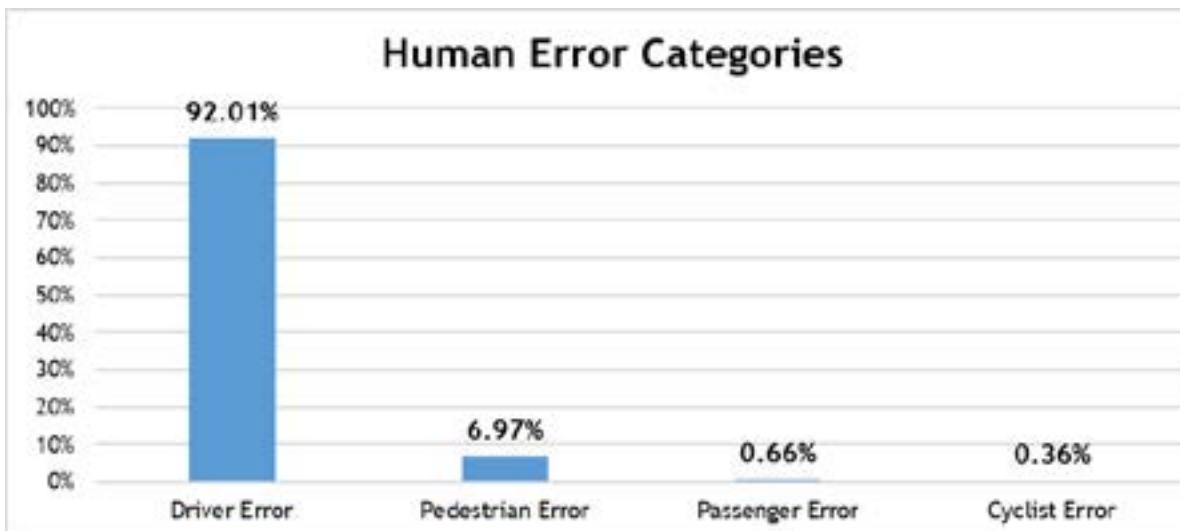


Figure 42: Human errors categories

3.18.1 Driver Errors

Driver errors are further categorised in smaller errors and figure 43 shows distribution of the errors. The figure shows driver errors with

excessive speed standing out at 18.44% has the highest errors. Additionally, failing to keep near side and misjudging clearing distance had 17.80 and 17.7% respectively.

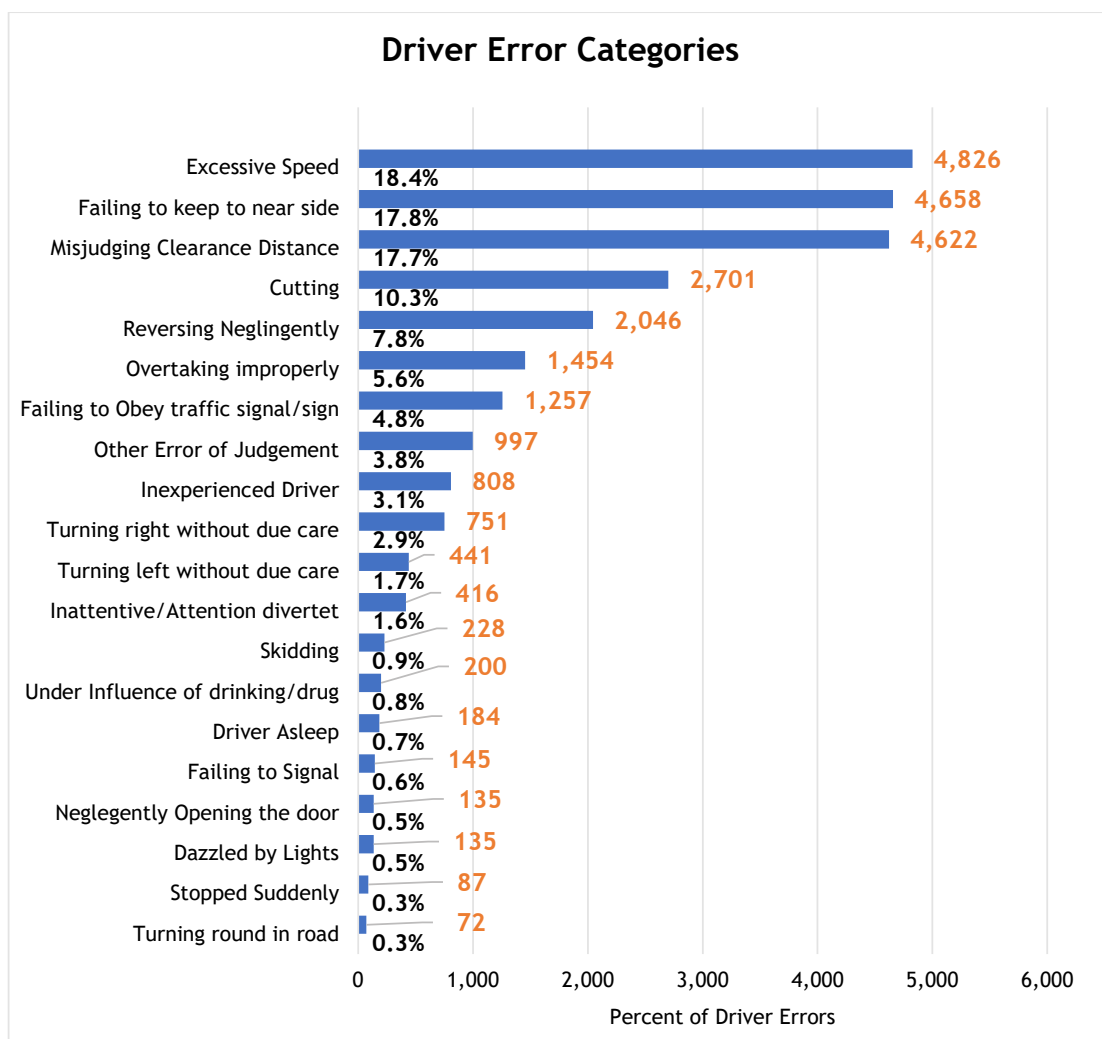


Figure 43: Driver errors

3.18.2 Pedestrian Errors

Pedestrian error accounted for 6.97% of the human errors, pedestrian errors were broken down as shown in the table below. The table

shows that majority of the pedestrian errors were as a result of pedestrian crossing the road, accounting for 83.14% of the total pedestrian errors and 5.09% of the total road traffic crashes.

Table 8: Pedestrian Error

No.	Pedestrian Error	Number of RTCs caused	% Pedestrian Errors	%of Total Number of RTCs
1	Pedestrian crossing the road	1,647	83.14%	5.09%
2	Walking, standing on road	167	8.43%	0.52%
3	Playing on the road	106	5.35%	0.33%
4	Sudden illness	19	0.96%	0.06%
5	Under the influence of drink/drug	42	2.12%	0.13%
	TOTAL	1,981	100%	6.12%

The results above are displayed in figure 44 showing the percentages with pedestrian crossing

the road having the highest (83.1%) and sudden illness having the least (1%).

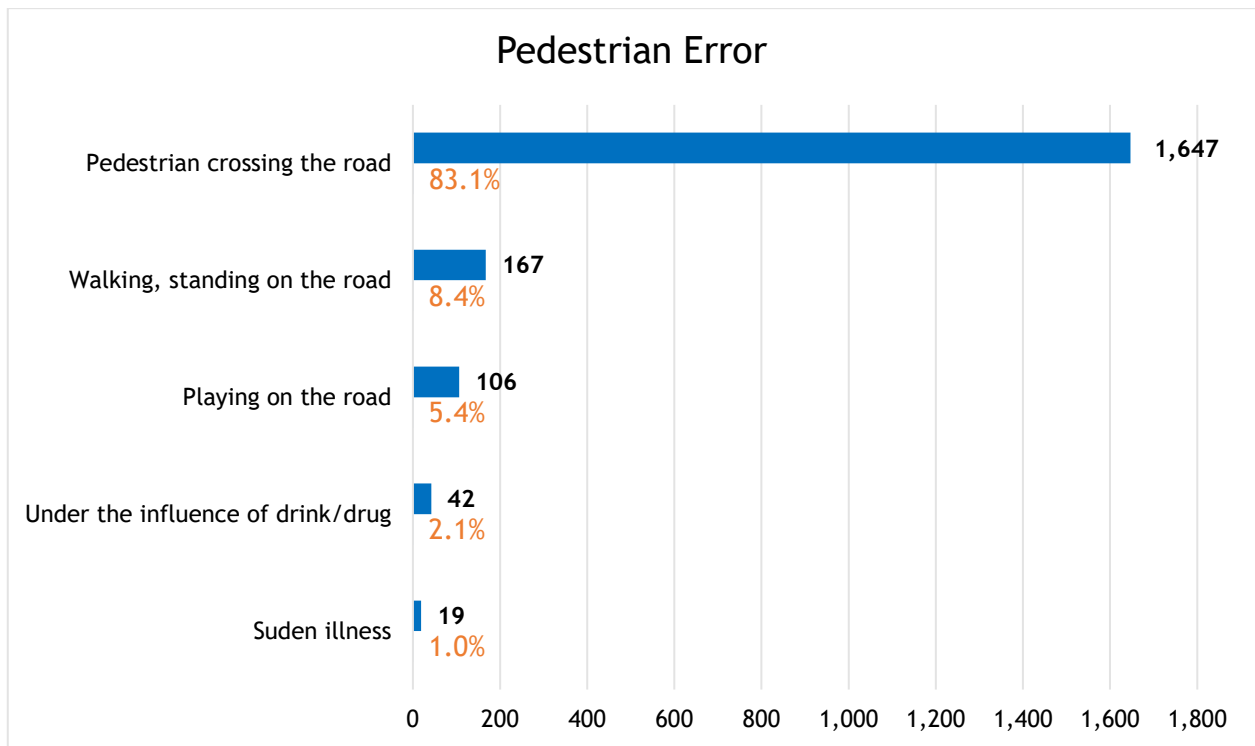


Figure 44: Pedestrian errors

3.18.3 Passenger Errors

Among the passenger errors, it was observed that passengers falling from a vehicle accounted

for 91.53% while negligence on the part of the conductor stood at 8.47%

Table 9: Passenger Error

No.	Passenger Error	Number of RTCs caused	%Passenger Errors	%of Total Number of RTCs
1	Passengers falling from the vehicle	173	91.53%	0.53%
2	Negligence on the part of the conductor	16	8.47%	0.05%
TOTAL		189	100%	0.01

Table 10: Motor vehicle defects

No.	Motor Vehicle Defects	Number of RTCs caused	% MV Defects	%of Total Number of RTCs
1	Brakes	139	34.41%	0.43%
2	Tyres	141	34.90%	0.44%
3	Steering	20	4.95%	0.06%
4	Springs	13	3.22%	0.04%
5	No front light	1	0.25%	0.00%
6	No rear light/reflector	9	2.23%	0.03%
7	Unattended vehicle running away	43	10.64%	0.13%
8	Smashed windscreen	4	0.99%	0.01%
9	Vehicle overloaded	34	8.42%	0.11%
TOTAL		404	100%	1.25%

3.19 Motor Vehicle Defects

Motor vehicle defects are shown in the table below in their contribution to road traffic crashes. Motor vehicle tyres recorded the highest number of defects with 34.90% followed by brakes which also recorded a high number of defects having accounted for 31.38% of the total motor vehicle defects. The least recorded that contributed to traffic crashes were vehicles with no front lights with 1.41%. Motor vehicle defects accounts for a

very small contribution to the total number of road traffic crashes as it contributed 1.25%.

3.20 WANDERING ANIMALS

Wandering animals also contribute to the road traffic crashes that occur. Statistics show that dogs on the road accounts for 13.01% of crashes due to animals on the road. Other domestic animal on the road accounts for 82.11% while other animals had contributed 4.88%.

Table 11: Wandering Animals

No.	Wandering Animal	Number of RTCs caused	%Passenger Errors	% of Total Number of RTCs
1	Dog on the road	48	13.01%	0.15%
2	Other domestic animal on the road	303	82.11%	0.94%
3	Other animals on the road	18	4.88%	0.06%
TOTAL		369	100%	1.14%

3.21 WEATHER CONDITIONS

Environmental factors such as weather conditions caused 0.05% of the traffic crashes in the year

2021. The most common factors recorded include accidents caused by heavy down pours.



2021 ROAD TRANSPORT & SAFETY STATUS



Road Traffic Fatalities

2,163 fatalities were recorded on Zambian roads



28% increase from 1,690 fatalities recorded in 2020

CHILDREN FATALITIES

10% of those killed in road traffic crashes were children under the age of **16 Years**

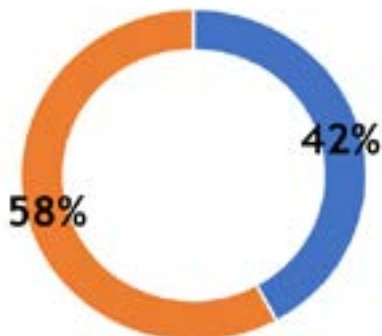


29%
Fatalities were Female Children

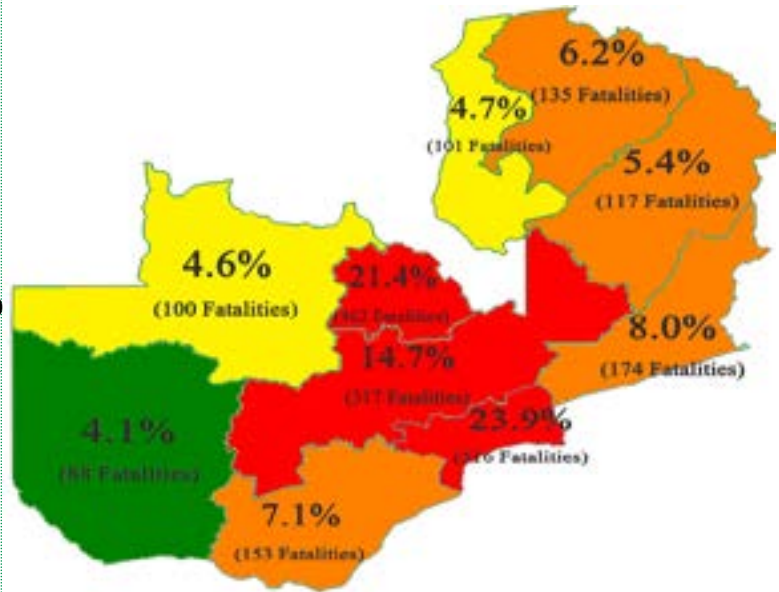


71%
Fatalities were Male Children

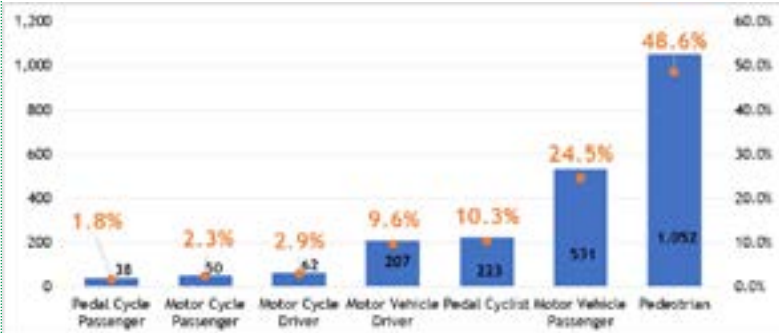
URBAN AND INTER DISTRICT ROADS FATALITIES



ROAD TRAFFIC FATALITIES BY PROVINCE



FATALITIES BY ROAD USER TYPE



49%



12%



5%

66% of persons killed were vulnerable road users

24Hr Toll-Free Hotline

983

Figure 44: Road Traffic Crashes summary



Conclusion and Recommendations

4.1 CONCLUSION

Road traffic crashes are a growing public health concern globally and they disproportionality affect the poor and vulnerable sections of society. Most road traffic crashes (RTCs) are both predictable and preventable. There is considerable evidence that various measures and interventions being put in place by the Agency and various stakeholders in the road sector yielded good results in making our roads safer.

From the road traffic crashes and fatalities trends of 2012 to 2020, the number of fatalities per 100,000 population has shown a steady decline from 17 fatalities per 100,000 population recorded in 2012 compared to 9 in 2020 road traffic crash per 100,000 population. However, there was an increase to 12 fatalities per 100,000 population in the year 2021.

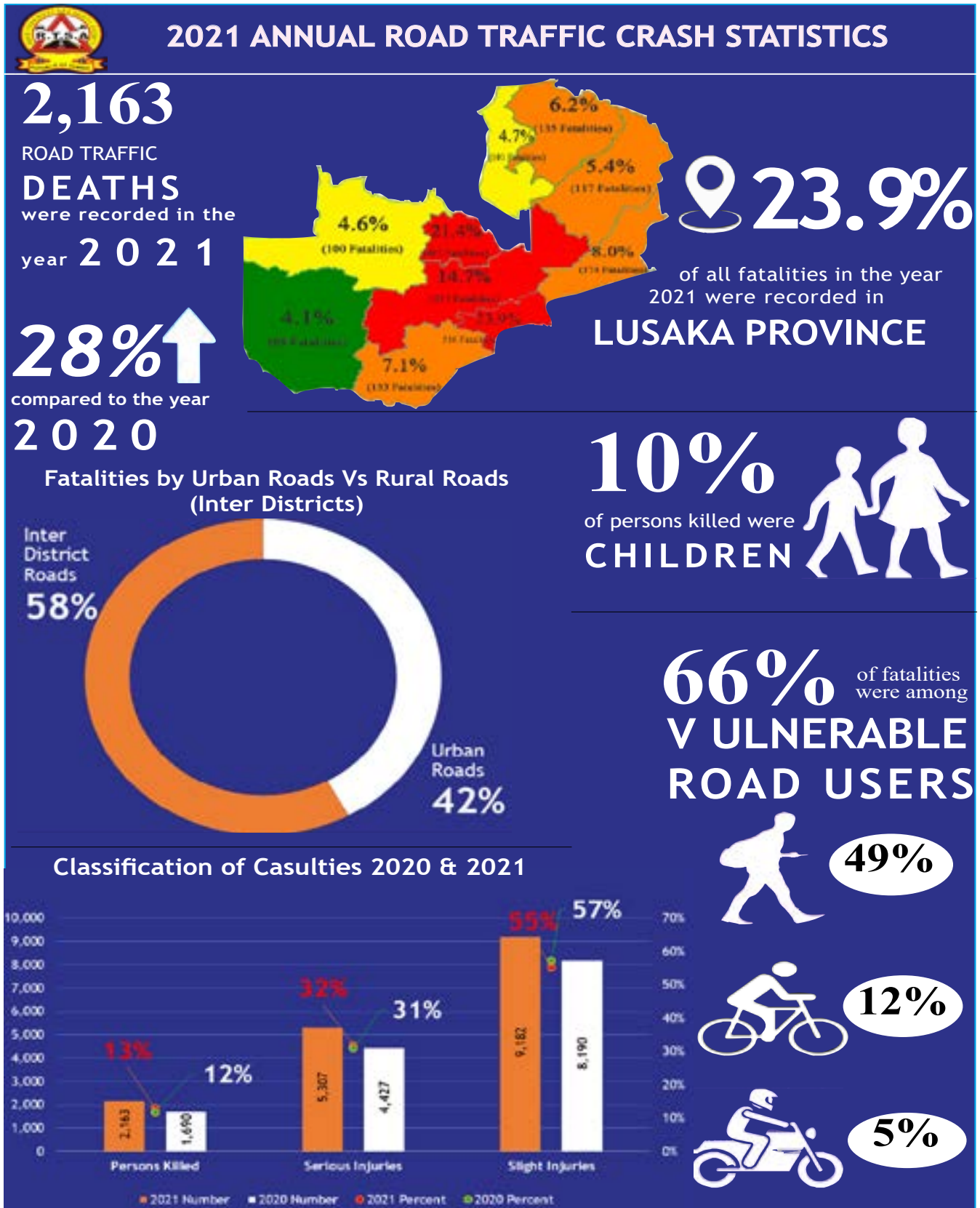
RECOMMENDATIONS

Based on the results of the Road Transport and Safety statistics for 2020, the following recommendations have been made;

1. There is need for an injury surveillance systems that generate reliable data on road traffic crashes and injuries. Indicators, especially for non-fatal outcomes as it may also help making comparisons with international standards.
2. There is need to train more specialists in road traffic injury prevention both the paramedical personnel in health facilities and lay person living along major highways who apparently happen to arrive at the road traffic crash first after a road traffic crash, in order to address the growing problem of handling road traffic victims which in most cases have culminated into further injuries or loss of lives;
3. There is need to decentralise the education function to provincial level, so that we have officers specifically dedicated for education activities in the provinces. Enforcement and education activities complement each other. Road safety measures are effective if road users are first educated, then followed by an enforce the law, currently the provinces have enforcement officers, but the education function is missing which creates a gap in the road safety intervention;
4. The Agency should consider procuring one more tow truck to carter for the Northern circuit, from KapiriMposhi to Nakonde, this road stretch is characterised by heavy trucks to and from East Africa which usually break down along the way or sometimes are involved in road traffic crashes and need to be towed away to safety;
5. The Agency should consider procuring Jaws of life and empower the fire brigade section in Local Authorities along major highways for extracting trapped of road traffic crash victims from a wreckage;
6. More attention should be paid to the needs of the vulnerable road users (pedestrians, pedal cyclists and motorcyclists) who account for the majority of the road traffic fatalities in Zambia. New road designs should incorporate road safety features to carter for vulnerable road users who include; pedestrians, pedal cyclists and the differently abled in the society;

7. There is need to expedite the process of enacting the law on point demerit system, this measure is targeted at motorists violating traffic regulations. The point demerit will be deducting points from drivers

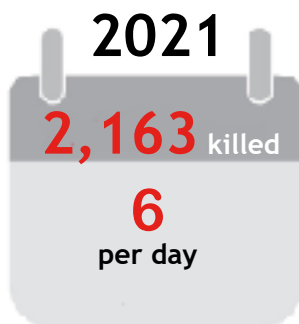
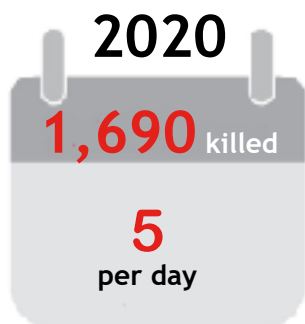
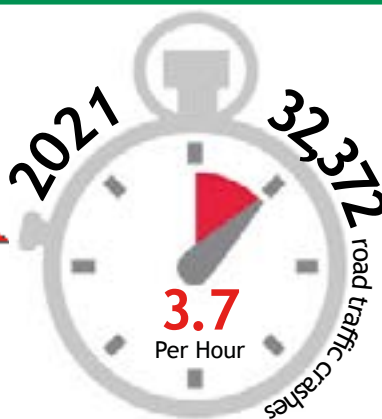
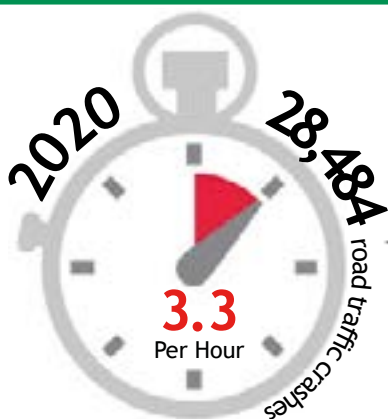
committing traffic violations and eventually lead into revocation or suspension of driver's license. This will be an effective measure to regulate driver behaviour.





2021 ROAD TRANSPORT & SAFETY STATUS

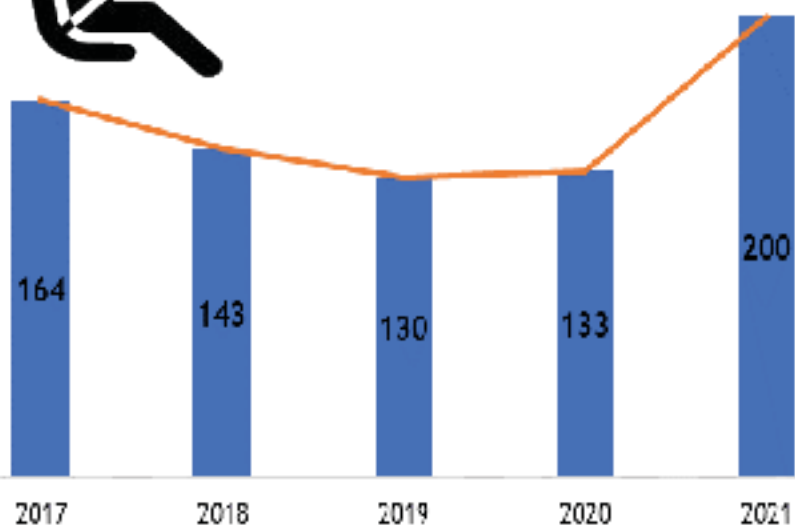
Road Traffic Crashes & Fatalities



FATALITIES BY MODE OF TRANSPORT



CRASHES INVOLVING DRIVING UNDER INFLUENCE OF ALCOHOL/DRUGS



34%

738 from motor vehicles (Drivers & Passengers)



5%

112 from motor Cycles (Drivers & Passengers)



12%

261 from pedal cycles (Pedal cyclists & Passengers)



49%

1,052 Pedestrians

24Hr Toll-Free Hotline



AskRTSA 0965 429499 twitter@rtsa2006

983



2021 ROAD TRANSPORT & SAFETY STATUS



Road Traffic Crashes

32,372
Crashes

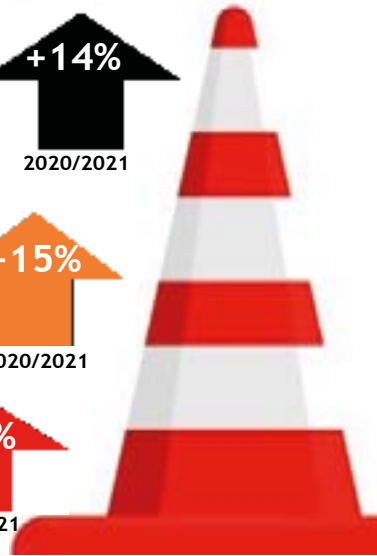
+14%
2020/2021

14,489
Injuries

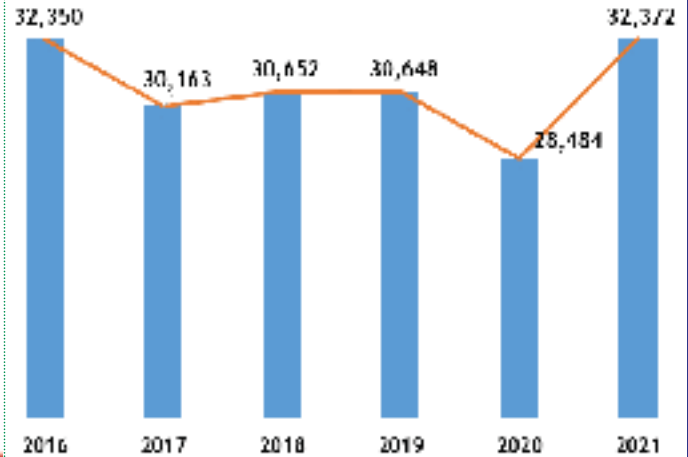
+15%
2020/2021

2,163
Fatalities

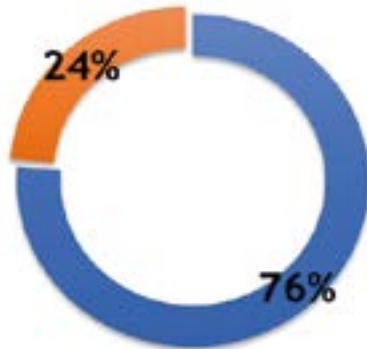
+28%
2020/2021



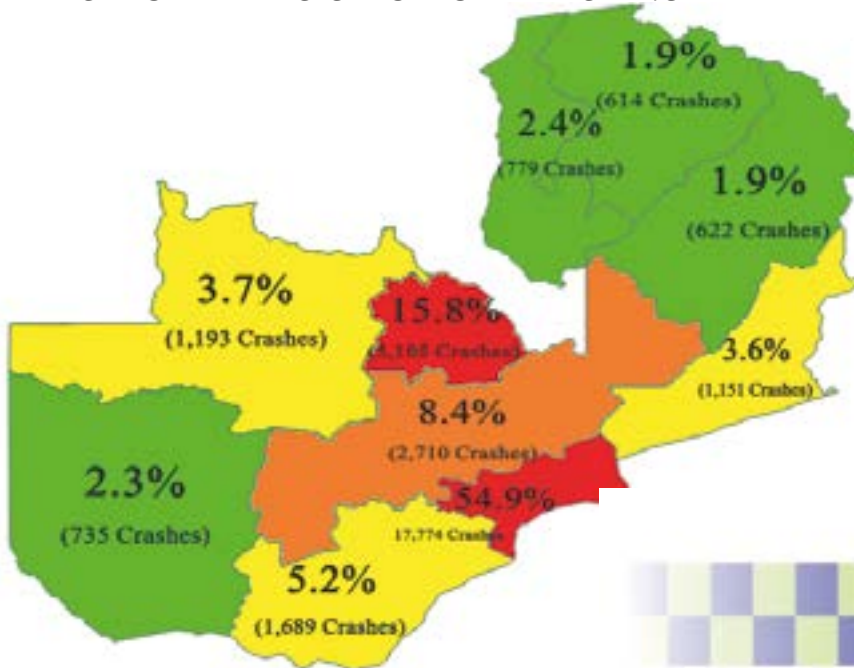
TRENDS IN ROAD TRAFFIC CRASHES



FATALITIES BY MODE OF TRANSPORT



ROADS TRAFFIC CRASHES BY PROVINCE



24Hr Toll-Free Hotline

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