

**COMMUNITY-DRIVEN ROAD SAFETY IN
BLAaubosch, Newcastle,
Kwazulu-Natal**

by

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Submitted in fulfilment of the requirements for the degree of

MASTER OF SCIENCE

in the subject

GEOGRAPHY

at the

UNIVERSITY OF SOUTH AFRICA

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November 2016

DECLARATION

I declare that 'Community-driven road safety in Blaauwbosch, Newcastle, KwaZulu-Natal' is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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ACKNOWLEDGEMENTS

The process of completing this Master's dissertation has been more than an academic journey. It has also been one of self-discovery, shared discovery and growth. There have been many influential people over the past three years, and without their support, guidance, patience and inspiration, all of this would have been impossible. I owe you all my deepest gratitude.

- Professor Melanie Nicolau as my supervisor – you were the guiding voice throughout. Thank you very much for your support, advice and patience, and most of all for encouraging and believing in me during this journey, which allowed me to grow in the process.
- KwaZulu-Natal Department of Transport, Cost Centre Newcastle – thank you for your support by providing all the resources and information that I required for my studies, and, most of all, for giving me the opportunity to pursue my studies.
- All the study participants from the Blaauwbosch area, the community members, local leadership and stakeholders. Without your compliance and generosity, this study would not exist.

To my family, thank you for allowing me to desert you to concentrate on my dissertation. The rewards will be shared by all of us.

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ABSTRACT

This study investigates community involvement in promoting and improving road safety in Blaauwbosch, Newcastle, KwaZulu-Natal. The aim is to evaluate community-driven bottom-up approaches like the Participatory Rural Appraisal (PRA). The central premise is that road crashes can be reduced if community involvement is exercised. Road crashes are affecting all the communities globally, and they continue to escalate at an alarming rate. The 2013 and 2015 World Health Organization (WHO) Global Status Reports form the basis of this study by providing the facts and figures about global road crash statistics. Communities are motivated by the outcomes and impacts of road safety interventions in improving their well-being and development.

The objectives of the research study were to document the community's perceptions of road safety, to check how community members can be involved in reducing road crashes, and to specify the role that local authorities can play. These objectives were met with the use of participatory rural appraisal (PRA) as a research tool for data collection. The study found that the community members of Blaauwbosch perceive road safety as an important factor that affects their lives. There was also a belief that, through community involvement, road crashes can be reduced. The authorities also had an important role to play in reducing road crashes, provided there is political will and the required resources. The findings and conclusions drawn affirms that road safety is a collective responsibility and requires joint efforts from all the stakeholders.

LIST OF ABBREVIATIONS

AARTO	Administrative Adjudication of Road Traffic Offences
ACRS	Australasian College of Road Safety
ADM	Amajuba District Municipality
AfDB	African Development Bank
CDD	Community-driven development
CRSC	Community Road Safety Council
CSIR	Council for Scientific and Industrial Research
DAFF	Department of Agriculture, Forestry and Fisheries
KZN-DoT	KwaZulu-Natal Department of Transport
DPI	Department of Planning and investment
DRC	Democratic Republic of Congo
FIA	Fédération Internationale de l'Automobile
GDP	Gross Domestic Product
GRSP	Global Road Safety Partnership
iRAP	International Road Assessment Programme
JTTC	Junior Traffic Training Centre
NGO	Non-governmental rganisation
PET	Participatory Education Technologies
PRA	Participatory rural appraisal
RAC	Royal Automobile Club
RAF	Road Accident Fund
RRA	Rapid Rural Appraisal
RSDI	Road Safety Development Index
RTMC	Road Traffic Management Corporation

SADC	Southern African Development Community
Sanral	South African National Roads Agency Limited
SAPS	South African Police Service
SDG	Sustainable Development Goal
SWOT	Strengths, weaknesses, opportunities, threats
UK	United Kingdom
UN	United Nations
Unisa	University of South Africa
USA	United States of America
USAID	United States Agency for International Development
WHO	World Health Organization

CHAPTER 1 : THE BEGINNING OF THE JOURNEY IN COMMUNITY FOCUS

1.1 BACKGROUND TO THE PROBLEM

Since the invention of the motor vehicle over a century ago, the World Health Organisation (WHO) estimates that over 30 million people have been killed in road crashes worldwide (WHO 2015). The first recorded road crash in South Africa occurred on October 1, 1903 in Maitland, Cape Town (Arrive Alive 2015). It can be described as follows: the driver of the vehicle entered a level crossing through an open gate, only to find the opposite gate closed. Before the gate could be opened, the driver and the passenger were struck by the express train, which was travelling at full speed. They suffered minor injuries, but the motor car was badly damaged. The enquiry into the crash revealed a remarkably casual attitude on the part of motorists towards level crossings (Arrive Alive 2015). During the century since this crash in 1903, the number of road crashes have increased, mainly as a result of motorists' casual attitude towards complying with the law, and numerous other contributing factors. The movement of goods and people on the road is necessary for social, economic and political reasons. The need to travel creates the circumstances in which road traffic injuries can occur. The rise in crash rates can be attributed to the rise in the number of vehicles, the road environment, demographic factors and the choice and use of less safe forms of transport.

The WHO's Global Road Safety Status Report (WHO 2013) states that the rate of road traffic casualties has reached unacceptably high levels. Globally, about 1.3 million people are killed every year through road traffic injuries. This is cause for concern because these numbers are increasing with the increase in motorization. The report further revealed that road traffic injuries are the eighth leading cause of death globally, and it is projected that, unless urgent action is taken, road traffic deaths will be the fifth leading cause of death by the year 2030. An estimated 90% of road traffic fatalities occur in low- and middle-income countries, particularly in the African region, and these fatalities have severe economic, psychological and social effects. Table 1.1 indicates the road traffic deaths in each region of the world, based on the WHO 2013 Global Road Safety Status Report. The table shows that the African region has the highest number of road traffic deaths per 100 000 population. This is 24.1 road traffic deaths, followed by the Eastern Mediterranean region with 21.3. The lowest number is recorded for the European region with 10.3 road traffic deaths per 100 000

population. The information in the table highlights the severity of the problem of road traffic deaths, and is a clear indication of the predictions of the worst case scenario that can prevail should not sufficient action be taken against road traffic deaths.

Table 1.1: Road traffic deaths in each region of the world.

REGION	ROAD TRAFFIC DEATHS PER 100 000 POPULATION
African Region	24.1
Eastern Mediterranean	21.3
South East Asia	18.5
Western Pacific	18.5
American Region	16.1
European Region	10.3

Source: WHO 2013: 6.

1.1.1 Global road safety status

According to a study conducted by the Royal Automobile Club (RAC) Foundation in 2013, the countries in the Global North have achieved steady declines in road traffic deaths through coordinated and multi-sectoral responses to the problem. It shows that the European Union has the lowest road traffic deaths, estimated at 10.3 per 100 000 population. Car occupants are mostly affected by road traffic deaths in the Global North, followed by pedestrians and cyclists. The road traffic deaths among 15–44 year olds is estimated at 60%. The study further identifies the five basic key risk factors to road safety as speed, non-use of seatbelts, helmets and child restraints, and drinking and driving. These risk factors are commonly known as the “Big Five” in the Global North (RAC Foundation 2013), and are depicted in Figure 1.1. The countries in the Global South are mostly middle- and low-income countries, with 90% of road fatalities occurring in Sub-Saharan Africa. Sharp increases in road fatalities are noticeable in the countries with no traffic management agencies (WHO 2013). Other countries in the Global South, like Cambodia, the Philippines, Thailand and Vietnam have initiated many road safety activities. The causes of road crashes as determined by the police, are mainly due to human errors rather than environmental or vehicular factors. Road-user behaviour accounts for the largest number of road crashes, with alcohol-related cases topping the list.

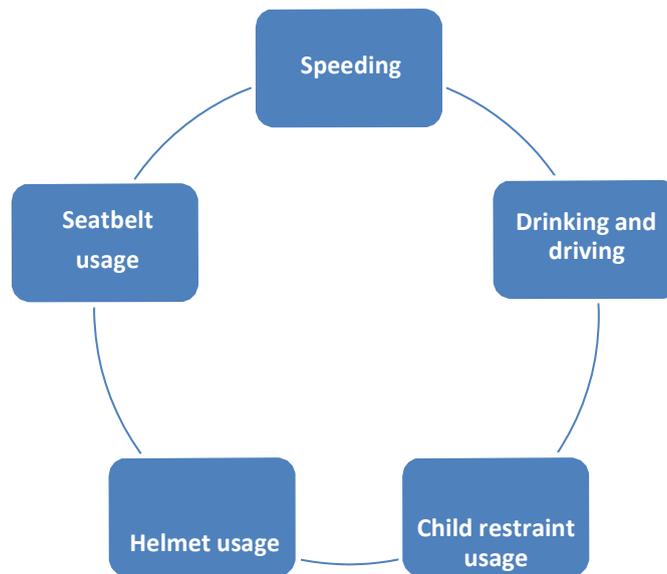


Figure 1.1: Key risk factors of road deaths in the Global North.
Source: WHO 2013.

1.1.2 South African road safety status

In terms of the South African population, there was an increase of 1.93% to a total of 54 million between 2013 and 2014 (Statistics South Africa 2014). The Road Traffic Management Corporation (RTMC 2014, 2015) reported that there was also an increase in the number of driving licences from 11.1 million in December 2014 to 11.6 million in December 2015. The number of professional driving permits also increased by 3.26% from December 2014 to December 2015. The number of vehicles registered increased by 3.30% from December 2014 to December 2015, totalling at 11.7 million registered vehicles during that time period. The general mobility of the provinces in terms of the number of persons per road vehicle varied, with the least mobile provinces being Limpopo and the Eastern Cape. The most mobile provinces were KwaZulu-Natal and North West (RTMC 2015). These statistics highlight the status quo and the crisis situation in road crashes in South Africa due to increased mobility levels.

The RTMC's report of 2015 indicates that more than 12 000 people die on South African roads every year. The bulk of the road crashes occur during the festive (December and January) and Easter (March and April) seasons. It is, however, important to note that the road crashes on rural roads are not clearly specified because of the inconsistency in the system of collecting data on road crashes. Figure

1.2 shows the South African fatalities per road-user group in all provinces.

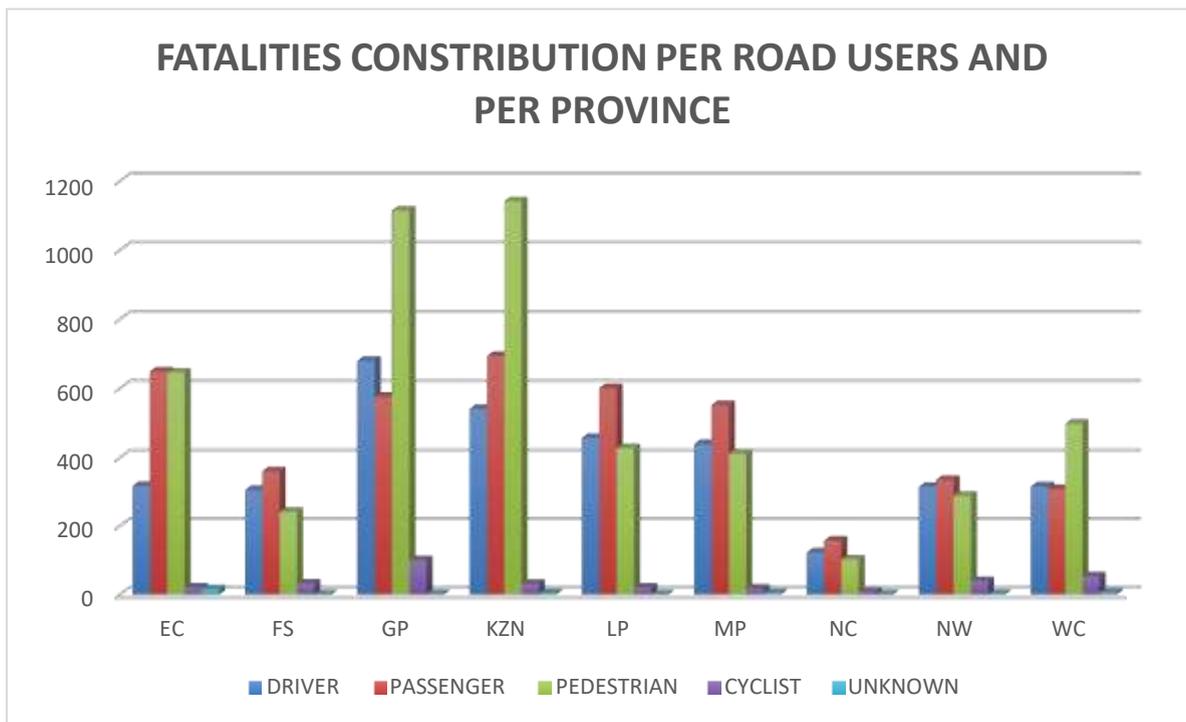


Figure 1.2: Fatalities contribution per road users and per province.
Source: RTMC 2015:44.

The graph in Figure 1.2 shows that the province with the highest fatalities in terms of drivers and passengers in 2015 was KwaZulu-Natal. The Gauteng Province had the second highest fatalities for pedestrians and passengers, with the drivers group being the highest among all nine provinces. The reason that these two provinces recorded the highest fatality rates can be attributed to the fact that they have larger population sizes and a greater number of vehicles than the other provinces. The Gauteng Province is the economic hub of the country and the most congested province. The KwaZulu-Natal Province is a popular holiday destination for the population, hence the highest number of fatalities in this province are recorded during the Easter and festive seasons. The fewest fatalities are recorded in the Northern Cape Province. This province is sparsely populated and has fewer vehicles, hence low mobility factors.

Local research by the Road Accident Fund (RAF) in 2014, has shown that approximately 95% of traffic crashes occur as a result of traffic offences or violations. The factors contributing to road crashes are categorized as human (82.84%), vehicle (9.14%) and environmental (8.02%) factors. This resulted in a traffic offence survey that was to be conducted in 2015, in line with the newly published terms of reference in which the RTMC embarked on a process of establishing a national database in

which all traffic infringements would be recorded by metros, provincial and local governments and national traffic police (RAF 2014).

The reasons to act on road deaths include, but are not limited to, the following:

- 90% of casualties occur in developing countries.
- It is the number one cause of death among young people worldwide.
- The economic cost of road crashes to developing countries is at least \$100 billion per annum.
- Forecasts indicate that these deaths could rise to 1.9 million by the year 2020, if no preventative measures are put in place (RAF 2014).

The South African government is losing more than R55 billion annually as a result of deaths on the roads. According to the RAF 2014 report, during the 2013–2014 financial year, the RAF assisted 26 000 people regarding general damages, 13 000 for the loss of income, 127 000 people for medical costs and contributed to 6300 funerals stemming from road crashes. The RAF's expenditure for 2013/14 and 2014/15 amounted to approximately R55 billion in post-crash care and rehabilitation.

South Africa participates in international road safety conferences that are organised by such stakeholders as the FIA Foundation, the WHO, the World Bank, the United Kingdom's (UK) Department for International Development, and the Global Road Safety Partnership (GRSP), with the following objectives:

- Reviewing the progress made by African countries in improving road safety.
- Planning for the implementation of the recommendations of the *World report on road traffic injury prevention* and the African Road Safety Corridors Initiative.
- Continuing preparations for the United Nations (UN) Global Road Safety Week.
- Advancing the development of national action plans for road safety in African countries.
- Identifying ways to mobilise resources to rapidly improve road safety.

1.1.3 A Decade of Action for Road Safety 2011-2020

Road safety was recognized in global environmental policy deliberations at the Rio+20 UN Conference on Sustainable Development in Brazil in 2010 (WHO 2013). A

clear link was made between road safety and sustainable development. It was highlighted that the promotion of sustainable transport policy must include making non-motorized forms of transport safe and accessible. In 2010, the UN General Assembly spearheaded the process in which the governments of the world, consisting of 195 countries, including South Africa, declared 2011–2020 as the Decade of Action for Road Safety (WHO 2013). The aim of this initiative is to reduce all road fatalities by 50% by the year 2020 in each member state. This is based on the following five pillars of road safety: road safety management, safer vehicles, safer road users, safer roadsides, and post-crash response. Each of these pillars describe the interventions that will be undertaken in each member state in order to reduce road fatalities. Further details of how each of the pillars will address road safety issues are discussed in section 2.6.1. The five pillars of the Decade of Action for Road Safety 2011–2020 are depicted in Figure 1.3:



Figure 1.3: Pillars of the Decade of Action for Road Safety 2011-2020.
Source: WHO 2013:2.

1.1.4 Community-driven road safety

This research study is centred on the involvement of the community in road safety matters. It will be shown that community involvement is a pre-requisite of any effective road safety initiative or programme. This is due to the fact that any road safety incident directly affects the community; therefore, the buy-in of the community is a necessity.

For example, any crash that occurs, involves the people in the community, whether

they were motorists, pedestrians or cyclists. The programmes implemented without consultation with the community are prone to failure because the community has the benefit of local knowledge of the environment, and are also required to adopt and use any countermeasures that are imposed on them.

According to Davis and Quimby (2003), community-driven road safety in China must be based on the following aspects:

- The development of integrated information systems to capture the details and dynamics of each ward. This would culminate into needs assessment analyses.
- The establishment of scientific decision-making tools to measure individual wards' road safety performance.
- The empowerment of all stakeholders to deal with the road safety problems, including community leaders and the public.
- The encouragement of community participation in the identification of road safety problems in the community.
- The application of a multi-disciplinary approach to the planning, implementation and evaluation of road safety problems that other communities like Blaauwbosch are also confronted with.

Community involvement and participation can help alleviate road safety crises. When community members are involved in initiatives that promote road safety they feel valued as citizens, thus enhancing their commitment and support for growth plans. This also promotes social cohesion and a sense of community pride.

1.2 PROBLEM STATEMENT

Roads are essential to the economic growth and development of communities, and bring about important social benefits. Roads are a critical transportation resource that provide both rural and urban communities a means of getting food on the table, getting children to school, tending to emergencies as well as attending social functions. However, roads can bring about calamity within communities in the form of road injuries and fatalities.

Road crashes have become recognized internationally as a social and economic burden, particularly in the Global South. Recent statistics from the report by the WHO (2013) indicate that approximately 1.3 million people die on the world's roads each

year, and between 20 and 50 million people sustain non-fatal injuries. It is projected that these figures will increase by approximately 65% over the next 20 years, unless there is a renewed commitment to prevention. South Africa contributes 40 deaths per day and 15 000 per annum to road fatalities (WHO 2013).

In terms of road safety, countries in the Global South present unique challenges. Road safety is addressed as an isolated issue with different organisations working on different elements. Existing community structures are often not used to their full potential to solve road safety problems that are common in all communities, as well as those that are unique to a specific community (Ribbens and Pillay 2012).

The above information illustrates the magnitude of the road safety problem. Globally many people are affected by road crashes (Table 1.1). The rate of change for this problem is getting worse, hence the increase in the number of road crashes. Road users and households are severely affected economically, socially, financially, physically and politically. The spatial or geographic occurrence of road crashes is normally known by the road traffic authorities, but the hazardous locations will have to be identified by the local community members. Most of the crashes occur during peak hours of vehicular and pedestrian traffic, namely weekday mornings and afternoons when commuters travel to and from work and schoolchildren go to school (WHO 2013).

1.2.1 The research study area

Rural areas are described by Cercarelli et al (2000) as areas that lack the kind of resources that are often taken for granted in an urban environment, which include basic services like drinking water, electricity and proper sanitation. Rural areas are often characterised by a poor quality of life, poverty and unemployment. Approximately 12.7 million people (13.4% of the population) live in rural areas in the former homelands of South Africa. Most of these households (about 93%) engage in subsistence farming, and do not generate significant resources. It is estimated that 3% of households rely on farming as their source of income (Statistics South Africa 2014).

The geographic area that forms the focus this study is shown in Figure 1.4. It is a small village called Blaauwbosch that is situated in the Amajuba District, which falls within the Newcastle Local Municipality, in the northwest corner of the KwaZulu-Natal

province. Blaauwbosch is located 21 km from Newcastle, the municipal capital. It is an impoverished rural area that is severely affected by road crashes because of the two main provincial roads (P296 and P483) that travel through the area, linking the towns of Newcastle, Dannhauser and Utrecht, leading to Vryheid. Along these roads the households, schools, shops and many other informal and formal economic activities that form a linear development. This situation increases the risk for the vulnerable road users, which are pedestrians and cyclists that are mainly schoolchildren.



Figure 1.4: Map of Amajuba District Municipality.
Source: The Local Government Handbook [sa].

The area of Blaauwbosch has experienced a number of road crashes that resulted in minor and major injuries as well as fatalities. Table 1.2 indicates the number of road crashes in the Blaauwbosch area over a period of one-and-a-half years, as provided by, CaptainS. Magudulela of the South African Police Service (SAPS), the Station Commander of Osizweni Police Station (Magudulela 2015).

Table 1.2: Road crash statistics for the Blaauwbosch area, January 2014 to May 2015.

MONTH	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	TOTAL
CRASHES	4	2	3	4	1	1	3	2	1	2	1	6	5	3	3	5	2	48

Source: Magudulela 2015.

The crash data for the period January 2014 to May 2015 indicate that 48 crashes occurred; however, there are no indications of the type of crashes and whether they were minor, major or fatal. The statistics were of such a nature that there is reason for concern, and should nothing be done about reducing crashes in the area, they will increase. Road crashes have enormous financial implications for the area, as the funds that could be utilized to develop the area are used for medical bills and to replace the infrastructure damage caused by these road crashes.

The reason for conducting this study is to encourage community involvement and participation with the aim of driving the processes of road safety. The more conventional method of applying road safety has always been to identify hazardous road sections through accident records in road safety audits. For this study, however, the input of community members, whose road safety needs are articulated through the ward councillor, was collected in each ward. The rationale is that the community knows where these problem areas are, because they suffer as a result of them. Allowing community involvement and participation in road safety highlights road safety problems, and provides benchmarking and monitoring mechanisms so that the service delivery and performance levels of ward councillors can be monitored.

According to Magudulela (2015), the causes of road crashes in the Blaauwbosch area are the following:

- Speed, because of inconsistency in road design elements/the road environment.
- Speed variations, due to vehicle types in the area.
- Alcohol use, which leads to poor road-user behaviour.
- Inefficient traffic-law enforcement, which gives rise to the presence of vehicles that are not roadworthy.
- Unlicensed motorists as well as stray animals such as cattle, goats and sheep.

These factors are indicative of typical rural traffic behaviour and highlights the need for a rural road safety system in which stakeholders and community members take the initiative and are responsible for the safety of their community members on the road.

1.3 PURPOSE OF THE STUDY

The purpose of this study is to utilise community involvement to improve road safety in rural communities. The focus will be on the Blaauwbosch area. This will highlight community-driven road safety aspects, and will ultimately demonstrate to the authorities, community developers and road safety practitioners the role that community involvement can play in improving road safety in rural areas. This can then be used in other areas where there are road safety issues, because road safety is a collective responsibility.

The results obtained can further be used in other rural communities as a yardstick to promote community development and empowerment. Having realised that participation approaches have been applied in community development with little success, as advocated by Cornwall and Pratt (2011), this research study was inspired by enthusiasm to design a solution to the current road safety situation, especially amongst rural communities. It was also inspired by an eagerness to determine the appropriate participatory development model that can contribute to the empowerment of rural communities. This will ultimately instil a sense of ownership and responsibility within participants, and generate a sense of self-reliance among them.

This research study is further motivated by the fact that a community-driven approach will define local priorities and perspectives. Its greatest advantage is that indigenous people are provided the opportunity to articulate their needs in their own way, and participation and empowerment is activated for all community members, even the illiterate individuals. Local people can then determine their plan of action to solve the challenges with which they are faced. This approach will also enable community members to undertake their own appraisals. It can be argued that a roots-driven approach is the best when attempting to resolve road safety issues, because communities will be actively involved and will participate in the activities aimed at resolving road safety issues.

Another research study that advocates the importance of local communities' involvement in road safety was conducted by the London Road Safety Unit in 2008 (Gervais and Concha 2008). It had the following aims regarding rural communities' involvement and participation:

- Promote greater involvement in rural entities and councils and their local communities in defining local road safety issues and developing partnerships to address them.
- Assist local authorities in the analysis factors that affect local road safety and the development of action plans to target problems.
- Information programmes to disseminate information to communities about local initiatives and programmes, as well as evaluating them.
- Serve as training opportunities and guidance for local government on best practice in the application of road safety measures.
- Arrangements for communities to ensure representation in the planning, implementation and evaluation of road safety programs.

1.4 RESEARCH AIMS AND OBJECTIVES

According to Flowerdew and Martin (2005), objectives are based on things and facts that can be seen or measured. It is what the researcher is trying to achieve by a particular course of action. Objectives are specific factors that indicate an action that is required to achieve the aim or goal that was initially set. This is achieved through community participation and involvement, which is the exchange of information on issues, acceptance of feedback on issues, and allowing the community to influence the substance of the decisions that are made through power-sharing with the community.

The specific aim of the study is to establish how community involvement and participation can be used as a tool to improve road safety in the rural community of Blaauwbosch. In order to achieve this aim, the following three objectives of the study will be elaborated on:

- To document the perceptions of road safety by the rural community.
- To establish how the reduction of road crashes can be achieved and sustained through community participation to improve rural development.

- To specify the role that authorities can play to assist the rural community of Blaauwbosch to reduce road crashes.

1.5 RESEARCH METHODOLOGY

A qualitative research method is utilised in this study. This is because the study has a participatory perspective and is issue-oriented with regard to road safety. The interaction with the participants is discussed, including explanations of the social phenomena, specifically how events (road crashes) in the rural community of Blaauwbosch affected them (Cornwall and Pratt 2011). The study also takes into consideration the participants' life experience, by virtue of which are regarded as experts and empowered as respondents. A questionnaire with both open-ended and closed questions was used, after signed consent forms were obtained from the respondents (Annexure I).

Participatory rural appraisal (PRA), from a post-development perspective, will be used. In this system, people are involved in the "bottom-up" approach to find information from both literate and illiterate people about the problems, needs and the potential in a village (Chambers 1994). The appraisal intends to enable local communities to conduct their own analyses, and to plan and take action. PRA involves project staff learning together with the villagers about the village, one of the aims of which is to help strengthen the capacity of the villagers to plan, make decisions, and to take action to improve their own situation.

Using PRA, the researcher hopes to help to improve road safety and the lives of people in the rural community of Blaauwbosch. Different methods and techniques applied through PRA methodology are used in an attempt to improve road safety, and to empower rural people in the process. The outcomes of this study aim to contribute to the body of knowledge about rural community development by adapting and adjusting PRA tools for the effective generation of information. The results obtained can be further used in other rural communities as an example in order to promote community development and empowerment.

Ethical clearance for this research was obtained from the College of Agriculture and Environmental Science, Unisa. A copy of this clearance can be found in Appendix K.

1.6 SIGNIFICANCE OF THE STUDY

This study is underpinned by the assumption that community members can play an active role in reducing road crashes in their local areas and surroundings, if given the relevant tools, resources and exposure. It is hoped that the findings will assist officials who are involved with road safety to improve or reduce road crashes. These are the road safety practitioners in the KwaZulu-Natal Department of Transport (hereafter KZN-DoT) and non-governmental organisations (NGOs) that plan effective approaches to the implementation of road safety strategies and initiatives, and other researchers that are interested in further developing the field of road safety and road safety programmes, particularly in rural areas.

The study attempts to emphasize the fundamental fact that road deaths are preventable, and it is the collective responsibility of officials and road users to support all efforts to curb the carnage on South African roads. Leading road safety experts believe that, with the right action, up to 5 million lives could be saved and 50 million injuries prevented during the Decade of Action for Road Safety 2011–2020. This represents a reduction of approximately 50% on the predicted global death toll by the year 2020.

1.7 LIMITATIONS OF THE STUDY

Although the researcher's professional background is in the field of road safety, every effort was made to remain objective during the data gathering process. The participants were also made aware of the background of the researcher within the field of study.

It is important to mention that the road crash statistics for the study area (Blaauwbosch) may not be accurate as there is presently no standard data collection method used. The statistics collected do not distinguish between minor and serious or fatal crashes. That makes it difficult to conclude what type of crashes are prevalent in the study area.

One of the challenges facing road safety in South Africa is the fragmentation of structures of implementation within the three tiers of government, and the fact that the various statistics on road crashes are collected by different structures using different tools. This makes it very difficult to obtain consistent and reliable data. To

mitigate these challenges, all possible data sources have been utilised and, from these, an average status has been identified.

Many institutions are reluctant to release data on road crashes, in fear of what the data may be used for. This was mitigated by assuring them that the data will be used for research study purposes only. Once the research study is completed and finalised, its findings and recommendations will be made available to all the institutions that provided the researcher with data, as stipulated in the Unisa Ethics application.

Non-participation in the survey by community members who did not see the value of their participation was an anticipated limitation of the study. To mitigate this risk, community members were mobilized and motivated to participate through their ward councillors at the onset of interaction with them. In addition, the advantages of the study was highlighted, as well as the benefits of empowerment of the community members.

While doing participatory appraisal, there is a risk of raising the hopes of the community. Every effort was made to inform community members that the purpose of the study was to develop a strategy that could inform officials of these road safety problems. However, they were also made to understand that, for a variety of reasons, not all their suggestions could be accommodated. To mitigate this risk, the study objectives were made clear to the community members from the onset. The researcher explained how the processes work in as far as implementing the infrastructure is concerned. The researcher practiced extreme caution during observations, and endeavoured to inform the local authorities of the periods of observations. This was communicated via the letter from the supervisor.

1.8 ORGANISATION OF THE STUDY

Chapter 1 sets the background of the study and outlines the features of the research project. The problem statement, study aims and objectives, purpose, significance and limitations of the study are briefly described. It also includes the research questions that were investigated, and explains how the dissertation has been structured.

The basis and context of the study is provided in Chapter 2. It contains a review on global road safety issues. The literature on road safety is critically reviewed in relation to the existing body of knowledge. The focus is also on the best practices of countries that have made significant advances in the reduction of road crashes. The object is

to indicate the work that has already been done and to avoid duplication. The main focus is on road crashes and the role that communities play. These are first discussed from a global perspective, then the focus is narrowed to Africa and South Africa.

Chapter 3 contains the literature review of the research methodology used in this study. The chapter will explain how the methodology was chosen, as well as the motivation thereof. Comparisons of the applications of the methodology on various scenarios are also documented.

A detailed description of the methodology is provided in Chapter 4. This includes discussions of the interviews and participatory methods that were used in the data gathering process, and the questionnaires and focus group frameworks that were utilised. The types of questions that were asked will also be motivated here, as well as the number of people interviewed, and where they are interviewed. This chapter also discusses the advantages and disadvantages of using participatory methods of data collection, and includes an extensive representation of data.

This study utilises a qualitative analysis method, through which the existing data collected, as discussed in the previous chapter, is subjected to detailed analysis in Chapter 5 to discern and establish meaningful interpretation of goals and objectives. The key features of the chapter are the justification for and discussion of the strengths and weaknesses of the data collection methods.

The implications of the research results for road safety policy are documented in Chapter 6. It also highlights the significance and justification of the study. Additionally, the raised assumptions are analysed in light of the research results.

Chapter 7 forms the conclusion of this research study, in which a summary of the important aspects of the previous chapters 1–7 are provided.

CHAPTER 2 : THE GLOBAL PERSPECTIVE OF ROAD SAFETY

2.1 INTRODUCTION

This chapter provides an overview of research related to road safety in general and community-driven road safety. It illustrates the current road safety situation from the global to the local context. Comparisons are made between these contexts and best practices are highlighted. These could serve as a point of reference for the development of programmes and approaches for community-driven road safety in the Global South and the local context, like the study area of Blaauwbosch. The sources of information for this chapter's literature are the reports, road safety programmes, books, newspaper articles, conference papers, journals, peer reviewed journal articles and online references. The problem statement in Chapter 1 highlighted the seriousness of road crashes. The number of fatalities is estimated at 1.34 million per year, and between 20 and 50 million people sustain non-fatal injuries per year. The purpose of this research study is to use a community-driven process as a tool to involve local community members in driving the processes and interventions for road safety. It is, therefore, important to discuss and cross-verify what the literature contains regarding road safety from a macro level (global) down to the micro level (KwaZulu-Natal, South Africa).

In order to assist in the understanding of the context of the study, it is necessary to use existing literature to clarify and define the basic concepts that will be used regularly in this research study: 'community', 'community-driven' and 'road safety'.

2.1.1 Community

McMillan and Chavis (1986) distinguish between two major uses of the term community. One is the territorial and geographical notion of community, which includes aspects like neighbourhood, town or city. The second is relational because it is concerned with the quality and character of human relationships without reference to location or, in other words, spiritual or professional relationships between people in the same area.

According to Bradshaw (2008), community refers both to the place in which organising occurs, and to the group amongst which organising is taking place. Thus, one can refer, for example, to the Blaauwbosch community. In either case, community implies social integration, and the issues and bonds that link people together. It also

implies that members of a group of people have something in common with each other, which distinguishes them in a significant way from members of other groups. Moreover, community is described as a social unit of any size that shares common values.

2.1.2 Community-driven

A research study by Mfenguza (2007) describes 'community-driven' as an initiative in which resources and decision-making authority are given directly to the community groups. The underlying assumption is that communities themselves are the best judges of how their lives and livelihoods can be improved. With adequate resources and information, they can organise themselves to provide for their immediate needs. This involves a measure of trust in people, advocates that people change their environment themselves, and that this is a powerful source for development. It is the empowerment of people through community-based development, where the beneficiaries themselves are engaged in the design, management and implementation of the project.

The processes involved here allow local people to make decisions that will develop or improve the road safety status in a community. According to Section 59 of the Constitution of South Africa (RSA 1996), the communities are encouraged to participate in the committee structures. The democratic government has designed many programmes to encourage community participation that will lead to poverty alleviation and improved lifestyles.

2.1.3 Road safety

Zeedyk et al (2001) describe road safety as the methods and measures used to prevent road users from being killed or seriously injured. This requires teaching people how to behave safely and avoid danger when they drive on or walk in the road. This includes the methods and measures for reducing the risk of a person using the road network from being killed or seriously injured. Road users include pedestrians, cyclists, motorists and passengers on public road transport. Best practice road safety strategies focus on the prevention of serious injury and fatal crashes in spite of human fallibility.

2.2 GLOBAL STATUS OF ROAD SAFETY

Eshbaugh et al (2012) indicate that, what began as a problem in the Global North, now affects countries in the Global South as well. Due to increasing motorisation and lagging infrastructure development, road traffic injuries throughout the world are now a serious cause for concern. Their study further indicates that road traffic deaths are also a developmental issue. As gross domestic product (GDP) per capita rises and households earn more disposable income, countries in the Global South experience a dramatic increase in the number of crashes on the road. Very often such increases in road traffic are not matched by adequate improvements in infrastructure and road safety legislation. This results in a lag between private expenditure on vehicles and the public expenditure necessary to accommodate increased motorisation. During this lag, countries in the Global South are experiencing the largest increase in traffic injuries and fatalities, demonstrating that this phenomenon should be understood through a developmental lens.

The WHO Global Road Safety Status Report (2013) reveals that road traffic injuries are the eighth leading cause of death globally. The same report projects that, unless urgent action is taken, road traffic deaths will be the fifth leading cause of death by the year 2030. An estimated 90% of road traffic fatalities occur in countries in the Global South, particularly in the African region. These fatalities have severe economic, psychological and social effects.

The report further reveals that more than three quarters of all traffic deaths occur amongst young people aged 19–33. This dramatically affects their productive years. The key factors that cause road crashes are speed, driving under the influence of alcohol, mobile phones, and failing to use motorcycle helmets, seatbelts, and child restraints. Driving above the stipulated speed limit is as dangerous to all the road users as driving under the influence of alcohol. The use of mobile phones while driving distracts the driver and, therefore, increases the risk of causing a road crash. Non-use of motorcycle helmets, seatbelts and child restraints increase the risk of being seriously injured or killed during a road crash. Figure 2.1 is an illustration of the key factors that cause road crashes.



Figure 2.1: Non-compliance: causes of road crashes
Source: WHO 2015.

Only 35 countries, both in the Global North and Global South, representing 10% of the world's population, have passed laws to address one or more of these key factors illustrated in Figure 2.1 (WHO 2015).

Due to international concern regarding road safety matters, numerous ministers of transport from around the world convened for the First Global Ministerial Conference on Road Safety in Moscow, Russia, during 2009. During this conference, the South African government became a signatory to the Moscow Declaration. The UN adopted the declaration, then called for the implementation of the Decade of Action for Road Safety 2011–2020, with the goal of stabilising and reducing the level of global road fatalities by at least 50% by the year 2020. As a result of this call, the UN Road Safety Collaboration was established to guide and support the implementation of the Decade of Action 2011–2020, based on the proposed global plan. Most of the countries that are signatories to this initiative are making progress in terms of achieving their goals, and it is important to document this progress on a regular basis.

2.2.1 Global progress on the Decade of Action for Road Safety 2011–2020

The Decade of Action for Road Safety 2011–2020 requires that progress with regard to road safety activities is checked and recorded. The following are some of the significant activities noted regarding the progress made, as recorded in the the WHO's Global Status Report (2013):

- The declaration of the third Sunday in November every year as World Remembrance Day for Road Traffic Victims. Certain countries erected memorials for road traffic victims on this day.
- Global Road Safety Week is held every year in the second week of May, during which more than 100 countries participate through activities that promote road safety.

Rapid development in the Global South, increased number of vehicles and population growth, are all contributing to the rise in the number of road crashes, injuries and fatalities. Although road safety remains a low priority for most governments in the Global South, there is a growing awareness of the social, economic and public health problems caused by road traffic crashes.

Efforts in many parts of the world recently succeeded in putting road safety on the global political agenda. The UN General Assembly also acknowledged that many countries in the Global South have limited capabilities to address road safety, and highlighted the importance of international cooperation, financial and technical assistance in this context. The WHO, the World Bank and the European Union have all, therefore, recently developed comprehensive traffic safety plans.

According to Sanral (2008), international road death rates allow any country's road safety performance to be compared to that of other nations while taking into account the differing levels of population, motorisation and distances travelled. While these rates and, subsequently, the rankings change every year, some countries have consistently displayed better road safety records than others. Road deaths increased by 46% worldwide between 1990 and 2010. Victims are predominantly vulnerable road users, are male, and include the most socio-economically active citizens. It is estimated that by 2030, around 96% of road deaths will occur in the Global South. The ranking of countries' performance in road safety assists with the allocation of the correct indicators which can be applied.

2.2.2 Road Safety International Benchmarking

As shown in International Benchmarking of Road Safety by Shen et al (2013), the road traffic crashes and consequent injuries and fatalities that were traditionally regarded as random, unavoidable accidents, are increasingly recognised as a preventable public health problem. Given the fact that more and more countries are taking steps to improve their road safety situation, there is a growing need for these countries to work together more closely. This is because there is a large number of common problems that can be identified through close cooperation, and improvement can be expected by learning lessons from existing best practices in other countries. The performance of countries in terms of road safety initiatives and interventions is benchmarked against that of countries in order to verify the state-of-the art technology used to reduce road crashes. However, performing a successful road safety

benchmarking practice is by no means easy. Challenges exist at the very beginning with the definition of a benchmarking framework to the final decisions in terms of identification of best practices and establishment of a continuous process of mutual learning.

Wegman and Oppe (2010) state that it is important for countries to compare their safety performances with one another. This will assist in terms of learning from other countries and identify advanced policies that are in use in order to apply them in one's own country. Comparisons can also be done with regard to rankings. In addition, it is important to first examine and analyse the trends of each country over time, and only then to make comparisons. The approaches that are used to compare countries should ensure that the countries concerned have the same situation, the same economic, historical and geographic background as well as the same level of motorisation and safety development. The three types of performance indicators for road safety are distinguished as road safety performance indicators, policy performance indicators and implementation performance indicators. Countries evaluate various aspects of their performance in relation to other "best-in-class" practices. Countries are grouped according to classes or comparable groups per class. Similar backgrounds assist in making comparisons in order to get valid results.

The Road Safety Development Index (RSDI) can be a useful tool in the road safety benchmarking process, according to Al-Haji (2005). It consists of three themes within the road safety domain: a focus on fatality rates from a product perspective, a focus on road-user behaviour, and a system-wide focus on safer vehicles, roads, enforcement and organizational performance. Road safety is an important policy area that can benefit from the implementation of various international benchmarking practices. It is, therefore, widely advocated by most countries and international bodies at the present time. International benchmarking of road safety performance and development has and will continue to play an important role in improving countries' road safety levels. Moreover, from the road safety policy point of view, Gitelman et al (2010) maintain that we should always keep in mind that benchmarking does not represent the end of the process, but that it is rather an ongoing diagnostic management tool that requires effective strategies, sufficient allocation of resources, successful implementation, and persistent monitoring and evaluation in order to achieve improvement over time.

2.3 ROAD SAFETY STATUS IN THE GLOBAL NORTH

Some countries in the Global North are achieving better road safety results, and have proven particularly successful at reducing road fatalities. These countries are Sweden, the UK, Norway, Japan and Denmark (Larsson et al 2010). In less- developed countries, road traffic crashes are the most significant cause of injuries, ranking eleventh among the most important causes of lost years of healthy life.

Shoukrallah (2014) outlines the success factors that contribute to the reduction of road fatalities in the Global North:

- Roads have two plus one lanes that provide for more space and wider roads in order to reduce head-on collisions.
- Speed-limit reduction is enforced in residential and built-up areas.
- Roundabouts are located at intersections to improve the flow of traffic.
- Trees and boulders are cleared away from the sides of roads to promote a more forgiving road environment.
- Guard rails are erected where there are steep gradients that pose a danger to motorists.
- Road markings are improved and median barriers with reflectors are installed for good visibility.
- Rumbled-edged markings are utilised to caution motorists when they are driving on the edge of the road.
- Sharp curves are straightened where slopes are gentle.
- Refuge islands are placed for pedestrians to allow them more time to cross the road safely.
- Black spots are immediately identified and treated.
- Cycling and pedestrian facilities are prioritised.
- “Safe Pedestrian Areas” and wide sidewalks are brought about.

The main reasons for success in achieving declines in road fatalities in the Global North are the following, according to Rizzi and Ortuzar (2003):

- Political support at highest levels, which translates to funding provision.
- A holistic approach to road safety (education, engineering, enforcement and policy)

- Partnerships between the government and private sectors, which also ensures sponsorships.
- Advanced data systems that provide accurate data to enable remedial action.
- Research into road crashes and new solutions and innovations.
- Education and training opportunities as a substitute to prosecution.
- Awareness campaigns that are aimed more at target groups, such as novice motorists or old motorists, pedestrians and cyclists or, in other words, vulnerable road users.
- Greater analysis when dealing with black spots.

Most of the above-mentioned features are lacking in the Global South, hence the high road fatalities in these areas. There are approaches that are in place in the Global South that assist in the reduction of road fatalities. One of them is the safe system approach.

2.3.1 Safe System Approach

In order to improve road safety, minimise the number of crashes, prevent traffic-related injuries and save lives in the Global North, most countries and territories have adopted the 'safe system approach' to road safety (Davies and Roberts 2014). In terms of this approach to road safety, the need for responsible road-user behaviour is identified. It also acknowledges the fact that human error is inevitable when a person is driving or using the road. Therefore, the main objective of the safe system approach is to create a road transport system that makes allowance for errors and minimises the risk of death or serious injury. It is composed of four main elements: roads, speeds, vehicles and road users (Safer journeys [sa]). Figure 2.3 serves as a visual representation of the safe system approach. In terms of this approach, if there is a forgiving environment between the roads, speeds, vehicles and road users, road crashes should be reduced. If the roads, speeds, vehicles and road users could be seen as an interlinked and interrelational system, the safe system approach would be promoted.

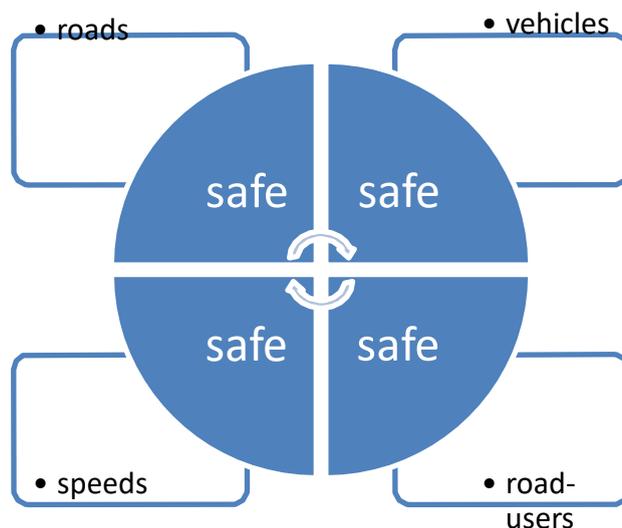


Figure 2.2: A visual representation of the safe system approach.
Source: Safer journeys [sa].

The study conducted by Sebby (2013) reveals that there are three types of crashes that lead to fatalities and hospitalisation: intersection crashes, head-on crashes and crashes in which a vehicle runs off the road. Intersection crashes involve different road users such as pedestrians, motorcycles and motor vehicles. Head-on crashes involve vehicles that travel at high speeds in opposite directions on two-way roads. Crashes in which a vehicle runs off the road occur when a vehicle leaves the road and collides with a roadside object, such as a pole or a signpost or a tree. These crash types can be avoided if the safe system approach is applied correctly. There would be a more forgiving road environment that accommodates mistakes.

Harris et al (2013) shows that the highest number of casualties in the Global North occurred in the age group of 17–24 years during the period 2008 to 2012. Harris et al suggest that there exists a need to formulate road safety action plans that would target young novice motorists. During the same period, more than half of all serious casualties involved motorists, whilst motorcyclists, pedestrians and cyclists comprised 25.4% of all serious casualties and 20.3% were passengers. The highest number of serious casualties per speed zone occurred in 60 km/h speed zones, which contributed 44.5% of the total crashes. In terms of behaviour, the following factors were identified as the main causes of road crashes: drinking and driving, unrestrained passengers, fatigue and excessive speed.

2.3.2 Rural Road Safety in the Global North

There are programmes for road safety dedicated to rural areas in the Global North. These assist in the achievement of the reduced numbers of road fatalities. In most countries in the Global North, according to Sebby (2013), the following road safety initiatives are used to reduce road crashes in rural areas:

- Camera Detected Offence Programme – the local traffic authorities, with volunteers from the community, monitor the speed of the traffic along the road in certain spots with the use of a speed-detecting camera that also displays the speed to the motorists. The motorists would normally slow down along these spots because they can see the speed at which they are driving.
- Black spot programme – the areas in which most crashes occur are identified and marked as black spots. Quick remedial action is taken and an evaluation is done to check the results of the treatment. These areas are identified by community members, who report it to the road authorities.
- Heavy Vehicle Safety and Productivity Programme – targets the drivers of heavy motor vehicles, and offers safety programmes to them as well as overload-control measures to reduce fatigue problems.
- Old Driver Safety Initiatives – targets senior citizens, and offers training programs that promotes safe driving skills, thereby reducing road crashes caused by old motorists.
- Anti-drunk-driving Initiatives – consists of road blocks aimed at checking the alcohol limits of all motorists, and offers educational programs.
- School Road Safety Initiatives – programmes that target schoolchildren in terms of their age groups and involves community members and parents as volunteers.
- Young Driver Program – targets novice and young motorists by offering more road safety programs to facilitate road safety education.

The study conducted by researchers at the RAC Foundation (2013) reveals that between 2005 and 2010 the number of deaths in European rural areas fell by 45%. This is attributed to the road safety initiatives discussed in the previous section.

The study further states that most rural crashes are caused by driving above speed limits. Northern Ireland's Road Safety Strategy to 2020, published by the Northern Irish Department of Environment and the Northern Ireland Statistics and Research

Agency (2015), reveal that in Northern Ireland, motorists' behaviour differ. There are those that obey the speed limits and those that disregard speed limits.

Gervais and Concha (2008) also confirm that 60% of the road crashes in each of the countries in the Global North occur on rural roads. They further maintain that speed remains the key risk factor on rural roads because of single carriageways with high speed limits that vary from 70 km/h to 100 km/h. The risk of being killed is much higher than on urban roads, and crashes are more severe, due to differences in speed, road geometry and functionality, and enforcement levels that are predominantly low. Generally, the rural road safety problem has been neglected over the years in comparison to the high level of attention that has been dedicated to urban roads. This is evidenced by the lack of explicit road safety policies or targets for rural roads in most countries. Even the WHO Global Road Safety Status Report for 2013 is silent about rural road safety.

The findings discussed above highlight the need for greater focus on road safety interventions in rural areas. This also calls for greater community involvement and participation in all road safety activities and interventions. The best practices highlighted in this study reveal that community-driven road safety leads to reduced road crashes, injuries and fatalities.

2.3.3 Criticism of Road Safety in the Global North

In Cairney (2001), one of the community road safety groups in Australia known as Promoting Awareness Responsibility and Care argues that the problem of road safety is largely being stated in the incorrect terms, as most road safety measures are designed to increase the safety of motorists, but many road traffic casualties are not motorists. For example, in the UK, only 40% of casualties are motorists. Those measures that increase motorists' safety may, perversely, increase the risk to these other road users through risk compensation. It is clear that vulnerable road users are marginalised by the road safety establishment in the Global North. Road safety interventions are often centred on reducing the severity of the results of dangerous behaviours, rather than reducing the dangerous behaviours themselves. Improved road safety has often been achieved by making the roads so hostile that those most likely to be injured cannot use them at all, and that the increasing safety of cars and roads is often counteracted, wholly or in part, by motorists' responses (also known as risk compensation).

The factors discussed in this section contradict the concept of the safe system approach in the sense that all roads should have a forgiving nature that accepts every road users' errors. The safe system approach, as applied in most countries in the Global North, like Sweden, Norway, Japan and Russia, advocates the integrated system where roads, vehicles, speeds and road users are in harmony. This is believed to reduce road crashes dramatically.

2.4 ROAD SAFETY STATUS IN THE GLOBAL SOUTH

The Global South is characterised by middle- and low-income countries where 90% of road fatalities occur, particularly the Sub-Saharan African region. Road traffic fatalities are increasing in these countries, and if nothing is done about the situation, it is estimated that the death toll will rise, and will ultimately make road fatalities the fifth leading cause of death by the year 2030. Sharp increases are noticeable in countries where traffic agencies are absent, as per the WHO Global Status Report on Road Safety (2013).

Downing et al (1991) highlight the fact that road safety research began as early as 1972, following a number of requests for help from the Global South. Road safety research is directed at finding practical solutions with an emphasis on monitoring road crash trends, improving crash data collection and analysis systems, and developing and evaluating appropriate low-cost counter measures.

Countries like Cambodia, the Philippines, Thailand and Vietnam in the Global South, have embarked on many road safety activities and initiatives. The causes of road crashes focused mainly on human errors rather than environmental or vehicle factors (Downing et al 1991). Road-user behaviour is attributed to the largest percentage of the causes of road crashes, with alcohol-related cases topping the list. Minimal road safety education in the Global South is the cause of high road crash rates compared to the Global North, which has intensive road safety education programmes.

Lower rates of road deaths and injuries can be found in the Global North while higher numbers are present in India, China and other nations in the Global South. Close to half of all traffic deaths worldwide take place in the Asia-Pacific region and it is estimated that in China one fatality occurs every five minutes. According to the WHO (2013), Ethiopia has the highest rate of fatalities per vehicle in the world, and Uganda

ranks second. In Ghana and South Africa, pedestrians are the group of road users that is most at risk.

Zietlow (2006) asserts that the statistics from the Global South should always be viewed with caution, as crashes are under-reported, which affects the quality of the data. However, data management is improving, and this will inevitably lead to a better-informed decision-making process. This is also promulgated by the Global Plan for the Decade of Action for Road Safety 2011–2020. It is important to discuss the challenges that face road safety in the Global South, as they have a direct impact on the factors that influence the high road fatalities.

2.4.1 Challenges Facing Road Safety in the Global South

In the Global South, there are poor road safety records due to inadequate awareness of the road safety problem in the public, political and professional arenas. There is also insufficient institutional capacity as well as adequately trained and unmotivated staff. Funding for the road safety measures is also insufficient (Kayani et al 2011).

The African Development Bank (AfDB 2014b) indicates that the funding problem seems to be the most difficult one to overcome and needs to be tackled first, in combination with road safety awareness campaigns. Without a stable and sufficient flow of funds for road safety, any attempt to solve institutional problems is bound to fail. Since road users are the ones that cause most of the road crashes and bear the consequences, they are the ones that benefit most by paying for road safety improvements. Measures to improve road safety, including proper enforcement of road safety laws and regulations, can best be financed through a road fund or land transport fund. Alternatively, road construction and maintenance budgets can be put in place, while road safety programmes are financed by applying a road safety surcharge to fuel or vehicle insurance premiums.

The study conducted by Elvik (2008) indicates that road safety programmes can be managed effectively and efficiently by local road safety funds or road safety councils on both national and local levels. These structures should have a sound legal basis, strong oversight and sound financial management. International bilateral donors can play an important role by assisting low-income countries to implement the necessary reforms to finance and manage road safety. Therefore, all road projects financed by

the donor community should have a component that is dedicated to the improvement of road safety, not only on the project level, but on the road-sector level as well.

2.4.2 Contribution of Private Sectors in Road Safety in the Global South

In order to get solutions to the challenge of funding road safety, as discussed in section 2.4.1, the Zietlow (2006) reveals that many private businesses support road safety for their own direct benefit. This can be done through road transport operations, insurance companies, manufacturers and distributors of road safety equipment, as well as road safety engineering firms and consultants. Other private sectors, such as oil companies, and car and truck manufacturers, like to benefit their corporate image or to brand their products as safe. They provide either funds or support in kind. The contributions tend to concentrate in road safety education and knowledge transfer, road safety campaigns, and driver training and awareness. Contributions to road safety by private business can play an important role in the financing and implementation of road safety measures, but they cannot provide all the funds necessary for road safety.

The question of how much should be spent on road safety depends on how the society, especially the road users, perceives the importance of road safety, and on what can be done to improve it effectively and efficiently. According to Elvik (2000), the main categories of road safety expenditures that need to be financed are:

- Road safety engineering measures, including road signs and markings, which form part of the construction, rehabilitation, improvement and maintenance of roads.
- Enforcement of laws and regulations related to road safety.
- Road safety programmes, including road safety awareness campaigns, road safety education, emergency medical services, trauma centres for road accident victims and road safety research.

Contributions by the private sector can provide relief for road safety issues in the Global South, provided that political will is amongst the support factors.

2.5 ROAD SAFETY STATUS IN AFRICA

Africa has the highest road fatalities rate compared to other continents. The number of people killed in road crashes is estimated at 322 000 per year. It is predicted that

by the year 2020, this number will increase to 540 000, if nothing is done to improve the situation (Small and Runji 2014). Road safety has become part of the priority development agenda as well as a poverty issue in the African region. Table 2.1 indicates that the African region has the highest road fatalities per 100 000 population. The burden of crashes has become a development issue that severely affects the competitiveness of and private investment in the Global South. More than R10 billion per year is spent on road fatalities. This hampers progress towards the achievement of Sustainable Development Goals (SDGs). The social impact of road crashes increases with dependency rates and poverty levels. Road crash fatalities have become the first or second leading cause of death for the population group aged 5–14 years in several African countries (WHO 2013). African countries have initiated measures and initiatives to alleviate road fatalities challenges.

2.5.1 Road safety manuals for Africa

It is important to have a tool on which African countries can draw for information in order to improve road safety status. According to the AfDB (2014b), Africa takes the highest share of the road crash burden relative to its low level of motorisation and road network density. The African region also experiences the highest per capita rate of fatalities. Road crashes cost African countries 1–5% of their GDP every year. These figures clearly indicate the direct linkage between road crashes and worsening poverty in Africa. The regional features, such as road network expansion and improvement, rapid motorisation, population growth, urbanisation, unsafe vehicles and mixed traffic, are the contributory factors. These will inevitably worsen road crash deaths and injuries unless African countries invest in road safety. The situation demands that African countries increase their level of investment and attract international cooperation for financial and technical support regarding crash prevention and reduction measures.

The AfDB (2014b) further states that some countries in Africa are investing a great deal in road infrastructure to enhance competitiveness and realise sustainable socio-economic development. The AfDB is widely engaged in national and multinational road infrastructure projects in African countries. In addition to road infrastructure funding, the AfDB has streamlined its approach to road safety in order to increase and consolidate its efforts to support comprehensive multi-sectoral road safety investments, and thereby reducing the increasing losses caused by road crashes.

In line with this, the AfDB developed three road safety manuals for Africa. These are based on the safe system approaches and best practices tailored to African conditions, and aims to support road infrastructure safety practices in Africa over the next decade. The manuals are the following:

- New Roads and Schemes – Road Safety Audits
- Existing Roads – Proactive Approaches
- Existing Roads – Reactive Approaches.

These manuals are designed to enable African countries to consider and manage road infrastructure safety during design, construction and operation. This intervention contributes to the achievement of the goal of the African plan for the Decade of Action for Road Safety 2011–2020, hence it is important to document the road safety progress made this far in the African countries.

2.5.2 African progress on the Decade of Action for Road Safety 2011–2020

The year 2015 marks the halfway point in the African Road Safety Action Plan (2011–2020). The items under review include the following: lead agency; strategy; target; a focus on development planning; promotion of road safety research and good practices; the creation of a knowledge management portal; self-sustained road safety financing; 10% infrastructure investment in road safety; and sufficient financial and human resources to improve road safety. The thirteen countries reviewed were: South Africa, Nigeria, Ghana, Niger, Burundi, Ethiopia, Malawi, Kenya, Ivory Coast, Namibia, Zambia, Liberia and Mozambique. In terms of the scores assigned as part of the initiative, South Africa has the highest score, with Mozambique having the lowest score (Lisinge 2014).

The WHO Global Status Report on Road Safety (2013) stipulates that one of the requirements for the Action Plan for the Decade of Action for Road Safety 2011–2020 is to create knowledge management portals for road safety issues by doing the following:

- Allocate at least 10% of road infrastructure investment to road safety.
- Allocate 5% of road maintenance resources to road safety.
- Enforce mandatory reporting by all signatories.
- Establish national associations of road accident victims and survivors.

The findings have revealed that 50% of the countries have done little or nothing in relation to the above activities, as per the WHO Global Status Report on Road Safety (2013).

In terms of establishing a road safety lead agency, 50% of the countries have done so through the following activities:

- Setting realistic and attainable road safety targets.
- Establishing self-sustained road safety financing.
- Allocating sufficient financial and human resources to improve road safety.
- Committing a component of all relevant international partner-funded interventions to road safety.

The activities that have been fully implemented by a relatively high proportion of the aforementioned countries include:

- Preparing and approving road safety policy and strategy.
- Advocating road safety as a focus area of development.
- Promoting road safety research studies and the use of good practices.
- Promoting private sector and community involvement in road safety.

In terms of the improved management of data, the items under review are the following: a national database, mandatory reporting, an analysis and reporting system, harmonised data, a harmonised vehicle and driver registration system, data management capacity, engagement of local research centres, enhancement of the injury data system, and baseline data on road safety. In terms of the scores, Niger has an excellent data management system, followed by Ghana. South Africa has the worst data management system.

With regard to partnerships and collaboration strength, Chen (2010) reviews the following items: the commitment to a road safety component in partner funded interventions, transport corridors for road safety programmes, the establishment of national associations of victims and survivors, and promoting private sector and civil society involvement. The scores revealed that South Africa has the best partnerships and collaborative strength, followed by Niger. The worst countries are Liberia and Mozambique.

The good practices illustrated in the Road Safety Manuals for Africa (AfDB 2014a, 2014b) include the following activities:

- Coordination of a memorandum of understanding for road safety stakeholders, national road safety councils, road safety audits and inspections, and commitment through government funding with the Road Fund Allocation in Ghana, Ethiopia, South Africa, Namibia, Burundi, Malawi and Zambia.
- Training for scholarships to attend road safety training in developed countries. In South Africa, there is a Zenani Mandela Scholarship for Road Safety.
- A high level of political commitment demonstrated by the Togolese and Ghanaian presidents through their declaration of 2014 as the Year of Road Safety.
- Age restrictions on imported vehicles were imposed for Senegal and the Democratic Republic of Congo (DRC).

The policy implications for the African countries were the following:

- The strengthening of data collections, analysis and reporting systems.
- The acceleration of reforms/modernisation of systems to improve the accuracy of data.
- Raised awareness on the part of the police of the importance of accurate and timely reporting of road safety data.
- The provision of a critical mass of road safety experts in national organisations that are directly involved in road safety.
- A high level of sharing of experiences among countries.

All the above good practices can ensure that road safety initiatives are promoted, and that community involvement is achieved. This will decrease the road fatalities to a great extent. The target for the Decade of Action for Road Safety 2011–2020 can also be achieved.

2.6 SOUTH AFRICAN ROAD SAFETY STATUS

South Africa is counted among the middle-income group of countries that have been the hardest hit with road crashes and fatalities. The lead agency is the RTMC, which is funded by the government and is responsible for the implementation of the National Road Safety Strategy. The latter is based on the four E's: education, enforcement, engineering and evaluation. As stated, South Africa is a signatory in support of the

Decade of Action for Road Safety 2011–2020, which aims to stabilise and reduce road fatalities by at least 50% by the year 2020.

The road network of South Africa is estimated at 752 000 km, and it is very hard-hit by road crashes (Sanral 2006). The most vulnerable road users are pedestrians, especially schoolchildren, cyclists, young motorists (25–34 years of age) and passengers in mostly public transport vehicles. According to the Road Accident Fund (RAF 2014), the cost of road crashes to the economy is estimated at R307 billion per year. The provinces with the highest road crashes are Gauteng and KwaZulu-Natal. This is probably due to the fact that they are the most populated provinces with the highest traffic volumes, especially during the peak seasons of Easter holidays and the festive season.

According to the RTMC (2015), more than 12 000 people die on South African roads every year. The number of road fatalities on South African roads seem to be decreasing at a very low rate over the years between 2010 and 2015 as shown in Table 2.2. The table indicates that there has been a slight increase of 197 fatalities between 2013 and 2014, and another increase of 247 fatalities in 2015. A decrease of 1952 fatalities was, however, recorded between 2011 and 2014.

Table 2.1: Road fatalities in South Africa 2010-2015.

YEAR	ROAD FATALITIES
2010	13 967
2011	13 954
2012	12 211
2013	10170
2014	10367
2015	10613

Source: RTMC 2015:9

The slow decrease of road fatalities makes it difficult to predict whether the target for the Decade of Action for Road Safety 2011–2020 to reduce road fatalities by 50%

within the relevant timeframe can be achieved or not. It is believed that with more community involvement and participation, new road safety measures and approaches, and improved implementation of policies and strategies due to more political will, road traffic injuries will be the thing of the past, and that the target of the Decade of Action initiative may be reached. It is, however, important to highlight the progress that has been made by South Africa regarding the Decade of Action initiative, up to the year 2015.

2.6.1 South African progress on the Decade of Action for Road Safety 2011-2020

The first draft of the country's progress report that was submitted to the UN with regard to the Decade of Action for Road Safety 2011–2020 in 2015 concentrates on the five pillars of this initiative, as shown in Figure 1.3 (Arrive Alive 2015).

2.6.1.1 Road safety management

The RTMC was established in 1996 as the lead agency for road safety in South Africa and it is still going strong with key objectives that address road safety issues. A National Road Safety Strategy was developed with Road Traffic Safety Management Systems and Road Transport Management Systems. The realistic long-term targets for the improvement of road safety were set. Methods to secure sufficient funding for road safety were also determined. The crash data systems to record crashes and road traffic offences was developed. The roles and responsibilities in the road safety environment are clearly defined and coordination takes place in a responsible way. The above factors ensure that road safety management is of a very high standard and that desirable standards to bring down road fatalities will be achieved.

2.6.1.2 Safer roads and mobility

The South African National Roads Agency Limited (Sanral) follows a safe system approach in the planning and implementation of road safety measures on their roads. This includes sustainable urban planning principles and the establishment of a road safety engineering focus group. The promotion of the safe operation, maintenance and improvement of existing roads, provision of safe new infrastructure, capacity building and knowledge transfer in the provision of new and safer road infrastructure, and research and development in the provision of safer roads would reduce road crashes and fatalities dramatically. All actions are coordinated between disciplines, and are monitored to constantly measure the impact of safety measures. Designing

roads and infrastructure, such as sidewalks, intersections and pedestrian crossings, require more than mere adherence to design standards and guidelines. Road safety audits can assist with the prevention of unsafe conditions on the road, where a system of peer review is used to verify designs before implementation. South Africa has recognised the need for implementing this road safety tool by compiling the updated South African Road Safety Audit Manual. The manual aims to assist road authorities to conduct both road safety audits for new road projects and road safety appraisals for existing roads, in order to identify potentially hazardous locations and put remedial measures in place to minimise crashes on the road network (RTMC 2012).

2.6.1.3 Safer vehicles

South Africa has little input in the design of vehicles, apart from regular feedback with the motoring industry. The Southern African Development Community (SADC) members participate in the UN World Forum for Harmonisation of Vehicle Regulations. It encourages the equipment of all vehicles with seat belts, promotes new vehicle safety assessment programmes, and encourages crash avoidance technologies as well as the use of fiscal incentives for vehicles with higher safety standards to discourage the importation of vehicles that have reduced safety standards. Pedestrian protection regulations and increased research into safety technologies to reduce the risk of vulnerable road users is also encouraged. In addition, the government and private sector are encouraged to buy vehicles with higher safety standards. South Africa is in the process of regulating, monitoring and auditing vehicle testing centres. A database of all vehicle testing centres will be established and strict criteria developed to monitor and audit compliance.

2.6.1.4 Safer road users

It is known that most crashes occur due to human error and drivers and road users who do not adhere to the rules of the road. Therefore, the road safety policy and strategy is focusing greatly on improving the driving culture in South Africa. There is a 365 Days Road Safety Programme in which each month has a theme with activities. Six areas are identified as follows: impaired driving, dangerous driving, occupants' safety, public transport, loads management, and vulnerable road users. Attempts have been made to intensify road safety awareness initiatives and prevention measures by implementing social marketing campaigns to help influence attitudes and opinions on the need for road traffic safety programmes. Some of the initiatives

in promoting road safety include the following: railway level crossing, Administrative Adjudication of Road Traffic Offences (AARTO), National Traffic Police, National Traffic Anti-corruption Unit, Road Safety awareness campaigns, Junior Traffic Training Centres (JTTCs) and scholar patrols. The school programmes for promoting road safety include Sanral's Checkicoast, Scholar Transport, Shova Kalula programme, National Rolling Enforcement Plan (NREP), research into road safety at schools, implementation of Average Speed over Distance on several roads and learner licence programme for grade 12 learners. If community members volunteer to be part of these initiatives, there could be a reduction in road crashes and fatalities because they have a better understanding their environment and surroundings.

2.6.1.5 Post-crash response

There exists pre-hospital care systems, which includes the extraction of a victim from a vehicle after a crash, and implementation of a single nationwide telephone number for emergencies is underway. The hospital trauma care systems and evaluation of care through the implementation of good practices in trauma care systems and quality assurance is currently being developed. Early rehabilitation and support will be provided to injured parties and those bereaved by road traffic crashes to minimise both physical and psychological trauma. The establishment of appropriate road-user insurance schemes to finance rehabilitation services for crash victims through the introduction of mandatory third-party liability and international mutual recognition of insurance like the green card system is encouraged. The SAPS road crash investigation results should be made readily available. Thorough investigation into a crash, the application of an effective legal response to road deaths and injuries, and fair settlements and justice for the bereaved and injured have also been implemented. The activities that have been undertaken for the Decade of Action for Road Safety 2011–2020 are important with regard to the reduction of road crashes. However, South Africa continues to face challenges that negatively impact the achievement of these milestones.

2.6.2 Challenges that face road safety in South Africa

The following factors were identified by the RTMC (2014) as challenges faced by South African road safety:

- Fragmentation of responsibilities amongst various tiers of government or, in other words, national, provincial and local government.

- A lack of co-ordinated co-operation and failure plan and undertake road safety programmes.
- Poor communication between the various tiers of the government.
- Inadequate utilisation of control measures, monitoring and management of information systems.
- Inadequate training, equipment, manpower levels, infrastructure and performance management tools to perform required functions.
- Decreasing revenue for traffic-law enforcement and traffic management.
- No uniformity in terms of legislation, appointment of agents, tariff structures, fines or collection levels.

If these challenges can be resolved, South Africa can achieve massive declines in road fatalities. The Decade of Action for Road Safety 2011–2020 campaign contains numerous projects that are aimed at reducing road fatalities. These will be discussed in the recommendations chapter. The pillars of the Decade of Action 2011–2020 endeavour to address the identified challenges. However, community-driven road safety can also bring about solutions to these challenges.

2.7 COMMUNITY AND ROAD SAFETY

In 2010, the South African Minister of Transport, Sibusiso Ndebele commissioned that road safety needs to be taken to grassroots level and its context. A Road Safety Summit was held to put together a strategy to develop Community Road Safety Councils (CRSCs) at national, provincial and local levels. He stated that “road safety is not what you do to a community, but it is what you do with a community”. As a result CRSCs were established in most provinces during 2011 and training was carried out to capacitate communities in improving road safety (Arrive Alive 2015).

Involving communities in road safety has many benefits and positive results, as discussed by Davis and Quimby (2003):

- Community members feel considered as valued citizens.
- The community’s support for growth plans is earned.
- The liveability of communities is enhanced.
- Cohesion between the resident and non-resident workforce is promoted.
- The sense of community pride is enhanced.

Community involvement is an essential part of community programmes, because it provides an opportunity for ongoing understanding and improvement. It builds local capability, empowers communities regarding matters related to land transport systems, and adds a wider sense of community development (New Zealand Transport Agency 2008). This includes the achievement of sustainable change in attitudes and behaviour at the community level, and the sharing of information (success and good practice) among communities.

Cairney (2001) maintains that growing interest in community road safety has been considerable in recent years, both on the part of authorities that have a stake in containing or reducing the death toll, and on the part of some communities themselves who have embraced the opportunity to address road safety issues directly. Community road safety is described as action initiated and managed at a local level rather than at national or provincial level. This can also culminate in action to tackle problems in the local area that arise from local conditions, and in the involvement of the local community and local groups as service providers, or enhance awareness of road safety issues.

In order to highlight the practicality of community involvement in road safety initiatives, it is important to discuss certain case studies that had proven community road safety interventions to be successful in certain areas.

2.7.1 Conditions for a sustainable community road safety programme

A sustainable community road safety programme has to develop under certain conditions in order to be successful. Harris et al's (2013) study, conducted at the Australasian College of Road Safety (ACRS), focuses on saving lives and serious injuries on the roads. It is the region's leading association for road safety professionals and members of the public who are focused on road safety. The study advocates that the following conditions would ensure a sustainable community road safety programme:

- A stable representative of the local body for strategy development.
- Effective personnel with a road safety officer or coordinator and active volunteers from the community.
- The commitment of local resources through funding, contributions and volunteer input for low-cost projects to be effective.

- Effective partnerships through stakeholder organisations with clear roles and responsibilities.
- Management support where there is a framework for the management of community road safety.
- A commitment to community road safety and to building the confidence and securing the buy-in of the community.
- Expert advice from the council or municipality, and even running workshops in support of community road safety.
- A screening process for initiatives to ensure good results and benefits to justify funding.
- Evaluation, to monitor processes and interactions with communities, based on set indicators to evaluate whether the community road safety programme succeeded or failed through outcome evaluation and process evaluation.

Many jurisdictions now recognise community road safety as an essential part of good practice in the delivery of road safety, especially in terms of dealing with local issues and reaching groups and individuals not easily reached by mainstream media. It has been demonstrated that community road safety can deliver programmes and engage the community effectively.

2.7.2 Objectives for community road safety programmes

Howat et al (2001) advocates the specific objectives of the promotion of road safety through communities as follows:

- Creating an informed community to produce informed activism.
- Mobilising local resources for road safety to create a sense of ownership, encouraging community involvement and enhancing a sense of community.
- Promoting effective action toward road safety outcomes, encouraging good practice, innovation and influencing key stakeholders.
- Integrating activities by involving other stakeholders and sector departments to promote and enhance road safety culture.
- Empowering local people, especially women and the poor, by enhancing their personal capacity to foster responsible attitudes and good road-use practices.
- Raising awareness and bringing positive changes to the knowledge, attitude and behaviour of road users about road safety rules and the road environment

through community-preferred interventions and by using local resources and networks, which will help to reduce poverty as well.

- Enhancing responsible attitudes and appropriate behaviour toward their own safety and that of others on the road.
- Finding sustainable and replicable road safety education programmes, tools and interventions.
- Developing community ownership of road safety and the programmes that are carried out.

2.7.3 Best practices for community-driven road safety activities

Barrie (2007) tabled the best practice interventions for a community road safety initiative in the Renfrewshire Council in Scotland. The aim of the initiative was to tackle driver behaviour and encourage motorists to reduce their speed to 40 km/h in all built-up areas. The reason for choosing this specific study area to apply community-driven road safety is because it had the following characteristics:

- There was a busy provincial road running through a rural area.
- Road crashes were occurring regularly.
- Accident data was available and indicated treatable road safety problems
- The community was willing to participate in road safety measures.
- Large trip generators were present along transport routes, like schools, shops or bus stops.
- It was a low-income residential areas.

The community members were actively involved in promoting this awareness campaign by engaging in many activities. They designed posters and leaflets to promote road safety throughout the area. The leaflets and posters contained local people and area photographs, which highlighted local issues and encouraged motorists to keep their speed to 40 km/h or less. Quotes from local residents about road safety were also put in the posters and leaflets to promote road safety. Distribution was also done door-to-door to all the neighbourhood, and positive feedback was received because the initiative was local and involved local people. The community members even embarked on formulating a community charter on road safety. Road safety became their lifestyle. Monitoring and evaluation was performed through surveys to measure the changes in driver speeds, through door-

to-door interviews, through ongoing accident analyses, and through school surveys and observations.

Australia and New Zealand have implemented many leading community road safety programmes that can serve as best practices for other countries. Cercarelli et al (2000) outlines the characteristics of community road safety programmes that are based on the practices of Australia and New Zealand:

- Participating municipalities that have a full-time or part-time Road Safety Officer, and the development a road safety plan.
- A budget for road safety programmes to be implemented by the community.
- Road safety efforts are managed by legislation, such as a national transport act, that also provides for funding for the programme.
- Road-wise communities develop strategic plans for road safety.

In Queensland, Gervais and Concha (2008) points out, the community road safety programme supports a number of activities, including driver reviver programmes, community committees and a comprehensive school safety program. In Victoria, there are community road safety councils (CRSCs), like those in South Africa, that operate across a number of different local government areas and is supported by a coordinator to carry out presentations and seminars.

If a country has all the characteristics outlined above, community road safety can be easily undertaken, and the results can be immensely positive. This can lead to a massive reduction in road crashes. The implications of the above factors are that community-driven road safety is possible, especially with strong institutional structures with the capacity and capability for road safety.

2.7.4 Remarks on community-driven road safety

Gervais and Concha (2008) explain that the aims of community involvement in road safety are not limited to the following:

- Raising awareness of road safety and injury prevention in targeted communities.
- Generating evidence on the causes of inequalities.
- Facilitating community-driven solutions.
- Creating long-term engagement structures.

Working with communities to reduce road traffic injury inequalities will ensure that the following factors are minimised:

- Lack of awareness and knowledge about road safety.
- Limited parental ability to supervise children.
- Carelessness on the streets among children.
- Poor in-car safety.
- Greater exposure to risk.
- Less safe environments.
- Less road safety education and knowledge.

To conclude the issue of community involvement, it is clear that it is a pre-requisite for any effective road safety initiative or programme. It requires the interest and buy-in of all potential stakeholders and beneficiaries for the identification of local road safety problems and issues. Participation in interventions and the development of countermeasures in order to raise awareness of the issues and reduce the incidence of road crashes is encouraged. The programmes that are implemented without consulting the community are prone to failure because the community has the benefit of local knowledge, and are also required to adopt and use any countermeasures that are imposed on them.

2.8 CONCLUSION

In this chapter, a comprehensive review of the literature on road safety has been presented, from a macro to a micro level. The progress that has been made in some countries has been highlighted as well as the criticism and challenges thereof. These discussions will assist in advocating for a strong community-driven road safety that is applicable in the study area of Blaauwbosch. However, in order to facilitate the community-driven road safety programme, it is important that the proper methodology is utilised. PRA has been selected as the method to drive the process, and it will be comprehensively discussed in Chapter 3 of this research study. It is universally believed that all community programmes can only succeed if there is full involvement and participation by the community members. Road crashes and fatalities can be dramatically reduced if more community-driven initiatives are employed.

CHAPTER 3 : A HANDS-ON APPROACH TO COMMUNITY INVOLVEMENT AND PARTICIPATION

3.1 INTRODUCTION

This research study seeks to highlight the role that community involvement can play in improving road safety and the lives of the people in the study area of Blaauwbosch in KwaZulu-Natal. The study aims to assist the authorities, community developers and road safety practitioners to acknowledge the role that can be played by communities in improving road safety. The results can then be applied to other communities because road safety is of great concern. Participatory Rural Appraisal (PRA) is used to highlight community involvement in road safety. A brief description of PRA, its history, tools, methods and techniques as well as the pre-requisites and application of PRA are discussed to indicate its best practices.

3.2 PARTICIPATORY RURAL APPRAISAL DESCRIPTION

Robert Chambers is regarded as the originator of PRA and described it as a system where people are involved in a bottom-up approach to find information from both literate and illiterate people about problems, needs and potential in a village (Chambers 1994). It is intended to enable local communities to conduct their own analyses and to plan in order to take action. PRA also involves project staff learning together with villagers about the village, with the goal of helping them to strengthen their capacity to plan, make decisions, and to take action towards improving their own situation.

Cavestro (2003) describes PRA as a family of approaches, methods and behaviours that enable people to express and analyse the realities of their lives and conditions, to plan for themselves which action to take and to monitor and evaluate the results. It emphasises processes that empower local people. Greater community participation is included in PRA, which is a semi-structured process of learning from, with and by rural people as actors or presenters and not merely as respondents. It is not only focused on data gathering aspects, but on the presentation and analysis of information to the community by, for example, participatory mapping and visual sharing techniques. It is considered an initial step in a process of participatory planning and action.

Robinson (2002) stipulates that PRA is one of the most appropriate approaches for the identification of community problems and for understanding the socio-economic and cultural aspects of the community. Its purpose is to gain an understanding of the complexities rather than to gather highly accurate statistics on a list of variables. Participation is regarded as the most important part of PRA. It means involving local people in the development of plans and activities designed to change their lives. In its most developed form, participation is a continuous process of negotiation and decision-making that occurs at various levels and with all stakeholders. It is the process through which stakeholders influence and share control over priority-setting, policy-making, resource allocation and access to the community. The description of PRA necessitates that its history be investigated so that its application can be analysed without difficulty.

3.3 PRA HISTORY

The brief history of PRA gives an indication of its applicability to community structures. It stems from the shift away from processes in which local people were not involved in tackling their local situations and issues. The PRA approach was first developed in the late 1970s to assist with the shift from the top-down approach, which was known as Rapid Rural Appraisal (RRA), to a bottom-up approach, based on village experiences where communities effectively take charge of their local situations. Researchers only act as facilitators to help local people conduct their own analysis, plan and then take action accordingly. This approach is based on the principle that rural people are creative and capable, and can do their own investigations, analyses and planning. It is considered one of the popular and effective approaches to gather information in rural areas. The Department of Planning and Investment in Quang Ngai Rural Development Programme in Vietnam describes PRA as a set of tools and techniques that is used with households to gather and analyse information from households regarding community resources, problems, potential and needs (Pain and Francis 2003).

PRA is usually conducted with a group of households from a village that work with facilitators, using different exercises known as PRA tools or methods. Each exercise is conducted differently and has a different purpose and outcome. Chambers (1994) states that PRA has five streams or sources that stand out as parallels to it, these are activist participatory research, agro-ecosystem analysis, applied anthropology, field

research on farming systems and RRA, which evolved in the 1970s and is one-sided, dominated by the researcher, and gives nothing back to the villagers. It is argued that RRA's main objectives are investigation, analysis, learning, planning, action, monitoring and evaluation by insiders.

In this research study, PRA is applied from the perspective of post-development theory, which arose in the 1980s and 1990s through the works of scholars like Arturo Escobar, Gustavo Esteva, Majid Rahnema, Wolfgang Sachs, James Ferguson and Serge Latouche (Pieterse 2010). They argue that development has always been unjust, never worked, and that the idea of development stands like a ruin in the intellectual landscape, and this must be dismantled. They further argue that the concept of development has resulted in the hierarchy of developed and underdeveloped nations. Developed nations are more advanced and superior to underdeveloped nations. Underdeveloped nations are considered inferior, in need of help from developed nations, and have the desire to be developed nations themselves (Pieterse 2010). Post-development theory focuses on the underlying premises and motives of development. What sets it apart from other critical approaches is that it is sceptical about development. The question is whether this is a tenable and fruitful position, wherein post-development is a radical reaction to the dilemmas of development. Development is also rejected because it is believed to be the 'new religion of the west', and the imposition of science as a form of power, which brings about environmental destruction.

This destruction is what PRA aims to eliminate. Instead, it encourages rural people to take charge of their situation and be actively involved in decision-making processes. This will ultimately empower them to be active citizens that are involved in development processes, instead of wishing to be like the developed nations but not taking any action. For example, suggesting and deciding on the interventions that would assist them in bringing down the road crashes in their areas.

The models of development are based on Western models of industrialisation that are unsustainable in this world of limited resources, and ineffective for their ignorance of the local, cultural and historical context of the people to which they are applied. The imbalance of influence, or domination by the West, is opposed by the post-development scholars like Escobar (1992). He believes that the economy must be based around solidarity and reciprocity, and that policy must focus on direct

democracy, and knowledge systems should be traditional, or at least a hybrid of modern and traditional knowledge (Escobar 1992).

According to Hamilton and Kennedy (2005), PRA is one of the development methods that act as a tool of empowerment for community development. It is, therefore, crucial to use it as a tool to improve road safety within rural communities, seeing as road safety is currently a major cause for concern. They further argue that participation cannot be separated from empowerment. People's participation is an organised process in which the people concerned take initiative and control. Participation develops self-confidence, pride, initiative, creativity, responsibility and co-operation. People are empowered during the process when they take charge of their own lives and solve their own problems.

This study is further motivated by the fact that PRA is a bottom-up approach with locally defined priorities and perspectives. Its greatest advantage is that indigenous people are provided the opportunity to articulate their needs in their own way, and participation and empowerment are activated for all community members, even the illiterate group. Local people can then determine their plan of action to resolving challenges with which they are faced, and are enabled to undertake their community's activities, and will be actively involved and participate in resolving road safety issues.

3.4 PRA TOOLS, METHODS AND TECHNIQUES

The central issue in this research study is the use of PRA as a tool to improve road safety and the lives of people in a rural area like Blaauwbosch through community involvement. Different methods and techniques, applied through PRA methodology, were used in an attempt to improve road safety and empower rural people in the process. The following techniques of PRA, as developed by Chambers (1994), were applied: direct observation, do-it-yourself, transect and guided field walks, semi-structured interviews, group interviews, timelines, probing questions and suggestions for the future.

The research involved the community from the onset, which permitted them to monitor their own progress, and build skills in analysis and planning during the process. All the activities were based on communities' experiences, and the researcher learned from the rural people. The participants were residents of the rural community of Blaauwbosch, along with local leadership and government officials of

the KZN-DoT. Consent letters (Annexure I) were used to allow the local people free participation in the research study after the objectives of the study had been explained, in accordance with the Ethics Policy Manual of Unisa.

According to Bhandari (2003), PRA is an action research methodology where local people and outsiders from different sectors and disciplines are involved. Outsiders facilitate local people in analysing information, practising critical self-awareness, taking responsibility and sharing their knowledge of life and conditions to plan and to act. The principles of PRA include the following: using optimal ignorance, offsetting bias, triangulation, learning from and with rural people, and learning progressively and rapidly. The features of PRA are iterative, innovative, interactive, informal and in the community. Chapter 4 illustrates how the PRA tools, methods and techniques were applied in this research study. The use of observations, transect walks, interviews and focus group discussions is comprehensively discussed.

3.5 APPLICATION OF PRA TO COMMUNITY DEVELOPMENT

Kibombo and Kanyesiye (2005) discuss the factors that should be considered for PRA to be applied effectively and efficiently:

- It is necessary to have a simple and easy procedure for community organisation and to ensure participation from each corner of the village.
- All sectors or areas of the community should be covered in order to ensure maximum participation from members of the community.
- A strong relationship must exist between the researchers and community members, and the local elite should be involved in every activity, but not given all authority and responsibility.
- Community members should be trained in all aspects of basic road safety with the use of different tools in different sectors, without any discrimination.
- A clean and transparent system of accountability at grass-roots level must exist, with monitoring and evaluation as part of every phase.
- Communication with local community members should occur regularly for information-sharing sessions and to highlight the importance of community involvement and participation.

If applied correctly, the above-mentioned factors would ensure maximum and effective participation of the community members, ultimately bringing about efficient PRA processes.

PRA is currently applied within many other programmes, including rural and urban projects with different topics and in varied environments. The objective of PRA is to create conditions that attract the interest and involvement of community members and others concerned in development processes, according to Khoi (2014). He stipulates that the conditions for a successful PRA include the following:

- Training and capacity building that is practical. PRA is a long-term process that requires experience. Community members should have a clear vision of what is expected of them right from the outset. This can be done by thoroughly explaining the objectives of the research study.
- Appropriate follow-up is essential for support. All activities undertaken should be followed up for proper monitoring and evaluation.
- Flexibility and adaptation. All members should be flexible enough to allow adaptation by community members.
- PRA for local organisational development. Communities become developed in an organised manner, promoting empowerment.
- Awareness must be created among planners and policy-makers that will necessitate improvement of the existing policies and intensification of strategies that are applied to improve road safety.
- PRA should be used in local government systems as a developmental tool.
- Scheduling, during which all activities, such as transect walks and observations, are planned and carried out in a timeous manner with the required resources.
- Flexible funding arrangements would be unlocked if there is greater community participation with political willpower and support.

According to Tedford and Shepard (2011), PRA facilitates local analysis of how to define and approach the study's central issue by assisting in the selection of an audience with high stakes in its success, at both the instructional and at the decision-making levels. The use of social relations in networks of trust can generate willpower for local change in rural sectors of the developing world. This was found to be a central governing concept of community-driven development (CDD) as a process that

emphasises the empowerment of rural developing communities to synergise for the purpose of creating plans to resolve self-acknowledged challenges. The principles of CDD are designed to build leadership among those who are directly affected, and to inculcate lasting social changes by increasing ownership of decision-making through the de-emphasis of traditional authoritarian change structures and invasive research practices.

The key values of PRA, as presented by Chambers (1994), are the following:

- Enable the realities and priorities of poor and marginalised people to be expressed and communicated to policymakers.
- Enable trainers to facilitate attitude and behaviour change.
- Make normal bureaucracies more participatory.
- Build self-improvement into the spread of participatory methodology.
- Enable people with power to find fulfilment in disempowering themselves.

According to Uddin and Anjuman (2013), PRA applications include general analysis of a specific topic, a question or problem, a needs assessment, feasibility studies, identification and establishment of priorities for development or research activities, monitoring and evaluation of development or research activities, and identification of conflicting interests between groups. PRA assumes the following: that rural communities form an active foundation for rural development; that communities need committed local leaders to stir up their development; that communities have knowledge and information but that it needs to be organised; that communities have resources but they need to be mobilised so that they can introduce projects, thereby taking action primarily with their own resources (Nicolau 2013). Community organisations are among the many underutilised resources available for development efforts. External units, such as government technical experts and extension workers, NGOs and international organisations, can often provide substantial technical, financial or managerial assistance that is critical to rural communities. Thus, PRA brings together the development needs as defined by the community members on the one hand, and the skills of government, donor agencies and NGOs on the other. It integrates traditional knowledge systems and external technical knowledge in the development process.

PRA helps communities to mobilise their human and natural resources, define problems, consider previous successes and failures, evaluate priorities and

opportunities, and prepare a systematic and site-specific plan of action (Adebo 2000). In this way, the communities are able to compare past experiences and improve on them with the new applications learnt through the participatory processes.

3.6 PRA PRE-REQUISITES AND PRINCIPLES

PRA has a set of pre-requisites and principles that must be met before it can be carried out successfully. Campbell (2001) stipulates that, in order for PRA to be carried out effectively, it is necessary that data collection and analysis be undertaken by local people with outsiders who facilitate rather than control. The outcomes of the participatory process are relayed back to the participatory community in a process of learning and reflection. Communities assess the realities and learn from their experiences. The key principles of PRA include participation, teamwork, flexibility, and triangulation through which information is derived from more than one source or PRA tool to ensure that the qualitative data is valid and reliable. In the context of road safety in rural communities, PRA is invaluable in the identification of a problem statement and the evaluation of potential solutions by the communities with the use of PRA tools or methods. One advantage of PRA methods is that they can be applied at any level of learning, and does not rely on literacy as a requirement for road safety awareness. This makes it more efficient in rural areas, and can be applied under different social conditions.

Road safety is a multi-disciplinary problem that requires various disciplines to develop the road safety activities effectively. Different systems of expertise have to be merged together to provide greater insight into the new dimensions of safety problems. The notion of sharing the responsibility between all the stakeholders and role players involved in the system would ensure that the optimum goal is reached and increased society's welfare through the reduction of the number of road crashes. The community also feels more actively involved in decision-making and their trust in the process is increased, thus helping to reduce road carnage. Encouraging public input promotes much awareness and concern about road safety throughout society. This changes the traditional belief that an accident is an act of God, but rather an accident is a problem that can be solved (New Zealand Transport Agency 2008).

Communities can play a pivotal role in improving road safety and driving their initiatives. This can be done through their active involvement and participation in road safety activities. PRA, as pioneered by Robert Chambers (1994), can be used as an

effective tool by rural communities to improve road safety, ultimately resolving the challenges that the world faces in as far as road safety is concerned. PRA allows people to take an active role in prioritising their situations and coming up with activities to empower themselves through a set of defined pre-requisites and principles. These will ensure that PRA best practices are optimally achieved.

3.7 PRA BEST PRACTICES

PRA has been applied in many sectors that target development. This section highlights the best practices attained in various areas. A study conducted by Horberry et al (2013) point out that, in order to improve road safety at a community level, local community groups should focus on the following:

- Researching community safety needs and addressing them through planned approaches that rely on evidence-based interventions.
- Promoting and implementing multi-faceted community-wide programs
- Delivering consistent and sustained approaches to change the culture of communities and have a positive impact on community members.
- Informing and actively engaging key community leaders like local councillors and traditional leaders.
- Ensuring monitoring on an ongoing basis.
- Evaluating program outcomes.

This supports Chambers's principles of PRA, which are participation, flexibility, teamwork, optimal ignorance and systematic involvement and participation. In this context, the local community members can review the road safety status quo of their area, identify what is missing or where the gaps are, and then come up with community-wide programmes that will be sustained over a long period, whilst engaging the key leaders for support. These programmes can later be evaluated, and then modified to address the requirements of each community. The process can initially be facilitated by the researcher, and later the community itself can continuously sustain the processes to ensure maximum participation.

In another study conducted by Pain and Francis (2003), community education programmes using PRA proved successful in many other areas like health, agriculture and the environment. These programmes were also viewed as viable with

regard to the promotion of appropriate road safety in a targeted and sustainable way. The key characteristics of community road safety education are as follows:

- It relies critically on the involvement of the community.
- Measures are identified, initiated and supported at a local level.
- It does not focus on formal education, but schools, teachers and children can be involved.
- The community should include all demographic groups.
- It combines analyses of crash data with consultations with community members, and employs influential local stakeholders rather than external experts.
- It should be sustainable in order to ensure good results.
- It also aims to produce behavioural change and a safer environment.

As a result of the above-mentioned factors, the many local governments like that of Victoria in Australia, has taken an interest in community road safety to mainstream road safety culture, based on the following conditions:

- A stable, local representative body to take responsibility for the strategy, and mobilise stakeholders to interact with the government.
- Effective personnel and partnerships between stakeholder organisations to manage road safety activities.
- Commitment of local resources for funding, media and volunteers from the community.

The studies conducted by Vermaak (2000) and Vermaak et al (2005) at the Council for Scientific and Industrial Research (CSIR) used various participatory research methods that are categorised as formal, non-formal and informal with regard to education. Participatory Education Technologies (PET) were used regarding education as a form of communication, during which the teacher and student are jointly responsible for the process of growing through dialogue.

PET evolved as a means of enabling communities to identify the problem themselves and decide on effective solutions to counteract the problem. This encourages and helps empower communities to initiate their own road safety education programmes, even when institutional support may be lacking. During the needs assessments/problem identification with communities performed by Vermaak et al

(2005), interventions that targeted various safety concerns were identified. This was done through workshops for parents, schools visits, roadblocks, speed enforcement, posters and pamphlet distribution, Community Safety Forum and road safety days.

In KwaZulu-Natal, Sanral (2014) highlights the link between poverty and road safety in rural areas. The least educated and most under-resourced rural people are the most vulnerable to road crashes. This necessitates the empowerment of rural communities that border on national highways through road safety education to provide positive benefits through a reduction in crashes or deaths. Sanral achieved this through the composition of resource material, training workshops and seminars as well as the formation of community road safety councils (CRSCs). When this is done at a larger scale, it can culminate into PRA and can be effective and sustainable.

In a study conducted by Johnston (2010), the Victorian Rural Advancement Committee deals with development interventions that includes traffic safety. Field officers were trained to undertake community road safety initiatives across the country, especially in rural areas. This depicted real life stories of road traffic crashes and how these impacted on the families of victims. The partnership between NGOs and the government demonstrated that road safety activities can evolve from conceptualisation to local implementation. This allowed a sense of community ownership to proliferate and encouraged local communities to carry out monitoring and maintenance. Strong political will and influence, therefore, greatly promote community involvement in road safety issues, as more funding sources are unlocked.

These PRA best practices make it simple for the application of PRA, provided that the techniques, principles and methods are followed correctly. Success stories also indicate that road crash reduction can be realised through community involvement. It is therefore necessary to clearly outline the specific research design and techniques that were utilised in this research study.

3.8 RESEARCH DESIGN AND TECHNIQUES

Different methods were used to collect data through direct encounters with individuals as participants or respondents, using non-probability sampling and inductive research.

Babbie and Mouton (2007) elaborate on the practice of social research, hence the use of a qualitative approach of data gathering and analysis. This includes the

analysis of official documents that discuss the circumstances of Global North and South, African and South African road safety status, as well as the local study area. Structured observations of day-to-day community activities were conducted using observation sheets (Annexure B) that contained items aimed at answering some of the research questions. Field notes were maintained to record the site visits that were carried out, as well as the results thereof. Qualitative interviews in the form of focus group discussions (Annexure C2) and structured interviews (Annexure C1) were conducted with the leadership of the community, government officials, community structures and the public in general. The aim of these interviews were to find out what the community knows about road safety, and how they feel they should be involved in resolving road safety issues.

This research study adopted a qualitative research method because the study has a participatory perspective and is issue-oriented with regard to road safety. There was interaction with the participants where explanations of the social phenomena was done, which looked at how events (road crashes) surrounding the rural community of the study area affects them. The study took the participants' life experience into consideration, and regarded them as experts and empowered as respondents.

3.9 REMARKS ABOUT PRA

PRA helps to identify community problems and to plan solutions with the active participation of community members. It allows for rapid and systematic description and analysis of the community and its context, identification of problems and potential solutions, and project design and programming of activities for project implementation. The characteristics and conditions of the community are analysed by its members. Then problems and possible solutions are identified. This method facilitates the identification, preparation and design of community projects based on the reality and criteria of the inhabitants themselves. This promotes and supports self-reliance and sustainable development.

Rural communities participate more actively when they use visual techniques for gathering, analysing and presenting information. Through group discussion and the use of visual materials, PRA promotes the active and sustained participation of community members in the description and analysis of their community, including the identification of its problems and solutions. Community members are allowed to search for solutions in accordance with the local criteria and priorities in areas such

as technical and social feasibility, sustainability, cost, and the role of participants. Space is provided in which community members and development workers can get to know each other better.

The results of PRA allow community organisations and NGOs to prepare realistic project proposals, which can be presented to donors for financing. The participation of diverse groups, especially women, the youth and the elderly, is encouraged, and all themes, such as history, geography, social aspects, economy and production, are taken into cognisance. Given that PRA is carried out in and with the community itself, it is based on first-hand information about the local reality, which includes local knowledge, world news, cultural values and needs.

PRA is conducted with a group of households from a village that work with facilitators, using different exercises known as PRA tools or methods. Communities in rural areas can play a pivotal role in improving the road safety status, thus also improving their lives. This can be done through their active involvement and participation in road safety activities. PRA can allow rural people to take an active role in prioritising their situation and coming up with activities to empower themselves. PRA is one of the development methods that act as an empowering tool to community development. It is therefore crucial to use it as a tool to improve road safety within rural communities, because road safety is currently a cause for concern.

3.10 LIMITATIONS AND MITIGATION FACTORS OF PRA

PRA has many good practices and applications. However, it is important to highlight its shortcomings as well, and provide mitigating measures where possible. Pain and Francis (2003) highlight factors that limit PRA, such as the production of a certain type of information that is not intended by the research study objectives and that may be brief and superficial. During data collection and participatory processes, the duration of the researcher's involvement with the participants may be too brief for them to become relaxed and comfortable enough to share information with the researcher. Other participants may not be free to speak in front of the other participants, but rather in private with the researcher. This can lead to their selective involvement in verification and analysis of the information provided.

False expectations can be raised in the community, in that the community members might think that they will get benefits or incentives, like employment opportunities,

once PRA has been applied. That is why it is important that the processes involved in the application of PRA be thoroughly explained before engaging with the participating community members. The act of identifying problems and solutions does not necessarily guarantee actions or results, and miracle solutions are not offered. Some of the suggested or discovered solutions may not be actionable under certain circumstances. Some of the information obtained during the data gathering process may be superficial, false or exaggerated. This can then lead the community-driven process into an incorrect direction.

The lack of experience and commitment in participatory work on the part of the researcher or development workers can have a negative impact on the quality of the exercise, unless the researcher, often regarded as an outsider, facilitates the PRA exercises instead of conducting them. Communication difficulties can occur, especially when there is language or marked cultural differences. This would necessitate translations and understanding of cultural diversity. The speed of the exercise can affect the quality of participation by community members. Also, not all the necessary and important information may be adequately captured within a short space of time. Sometimes the community is not interested, and lack commitment and a sense of responsibility about community issues that affect them. This can require greater mobilisation and buy-in from the community to facilitate the PRA processes. Another limitation is that every sector of the community cannot always be adequately represented, and this can create misrepresentation of the data that is collected and analysed. This is more applicable to the aged, the landless, ethnic and religious groups.

In order to mitigate the limitations of PRA, the researcher would need to ensure that careful planning and the predicted routes that would best effect change are implemented from the start. Working with more powerful groups from the outset, in order to achieve full cooperation that will actuate change, can also mitigate the limitations. Forming a steering group and interacting with local leadership can bring out better results in terms of community involvement. The mixing of groups according to the manner in which they would be comfortable or separating them where necessary could also assist the researcher to carry out PRA effectively. Lastly, the preliminary findings of PRA should be given to the involved groups once the objectives of the research study had been explained in order to ensure openness and transparency.

3.11 CONCLUSION

PRA practitioners generally believe that what distinguishes PRA from other techniques is its emphasis on participation. Only when participants are in full control of their needs assessment, goal-setting, planning, policy-making, implementation and evaluation, can a process be considered fully participatory. One of the questions each facilitator using PRA should ask is whether the actions and methods involved are contributing to the ability of the participants to take control. Chapter 4 puts PRA to the test. The techniques, namely the observations, transect walks, interviews and focus group discussions, will be discussed and explained.

CHAPTER 4 : THE LOCAL PEOPLES' VOICES

4.1 INTRODUCTION

This chapter discusses the research methodology of the research study in greater detail. To be precise, the research strategy, method, approach, process, methods of data collection, selection of the sample, type of data analysis, validity, reliability, and ethical considerations of the study are examined. The limitations of the research study is also discussed and mitigating factors are provided. The key features of the chapter are the justification for and discussions of the strengths and weaknesses of the data collection methods. This study adopted a qualitative research method, with which the existing data was analysed in order to discern and establish meaningful interpretation of objectives and goals.

4.2 RESEARCH DESIGN AND STRATEGY

In this research study, PRA was used with various designs and strategies. Babbie and Mouton (2007) define methodology as the methods, principles and procedures by which we tackle challenges and look for answers to our questions. In the field of social sciences, methodology is the way in which research is conducted, and it is the philosophical assumptions and principles of the researcher that determines their stance on how to do research.

A research design is a plan according to which we collect information. Its aim is to guide the researcher through the process of collecting, analysing and interpreting data. The researcher should specify what needs to be investigated, and then determine how best to do it (Welman and Kruger 2001). Furthermore, a research design is defined as the plan according to which research participants (respondents) are obtained and collect information from them. It describes the way in which participants will be involved, with a view to reaching conclusions about the research problem.

Since this research follows a qualitative study, the research design is more open, fluid and changeable. This means that the plan of the researcher is not rigid and can change as the research proceeds. The research methods permit innovations in the research design, compensate for the weaknesses in individual instrumentation, and thus guarantee the strengths, validity and reliability of the findings. Above all, it allows

for flexibility in the study of a complex or evolving phenomenon with human and organisational interplay.

Leedy and Omrod (2010) define qualitative research as the one method that encompasses several approaches to research that are in some respects quite different from one another. Qualitative researchers focus on natural settings or, in other words, what is happening in the real world. They then carefully study the phenomena at hand at a deeper level. The Qualitative Research Consultants Association ([sa]) website describes qualitative research as a method designed to reveal a target population's behaviour and the perceptions that drive it, with reference to specific topics and issues. The aim of qualitative research varies with every disciplinary background, such as sociology or psychology, in attempting to get an in-depth understanding of human behaviour. The qualitative method normally investigates the how and why of the decision-making process, and not only the what, where and when. It has a strong basis in the field of sociology in its attempts to understand government programmes and how people interact with their environment. The effectiveness of qualitative research is heavily based on the skills and abilities of researchers, while the outcomes may not be perceived as reliable, because they mostly come from the researcher's personal judgements and interpretations.

4.3 RESEARCH APPROACH

The research approach that was followed for the purposes of this research was an inductive one. In accordance with this approach, researchers begin with specific observations, which are then used to produce generalised theories and conclusions drawn from the research. The reasons for utilising the inductive approach is that it takes into account the context where the research effort is active, while it is also most appropriate for small samples that produce qualitative data. The observation sheet (Annexure B) and the map of the study area (Annexure A) were used during the observations. From this approach, generalised theories and conclusions were drawn, which ultimately assisted in carrying out other methods of data collection. In fact, the generalisations based on the observations informed the kind of questions to be used during the semi-structured interviews (Annexure C1) and focus group discussions (Annexure C2).

4.4 SAMPLE SELECTION

The population of this study consisted of residents and commuters from the rural area of Blaauwbosch. The residents of Ward 18 were targeted because the provincial roads in question (P296 and P483 – Annexure A) travel through this ward. The target population is characterised as rural poor who have had little or no opportunity to express their views in the past and, therefore, could have low self-esteem.

From the entire population of 21 336 people of the area of Blaauwbosch, 60 participants were selected, referred to as a sample. A sample of 20 people in the three focus groups was drawn. Then eight individual interviews were conducted with other participants from the fields of engineering, education, law enforcement, and the local clinic, the local leadership in the form of a ward councillor, and the traditional leader (induna). The research study was dependent on the data that had been collected from the sample. Gregory et al (2009) describes a sample as a small group of people selected from the population on which the research is conducted to gather data. There are two samples, probability and non-probability samples. The method of purposive sampling was used to develop the sample of the research under discussion. According to this method, which belongs to the category of non-probability sampling techniques, sample members are selected on the basis of their knowledge, relationships and expertise regarding the subject matter.

From the sample of the selected community members, it was clear that some of them had a special relationship with the phenomenon under investigation. Others had sufficient and relevant work experience in the field of road safety, active involvement in several road safety initiatives and programmes and partnerships, as well as a proven research background and understanding of raw data concerning road safety. Within this context, the participants of this study were road safety practitioners, experts, participants, and activists in the study area. All aspects and perspectives of road safety were represented by the participants, namely:

- Road safety engineering, education and enforcement;
- Community Road Safety Council (CRSC);
- Schools – educators and principals;
- Communities – commuters and frequent local road users of all types; and
- Local leadership – ward councillor and traditional leader.

The participants were divided into three different focus groups. These consisted of the CRSC, schools educators, and frequent local road users. These groups had a structured questionnaire (Annexure C1) to guide the discussions, after understanding the research objectives and signing the Consent Form. The in-depth interviews were conducted individually with the road safety experts and practitioners as well as the local leadership (Annexure C1). The study dealt with the investigation of community-driven road safety in Blaauwbosch, with the aim of achieving the objectives set for the study with the use of PRA as a data collection tool.

4.5 DATA COLLECTION METHODS AND TOOLS

Different research instruments (Annexures B–J) were used to collect information at different levels and stages of this study. Both primary and secondary sources of information were utilised. The primary sources of information were the research respondents, as most of the practical data was obtained from them. The information was gathered by means of empirical methods and was obtained from participants who comprised community members who were permanent residents of Blaauwbosch. The community members provided information regarding their views, feelings and opinions about road safety and their involvement in making a difference. The handling of the questionnaires was such that the respondents were grouped into focus group discussions and the interactive process of answering the questions was carried out, guided by the researcher as a facilitator.

Data was also gathered from the published sources, such as textbooks, legislation, policies, previous research papers and unpublished sources such as thesis, dissertation, reports and written material about road safety and community involvement. This data assisted in strengthening the theoretical features of data collection methods and tools. It also verified what could be applied in this research study.

4.5.1 OBSERVATIONS

4.5.1.1 General description of research tool and literature

Observation can be a powerful check against what people report about themselves or the occurrences during interviews and focus groups. What people say they believe and do are often contradicted by their behaviour. Marshall and Rossman (2010) describe participant observation as a qualitative method with roots in ethnographic

research, the objective of which is to help researchers learn the perspectives held by study populations. Qualitative researchers presume that there will be multiple perspectives within any given community, and they are interested in both knowing what those diverse perspectives are and in understanding the interplay among them.

Participant observation always takes place in community settings, and in locations believed to have some relevance to the research objectives. The researcher approaches the participants in their own environment rather than having the participants coming to the researcher. The researcher tries to learn what life is like for an insider while inevitably remaining an outsider. While in the community of the study area, the researcher makes careful, objective notes about what they see, recording all accounts and observations as field notes in a field notebook. Informal conversation and interaction with members of the study population are also important components of the method and is recorded in the field notes in as much detail as possible.

Data obtained through participant observation serves as a check against the participants' subjective reporting of what they believe and do. Participant observation is also useful for gaining an understanding of the physical, social, cultural and economic contexts in which study participants live, the relationships among and between people, contexts, ideas, norms and events, and people's behaviour and activities about what they do, how frequently and with whom. Through participant observation, researchers can also uncover factors important for a thorough understanding of the research problem but that were unknown when the study was designed. This is the great advantage of the method because, although truthful answers to the research questions can be obtained, questions are not asked outrightly. Thus, what we learn from participant observation can help us to not only understand data collected through other methods (like interviews or focus groups), but also to design questions for those methods that will give us the best understanding of the phenomenon being studied.

4.5.1.2 Blaauwbosch case study

In this research study, observation was done at certain points (Annexure A) where people in the study area often went to as part of their daily routine and engaged in the activities related to their interest. Key informants were used to identify those locations. The time and duration of observations varied, depending on the situation

and circumstances at those identified points, as indicated in Table 4.1. The main aim of the observations was to pay attention to what was happening in a particular setting. Observers were alert and vigilant, as they were supposed to write about what they saw and heard in great detail after leaving the scene. The details of what was observed are outlined in the observations sheet (Annexure B).

Table 4.1: Observation timetable.

Observation point	Date of observation	Time	Peak	Off-peak
P296	26 February 2016	07:00 – 08:30	✓	
	26 February 2016	10:00 – 12:00		✓
	07 March 2016	14:00 – 16:00	✓	
	07 March 2016	16:30 – 17:30	✓	
P483	11 March 2016	07:00 – 08:30	✓	
	03 April 2016	10:00 – 12:00		✓
	05 April 2016	14:00 – 16:00	✓	
	05 April 2016	16:30 – 17:30	✓	

- **Observation sheets**

An observation sheet (Annexure B) that was prepared before the actual observation took place was utilised in this study at four different settings on roads P296 and P483. It contained all the details of what was observed, and what assisted the researcher during other data collection methods. Observations took place during peak and off-peak times on different days and at times, as depicted in Table 4.1.

Elements that were not included in the observation sheet (prior to observation) were also noted and recorded, as well as the fact that these could have a direct bearing on the findings, conclusions and recommendations of the study. The analysis of the findings are explained further in Chapter 5. It is also important to note that these observations were planned such that they do not distract or interfere with daily lives or happenings in the study area.

4.5.1.3 Transect Walks

The United States Agency for International Development (USAID 2009) describes the transect walk as a path along which one observes and evaluates attributes of interest or of particular concern. It is a tool with which to describe and show the location and distribution of resources, features, the landscape and main land uses along the transect area. Transect walks are spatial data-gathering tools. They provide a team with an overall view of the community and help it to identify issues that might merit

further exploration. Transect walks can be time-consuming, depending on the size of the community and the transect area. After the transect walk, a discussion should be held on the information that was collected. The information gathered during transect walks is then presented in a diagram that shows the different zones of the community.

4.5.1.3 Application in the study area

In the case of this research study, the transect area were the roads P296 and P483 in the area of Blaauwbosch. The map of the research study area (Annexure A) indicates the points where the transect walk was undertaken. The transect walk was undertaken by the researcher and the community members that had been identified as key informants for the research study. The aim was to observe, listen, and ask questions that would enable the identification of problems and collective development of solutions. The key informants were the villagers who had good knowledge of the area, and who were willing to participate in the transect walk.

A total of nine individuals from each of the three focus groups were used as key informants to conduct the transect walk. They were selected based on their close proximity to the area of study as well as the keen interest that they showed with regard to the study. During the transect walk, the participants observed and recorded in detail all important issues related to road safety activities and the behaviour of the community members or road users. Notes were made of all vital information gathered, and sketches were drawn where necessary. Different aspects were grouped accordingly as per the information in the observation sheet (Annexure B).

4.5.1.4 Ethical considerations

Welman et al (2007) define ethics as a set of moral principles that is suggested by an individual or group, is subsequently widely accepted, and which offers rules and behavioural expectations about the most correct procedures towards experiments, subjects and respondents, employers, assistants and students. The researcher applied ethical principles such as not harming participants. It is possible for the interviewees (subjects) to be psychologically harmed during the course of the study, and the researcher must be aware of the dangers and guard against them. It is one of the obligations of the researcher to protect subjects from any kind of harm. If there are risks involved, the researcher should inform the participant before proceeding and take all possible measures to minimise distress.

The current study was subject to certain ethical issues. As previously mentioned, all participants provided their written acceptance regarding their participation in the research study through a consent form (Annexure I). This letter explains the research procedure and explicitly states the withdrawal clause. The aim of the consent form provided was to reassure the participants that their participation in the research was voluntary.

The consent form outlined the research process, objectives of the research as well as how the recruitment of the participants would be carried out. The participants were also notified about the use of photography and audio recording devices during the interviews and focus group discussions. In terms of confidentiality, it was clearly stated that all information gathered would be kept by the researcher at all times, and would not be made available to any third party at any time during or after the study, unless the participants agreed. The withdrawal clause stipulated that the participants were, at any time, allowed to withdraw from participation in the research study without being victimised. The participants were also informed of the anonymity clause, in accordance with which they did not have to provide their names during the discussions if they did not wish to. This was also clearly stipulated in the consent form, which included the following: none of the comments made or information collected would be attributed to any individual or name; the data would be stored in the researcher's personal computer; the data would be stored for the duration of the research study, and would be destroyed once the study was complete; the data would only be used for the research study's stated purpose, and would be submitted as part of the dissertation.

The participants had to sign the consent form, acknowledging that it had been read and its contents understood. One copy remained with the participant, and the other copy was kept by the researcher. On signing the consent form, the participant acknowledged that they understood the purpose of the research study, and agreed to indemnify Unisa against any liability that may occur during the course of the project. In addition, the participants undertook to make no claim against Unisa in respect of damages to their person or reputation as a result of the project through the fault of other participants, unless resulting from negligence on the part of Unisa, its employees or students.

Annexure K indicates the ethics approval document that outlines that the institutions that gave permission for the research study to be carried out requested that feedback be given at the end of the research study. This is done in the form of findings, recommendations, and conclusions about the research study. Other participants in the study also requested that they be provided with feedback at the end of the research study. This would also be presented at the end of the research study through the same format that was followed during the research process. The feedback would be useful to the participants to determine the intervention strategies that they need to undertake, and to ensure sustained participation.

4.5.2 Interviews

4.5.2.1 General description of the research tool

According to Berg (1998), the qualitative research interview seeks to describe the meanings of central themes in the lifeworld of the subjects. The main task during the interview is to understand the meaning of what the interviewee says. The interview also seeks to uncover both a factual and meaning level, though it is usually more difficult to interview on a meaning level. Interviews may be useful as follow-up in the case of certain respondents to questionnaires, and to further investigate their responses. It may also be useful to get the story behind a participant's experiences. This could be uncovered through other methods of data collection, namely observations and focus groups.

Interviews are more personal than questionnaires, and are completed by the interviewer based on what the respondent says. Bailey (1994) lists the different types of interviews as follows: informal, conversational interviews; standardised open-ended interviews; personal, telephonic and mail interviews. Preparation for an interview is also very important in terms of the setting, which should have few distractions. The purpose of the interview should be described prior to the interview, as well as the issues of confidentiality and the Consent Forms. The format of the interview and all contact information should also be provided to the interviewees.

4.5.2.2 Blaauwbosch case study

In this research study, semi-structured interviews were used. The benefits of these kinds of interview is that they have the capacity to provide information that is more detailed and in-depth than what was available through other data collection methods,

such as survey questionnaires. There was standardisation of some of the questions and this increased the reliability of the data. The interviews offered the opportunity to ask spontaneous questions that were sensitive to participants and allowed them to express themselves. These interviews also provided a more relaxed atmosphere in which to collect information, as respondents felt more comfortable with having a conversation with the researcher as opposed to filling out a survey questionnaire.

Pre-interview meetings were held during February and March 2016 with the road safety practitioners, road engineers/technicians, road safety experts, community leaders and members of the community to explain the objectives of the research study. In general terms, the participants were willing to participate in the research study. The interviews were then conducted between March and May of 2016. The discussions took place at the offices, meeting places and community structures of the respondents for approximately one to one-and-half hours maximum. During the interviews, notes were taken and it was recorded on a cellular phone in order to help the researcher analyse the gathered data. During the interview process, the respondents were free to express their views, even on topics that were not included in the discussion areas, which were mentioned previously. Some questions were prepared beforehand to guide the researcher through the interview and satisfy the research objectives (Annexure C1). The questions that were asked during the semi-structured interviews and focus group discussions were cross-cutting.

Before conducting an interview, the researcher prepared the interview guide (Annexure D). Notes were taken and the interviews were recorded on a cellular phone to obtain the best possible record of the interviewees' responses. The exact words of the interviewees were then transcribed as raw data, which was then analysed. Before the interview sessions, all the participants were contacted by the researcher via email and telephonically to inform them about the objectives of the research study, their rights during participation in the study, as well as the logistics of the interview sessions. At the beginning of the interview sessions, the interview procedures were explained as well as the research ethics and Consent Form issues. Follow-up questions were used where responses were not clear enough, and to gain deeper understanding of the issue at hand. Some interviews were completed via email after the set of questions were sent to the respondents, who were requested to respond and send back the responses. Telephonic interviews were conducted when follow-up information was required, and to get more information on certain issues. Some of the

interviews were conducted in the comfort of the workplace environment of the respondents, in their preferred language, which was isiZulu, then transcribed in English. Although the English transcription did not always contain the exact words of the interview, the meaning remained the same. It should be noted that the researcher is fully conversant in isiZulu and English.

The detailed analysis of the responses received from the interviewees is tabled in Chapter 5, and is used to draw conclusions and make recommendations.

4.5.3 Focus groups discussions

4.5.3.1 General description of the research tool

The focus group interview method has been gaining more popularity among academic researchers in the health and social sciences (Freitas et al 1998). The use of this method in the fieldwork component of postgraduated dissertations and theses in the field of social sciences is also a growing trend. Many of these researchers have been developing the method and steering it to suit their research needs. The more recent popularity of focus groups in qualitative research in the health and social sciences is reflected in an increased number of papers and books in which it is used. Parker and Tritter (2006) stipulate that the reason that focus group discussions have become popular in recent years is partly because they are seen as the method that can provide quick results. It is also perceived as a method that can generate complex information at low cost and with the minimum amount of time. It is used with a wide range of people and groups in different settings. Focus groups are collective in nature, and this may suit people who cannot articulate their thoughts easily and provide collective power to marginalised people. It is for this reason that focus group articles are dedicated to different social and cultural groups.

In terms of methodology, Wilkinson (2004) stipulates that a certain number of people, ranging from 8 to 20, that come from a similar social and cultural background with similar experiences and concerns can be involved in focus groups. The aim is not to reach consensus on the discussed issues, but rather to encourage a range of responses that involve a greater understanding of the attitudes, behaviour, opinions or perceptions of the participants with regard to the research issues. The participants need to feel comfortable in discussing their experiences and opinions, and hence the need for a non-threatening environment within the group.

Morgan (2002) advises that, during focus group discussions, the participants should never get the sense that they will be ridiculed or judged by others in the group. The manner in which participants relate to each other during the discussions is important. For example, being able to express themselves freely in the presence of the other participants, or being able to acknowledge other participants' views. These interactions among the participants are treated as research data. The participants are chosen because they are able to provide valuable contributions to the research questions. The interaction among the participants themselves puts greater emphasis on the points made by the participants than those of the researcher. This allows for group dynamics and helps the researcher capture shared life experiences; accessing elements that other methods may not be able to and often remain hidden in the more conventional in-depth interview method. Different factors, social or political for example, can cause the participants to respond in a particular manner to the questions asked.

4.5.3.2 Blaauwbosch case study

The rationale for having used focus group interviews in this research study is that it would be useful in exploring and examining what people think, how they think, and why they think the way they do about road safety issues. This is the ideal approach for examining the stories, experiences, beliefs, points of view, needs and concerns of individuals. It is believed that the focus groups reveal more diverse understandings, which are often difficult to access by more orthodox methods of data collection. It also allows the researcher to explore diverse perspectives of individuals, since focus groups function within the social network of groups.

In this research study, the focus group discussions consisted of reasonable homogeneous members that ranged from 15 to 20 members. Three focus group meetings were conducted, these were: the Community Road Safety Council (CRSC); school educators from those schools located along the main roads in the study area; and frequent local road users. Different dates and venues were set up for each of these focus group meetings, after confirmation of attendance in response to the invitations that were sent out to each of the members of the groups.

In this research study the focus group discussions on road safety included the following aspects:

- To identify road safety issues of importance.
- To explore new areas of interest.
- To provoke community thoughts on engineering, enforcement and educational measures, as well as road safety interventions.
- To resolve project constraints and come up with solutions or reasons why the project is failing.
- To evaluate the project's usefulness, how can it be improved and subsequent programmes.

4.5.3.2 Preparations for the focus group discussions

i) Community Road Safety Council

This group consisted of community members from different sectors as outlined in their list in Annexure E1. They were working closely with the KZN-DoT's Road Safety Directorate on the implementation and promotion of road safety activities and initiatives. They met once every month in the offices of the Department to discuss and report on road safety issues in their locality, which includes the study area of Blaauwbosch.

ii) School educators

The roads P296 and P483 are surrounded by many primary, combined and secondary schools, as depicted in the map of Blaauwbosch (Annexure A). There was great cause for concern for road safety issues along these roads. The list of participants is attached in this research study as Annexure F.

iii) Frequent local road users

This was the third focus group for the research study. It was the most difficult group to constitute. The list of these group members is attached as Annexure G. The difficulty in constituting the group emanated from the fact that they were not an organised group of people that was easy to locate. Their homogeneity was only based on the fact that they used the same road frequently, and would probably experience the same road safety issues. More effort and energy had to be applied in order to constitute this focus group.

Flyers and posters were printed that contained all the information necessary for prospective participants. These were then distributed to all the possible places where

the frequent local road users could be found, namely: meeting places, shops, roads intersections, churches, the local library, and to all the people that passed by. Annexure G1, shows an example of the flyer that was distributed. Six weeks were set aside for this process, and it was believed that this would be enough time for those interested to respond to the invitations by using the contact information printed on the flyers and posters. At first, there was a very slow response to the invitations, until the help of the local ward councillor was sought. The ward councillor assisted with the distribution of the flyers at the ward meetings and the explanation of the research study's objectives.

4.5.3.3 During the focus group discussions

i) Community Road Safety Council

All 20 members of the CRSC attended the focus group discussion. The researcher was the chairperson for the meeting. Basic ground rules were explained to the members as shown in Annexure H, in order to put the members at ease. Before the discussions started, all the members were given consent forms to sign, and the objectives of the research study were fully explained to them. The discussions were carried out in their home language (isiZulu), and were then transcribed in English. The interviewer had a set of questions prepared before the discussions, as shown in Annexure C. The participants were, however, allowed to discuss any other relevant issues at the end of the session.

ii) School educators

Of the 25 school educators that were recruited, 18 educators managed to attend the focus group discussion. The same procedure of conducting discussions that had been adopted for the CRSC focus group was used for this group as well. There was also a set of questions that had been prepared beforehand to lead the discussions, shown as Annexure C. The responses and discussions will be discussed in Chapter 5.

iii) Frequent local road users

The third focus group discussion took place after 8 weeks of organising and making arrangements. The participants signed the consent forms after the research objectives and relevant clauses were explained to them. The attendance was very good. Out of the 26 people that confirmed that they will attend the meeting, 19

participants attended. Those that had confirmed their attendance but did not make it, sent apologies for not attending the meeting. The discussions were carried out in their home language (isiZulu), and then transcribed in English.

4.5.3.4 After the focus group discussions

The focus group meetings were valid, as the researcher made sure to possess the following attributes:

- The ability to listen attentively with sensitivity and empathy.
- The ability to listen and think at the same time.
- The belief that the group participants had something to offer, no matter what their education, experience or background was.
- Adequate knowledge of the topic
- The capability to keep personal views and ego out of the facilitation session.
- The capability relate to the group well and manage challenging group dynamics.

The focus group moderator (researcher/facilitator) fulfilled the responsibility of adequately covering all the prepared questions within the time allocated. Long and ambiguous comments were paraphrased and summarised to demonstrate active listening and further clarify the comments to the group.

4.6 RESEARCH LIMITATIONS

This dissertation has the following limitations:

- The road crash data for the study was not easily obtained from the government authorities, and its reliability was not ascertained due to issues related to the confidentiality of the information about road crashes.
- The data on road crashes in the study area was sourced from various institutions, like traffic officials and the SAPS. This caused data inconsistency because different tools of data collection were utilised. However, to mitigate this risk, all the data was combined and an average result was taken.
- The data also has limitations in terms of specifying the nature of crashes as major or minor. Therefore, the severity of the problem cannot be identified or sufficiently emphasised. As a result, the wrong mitigating measures could be applied to these problems.

- The young group of community members did not see the value of their participation in the study. They felt that road safety was not their priority, especially those that had never been affected by road crashes. They felt that basic needs and services are important aspects that they could engage in.
- In some instances, during the focus group discussions, some participants were more vocal than the others, and this nearly influenced or clouded the judgement of the researcher/moderator/facilitator.
- The data collection process could raise false hopes among the community members that all their demands and wishes for road safety would be fulfilled. However, the researcher explained all the processes that would be involved before the recommendations could be implemented. The issue of the budgetary constraints was also explained to the community members.
- The researcher also vowed to ensure the safety of the participants, the key informants, during the transect walk observations on the roads in the research study area. They were all cautioned about road safety measures.

4.7 VALIDITY AND RELIABILITY OF DATA

Gregory et al (2009) defines 'validity' as the degree to which a measuring instrument measures what it is designed to measure. Validity is based on the assumption that what is being studied could be measured or captured, and seeks to confirm the truth and accuracy of the data collected from various sources. In order to enhance the validity and reliability of collected data, similar questions were asked during the interviews, observations and focus group discussions. These similar questions were concerned with, amongst other things, issues around road safety publicity in the study area, community involvement in road safety, and the issue of the authorities prioritising road safety. The responses yielded similar results in that the respondents felt that not enough road safety publicity was undertaken in the study area. Community members should also be more involved. They also highlighted that road safety was not yet a priority by the authorities in the study area.

According to Burns and Grove (2001), triangulation is most successful when the stakeholders are involved in all the phases, this includes: choosing the priority questions to be addressed, identifying and gathering data, guiding the analysis and interpretation, and using the results of triangulation in making decisions on their policies and programmes. In this study, triangulation was successfully performed due

to the access to and use of multiple data sources, and a high level of co-operation and buy-ins from many institutions and key persons or stakeholders.

The uses of triangulation in road safety should not be limited to the following:

- Tracking road crash and fatality trends
- Allocating resources for road safety.
- Mobilising political commitment (advocacy).
- Informing and educating the public.
- Guiding research.
- Road safety programmes.

Krueger (2001) states that a research design is said to be valid if it enables the researcher to elicit the correct responses from the sampled subjects, otherwise it is a faulty design and may lead to misleading findings. Validity is concerned with the question of whether the observed changes in the dependent variable actually relate to the changes in the independent variables.

Reliability, on the other hand, refers to the dependability of the measurement instrument, according to Bailey (1994). It implies the extent to which the instrument yields the same results on a repeated basis. Reliability is concerned with the findings of research and relates to the credibility of the findings. Concerns surrounding the trustworthiness of qualitative research seeks reliability, validity, objectivity and generalisation within its approaches.

Within this research study, the technique of prolonged engagement had to be balanced with a decision to complete interviews within a set of two months in an attempt to prevent participants doubting responses and researcher expectations. In further attempts to ensure a high level of trustworthiness in the research process, the entire research process, from proposal level to the drawing of conclusions, was discussed during the many consultations with the local prominent people and local leadership over the period of a year.

4.8 CONCLUSION

In this chapter, a detailed description of the research methodology has been carried out. The use of observations, interviews and focus group discussions has been elaborated upon at length. The motivations have been provided for the types of

questions asked, and the number of people interviewed and focus group discussions have been discussed. All the data gathered is further analysed in Chapter 5, the following chapter. In it, various methods of data analysis are applied in order to facilitate the finalisation of the results, findings and recommendations.

CHAPTER 5 : UNPACKING LOCAL PEOPLES' VOICE

5.1 INTRODUCTION

The purpose of this research study is to assess the extent to which the community of Blaauwbosch could be involved in road safety activities and initiatives. The PRA system was applied as a tool to facilitate the processes of community involvement in road safety. This chapter presents and discusses the results based on the data collected from the respondents, as outlined in the previous chapter. The information collected from the different segments of people was aimed at achieving the objectives of the study. The data is analysed based on the research done during observations, interviews and focus group discussions.

5.2 DATA COLLECTION FINDINGS AND ANALYSIS

5.2.1 Observations

The aim of the observations was to document the perceptions of community members about road safety, and explore ways in which road crashes can be reduced through community involvement and the authorities playing an active role. Observation sheets (Annexure B) were used to conduct observations during different sessions, points and times, as shown in the map of the study area (Annexure A). It was discovered that roads P296 and P483 are very busy roads, especially in the mornings and afternoons when people rush to work and children go to school. The situation was also aggravated by the fact that these two roads run through the built-up residential area, comprised of houses, schools, shops and other community structures like clinics, community halls and churches. Many people walked alongside these roads and across them on a regular basis, including adult pedestrians and schoolchildren. Buses and taxis stopped anywhere to pick up the passengers that require their services. This created a problem because it obstructed the view of oncoming traffic from both directions. Road P483 comes from Newcastle and is joined by P296, then lead to the two neighbouring towns of Dannhauser and Utrecht, which later lead to the other bigger towns, Dundee and Vryheid. So, the regular users of these roads were also the commuters from these neighbouring towns. Figure 5.1 shows the provincial road P483 in the study area of Blaauwbosch.



Figure 5.1: Road P483 in the area of Blaauwbosch.
Photograph: S.T. Ndawo, 28 April 2016.

The observation sheet used during on-site observations was divided into different categories based on the aspects to be observed, namely: road infrastructure, road furniture, road usage, and other activities taking place in these roads.

5.2.1.1 Road infrastructure

In terms of the width and condition of these roads, these were tarred roads that were supposed to be 7 m wide (Sanral 2009). However, at the time there were continuous edge-breaks (Figure 5.2) that reduced the width of these roads, instead of alleviating the challenges of road safety issues. The shoulder lanes had also been reduced as a result.



Figure 5.2: Continuous edge-breaks on road P296.
Photograph: S.T. Ndawo, 28 April 2016.

The condition of the roads was satisfactory, even though there were potholes spotted in some parts, as shown in Figure 5.3.



Figure 5.3: Potholes identified in road P483.
Photograph: S.T. Ndawo, 12 May 2016.

Attempts were made to patch these potholes, but the situation sometimes got worse with those patches that were not level with the original road surface. This created an uneven and irregular road surface (Figure 5.4). Motorists would veer to the side in order to avoid these patches, but were at the same time creating an even more dangerous situation because they were then facing oncoming traffic.



Figure 5.4: Uneven or irregular road surface on road P483.
Photograph: S.T. Ndawo, 14 May 2016.

5.2.1.2 Road furniture

Road signs were available on these roads, but not all of them were still in their original positions. Those that were available were in a good condition, but there were some that had been vandalised. Figure 5.5 indicates the vandalised road sign.



Figure 5.5: Vandalised road sign on road P296.
Photograph: S.T. Ndawo, 28 April 2016.

Table 5.1 contains detailed information about the available and missing signs on provincial roads P483 and P296, according to the information gathered from the interview with the Industrial Technician of the KZN-DoT and the observations undertaken.

Table 5.1: Information on road traffic signs along roads P296 and P483.

Sign name	Description/Purpose of road sign	Sign type	Remarks
Speed limit 	Informs the motorists of the speed they should drive on that particular section of the road. -Roads along built-up areas have a speed limit of 80 km/h, whereas the roads next to the schools should have a 40 km/h speed limit.	Regulatory sign	Available only in some parts of the road
Pedestrians walking	Warns the motorists about the pedestrians that occasionally walk on that section of the road.	Warning sign	Not available
Livestock/stray animals	Warns the motorists about livestock or stray animals that may be present on that road.	Warning sign	Not available

Children sign 	Warns the motorists about schoolchildren that can be found along the road.	Warning sign	Not available
Cyclists sign 	Warns the motorists about the presence of cyclists on this road.	Warning sign	Not available
Speed hump sign 	Warns the motorists that there are speed humps on the section of the road ahead.	Warning sign	Available
No U-turn sign 	Informs the motorists that they should not make a U-turn on that section of the road.	Regulatory sign	Not available

Source: South Africa. KwaZulu-Natal Department of Transport 2000.

The key informants indicated that some of the missing road signs were vandalised or removed by the community members. Some of the material for the road signs were used for various purposes at the homesteads in the area, such as building kraals and sheds. This posed a serious threat and danger to the motorists, especially those that were not familiar with the surroundings of the area of Blaauwbosch. They were not warned about the dangers of these roads as well as the speed to travel, and serious crashes were likely to occur as a result.

Road markings in a form of centre lines, barrier lines and pedestrian crossings, were available, but no longer in a good condition. They needed repair or re-painting in the near future. Figure 5.6 indicates the faded road markings in the study area.



Figure 5.6: Faded and absent road markings on roads P483 (a) and P296 (b).
Photographs: S.T. Ndawo, 26 April 2016.

The Industrial Technician that was interviewed indicated that they do line marking on an annual contract. She further mentioned that the durability of the paint and the material used is supposed to last for the entire year. During the observation, this did

not seem to be the case. This created danger to the motorists, especially at night or during cloudy weather conditions. Figure 5.7 indicates that the road studs (commonly known as “cat’s eyes”) were also missing in many parts of these roads.



Figure 5.7: Missing road studs in roads P296 (a) and P483 (b)
Photographs: S.T. Ndawo, 10 May 2016.

Loading zones for buses and taxis were also not available on roads P296 and P483. This meant that the public transport operators would stop anywhere and anyhow to load and off-load the passengers. This obstructed the view of the other motorists,

creating a hazard and likelihood of a road crash. Upon closer observation, it was noticed that there was space available on the road reserve that could be utilised for the construction of bus bays or loading zones. Financial constraints were, however, inhibiting the possibility of the construction of these structures in the near future, according to the Industrial Technician interviewed. Figure 5.8 indicates the absence of loading zones in the road in the study area.



Figure 5.8: Absence of loading zones in road P483.
Photograph: S.T. Ndawo, 26 April 2016.

Speed calming devices in the form of speed humps and rumble strips were available in the areas where there were pedestrian crossings near the schools. However, these devices no longer seemed to be effective enough because the motorists drove through them at a high speed. More crashes were reported in the areas where there were speed calming devices in place. They were not clearly marked, and visibility was a challenge, although the warning signs were in place. The pedestrians, including schoolchildren, had hoped that they would be safer when walking or crossing along the areas where there were speed calming devices, however, this was not the case. Figure 5.9 indicates the ineffective speed humps and rumble strips on roads P483 and P296.



Figure 5.9 Ineffective speed calming devices (speed humps and rumble strips) on roads P296 (a) and P483 (b)
Photographs ST. Ndawo, 20 April 2016.

The pavements/sidewalks were constructed in some sections of the roads, and they were still in a good condition. These were normally located along the densely populated areas of Blaauwbosch. These sidewalks were constructed only on one side of the road, due to budgetary constraints. They were used optimally by the schoolchildren, promoting their safety on these roads. Figure 5.10 shows a sidewalk on road P483.

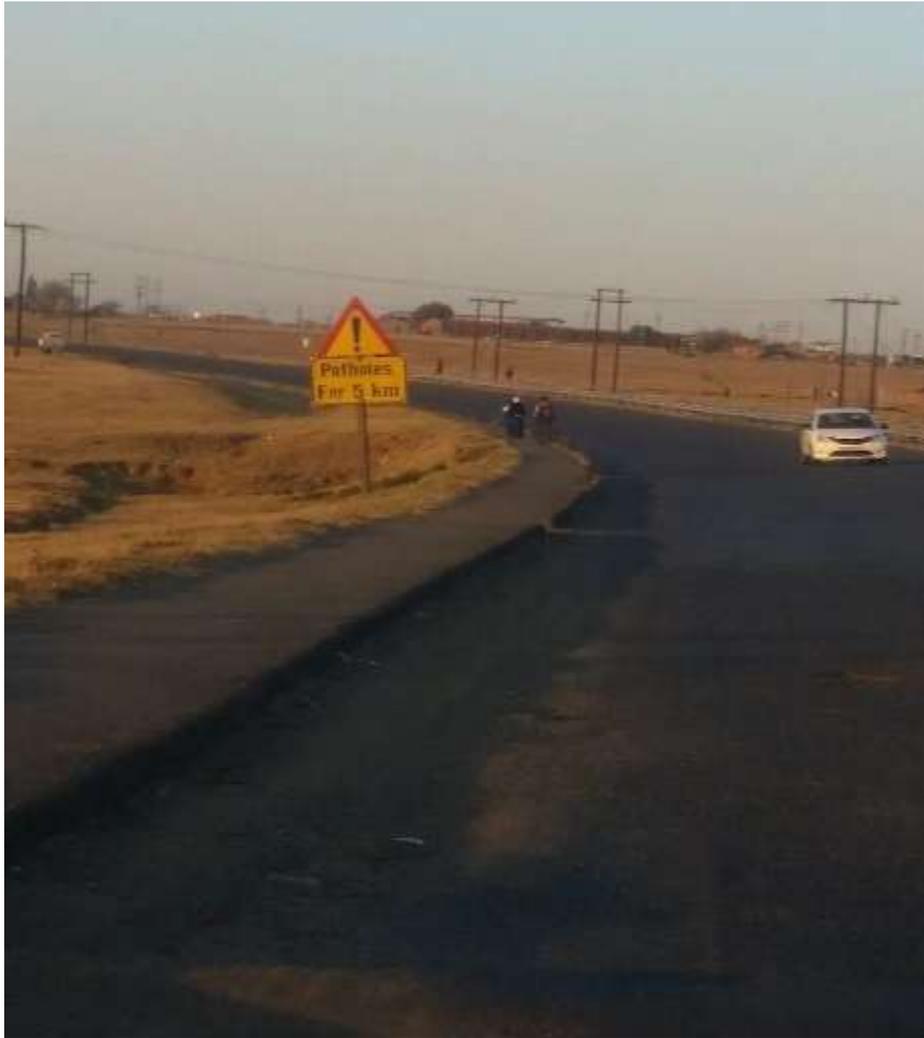


Figure 5.10: Sidewalk or pavement on road P483.
Photograph: S.T. Ndawo, 28 April 2016.

Cycling lanes were absent along these roads (Figure 5.11). The cyclists had to share the road space with the motorists and pedestrians. This posed danger to the safety of the vulnerable groups, like pedestrians as well as the cyclists themselves. No plans were in the pipeline to construct any cycling lanes in the near future. More

campaigning and marketing still needed to be done to promote non-motorised transport in the area.



Figure 5.11: Absence of cycling lanes in road P296.
Photograph: S.T. Ndawo, 20 April 2016.

Storm water drainage along the sides of these roads was absent or non-existent. During heavy rainfall seasons, water was poured into the road, posing a danger to the motorists. On the parts without sidewalks, the pedestrians were compelled to walk inside the road.

The road infrastructure left much to be desired to promote road safety in the study area. It indicated that, with more involvement on the part of various stakeholders and community members, something could be achieved that could uplift the level of road safety in the area. Figure 5.12 indicates the absence of storm water drainage on the road in the research study area.



Figure 5.12: Absence of storm water drainage in road P483.
Photograph: S.T. Ndawo, 20 April 2016.

5.2.1.3 Road usage and road users

Road usage in roads P483 and P296 was observed under different circumstances, namely during peak traffic in the morning, during the day, and during the afternoon peak-hour traffic. It is important to note that the morning peak hour was not the same as the afternoon peak hour, because schoolchildren came out of school earlier than the adults in the afternoon. Pedestrians, cyclists and motorists were observed during these varying sessions and circumstances as outlined above.

- **Pedestrians**

A pedestrian is described as a person travelling by foot for at least part of his/her journey. According to the WHO (2013), 22% of all road deaths across the world are pedestrians. In South Africa, 56% of pedestrians are killed per year on the roads. Successful interventions to protect pedestrians and promote safe walking require an understanding of the nature of risk factors for pedestrian crashes. The key risk factors are driver behaviour, infrastructure and vehicle design. This makes pedestrians increasingly susceptible to road traffic injury. Pedestrian vulnerability is further heightened in settings where traffic laws are inadequately enforced.

Tungare (2001) conducted a study based on the 'Theory of Segregation', a concept developed by Edward Le Corbusier, a Swiss born architect in the 1930s, which has

formed the key principles of modern traffic design. He found that pedestrians are vulnerable road users, and their safety is at greater risk than other road users. In order to prevent collisions and enhance the safety of road users, pedestrians and motorised traffic streams are traditionally kept separate. This theory is applicable on urban, peri-urban and rural roads where pedestrians remain vulnerable. Due to limited road-network space in rural areas, road users are not only confined to pedestrians and motorists, but there is a lethal mix of motorists, pedestrians, cyclist and animals. This results in competition for road space, as each user strives to move from point A to point B safely.

Roads P296 and P483 have serious traffic conflicts. According to the observer manual entitled *Traffic Conflict Techniques for Safety and Operations*, published by the Federal Highway Administration, a traffic conflict is an event that involves interaction between two or more road users, where both parties have to take evasive action to avoid the problem (USA. Department of Transport 1989). Traffic conflicts are a merger of road users that take risk into account, driver behaviour, road condition, and the traffic environment at the moment of exposure. The main reason traffic conflict occurs is because road users are forced to interact with each other while competing for space within the road environment.

For this study, the pedestrians were divided into adults and schoolchildren. The reason for separating them was the differences in their behaviour. The schoolchildren could be further divided into those in primary school and those in secondary school. It was observed that the schoolchildren accounted for over 500 road users in each of the busy sections of these roads. It is also important to note, as shown in the map (Annexure A), the vast number of primary and secondary schools that exist along the roads in the study area. Figure 5.13 shows the pedestrians along the roads in the study area.



Figure 5.13: Pedestrians along road P296.
Photograph: S.T. Ndawo, 15 May 2016.

Regarding pedestrian behaviour, most schoolchildren did not walk on the right side of the road, facing oncoming traffic. They walked on the left side of the road. This meant that traffic came from behind, and they could not see the cars coming. Some of them walked inside the road, in groups, not in a single file. This created competition for space between the motorists and the schoolchildren, leading to conflict. When crossing the road, most schoolchildren did not observe the traffic and apply the golden road safety rules: “Look right, look left, look right again, listen, and cross only if it is safe to do so”. Some of them also did not cross the road at the safe designated places, like the pedestrian crossings. Others crossed the road where the sight distance was not clear. The younger schoolchildren were observed to run across the road without observing the traffic before they crossed. It was, however, noticed that the older schoolchildren knew how to behave correctly on the road, but they chose not to do so. During the engagements with them, they showed understanding of all

the road safety rules, but they were not practically applying any of them. Figure 5.14 indicates the schoolchildren scattered along the roads in the study area.



Figure 5.14: Schoolchildren scattered in roads P296 (a) and P483 (b).
Photograph: S.T. Ndawo, 28 April 2016.

The adults were more cautious than the schoolchildren in terms of obeying the road safety rules. However, some of them walked on the wrong side of the road, and

walked inside the road where the sidewalks were absent. They also did not make an effort to educate or show the young ones how they should behave on the road.

The cost of pedestrian fatalities and injuries are psychological, socio-economic and health related, and it consumes the financial resources countries require for development. The cost is estimated between 1% and 2% of the Gross National Product (GNP) of South Africa (RAF 2014).

Chen (2010) states that pedestrians who commute in rural areas are more likely to suffer injuries than pedestrians who commute in urban areas. Many collisions occur at night during weekends due to poor visibility in that vehicle operators find it difficult or fail to see pedestrians. Roadway design has generally catered for the needs of motorised traffic, neglecting the needs of pedestrians. An assessment of roads in low- and middle-income countries in Asia, Africa, Eastern Europe and Latin America revealed that 84% of the roads surveyed had no pedestrian footpaths, even though they carried motor vehicle traffic moving at 40 km/h or more.

- ***Motorists***

An approximately number of 120 were observed during each session. This included small private vehicles, light delivery vehicles, taxis, buses and trucks. During the first instances of observation, the researcher just stood at the side of the road without being noticed or wearing any noticeable clothing. The purpose of this was not to distract the motorists from their normal behaviour. The speed at which these cars drove was perceived to be very high, especially in the sections where there were speed calming devices. The pedestrians were, therefore, cautious when crossing the road at these sections. At times, the pedestrians had to wait for a very long time before they could cross the road safely. The situation was worse with the small schoolchildren because they could not make the decision to cross the road at the correct time. The motorists also ignored the road signs that were warning them about road safety issues. Others were overtaking at the barrier lines and when there was an oncoming traffic. Some cars also stopped suddenly to load and off-load passengers, without considering other road users. No precautionary measures were taken by these motorists during their activities. The pedestrians waiting to cross the road were totally ignored. Other motorists made U-turns at dangerous areas and completely disregarded road safety rules. There was also widespread use of cellular phones while driving, especially by the minibus-taxi motorists. Most of the motorists

also did not use seatbelts. Figure 5.15 indicates the behaviour of motorists in the study area.



Figure 5.15: Motorists' behaviour in road P296 (a) and P483 (b).
Photographs: S.T. Ndawo, 25 April 2016.

In the next observation sessions, the researcher wore a reflective jacket that was associated with the traffic officers in terms of colour. A totally different scenario in terms of motorist behaviour was recorded. The researcher had a clip board on which to write, and was recording information as the motorists passed by. The speed of the cars was slower than the previous time. There was also a reduction in overtakings,

careless off-loading and loading, U-turns and sudden stops. Most of the motorists adhered to the traffic rules, but some of them did show that they were impatient. Some motorists would stop abruptly at the stop signs and speed calming devices after realising the presence of the researcher along the road and that notes were taken. It was assumed that they thought that the researcher could perhaps be a traffic officer. This indicated that the visibility of traffic officials along these roads could help to curtail speeding by the motorists.

- ***Cyclists***

An average number of approximately 20 cyclists were recorded at various points on these roads. In terms of the behaviour and patterns of cyclists, it was not easy to conclude whether they were road safety conscious or not. Mixed behaviours were observed. Some cyclists cycled on the right side of the road, instead of cycling on the left, together with the cars. When asked about their reasons, they stated that they felt safer when they faced oncoming traffic. Most of them were not aware that it was not correct to do so. The good behaviour observed was that all the cyclists were cycling in single file, and did not distract the motorists in any way. None of the cyclist used helmets. When asked about this, they indicated that they did not see the importance of wearing the helmet, and that they had been cycling without the helmets for a long time without any crashes or injuries. Most of the bicycles used by the cyclists still had the reflectors that make them visible to the motorists; however, none of the cyclists wore any that would increase their visibility to motorists. Most of the cyclists indicated that the purpose of their trip was to run errands around the area, while others indicated that they were going to work in town, which was 22 km away. Some of these cyclists were recruited to be part of the focus group discussions because of the enthusiasm that they showed when asked about road safety issues. Figure 5.16 indicates cyclists in the study area.



Figure 5.16: Cyclists in road P483.
Photograph: S.T. Ndawo, 28 April 2016.

- ***Stray animals***

Stray animals like goats, cattle, sheep and donkeys were noticed along and in the roads in the study area during the observation sessions. Some animals were supervised and others were unsupervised. Those that were supervised had herdsman that ensured that the animals stayed away from the road. There were, however, some instances where the herdsman would not realise that the animals had crossed to the other side of the road, maybe for water or for better grazing. The unsupervised animals were scattered all over and some of them distracted the motorists on the road, creating a high possibility of road crashes. Figure 5.17 show stray animals in the roads in the study area, and how they influence road safety.



Figure 5.17: Stray animals in roads P483 (a) and P296 (b).
Photographs: S.T. Ndawo, 15 May 2016.

5.2.1.4 Other activities

It was observed that there were many activities taking place along the sides of roads P296 and P483. Street vending in shacks and small portable tents were noticed. This obscured the sight distance of the motorists on the sides of the road, especially at the

points where there were intersections. The vending material also encroached the road reserve. There were also other small businesses like tyre sales, car repairs and goats being kept in small kraals to be sold to the community members and the passersby. Road workers that were picking up litter and doing minor road maintenance along the sides of these roads were also noticed. These people were used as key informants during the observation sessions, and were also recruited as part of Focus Group C. Figure 5.18 shows the other activities that are taking place along the roads in the study area.



Figure 5.18: Road works along road P483.
Photographs: S.T. Ndawo, 26 April 2015.

Other activities/features that existed along these roads were advertising signs, boards and poles that further obscured the view of the oncoming traffic and illegally encroached the road reserve. All these activities encouraged vehicles to just stop and park anywhere in order to access these services. The situation got worse when the schoolchildren were around the area because they would come in large numbers, and would not observe the rule of the road, which appears to be common. Figure 5.19 indicates other activities that took place in the research study area.



Figure 5.19: Other activities along the road: a) goat kraal and salon on road P483; b) tyre sales on road P296; c) taxis pick up/drop off passengers on road P483. Photographs: S.T. Ndawo, 10 May2016.

5.2.2 Interviews

Interviews were conducted with the people that were the experts or had profound knowledge about the subject matter of road safety. There were eight interviews that were conducted with various people from different fields of specialisation. The set of questions as shown in Annexure C was used. The questions were, however, customised to the particular individual and allowed for further discussions on the issue at hand. Biographical data was not taken into consideration during the interviews, as it was believed to have no bearing on the research study.

5.2.2.1 General road safety knowledge

The first 'ice-breaker' question that the interviewees were asked was intended to trigger their thoughts about road safety. It was phrased in such a way that they had to provide information about what came to their minds when they thought about or hear the words 'road safety'. Responses included the following: crashes, speed humps, pedestrian crossings, speed, overtaking, cyclists and many more. However, the responses clearly reflected the line of work in which each respondent was engaged. All of the interviewees felt that roads P296 and P483 were not safe to the road users because of various reasons ranging from road infrastructure, to enforcement and education. They all felt that a lot still needed to be done, especially with regard to involving the community at large and the relevant authorities.

5.2.2.2 Road safety publicity

All the interviewees believed that road safety publicity could improve road safety in Newcastle. It appeared that, at that moment, very little was done in terms of publicity, as it tended to be maximized only during October, which was transport month and during the festive and Easter seasons. Local newspaper articles and local community radio were used at a very minimal scale in as far as road safety was concerned. One official from the KZN-DoT even raised concern about the restrictions that existed with regard to allowing government officials to make comments in the media, regardless of the topic under discussion. There was also a suggestion that a budget should be ring-fenced for publicity of all road safety activities. This would ensure that it was done at regular intervals with prescribed spaces and time slots allocated prior to the publicity.

5.2.2.3 Involvement of community members

On the issue of community members' involvement in road safety activities, two all the interviewees felt that the community members should be fully involved and trained to take part in all road safety initiatives. They further suggested that there should be incentives that would motivate and encourage the participation of community members in road safety activities. This could alleviate the financial burden on the authorities for services to promote road safety.

About three quarters of the interviewees pledged their full commitment and involvement in road safety activities through awareness campaigns, road shows, road blocks, road safety curricula, voluntary services and helping children to cross the road safely. Other interviewees indicated that they do not get invitations to participate in road safety activities and, therefore, feel left out. They indicated that they do have interest in partnering with other stakeholders to promote road safety, and requested to be involved at all costs.

i) Black spot programme

The respondents felt that a black spot programme should be introduced to closely monitor all the hazardous areas, and record and intervene in the shortest possible time. This programme involves requesting the community to identify and report all the areas in their communities where most crashes occur. These areas would be regarded as 'black spots' or hazardous locations (haz-locs). A form could be designed that could assist the community members to capture all the necessary information. Community members could be a valuable source of information in the areas where they reside, as the respondents knew exactly where the incidents of crashes normally took place, and could even speculate as to the reasons, effects and solutions to these incidents. The Black Spot Identification Programme was recommended in this case (Annexure J).

5.2.2.4 Characteristics of good road users

In terms of the characteristics of a good road, driver, pedestrian and cyclist, the interviewees' responses that were provided are summarised below:

- **Road** – a good road was considered to be a complete road, with all the road safety features that would be used by all road users and benefit them equally. The main features that were mentioned were speed humps, road signs, sidewalks, cycle

lanes and loading zones. They strongly believed that a road with all these characteristics was a good road.

- **Driver** – a good driver was regarded as someone that was cautious and obeyed the rules of the road. Such a driver should not exceed speed limits, not drink and drive, not use a cellular phone while driving, must use a seatbelt at all times while driving, and ensure that the passengers also buckle up. A good driver should also use child restraints and drive a roadworthy vehicle.
- **Pedestrian** – a good pedestrian obeys all the road safety rules, and is cautious all the time. A pedestrian should walk on the right hand side of the road, facing oncoming traffic and should wear visible clothing, especially at night or during adverse weather conditions. A good pedestrian should also not consume alcohol and walk or jaywalk (walking carelessly and crossing the road in between the vehicles or traffic). Such a pedestrian crosses the road at safe places designated as crossing points or with clear sight distance as per the golden road safety rule. Walking should be carried out on the sidewalk/pavement where it is available, or on the verge of the road in cases where a sidewalk is not constructed.
- **Cyclist** – a good cyclist always wears a helmet when cycling, and cycles on the left side of the road, in the same direction as the traffic. Such a cyclist uses signals to communicate with the motorists, obeys all road safety rules, and uses reflectors on the bicycle or visible clothing to be seen by the motorist and avoid crashes.

5.2.2.5 Involvement experience in road crashes

In terms of family members' or relatives' involvement in road crashes, some of the interviewees indicated that they did have relatives that were once involved in road crashes. In one incident, it was mentioned that the victim that was involved in a crash never got compensated from the RAF because the period of claim lapsed before the claim could be submitted. They were not aware of the time periods involved.

5.2.3 Focus group discussions

Three focus group discussions were undertaken during the research study. The results of the discussions were analysed in terms of biographical information and road safety status in the study area (Blaauwbosch) in terms of the discussion questions that were outlined.

5.2.3.1 Biographical information

In terms of biographical information, the following aspects were analysed: gender, age, literacy level and period of stay in the study area.

i) Gender

Figure 5.20 illustrates that Focus Group A, comprising the CRSC members, consisted of 60% males and 40% females. However, it is important to note that, although there were fewer females than males in the entire structure, there was balance in terms of participation in that the females were actively involved in the discussions.

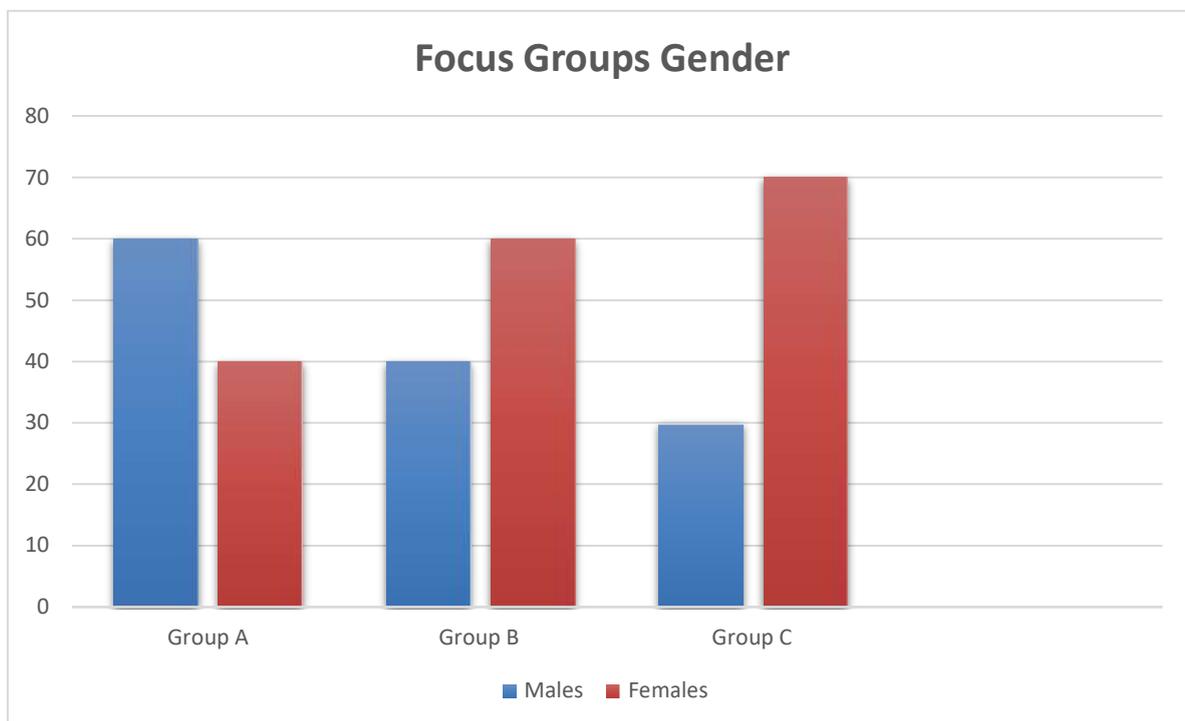


Figure 5.20: Gender of the focus group participants.

In Focus Group B, comprising of school educators, 40% were males and 60% were females. It is important to mention that the females showed more passion and dedication to road safety issues than males. Some of them were even volunteering to assist the younger and smaller learners to cross the roads safely in the mornings and afternoons. The females also had many innovative ideas that could promote road safety, and they took the discussions very seriously. Focus Group C, consisting of the frequent local road users, were 30% male and 70% female. The males, although fewer than females, were very active in the discussions about road safety issues, and had many experiences that could be drawn upon to frame the recommendations to

improve road safety in the area. There was even mention of the fact that men were more able to undertake voluntary activities to assist school learners in crossing the roads safely than females.

In total, the participants for focus groups comprised of 43% males and 57% females. The discussions were fairly balanced between these gender groups. Women mentioned that the empowerment workshops that were organised for women in the community increased their confidence to participate in community activities.

ii) Age

Figure 5.21 illustrates the four age categories that were used by the researcher to gather information from the respondents. The age distribution of focus group participants varied between 18 and over 60 years of age.

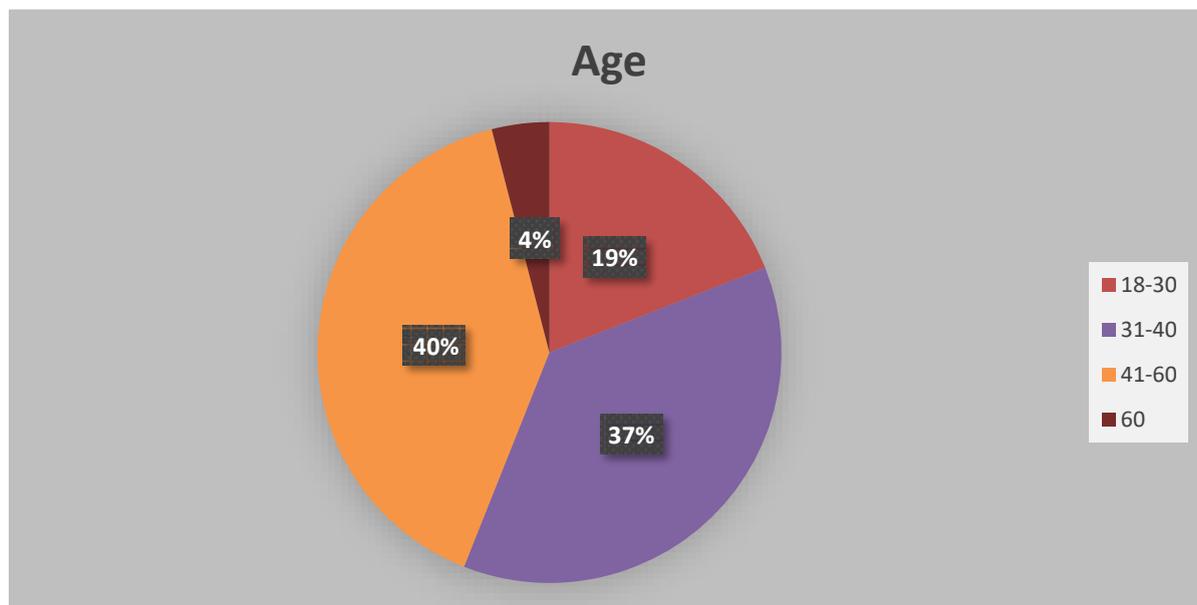


Figure 5.21: Age range of the focus group participants.

It is important to note that most of the respondents were in the age groups of 31–40 years (40%) and 41–60 years (37%). Only 4% of the respondents were over 60 years of age, and 19% were in the age group of 18–30 years. The fact that there was no equal representation in the age groups in the sample made any generalisations about the age influence on road safety issues impossible. This notwithstanding, all respondents revealed a positive attitude and enthusiasm about road safety issues, irrespective of their age. The middle-aged group of respondents showed vast knowledge and experience about road safety issues, whereas the young group of

respondents devised creative and innovative ideas and suggestions about improving road safety.

iii) Literacy level

Four aspects in terms of literacy level were analysed in this research study, namely: no schooling, primary education, secondary education and tertiary or post-matric education. Figure 5.22 indicates that only 2 of the 57 total participants were illiterate or had received no schooling. Moreover, 28% (16 participants) had primary education, 26% (15 participants) had secondary education and 42% (24 participants) had tertiary or post-matric education.

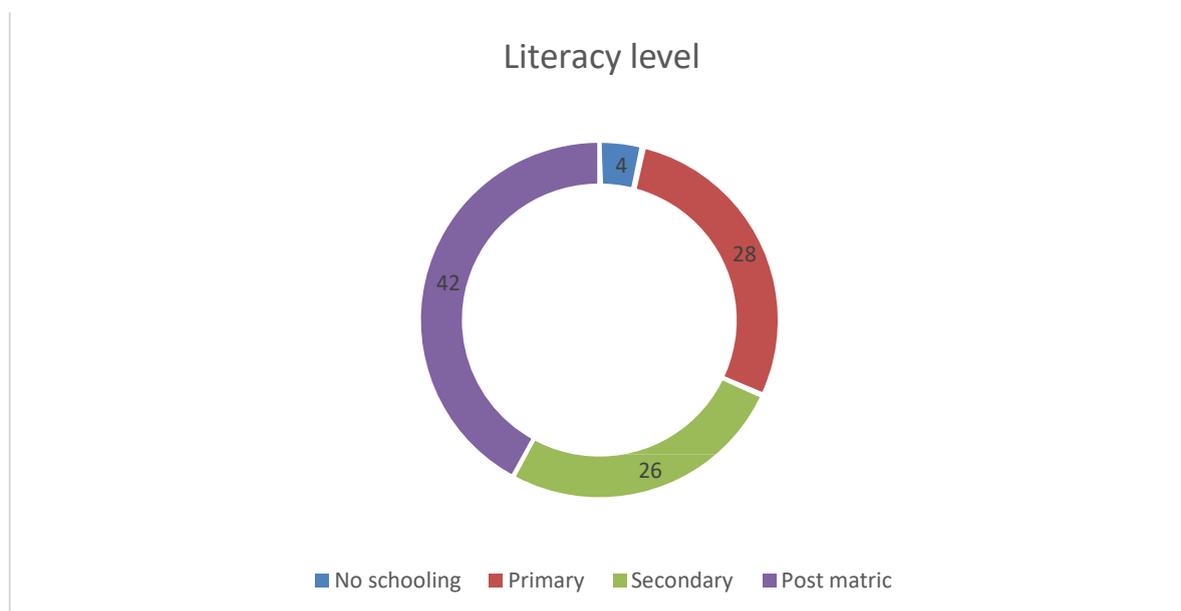


Figure 5.22: Literacy level of the focus group participants.

This is attributed to the fact that there was also a focus group of educators amongst the participants in the research study. The educational qualifications or literacy level, however, had no direct bearing on the discussions about road safety. The participants had many innovative and creative ideas about how to promote road safety. The enlightened ones that had had a chance to visit other parts of the country or the world were, however, able to share more ideas about what could be learnt from other areas. The respondents' general level of education had a significant relationship to their standard of living and their perceptions of aspects like road safety and community involvement in assistance and intervention. Other respondents, due to illiteracy, might not have seen the need to be involved in road safety issues because they could not

understand the road signs. It was interesting to note that illiteracy did not interfere with the participation level of the participants in the focus group discussions. The use of language with which the participants were familiar also encouraged them to participate and to express themselves.

iv) Distribution according to the length of period of stay in the study area

Figure 5.23 illustrates that 16% (9 respondents) of the total focus group sample reported that they had lived in the area for a period of 1 to 5 years. The next group of 6 to 10 years held 16 respondents, therefore 28% fell into this group. The largest percentage of 56%, comprising 32 respondents, indicated that they had lived in the area for more than 10 years.

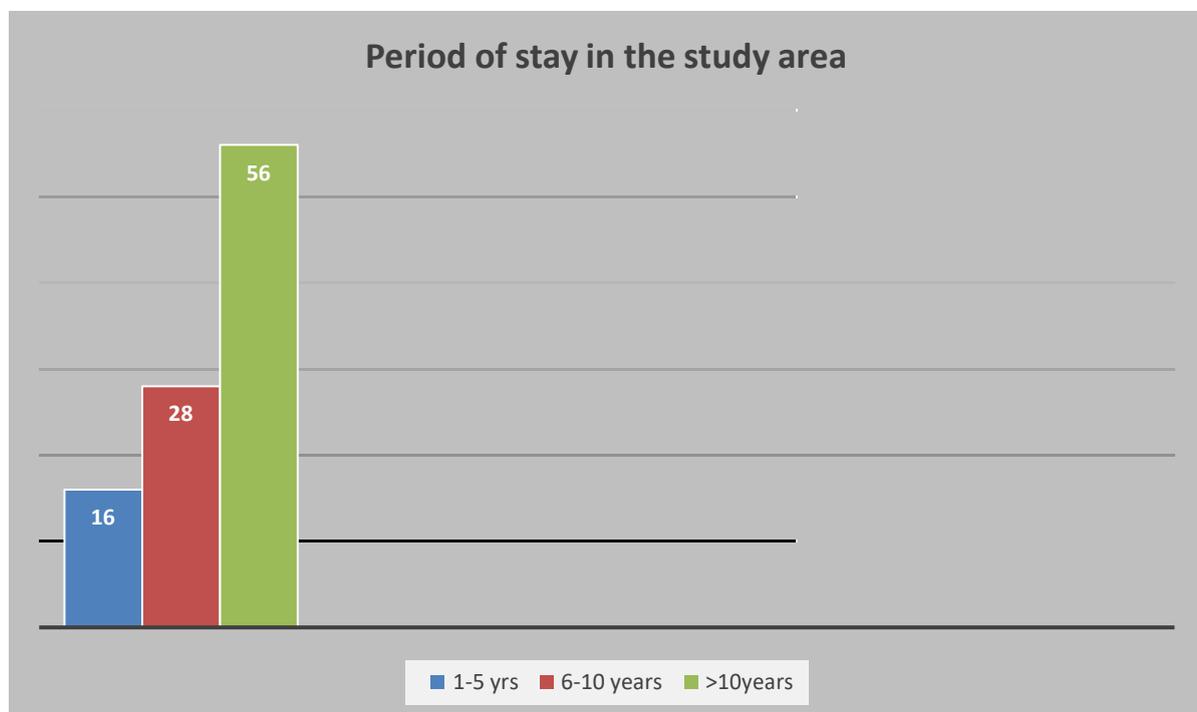


Figure 5.23: Period of stay in the study area of the focus group participants.

The length of the period of stay in the study area was divided into three categories, namely: 1–5 years, 6–10 years and those that had lived in the area for a period of more than 10 years. This implied that most respondents permanent residents in the study area. Therefore, it was possible that they had adequate and valuable information about road safety issues in the area. It is also interesting to note that in the focus group of school educators, 8 of the 18 had lived in the study area for more than 10 years. The CRSC focus group yielded the highest number of people that had

lived in the area for more than 10 years (14 out of 20 participants). This strengthens the relevance and validity of data collected from these respondents.

5.2.3.2 Analysis of the focus group discussions and research findings

In the community biographical data, the researcher indicated the intention to pose questions and answers that overlapped wherever possible. The following section analyses the responses to the discussions held with the three focus groups.

The researcher required the focus groups to express their understanding, involvement and suggestions about road safety issues in the study area of Blaauwbosch. Most of the questions overlapped amongst the groups, so the analysis of the responses would be grouped in terms of the content of the questions and the responses thereto. These responses would be checked against the objectives of the research study so that recommendations could be formulated.

i) Safety of roads in Blaauwbosch

All the focus groups participants strongly felt that roads P296 and P483 in the Blaauwbosch area were not safe at all. Some of the reasons mentioned were related to the road safety strategy focus areas: engineering, enforcement and education.

- **Engineering factors**

The roads were believed to lack the necessary features that would make them safe. Most of the responses about engineering issues came from the CRSC and school educators' focus groups. The following features were mentioned as either absent or insufficient on these roads: speed humps, road signs, sidewalks, cycling lanes, road markings and loading zone, and the poor road condition was also identified as a challenge. However, even though the road environment accounts for only 10% of the road crashes, according to the RTMC report of 2015, the respondents did not believe this to be the case in Blaauwbosch. Most of the crashes were believed to be the result of the poor road conditions that were due to insufficient engineering interventions on these roads.

- **Enforcement actors**

Roads P296 and P483 were declared unsafe by the respondents because of the inadequate enforcement measures undertaken. In an interview with the Road Traffic

Inspectorate official, it was revealed that the number of traffic officials in the Amajuba District was far less than the required number that would be able to provide proper road safety and traffic enforcement functions. This led to more traffic violations on the roads and more chaos that the traffic officials could not handle. One respondent attested to the fact that he had never seen any traffic officials on that road since he started staying there five years before. He further mentioned that he would only see the traffic officials on the roads that are closer to town. The traffic violations that usually went unpunished on these roads were that of speeding, drinking and driving, non-usage of seatbelts, use of cellular phones whilst driving, as well as unroadworthy vehicles. All these violations contributed tremendously to the road crashes that affected the area of Blaauwbosch and its surroundings.

ii) Level of road safety awareness and publicity

The participants were asked about how they could rate the people's level of road safety awareness and the publicity thereof. Most of the respondents felt that not enough was being done to make all the community members aware of road safety. They felt that many people were not aware of road safety issues because very few people were talking about it. They even mentioned that Newcastle had media channels that could be used to highlight the importance of road safety. The media channels available were the Newcastle Community Radio, local newspapers, such as the *Newcastle Advertiser*, *Newcastle Express* and *Newcastle Sun*. These newspapers were published every week and they would be excellent vehicles to deliver road safety messages to the entire community. There was even a Zulu newspaper that could be used without language barriers. These issues are explored further in the recommendations.

The respondents also felt that not enough was being done by the authorities of the area to reduce road crashes. They believed that the authorities possess skills, knowledge and resources that could promote road safety and assist in the reduction of road crashes and fatalities that are regularly recorded. Not enough was happening on a regular basis that could be regarded as road safety interventions. Political will was also mentioned as one of the weak points of the promotion of road safety, because it was nearly absent, if it existed at all.

iii) Creating road safety awareness amongst road users

Very good suggestions and recommendations were mentioned when the respondents were asked about how road safety education could be carried out amongst road users. These are discussed further in the recommendations chapter. It is also important to point out that there was a strong feeling amongst all the participants that road safety should be a compulsory part of school curricula at all phases in schools. This was believed that it would enhance the life skills of learners at an early stage, and make road safety a lifestyle rather than a phenomenon. The involvement of all stakeholders was believed to be central to a successful awareness of road safety issues, and partnerships should be encouraged.

The respondents emphasised the fact that road safety was a collective responsibility, not solely of the authorities or the government. They also pointed out ways in which road safety issues could be tackled collectively, and the different roles to be played by various stakeholders. It was clear from the discussions that once the people understand the severity of the problem of road crashes, they would then understand that the authorities could not solve all these problems alone. Their perceptions in terms of road safety changed for the better.

iv) Role of community in promoting road safety

The former Minister of Transport, Sibusiso Ndebele, once stated in a keynote address that: "Road safety is not what you do for the people, but it is what you do with the people" (Arrive Alive 2015). This highlights the fact that road safety needs to be driven by the community members in order for it to be successful. If the community members are fully involved in road safety issues, a lot can be achieved. The existence of CRSCs emphasises this important factor of community involvement. However, more community members and structures still need to be involved. During the discussions, it seemed as if more community involvement in road safety could be achieved if the awareness and publicity of road safety could be heightened or strengthened. Most of the participants revealed their willingness to participate and volunteer in road safety activities when given an opportunity to do so. Others indicated that a monthly stipend would motivate people to do more for road safety, thus saving a lot of expenses incurred in road crashes. This is explored further in the recommendations chapter because it can improve the road safety situation.

Other members of the focus groups were, however, against the idea of giving out monthly stipends to those individuals that were volunteering to promote road safety. They argued that this would create a 'dependency syndrome' and that it would defeat the whole purpose of volunteering. They further argued that people should act out of the goodness of their hearts and a willingness to be of assistance to the community, without being driven by money or monthly allowances.

v) *Family member or relative involved in a road crash*

Some of the respondents were not willing to disclose too much information about their family members or relatives that were once involved in road crashes. Those that were willing to share the information preferred to do so privately. This was because of the experiences that they had had regarding the issues, and the fact that some of the incidents had happened recently, and the participants and victims had not yet recovered.

One respondent mentioned that the experience was very traumatic and painful because it was a fatal crash that took away the breadwinner of the family. The crash involved a minibus taxi in which several passengers were killed. The dependants of the deceased subsequently submitted claims for compensation of loss with the Road Accident Fund (RAF). They were then requested to send in all the supporting documents related to the crash. Evidently, the minibus taxi that killed those passengers was unroadworthy, and had no liability insurance for its passengers. That meant that none of the victims and their dependents would be paid any compensation. The lawyers who had been assisting those families, had continued the struggle, but they never succeeded.

Other respondents had good stories to tell about the compensation that their relatives had received from the claims that they had laid with RAF. However, that did not replace the painful experiences that they had when the incidents occurred. One respondent was a crash victim himself, and was in a wheelchair. He was not willing to discuss the details of his accident, but was happy to be part of the people that can promote road safety awareness.

The respondents that had first-hand experience of road crashes, had more information to share than those that were never affected. The experiences that they had had also served to stimulate the suggestions and ideas they offered on how road

safety matters could be tackled. They felt strongly that they needed to do more to promote road safety awareness and participate in all the activities and interventions.

The school educators had had experiences during which some school children were knocked down by cars. They explained the effect that these incidents had had on the other learners, especially those in lower grades. Some of them even had to undergo trauma counselling because the incidents were gruesome and shocking for them. They also mentioned that the parents of the injured or deceased learners would sometimes put the blame on the school for not taking sufficient care of their children. One parent was said to have even confronted the school principal, demanding to find out how many learners must die before the school acts on the road crashes affecting the learners. At some stage the community members had threatened to dig a trench across the road so that the cars would not be able to drive through because they were said to be 'slaughtering' their children. They had demanded speed humps or any other means of speed calming devices to be put in place immediately. The suggestions and responses by the respondents are documented in Chapter 6.

5.3 THE PROCESS OF DATA ANALYSIS

5.3.1 Coding

The researcher coded the data obtained from the observation, interviews and focus group discussions with the use of words that would be easily understood by the reader. For the observations, the following data codes were identified:

- PH - Peak hour
- S/O - Speeding and overtaking
- SS - Sudden stopping
- DinC - Difficulty in crossing
- VO - Viewer obstruction
- RC - Road construction
- LO - Loading and off-loading
- RT/M - Road traffic sign or marking
- Dr /Ped - Motorists and pedestrians
- V of RTR - Violation of road traffic rules
- SP - Speed

All the codes that are used in this research study makes it easier for the reader to understand what is being discussed. During note-taking and recording, it was also easier to record the observed situations and scenarios because of the coding system. The data collected during the transect walks was recorded in the same manner using the simplified codes illustrated above.

5.3.2 Categorisation

In order to form categories, related information was coded and grouped together. To make this task easier, all the necessary interview units and focus group discussions from the respondents were collected and reviewed against observation data. Units with similar meanings were grouped together to form categories, with properties that make up the category, and a dimensional range was developed for each property. Table 5.2 contains the information obtained from the observational data:

Table 5.2: Categorisation of the information obtained through observation.

CATEGORY	PROPERTIES	DIMENSIONAL RANGE	
		EXTENT	FREQUENCY
Violation of traffic rules			
	Speeding	High	Always
	Overtaking	High	Always
	Sudden stopping	Medium	Always
	Loading and off-loading	High	Always
	Seatbelts non-use	High	Always
	Cellular phone usage	High	Always
	Ignoring traffic signs	High	Always
	Walking on wrong side	Medium	Always
	Crossing at unsafe places	Medium	Always
	No bright clothes	High	Always
	Playing in the road	Medium	Always
	Walking in the road	High	Always
	Cycling on wrong side	High	Always
	Non-use of helmet	High	Always
	No visible clothing	High	Always
	Reflectors on bicycle	Medium	Always
	Road signs	Medium	Always
	Pavements	Medium	Always
	Loading zones	Low	Never
	Speed humps	Medium	Always

	Potholes	Medium	Always
	Road markings	Low	Always
	Cycling lanes	Low	Never
	Storm-water drainage	Low	Never
	Supervised	Low	Always
	Unsupervised	Medium	Always
	Vending shacks	High	Always
	Signboards along road	Medium	Always
	Road works/ construction	Medium	Always

The interview and focus group discussions data is summarised with the conceptual framework based on the research questions of this study as shown in Figure 5.24.

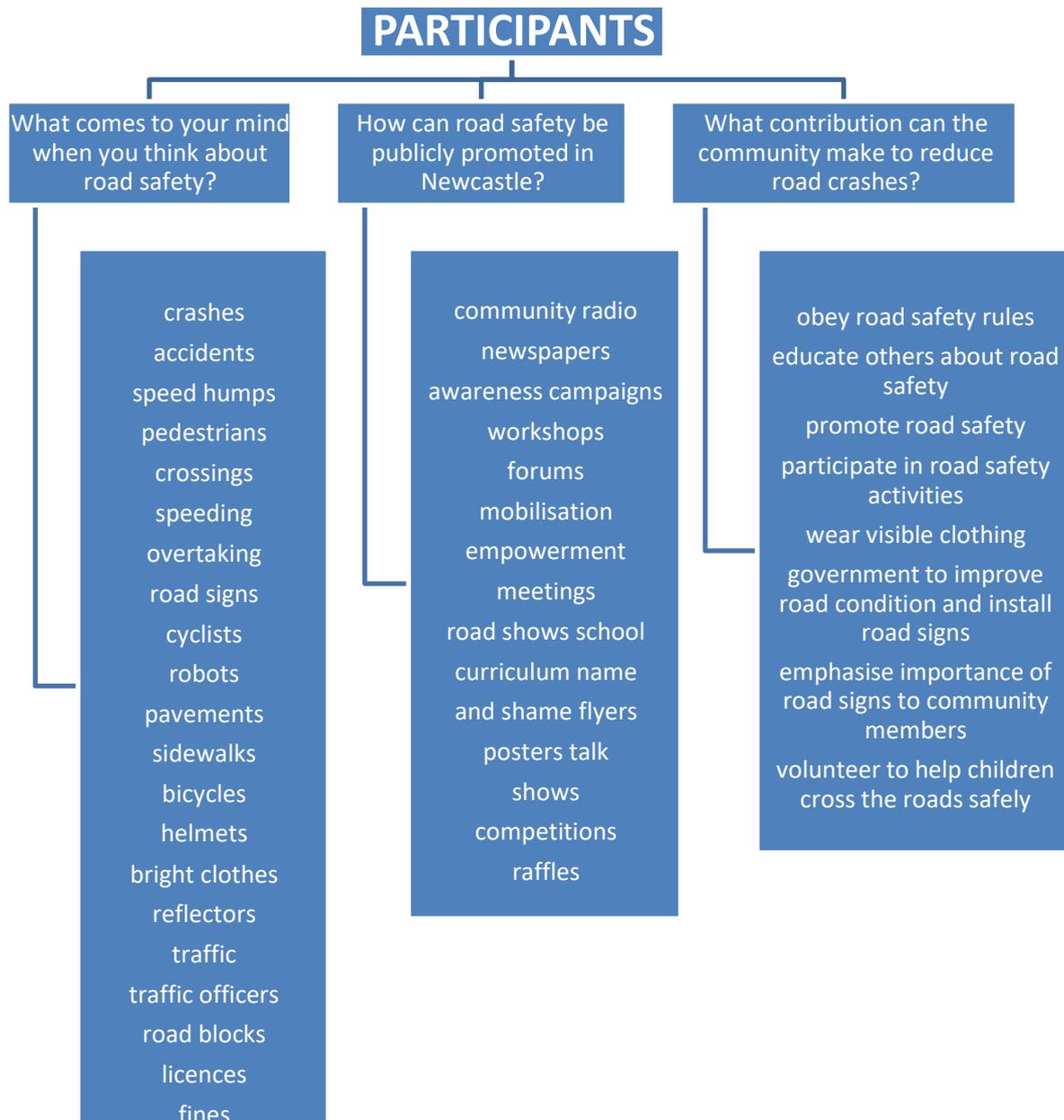


Figure 5.24: Categorisation of the information from the interviews and focus group discussions.

The characteristics of a good road, driver, pedestrian and cyclist that were gathered from the respondents during interviews and focus group discussions are shown in Figure 5.25:

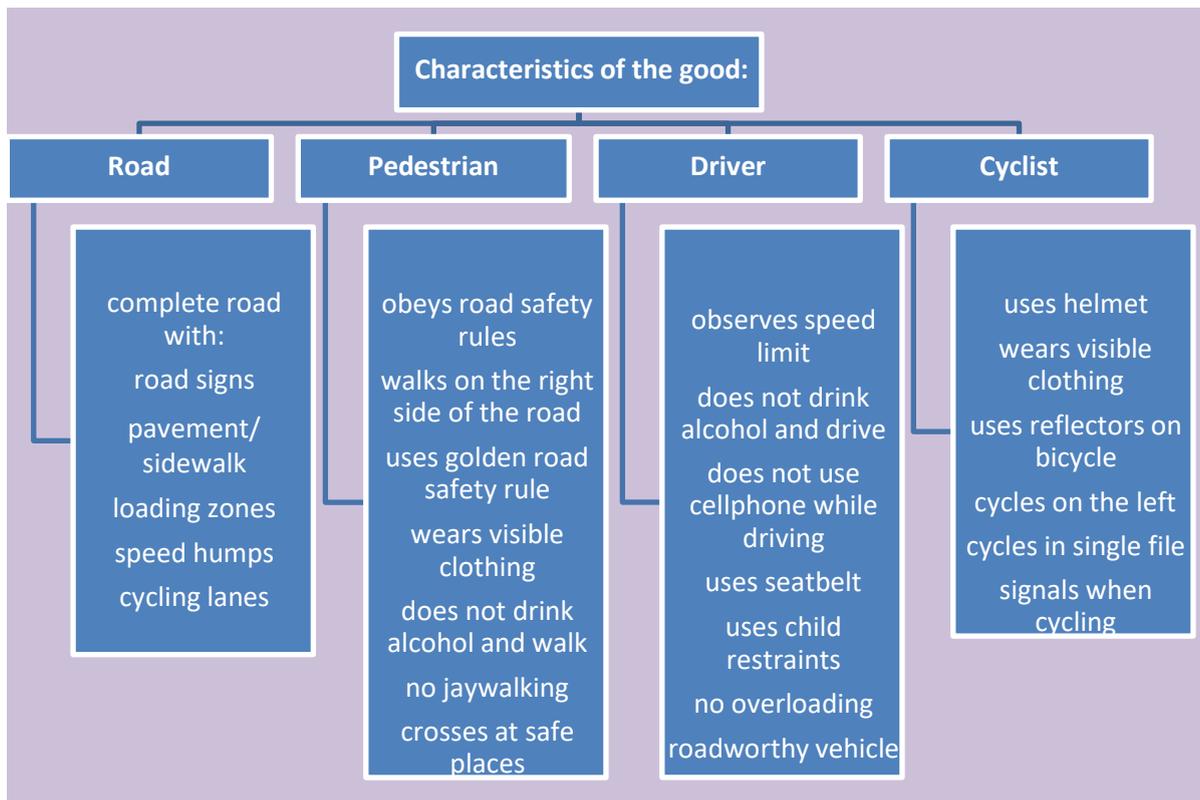


Figure 5.25: Categorisation: Characteristics of a good road, driver, pedestrian and cyclist.

5.4. CONCLUSION

The data gathered and analysed in this research study proved to be very useful in formulating the findings and results of the study as well as the recommendations. This will also highlight the potential benefits of this study for future research. It is also important to take note that the data collected during the research study was checked against meeting the objectives of this research. This is evident in the findings and the recommendations of the study.

CHAPTER 6 : LOCAL VOICE, GLOBAL CHANGE

6.1 INTRODUCTION

The aim of this chapter is to summarise the data that had been gathered and analysed based on the objectives of the research study. This will assist in gaining insight on how communities perceive road safety and how they can be involved in reducing road crashes, and work together with the relevant authorities. The main findings in this research study are discussed in line with the objectives of the research study. It is also shown that community involvement and participation is needed to address community road safety challenges.

6.2 SUMMARY OF FINDINGS

6.2.1 Community members' perceptions of road safety

The results of the analysis revealed that all community members that took part in the research study believed that the roads in question (P296 and P483) were not safe for all the road users. This was based on their views about the characteristics of a good road and road users, and their responses when asked about what comes to mind when they hear the word road safety. The roads in the study area were regarded as completely unsafe because they lacked the basic road safety features like road signs, road markings, loading zones, speed calming devices and pedestrian crossings.

The respondents perceived the road users (pedestrians, cyclists and motorists) as careless about road safety, based on the way they behaved on these roads. The respondents had basic road safety knowledge, but the main issue was the practical application of such knowledge on a daily basis. The absence of traffic officials that patrol the study area also supported the perception of the community members about the poor road safety status in the area. This was believed to contribute immensely to the reckless behaviour of the motorists in the study area.

The general feeling of the community members was that road safety was not a top priority for the authorities in the area of Newcastle. This was evidenced by the lack of publicity about road safety activities that take place in the area, and the total absence of other forms of road safety awareness. The interviewed authorities admitted that not enough was being done to promote road safety, and were willing to intensify road safety interventions. This included participating in road safety activities. However, they also revealed that budgetary constraints limit their scope – not enough funding

was dedicated to road safety activities in the local municipality's budgetary framework, nor that of the KZN-DoT.

Based on the data collected from the participants in the research study, the following were perceived to be the causes of road crashes in the area of Blaauwbosch. These causes have been classified as human, road-related and vehicular factors.

- *Human factors*

Human beings were believed to be directly responsible for road crashes due to the following: jaywalking; hit and run; speeding; unlawful overtaking; alcohol; fatigue; disregarding road signs, especially stop signs, in the case of motorists; and disregarding road safety rules in the case of pedestrians and cyclists.

The motorists, pedestrians and cyclists were each responsible for the road crashes that occur on these roads in one way or the other.

- *Road-related factors*

The prevalent road-related factors, thought to contribute to road crashes, were identified as: sharp bends; wet and slippery roads; unclear road markings; potholes; broken road edges; and stray animals such as cattle, goats, sheep, donkeys and horses.

- *Vehicular factors*

The vehicular factors, as the cause of road crashes, were attributed to the following: tyre burst; faulty brakes; and faulty steering wheels.

To summarise, the unroadworthy vehicles contributed much to these factors. The absence of enforcement officials who patrol the study area caused these problems to escalate.

The findings further indicate that road crashes have a negative effect on the morale of the community. It was realised that, after an incident, rejection often develops between the victim and the perpetrator. The victim in this regard could sometimes be a relative or friend of a person that was injured or killed in a road crash. The sense of belonging for the one that caused the incident could be lost, and this could result in isolation and frustration, which can lead to such psychological effects as stress and trauma. This then had long-term effects for the community members.

6.2.2 Involving community members in reducing road crashes

The consultative structure, known as the Ubuhlebamakhosi Community Road Safety Council (CRSC), which existed in Newcastle, also covered the Blaauwbosch area. However, it did not involve the full diversity of the community. This could be attributed to the fact that this structure was formed under the conditions and regulations of the KZN-DoT, not the other stakeholders like the Newcastle Local Municipality, Road Traffic Inspectorate or the Department of Education. Some of the participants in the research study revealed that they had no knowledge of the existence of such a structure. This indicated that information about road safety, retained by the CRSC, was not all filtered down to the people at grass-roots level using all relevant media.

No report-back meetings or annual general meetings (AGMs) for the community were held by the CRSC to report on the road safety programmes' implementation, progress or challenges experienced. The community was, therefore, not fully informed about the road safety programmes undertaken by the KZN-DoT, in spite of the CRSC's ongoing monthly meetings. A bigger forum with greater representation of all the community sectors would serve a better purpose. At the time, there were no other organised structures dealing with road safety issues in the area except the CRSC.

This supported the responses obtained from the participants regarding road safety publicity in the area of Newcastle. It appeared that there was insufficient publicity in terms of media advertisement. Some of the respondents testified to never having seen any road safety campaign taking place in the area. Others revealed that they had seen road safety publicity in the form of flyers, posters and pamphlets; however, these were not written in the vernacular language. Therefore, the road safety information it contained could not be understood. As a result, very little was done by the community at that moment to promote road safety, even though they were willing to do something if the opportunity could be presented to them. Others revealed that they believed that road safety was the sole responsibility of the government, but after the discussions on road safety issues, they were more willing to take part in road safety initiatives. The suggestions on how the community could be fully involved in road safety initiatives are discussed under the key recommendations section.

6.2.3 The role that authorities can play to reduce road crashes

During data collection processes, semi-structured interviews were conducted with the people that were the decision-makers and planners of road safety. This was done in

order to determine the role that authorities could play in assisting the communities to reduce road crashes. Amongst the interviewees were the employees of the KZN-DoT responsible for the construction and maintenance of road infrastructure, road safety education and enforcement. The other stakeholders were the Newcastle Local Municipality, the SAPS and the local leadership through the ward councillor and the traditional leader, that also have a large role to play in road safety interventions. The study revealed that there were budgetary constraints that hindered the design, implementation, monitoring and evaluation of road safety programmes. No dedicated funding was available to address road safety issues or implement road safety programmes in the Newcastle Local Municipality. The KZN-DoT had a budget for road safety but it was not sufficient. The main focus was on the construction of roads that did not have road safety features like sidewalks, speed humps, loading zones and pedestrian crossings, to name a few.

The road safety campaigns conducted by the KZN-DoT, in conjunction with the CRSC, were not adequate because they did not reach all sectors of the community. Most community members were not even aware of such interventions. The local councillor had never conducted or implemented any road safety initiative in the area, but gladly participated in the interventions organised by other stakeholders. There were formal school programmes in place for primary and secondary school learners. These were, however, not sufficient because monitoring and evaluation of these programmes are not sustainable.

This suggested that, at that time, very little was being done by the authorities to address road safety issues. However, during the discussions, it appeared that there was a lot that the authorities could do to reduce road crashes, given the right platform and resources, and greater political will.

6.3 KEY RECOMMENDATIONS FOR THE RESEARCH STUDY

In order for the recommendations outlined in this research study to be realised, the following stakeholders were identified:

- KZN-DoT Cost Centre Newcastle – the roads in question fall under their jurisdiction in terms of road demarcation networks. They could also provide continued maintenance and rehabilitation of these provincial roads.

- Newcastle Local Municipality – to partner with the KZN-DoT and develop a collaborative approach to solving road safety issues.
- The community – to raise road safety awareness and increase publicity through continuous community dialogues.
- Livestock owners – for discussions around how to take care of their livestock, and the construction of a community kraal.
- School educators and school governing bodies – as powerful institutions that shape beliefs, attitudes and values.
- RTI, SAPS and the local traffic authority – for joint enforcement operations of creating and promoting road safety initiatives and interventions
- Department of Agriculture – to provide guidance, advice and assistance with regard to keeping livestock in the community kraal.

6.3.1 Civil engineering issues

- *Resurfacing the road to address potholes and broken road edges*

From the observations conducted in some sections of roads P296 and P483, it was revealed that these roads were in a poor condition and lacked maintenance. The solution to address this problem was the complete rehabilitation of these roads. According to the International Road Assessment Programme (iRAP 2010), road rehabilitation involves the removal of the top surface of the road and the restoration of the original slope and natural drainage patterns to prevent erosion and re-establish site productivity. Through this process, the potholes and broken edges would at the same time be eliminated.

- *Construction of sidewalks*

The South African Road Safety Audit Manual (RTMC 2012) describes the sidewalk as an area constructed for non-motorised transport outside the road, or the road shoulder. It stipulates that it should be a minimum of 1,5m in width. The total amount of space required for the widening of the road and the construction of the sidewalk should accommodate this width. Upon measuring the roads in question (P296 and P483), and analysing the available space on either side of the roads, there was clearly ample space available for fixing the road edges and constructing the sidewalk. However, the provincial regulations regarding road reserves and encroachment should also be considered. Therefore, it was proposed that the sidewalks should be

constructed on one side of the road as in the other sections of the road where sidewalks exist. Sidewalks would separate the pedestrians from the motorists. Figure 6.1 shows an example of the sidewalk that can be constructed.



Figure 6.1: Sidewalk or pavement on road P483.
Photograph: S.T. Ndawo, 28 April 2016.

- *Pick-up and drop-off zones/loading zones*

Loading zones are the areas designed on the sides of the road, at regular intervals, for public transport to pick-up or drop-off passengers. Pick-up and drop-off zones should be constructed so that public transport operators would be able to utilise them accordingly. These could be on either side of the road because there is space available in the road reserves. Passengers or pedestrians could then embark or disembark from public transport at designated safe points. This would ease traffic congestion problems that contribute to traffic safety conflicts on these roads. In some

parts of road P296 that were well-developed, these loading zones even had shelters for passengers to use in the case of rain or heavy sunshine. Figure 6.2 indicates the example of a loading zone that is recommended for the roads in the study area.



Figure 6.2: Loading zone (pick-up and drop-off zone).
Source: The Local Government & Municipal Knowledge Base [sa].

- *Speed calming devices*

Speeding was identified as one of the main causes of road crashes on these roads. Therefore, speed calming devices needed to be constructed or upgraded so that cars that travel along these roads could decrease their speed. This would reduce the danger of knocking down schoolchildren and other pedestrians. It was recommended that two rumble strips and three speed humps on either side of the pedestrian crossing be erected at all crossing points located at reasonable regular intervals. This is in line with the specifications used by the Department of Transport (SA Speedbumps [sa]). These would be erected at all the crossing points where schoolchildren cross the road to and from school. As a short-term measure to address the urgency of the situation regarding road crashes, temporary movable speed humps could be used. These are placed in the area where there is a crisis situation every

day during peak hours. This can be done by the volunteers from the community taking turns. Figure 6.3a indicates the movable speed humps, and permanent speed humps are shown in Figure 6.3b.

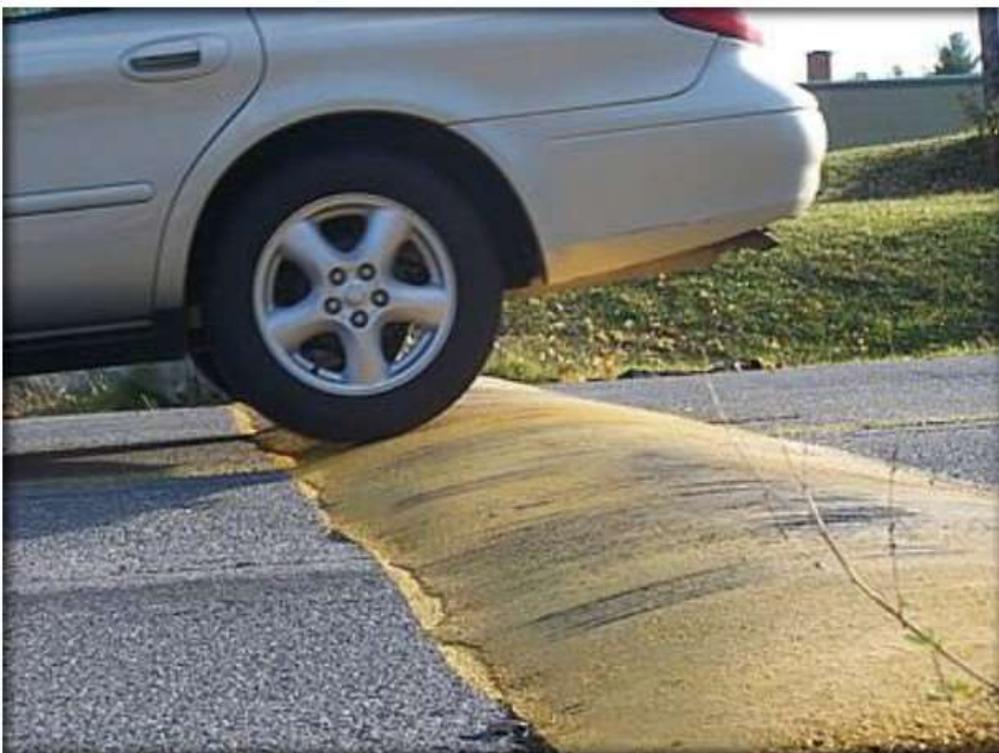


Figure 6.3 a) Temporary speed hump and b) permanent speed hump
Source Pittman Traffic & Safety Equipment [sa]; Davidson 2016.

- *Road markings and road signs*

As a long-term solution, it is recommended that complete road marking should be undertaken right after the road had been rehabilitated. Road markings that would be essential once the rehabilitation of the road was complete include:

- Solid line markings
- Broken line markings
- Left and right edge line markings
- No-stopping line

Figure 6.4a shows examples of solid line markings, and Figure 6.4b shows an example of barrier line markings and left/right edge line markings that are recommended in the study area.



Figure 6.4: Solid lines (a), and barrier and left/right edge lines (b).
Source: Jaychandran Infrastructure Pvt Ltd [sa]; SA Speedbumps [sa].

Generally, the efficiency of road signs depends on their presence, placement and the message conveyed. Therefore, signs are essential in guiding and informing motorists on the road. Table 6.1 illustrates the recommended road signs that should be implemented, according to the KZN-DoT's official (2016).

Table 6.1: Road signs to be erected on roads P296 and P483.

Code	Description	Purpose
R 201	Speed limit signs 80,60,40	Accepted speed limits
R1	Stop sign	At intersections
R217	No stopping	Certain areas are no-stop zones
R241	No hawkers	To ban hawkers along sides of the road
R214	No overtaking	At barrier lines and blind spots
R213	No U-turns	At all sections of the built-up areas
W204 W205	Sharp curve (left and right)	At sharp curve areas
W202 W203	Gentle curve (left and right)	At gentle curved bends
W309	Cyclists	Where cyclists are present
W332	Speed humps	Where speed humps had been installed
W332	Uneven road surface	Where the road was uneven – patches
W339	Potholes warning	Inform motorists of the potholes
W333	Slippery road	Indicated slippery road when wet
W354	Fog/Mist	Poor visibility when foggy or misty
W307	Pedestrians	Pedestrians walking on the area

Source: South Africa. KwaZulu-Natal Department of Transport (1999).

- *Dark roads – solar powered road studs*

Roads P296 and P483 are dark at night and during foggy or misty periods. This is as a result of the missing road studs or cat's eyes. Solar powered road studs were proposed on both roads P296 and P483. This will increase visibility, cut electrical

costs, and reduce cable theft from street lights. According to Comparethemarkings.com ([sa]), road studs are electro-reflective safety devices used in road markings. They originated in the UK in 1933 and is today used all over the world. Road studs consist of two pairs of reflective glass spheres set into a white rubber dome, mounted in a cast-iron housing. It was proposed that solar-powered road studs be installed. These units would charge up during the day when the sun shone, and flash very brightly all night and during periods of dark fog. A fully charged solar-powered road stud can maintain its power for up to three days, so this solution would be effective during winter months or in case of severe storms with extended periods of little or no sunshine. Figure 6.5 shows the effectiveness of solar-powered road studs during a foggy season and at night.



Figure 6.5: Solar-powered road studs in fog (a) and at night (b).
Source: Soloway 2001; R Solar World [sa].

6.3.2 Roaming livestock

Due to theft, lack of enforcement, and funding restrictions, the fencing of roads had proved to be a major challenge. Therefore, the following is recommended:

○ *Livestock monitoring programme*

In an effort to curb unnecessary road crashes between motorists and roaming livestock, the introduction of a livestock monitoring project is recommended. This would involve the employment of the out-of-school unemployed youth by the KZN-DoT. They would be given bicycles and then be required to travel demarcated lengths of road every hour on every day, ensuring that livestock did not wander onto the road. This could be done on a rotational basis or shifts during the day. While addressing road safety issues, poverty alleviation would be tackled by providing employment to the youth of the research study area.

○ *Construction of a community kraal*

According to the Department of Agriculture, Forestry and Fisheries (South Africa. DAFF [sa]), a community kraal contains cattle, sheep and goats; and the fodder for these animals would normally be collected and fed to them by their respective owners. The example of a community kraal is shown in Figure 6.6. The community kraal should be constructed near a dam or lake, where possible, so that the livestock could use it to drink water during the day. The area of Blaauwbosch has vast commonages (available land) that the municipality could zone for this purpose. However, the following criteria must be adhered to:

- The ownership of the land should be secure.
- It should be well-drained (not in a wetland or depression that collects water).
- It must be near enough to the residential areas for security purposes, but far enough to comply with health regulations regarding animal enclosures near residential areas.
- It should have a good access the road.
- Once secured, it should be fenced in, making provision for easy access to vehicles that transport animals, feed and stock remedies.



Figure 6.6: Example of a community kraal.
Source: SlideShare 2014.

6.3.3 Traffic management issues

- *Education*

The Royal Society for the Prevention of Accidents (RoSPA 2014) suggests that ongoing road safety education for both farmers and community members, including schoolchildren, should be undertaken. The ‘four E’ approach (education, engineering, enforcement and evaluation) based on the road safety model of Victoria, Australia, which the KwaZulu-Natal Province adopted, should be implemented. However, in order for the ‘four E’ approach to work, there had to be better co-ordination between the various spheres. The KZN-DoT and other stakeholders should conduct road safety awareness campaigns to teach the community members about road safety. This needs to be taught at the schools and in the community. The CRSC also needs to be empowered in terms of conducting road safety education and awareness campaigns. Relevant road safety content in the right language must to be communicated to them and organised in an easy-to-use manner suitable for the targeted audiences. This could be done through the use of Junior Traffic Training Centres (JTTCs) as shown in Figure 6.7. A road safety mat with illustrations that

resemble the road and its features would be used to educate junior school children. The advantage of using the JTTCs would be that they are portable and can be moved from one place to the next. They can be used in all the schools where road safety education is required. Children learn and understand better through practical sessions.



Figure 6.7: Road safety education for schoolchildren at a Junior Traffic Training Centre.
Source: Groom 2012.

- *Enforcement*

While being under-resourced, the Newcastle Traffic Department, in partnership with the RoadTraffic Inspectorate and SAPS, should commit to prioritising enforcement activities in the Blaauwbosch area through a multi-disciplinary approach. Random road blocks should be held and visible policing initiated. High visibility policing is a preferred deterrent for illegal behaviour, and is regarded as one of the most effective methods of policing. Detective Inspector Frank Gilroy, Parramatta Local County Crime Manager, put it simply, when he said: “High visibility policing is what the community are asking for, and it is true that offenders become extremely aware of the fact that police are in the area” (South Wales Police 2004 [sp]).

Having different law enforcement authorities is ideal for the South African situation. Enforcement agencies are structured at provincial, municipal and metropolitan levels. Special policing needs are also addressed through cross-border operations, which allow officers to work with their counterparts from neighbouring countries, Immigration Officers and the SAPS. Figure 6.8 shows an enforcement operation that is multi-disciplinary because it involves both the SAPS and the local traffic authorities. Various skills can be applied to ensure road safety compliance such an instance.



Figure 6.8: Traffic law enforcement.
Source: Jonckie 2009.

6.3.4 Community-driven road safety

A research study conducted by Thomson (1997), revealed that empowering people with relevant knowledge and skills can have a positive contribution. Community development requires all people, especially ordinary citizens, to initiate and promote ways in which to resolve problems or issues that affect their lives. The community should learn to take the lead. They should not wait for the government, politicians or experts to initiate change and make decisions for them in matters that relate to their problems.

The CRSC and other community structures should be mobilised to be more representative of all the community sectors. More resources should be allocated to community road safety initiatives and interventions. The following are some of the recommendations to promote road safety by involving the community:

- *Community speed watch*

It is recommended that volunteers from the community work with the local traffic authorities to watch the speed of vehicles in the areas with high crash data. They would use a device that indicated the speed of an approaching vehicle, and the motorist could also see the speed at which they are driving, and would suddenly slow down. This would encourage motorists to drive within the required speed limits, especially near built-up areas and school zones. A similar programme is underway in the UK, where community members volunteer to work with the local traffic authorities to monitor the speed of the vehicles. They use the required device as shown in the photograph in Figure 6.9.



Figure 6.9: Community speed watch.
Source: Sway Parish Council 2015.

- *Road safety champions*

Another recommendation is that certain members of the community, especially youth, could be selected to be road safety champions. These people would be given authority to contact the media (local community radio and newspapers) about all information related to road safety. They could also spearhead all road safety activities

that take place within the community, once they are trained and empowered. Innovative road safety solutions could also be generated by these individuals because of their experience and skills.

- *School crossing patrol*

It is recommended that adult community members who live in close proximity of the schools volunteer to assist school learners when they cross the busy roads to and from school on a daily basis. The local road safety office or the traffic department would provide training to those volunteers as well as the necessary equipment so that they can do the work effectively and efficiently without putting themselves in danger. Figure 6.10 shows an example of a school crossing patrol where an adult volunteer assists small children in safely crossing the road. Proper equipment and clear visibility of the volunteer should be ensured.



Figure 6.10: School crossing patrol.
Source: Curley et al 2014.

- *'Small Steps' team*

A more practical recommendation is that a team or group of parents would volunteer to teach junior primary school children about the correct way to use or follow road safety rules. This would be done regularly by taking the schoolchildren out to the road

environment during off-peak time, and teaching them the correct road safety rules. The main focus should be on crossing the road safely, how to walk on the right side of the road and safe places to play. This project had been successfully applied in most primary schools in the UK, and can work for South Africa as well through vigorous mobilisation of community members. Figure 6.11 shows an example of how the ‘Small Steps’ project can be undertaken.



Figure 6.11: ‘Small Steps’ project.
Source: WikiHow 2016.

- *Black Spot Identification Programme*

Community members could be a valuable source of information in the areas where they reside. They know exactly where the incidents of crashes normally take place, and could even speculate about the reasons, effects and solutions to these incidents. The Black Spot Identification Programme is recommended in this case. It involves requesting the community members to identify and report all the areas in their communities where most crashes occur. These areas are regarded as ‘black spots’ or hazardous locations (haz locs). A form could be designed to assist the community members in capturing all the necessary information about the hazardous locations (Annexure J). They could then submit it to the relevant authorities, who could then in

carry out further investigations to remedy the situation. Figure 6.12 shows an example of the signage that can be used to warn the motorists about a hazardous location in a particular section of the road.



Figure 6.12: Black spot that has been identified.
Source: Kildare Now 2016.

- *Road safety publicity*

The area of Newcastle has various media platforms that could be used to publicise road safety issues. This could be done in collaboration with all the identified stakeholders in this research study. The following are some of the methods that are recommended:

- Newcastle Community Radio – negotiations to obtain slots in which to discuss road safety issues on a regular basis could be arranged. Stakeholders could take turns to participate in this project and deal with different themes on various days.
- Local newspapers – there were four newspapers produced every week in the area of Newcastle and delivered to all the citizens. A column or space could

be negotiated to teach people about road safety. Photos of road crashes could also be publicised to warn the public about road safety issues.

- Road safety Fridays – every Friday of the week could have a road safety theme that road safety activists and the public could follow. These could also be displayed on the notice boards in schools, community centres, malls and libraries, as well as feature on the community radio.
- Annual Road Safety Show – the Newcastle Local Municipality hosted an annual show where all themes of road safety could also be showcased. Different mascots could be used to convey the road safety messages to the primary school children that attend the show.
- Road safety toll-free number –a hotline could be set up whereby all road safety transgressions could be reported by community members. This will include the place, date and type of incident, as well as the vehicle registration number. These transgressions could then be communicated to the offenders as warnings before any form of prosecution takes place.
- Name and shame Campaign – all road safety offences could be publicised and made known to the public, including the people who committed the offence. This would lower the level of contraventions because people would not want to be publicly shamed.
- Social marketing – the use of social media is widespread and powerful these days. Posting tips, advice and news about road safety on social media on a regular basis could help to heighten the level of road safety awareness.

Figure 6.13 displays examples of billboards that can be used in road safety publicity.

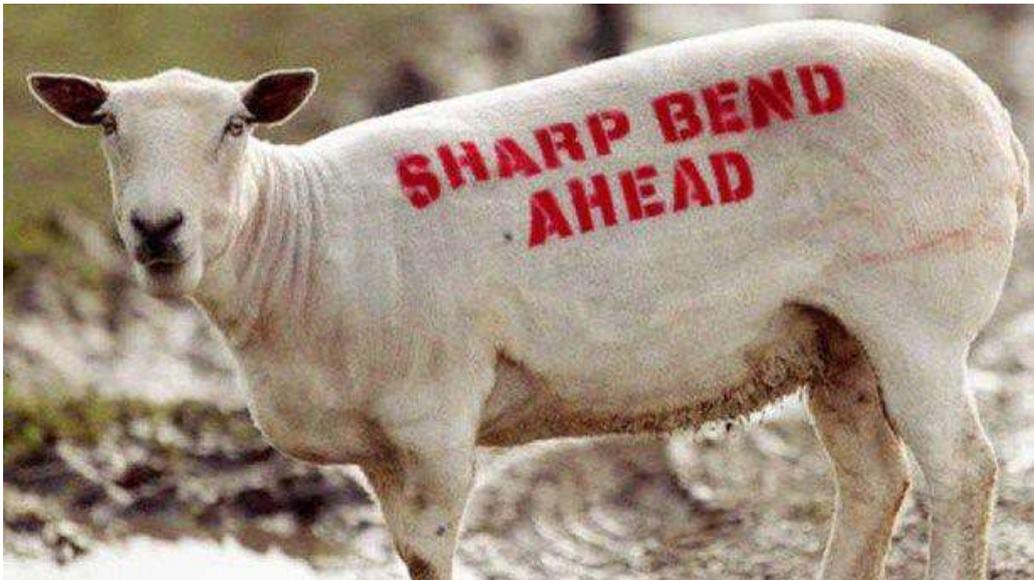


Figure 6.13: Examples of road safety publicity.
Source: USA Washington, DC, District Department of Transport 2016; Spary 2015.

Road safety is a collective responsibility. A government with a strong political will and powers should take the lead. Horizontal integration and involvement of other sector departments and their activities or programmes have a direct bearing on the level of road safety. Inter-sphere coordination attests to the fact that road safety is a shared concurrent function that involves national, provincial and local governments. Inter-governmental and inter-sphere co-operation are the cornerstones of a successful road safety strategy.

6.3.5 SWOT analysis of the key recommendations

It is important to check and verify the prevailing situation in the study area in order to determine whether the suggested recommendations can work or not. SWOT stands for strengths, weaknesses, opportunities and threats. Strategic planners use the SWOT analysis for the purpose of identifying internal strengths and weaknesses, as well as external opportunities and threats. This involves the internal factors (Strengths and Weaknesses), which can be controlled, and the external factors (Opportunities and Threats), which cannot be controlled (Management Study Guide Experts [sa]). Table 6.2 illustrates the SWOT analysis as applied to the recommendations of the research study area.

Table 6.2: SWOT analysis of the key recommendations.

<p>STRENGTHS</p> <ul style="list-style-type: none"> • Once the roads are rehabilitated, community access will improve and opportunities for further economic investment be created. • The community will be educated about road safety issues through educational programmes outlined in the recommendations. • There will be a reduction in road crashes, and more development as less money is spent on crashes. • Community members and authorities will play an active role in road safety. 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> • Financial constraints or limited funding. • The prioritisation of new projects by the governmental departments that must implement them is challenging • Some contractors do not offer excellent service delivery, thus jeopardising the budget of the KwaZulu-Natal Department of Transport by compromising the quality of the work that they do. • A lack of co-operation by livestock owners in the mitigation of the stray animals' factor.
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • Land is available for the construction of sidewalks and a community kraal along the roads in the study area. • These roads (P296 and P483) are repairable without the government having to invest in major infrastructure, like upgrading them from gravel to tar roads. • The Department of Agriculture is a committed partner to the stakeholders and the community in 	<p>THREATS</p> <ul style="list-style-type: none"> • The government does not have enough funds to cater for every road safety problem identified in the study area. • This can then jeopardise all the recommendations that are suggested to promote road safety. • The cost of the recommendations cannot be implemented at the earliest convenient time, unless they are staggered over a long-term period.

<p>the construction of the community kraal.</p> <ul style="list-style-type: none"> • The community is willing to participate in any road safety initiatives. 	<ul style="list-style-type: none"> • A lack of political will can hinder progress on road safety initiatives.
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6.4 FUTURE RESEARCH CONTRIBUTIONS

The challenges facing South African road safety outlined in this research study can be addressed through the key recommendations. However, a strong political will, commitment and improved funding models can better support the realisation of the visions of road safety.

Community-driven road safety has been addressed extensively in this research study with the use of literature review and practical scenarios that is applicable to the research area. The data collected through observations, interviews and focus group discussions indicate that there are many opportunities available for future research if community-driven road safety is to become a reality. The key recommendations are also a valuable source of information that can be used to elaborate and continue research on how to promote community-driven road safety.

The quantification of the effect of road crashes has, however, always been a constraint in many research studies, due to data limitations and insufficient monitoring and evaluation processes. There is a need for a research-based model for the evaluation of road safety programmes as well as crash data. Regular monitoring and evaluation of the implementation of road safety programmes is necessary in order to measure it against a baseline.

6.5 CONCLUSION

The aim of this chapter was to highlight the findings, conclusions and recommendations that could be deduced from data collection conducted in the study area. It is also important to take note of the areas where future research can be concentrated. The objectives of the research were realised because the perceptions of the community members were documented, and their involvement in the reduction of road crashes was also explained. Lastly, the role that authorities can play in reducing road crashes was also discussed.

CHAPTER 7 : WRAPPING UP THE ROAD SAFETY JOURNEY

7.1 INTRODUCTION

In this research study, community-driven road safety in the area of Blaauwbosch, Newcastle, KwaZulu-Natal was examined. The status quo of road safety was investigated and quantified with the use of data gathered from the study area. The data was then analysed and informed the findings, conclusions and key recommendations of this research study. The primary objectives of the study was to document the community's perceptions about road safety, and to explore how community members and the authorities could assist in reducing road crashes. From the data collected and analysed, it emerged that community involvement and participation was needed to address community road safety challenges.

This involvement encourages collective and innovative decision-making, and leads to community development. Community development requires all people, especially the ordinary ones, to initiate and implement ways of resolving problems that affect their lives. The community should learn to take the lead, and not wait for the government, politicians or experts to initiate solutions and make decisions for them in matters relating to their problems.

7.2 SUMMARY OF THE STUDY OBJECTIVES

Statistics and literature on road safety revealed the magnitude of the road safety problem. Countries in the Global South present unique challenges. Road safety is addressed as isolated issues with different organisations that work on different elements. Existing community structures, as highlighted in the study area, are not used to their full potential to solve road safety problems common to all communities, as well as those that are typical of a specific community.

The purpose of this research study was to use PRA as a tool to involve community members in improving the road safety status in the area of Blaauwbosch. The outcomes of this study contributes to the body of knowledge on rural community development in relation to the adaptation and adjustment of PRA tools for the effective generation of information. The research study was based on three objectives:

- Document the community's perceptions of road safety. This was aimed at finding out how the community members perceive road safety in general and, more specifically, where they would be expected to be involved to improve the situation. Based on the data collected, it was evident that the community members are road safety conscious, but they were not sure about their role in promoting road safety. However, they were willing to voluntarily partake in the initiatives and activities that involve road safety. That was a positive result, because it proved that community-driven road safety could be a reality.
- Establish how the reduction of road crashes can be achieved and sustained through community participation. Various community participation models in road safety were explored from best practices in countries with similar situations as South Africa. It was established that the community can be the backbone in promoting road safety activities that would ultimately reduce road crashes. This also supported the notion that communities understand their surrounding environments better, and could do more to improve it when given an opportunity.
- Specify the role that authorities can play to assist the rural community of Blaauwbosch to reduce road crashes. The authorities were extensively involved in the research study through interviews. The role that they could play in reducing road crashes was specified. It was clear that their efforts at reducing road crashes could be doubled if they work together with the community members and various stakeholders. The support that they require through financial resources and political will could also be achieved if the community is mobilised as well.

7.3 CONCLUSIONS DRAWN FROM THE RESEARCH STUDY

Based on the objectives of the study, the following conclusions could be made with regard to road safety issues in the Blaauwbosch area:

- The community members perceived road safety issues as a threat to their well-being. Road crashes robbed them of their freedom to get to their destinations safely. There was, however, a general feeling that the situation could be reversed if the correct measures could be applied to reduce road crashes.

- The community members had a good idea of what constitutes a good road, driver, pedestrian and cyclist, and this could be used for the benefit of practising good behaviour on the roads by all road-users.
- There was a general feeling that community involvement in road safety issues was inadequate. Very few members were playing an active role in promoting road safety through the CRSC, which was not fully representative of all the community sectors.
- The role played by the authorities in reducing road crashes was also deemed insufficient. More suggestions were outlined regarding how this could be improved.

Road traffic crashes are one of the world's largest public health and injury prevention problems, killing approximately 1,3 million people per year, and injuring 20–50 million people worldwide (WHO 2012, 2013). The problem is all the more acute because the victims are usually in good health prior to the crashes. The crashes cost the country, communities and individuals approximately R133 billion per year, and this obviously has a huge impact on other developmental needs, according to the RAF (2015)

Based on the research findings, the conclusions that could be drawn emphasised a great need for community involvement in road safety initiatives. However, this required recommendations on how the identified issues could be addressed so that community-driven road safety could be a reality.

7.4 ACHIEVING COMMUNITY-DRIVEN ROAD SAFETY IN BLAAUWBOSCH

The work described in this dissertation has been concerned with the use of PRA as a tool to promote road safety in the community of Blaauwbosch, Newcastle, KwaZulu-Natal. This gave rise to the concept of community-driven road safety in the rural community setup. Various models of community-driven road safety are available in many countries in the Global North, like Australia, UK, Sweden and New Zealand. The concept has not been well-established in many parts of the Global South, and is still used with great caution. There are, however, many great suggestions and ideas on how community-driven road safety can be promoted or implemented worldwide. The need for this emanates from the global crisis concerning road fatalities. There is a desperate need for action.

A general introduction of road safety status and its challenges was presented in Chapter 1. The problem statement highlighted the extent of the situation regarding road safety, and how serious this issue is. It further explained the need for drastic measures to reduce road crashes. The study area was described and a brief summary of road safety status in the area was discussed. Community-driven road safety was briefly explored to get an understanding of what it entails. This study is underpinned by the assumption that community members can play an active role in reducing road crashes in their local areas and surroundings, given the relevant tools, resources and exposure. The study further emphasizes the fact that road deaths are preventable, and that through collective responsibility and interventions they can become a thing of the past.

The basis and context of the research study was outlined in Chapter 2, where the detailed analysis of the theories related to road safety issues was provided. The Global North and Global South perspective was cross-referenced with regard to road traffic safety. It was also realised that what works in the developed world might not work in the developing world. This section was discussed from a post-development perspective. The best practices from countries that have more significant advances in the reduction of road crashes were discussed. South Africa is also committed to reducing road crashes and fatalities. This is evidenced by the fact that it is one of the signatories of the Decade of Action for Road Safety 2011–2020. The countries that are participating this campaign aim to reduce and stabilise road fatalities by at least 50% by the year 2020. The progress that has been made through this campaign also indicates that most countries are determined to fight against the road fatalities.

An interesting development has been the shift towards the safe system approach by most countries in the Global South like South Africa, India, Cambodia and Brazil. Initially this move was only adopted by the countries in the Global North. The main objective of the safe system approach to create a transport system that makes allowance for errors and minimises the risk of death or serious injury. It also makes for a more forgiving environment for all road users, providing room for mistakes.

In Chapter 3, a detailed description of the research methodology used was provided. The final decision on how the methodology was chosen was also explained. PRA encourages rural people to take charge of their situation and be actively involved in decision-making processes. Participation cannot be separated from empowerment.

Therefore, if people participate in the activities in their areas, they become empowered with knowledge and skills to develop their areas. They can also make informed decisions. It is believed that participation develops self-confidence, pride, initiative, creativity, responsibility and co-operation. PRA is a bottom-up approach that assists communities to mobilise their human and natural resources, define problems, consider previous successes and failures, evaluate priorities and opportunities, and prepare a systematic and site-specific action.

The methodology used in the research study was discussed in terms of research design, strategy, approach, sampling, data collection tools, ethical considerations, research limitations, and validity and reliability. The study focused on the area of Blaauwbosch and provincial roads 296 and 483. PRA was applied with the use of observations, a transect walk, interviews and focus group discussions as the means of collecting data. The research was not aimed at discovering new knowledge, but to study the effectiveness with which existing knowledge is used to inform and guide practical action. All the participants in the research study were asked to sign the Consent Forms as part of ethical consideration. However, the study had some limitations in that the requested data for road crashes was not available for certain periods during the research process. Another limitation was that of the participants having high expectations about the challenges that they raised for road safety. However, the researcher was able to communicate the objectives of the research study to them, and that their concerns would be addressed using the correct channels of communication.

This research study adopted a qualitative analysis method. The key features of Chapter 5 were the analysis of data collected from the previous chapter. Visual footage, graphics and illustrations were used to depict data. This was done according to the methods of data collection that were used, namely observations, a transect walk, interviews and focus group discussions. Data was also coded and categorised to make it simple to understand. The analysis addresses the road infrastructure issues, road usage, stray animals and other activities taking place along the study area roads (P296 and P483). This analysed data assisted in formulating findings, drawing conclusions and proposing key recommendations. Future research could also emanate from this data analysis.

Chapter 6 of this research study outlined the findings of the study based on the objectives. Then the conclusions were drawn, leading to the development of key recommendations or implications of the study. The SWOT analysis of the key recommendations was also undertaken in order to determine the possibilities of implementing the suggested recommendations, since most of them originate in the Global North.

Road safety is a collective responsibility. Since it is also a multi-disciplinary phenomenon, it requires a collective effort from all the stakeholders. The involvement of community members in promoting road safety and reducing road crashes is of critical importance. This can be easily achieved when using a bottom-up approach in which community members are actively involved in making decisions about their communities. The perceptions of community members were documented, and this revealed that road safety is the responsibility of all the people in the community. It also appeared that the community members were fully aware of what needs to be done in order to observe road safety rules.

If road crashes are to be decreased, it is important that the suggestions of the community members be analysed and implemented where possible. The maximum participation of community members can make a significant difference in road safety, provided that the authorities play their part. The provision of the correct resources and capacity to the community members can also make a substantial difference. In areas where there is full commitment and support from the authorities, there is also political will, and road crashes and fatalities decrease dramatically. The community programmes discussed in the key recommendations section have yielded great results in the areas where they are implemented. There are many other initiatives that can be implemented in conjunction with the community members. It is of utmost importance that immediate actions are taken regarding road crashes in order to avert the severe consequences predicted by the WHO. It foresees that, if nothing is done to fight road carnage, the number of current fatalities will double by the year 2030.

The implications of the study also call for the immediate formation of active community structures with activists that will assist with the implementation of road safety interventions. The mobilisation of community members has revealed that they can volunteer to do more, without expecting to be paid. This goes hand-in-hand with having strong community leadership. The study limitations do not prevent any road

safety action from taking place to reduce road crashes. As long as the community members are made aware of what needs to be done to reduce road crashes, and they are provided with the proper resources and capacity. Areas of future research should also include aspects related to increasing funding allocation for road safety.

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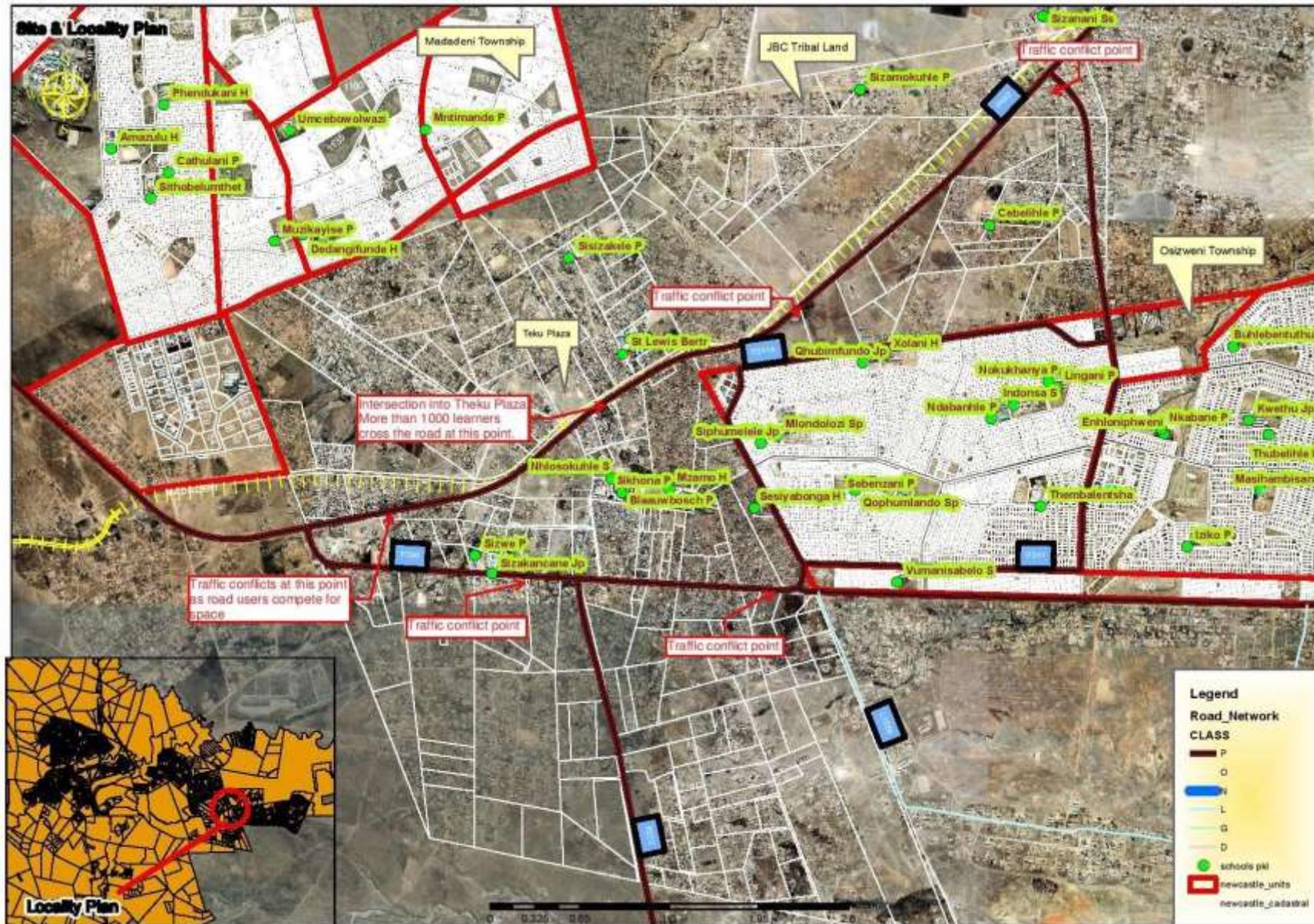
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ANNEXURE A: MAP OF BLAAUWBOSCH



ANNEXURE B: OBSERVATION SHEET



OBSERVATION SHEET

ROAD SAFETY ASPECTS IN THE BLAAUWBOSCH AREA ALONG ROADS P483 AND P296

DATE OF OBSERVATION: _____ TIME: _____

POINT OF OBSERVATION: _____ DURATION: _____

1. ROAD INFRASTRUCTURE

	YES	NO	REMARKS
• Road signs – available			
- Good condition			
• Road markings – available			
- Visible			
• Speed calming devices – available			
- Good condition			
• Loading zones – available			
- Good condition			
• Pavement / Sidewalk – available			
• Road surface – tarred			
- Gravel			
• Road Condition – Good			
- Bad			
• Storm water drainage			
• Pedestrian crossings available			
• Cycling paths / lanes available			

2. ROAD USAGE / ROAD USERS

2.1 PEDESTRIANS

2.1.1 ADULTS	YES	NO	REMARKS
• Walk on the right side of the road			
• Cross at safe places			
• Observe before crossing the road			
2.1.2 SCHOOL CHILDREN			
• Walk on the right side of the road			
• Walk outside the road surface			
• Walk in a single file			
• Cross at safe places			
• Observe before crossing the road			

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3. MOTORISTS

OBSERVED ACTIVITY	REMARKS				
• Speeding					
• Overtaking					
• Seatbelt usage					
• Cell phone usage while driving					
• Speed when approaching school zone					
• Number of cars observed					
- Types of cars	Small car	Mini-bus	Bus	Truck	Motorcycle
- Number observed					

4. CYCLISTS

OBSERVED ACTIVITY	REMARKS
• Number of cyclists	
• Cycling side	
• Cycling pattern	
• Use of helmet	
• Visibility to motorists	
TRIP PURPOSE	

5. STRAY ANIMALS

OBSERVED ACTIVITY	REMARKS				
• Number of stray animals observed on the road					
• Unsupervised					
• Supervised					
• Types of animals	Cattle	Sheep	Goat	Horses	Donkeys
- Numbers observed					
GENERAL REMARKS					

6. OTHER ACTIVITIES TAKING PLACE

ACTIVITY	REMARKS
• Street vending	
• Road workers	
• Vehicle repairs	
• Any other activities (Specify)	

ROADS SKETCH MAP

ANNEXURE C: INTERVIEW QUESTIONS



INTERVIEW OF A DEPARTMENT OF TRANSPORT'S OFFICIAL: TECHNICAL

NAME OF INTERVIEWER: _____

NAME OF INTERVIEWEE: _____

POSITION: _____

DATE OF INTERVIEW: _____

PLACE OF INTERVIEW: _____

INTERVIEW QUESTIONS

1. What comes to your mind when you think of road safety?
2. In terms of road infrastructure, what road safety features exist in the roads P483 and P296?
3. Do you think that these features are adequate to ensure that road crashes are avoided? Give a reason for your answer.
4. Which road safety measures do you feel would work best to reduce road accidents and ensure road safety in the area of Blaauwbosch?
5. During the design phase of the roads, do you take any road safety features into consideration? Explain your answer.
6. How often do you do routine or periodic maintenance on the roads in question? Explain the reasons for such differences.
7. How do you feel about road safety publicity in the area of Newcastle? Have you ever seen any road safety publicity? Do you think publicizing road safety works?
8. What is your involvement in road safety activities in the area of Blaauwbosch or Newcastle?
9. Do you think that community members should be involved in promoting road safety? Why?
10. If you had all the resources to ensure that road crashes do not occur on these roads, what would you do?
11. Are there any other issues related to road safety that we might have not touched on? Kindly mention them and let us discuss them.
12. Has any of your family members / relative been involved in road crashes? Are you willing to further discuss the incident openly / privately?

INTERVIEW OF A DEPARTMENT OF TRANSPORT'S OFFICIAL: ROAD SAFETY OFFICER

NAME OF INTERVIEWER: _____

NAME OF INTERVIEWEE: _____

POSITION: _____

DATE OF INTERVIEW: _____

PLACE OF INTERVIEW: _____

INTERVIEW QUESTIONS

1. As a Road Safety Officer, what is your involvement in road safety in the area of Blaauwbosch? To what extent are you involved?
2. How do you feel about the priorities of road safety in the Blaauwbosch area? What works well and/ or not so well?
3. How do you feel about road safety publicity around Newcastle? Do you think publicizing road safety works? Explain your answer.
4. In some areas they are using volunteers from the community to raise road safety awareness. What are your thoughts and opinions about this? What is happening in the area of Blaauwbosch?
5. How can adults and school children be educated about road safety? Are there any programmes in place? Is enough being done to educate them?
6. What in your opinion should the authorities do to improve road safety in Blaauwbosch? What are your suggestions for improvement?
7. What in your opinion are the characteristics of a good road, driver, pedestrian and cyclist?
8. What other issues of importance have we left out in our discussion?
9. Has any of your family members / relative been involved in road crashes? Are you willing to further discuss the incident openly / privately?

INTERVIEW OF A LOCAL TRAFFIC OFFICER

NAME OF INTERVIEWER: _____

NAME OF INTERVIEWEE: _____

POSITION: _____

DATE OF INTERVIEW: _____

PLACE OF INTERVIEW: _____

INTERVIEW QUESTIONS

1. What is the legal speed limit on roads P483 and P296? How do the motorists keep to this speed limit?
2. What comments can you make about road safety on Road P483 and P296?
3. How often do you conduct traffic law enforcement on road P483 and P296? Why?
4. What type of traffic law enforcement activities do you engage in?
5. Which offences are the motorists normally charged for when you conduct the traffic law enforcement?
6. Is there a difference that your traffic law enforcement makes on these roads? Explain your answer.
7. What improvements do you think can be made to reduce road crashes on these roads?
8. Which other stakeholders do you think can play an active role in improving road safety status in Blaauwbosch?
9. How do you feel about road safety publicity around Newcastle area? Do you think it would work? Explain your answer.
10. In some areas they are using volunteers from the community to raise road safety awareness. What are your thoughts and opinions about this? What is happening in the area of Blaauwbosch?
11. What in your opinion are the characteristics of a good road, driver, pedestrian and cyclist?
12. Has any of your family members / relative been involved in road crashes? Are you willing to further discuss the incident openly / privately?

INTERVIEW OF A LOCAL POLICE OFFICER

NAME OF INTERVIEWER: _____

NAME OF INTERVIEWEE: _____

POSITION: _____

DATE OF INTERVIEW: _____

PLACE OF INTERVIEW: _____

INTERVIEW QUESTIONS

1. What activities are you involved in, in as far road safety is concerned?
2. How often do you perform these activities? With Who? How are they performed?
3. What are your comments about the road crashes in roads P483 and P296? Do you consider these roads to be safe? Explain the reason for your answer.
4. What statistics is available for road crashes for the roads in question for the past year? How do these statistics compare with the ones for the previous year?
5. What in your opinion could be done to improve road safety in Blaauwbosch?
6. How do you feel about road safety publicity around Newcastle? Do you think it is necessary? Explain your answer.
7. Which other stakeholders do you think can play an active role in improving road safety status in Blaauwbosch?
8. In some areas they are using volunteers from the community to raise road safety awareness. What are your thoughts and opinions about this? What is happening in the area of Blaauwbosch?
9. Has any of your family members / relative been involved in road crashes? Are you willing to further discuss the incident openly / privately?

INTERVIEW OF A LOCAL WARD COUNCILLOR / TRADITIONAL LEADER

NAME OF INTERVIEWER: _____

NAME OF INTERVIEWEE: _____

POSITION: _____

DATE OF INTERVIEW: _____

PLACE OF INTERVIEW: _____

INTERVIEW QUESTIONS

1. Do you think / feel that the roads P483 and P296 in the Blaauwbosch area are safe for all the community members to use? Explain your answer.
 2. How do you feel about the Council's road safety priorities? What works well / not so well? Which ones are the priorities for you?
 3. Do you think that enough is done to address road safety issues in Blaauwbosch? Explain the reason for your answer.
 4. What role can you play, as a leader, in order to improve road safety in this area?
 5. How do you feel about road safety publicity around Blaauwbosch / Newcastle? Is enough being done? Does it work?
 6. In some areas they are using volunteers from the community to raise road safety awareness. What are your thoughts and opinions about this? What is happening in the area of Blaauwbosch?
 7. Which other stakeholders do you think need to be involved in resolving road safety issues?
 8. Some people believe that road safety is the sole responsibility of the government. How do you feel about this statement?
 9. Are there any other issues of importance that can assist in improving road safety in the area of Blaauwbosch?
 10. Has any of your family members / relative been involved in road crashes? Are you willing to further discuss the incident openly / privately?
-

INTERVIEW OF A LOCAL CLINIC OFFICIAL

NAME OF INTERVIEWER: _____

NAME OF INTERVIEWEE: _____

POSITION: _____

DATE OF INTERVIEW: _____

PLACE OF INTERVIEW: _____

INTERVIEW QUESTIONS

1. Do you treat patients that are injured from road crashes? If so, how many patients on average per month do you treat?
2. Do you think that the roads in the Blaauwbosch area are safe? What are your comments about road safety status in the area of Blaauwbosch?
3. Do you think that something needs to be done to improve the road safety situation in Blaauwbosch? Explain your answer.
4. Would you be part of the activities aimed at reducing road crashes in Blaauwbosch? Why?
5. How do you feel about road safety publicity around Newcastle? Do you think that publicizing road safety works?
6. In some areas they are using volunteers from the community to raise road safety awareness. What are your thoughts and opinions about this?
7. Are there any other issues of importance related to road safety that you feel we need to discuss?
8. Has any of your family members / relative been involved in road crashes? Are you willing to further discuss the incident openly / privately?

ANNEXURE C2: FOCUS GROUP DISCUSSIONS



FOCUS GROUP DISCUSSIONS

GROUP A

COMMUNITY ROAD SAFETY COUNCIL MEMBERS

INDIVIDUAL RESPONSES

Kindly respond to the following questions anonymously. Your response will also be treated with strict confidence.

1. Why are you a member of the Community Road Safety Council (CRSC)?
 - A. For income generation (monthly stipend)
 - B. Social gain and cohesion
 - C. Social responsibility
 - D. Knowledge gain and empowerment
 - E. Other
2. Which road safety activities are you involved in?
 - A. Educating school children about road safety
 - B. Educating adults about road safety
 - C. Identifying black spots and reporting to the authorities
 - D. Encouraging motorists to obey road safety rules in road blocks
 - E. Other
3. What form of training have you received to carry out your road safety activities?
4. What do you like / dislike about being the member of the CRSC?

FOR GROUP DISCUSSION

1. Do you think that the roads in this area of Blaauwbosch are safe for everyone?
Explain the reason for your answer.
2. In your opinion, what are the characteristics of a good driver, pedestrian and cyclist?
3. What comments can you make about the road safety situation of this area?
4. What in your opinion can be done in order to improve the road safety status of this area? Do you think that enough is being done to address road safety issues?
5. What role as a community member can you play in improving road safety in this area?

6. If you had all the power and resources to improve road safety, what activities would you implement in the area of Blaauwbosch?
7. How can adults and school children be educated about road safety? Are there any programmes in place? Is enough being done to educate them?
8. How do you feel about road safety publicity around Newcastle? Do you think that it would work? Explain your answer.
9. Are there any other road safety issues that we did not discuss here, that you feel are important to include? If so, please state them.
10. Has any of your family members / relative been involved in road crashes? Are you willing to further discuss the incident openly / privately?

FOCUS GROUP B: SCHOOL EDUCATORS

1. What comes to your mind when you think about road safety?
2. What is the road safety situation around your school zone?
3. Do you think that the road around your school is safe for everyone? Explain the reason for your answer.
4. What in your opinion are the characteristics of a safe road and safe road users?
5. What do the learners in your school know about road safety?
6. How can the school children be educated about road safety? Are there any programmes in place? Do you think that enough is being done in this aspect?
7. If you were in charge of road safety, what changes/ improvements would you make in and around your school?
8. Some people believe that road safety is the sole responsibility of the government. How do you feel about this statement?
9. What are your comments about including road safety in the school curriculum?
10. How do you feel about road safety publicity around Newcastle? Do you think that it would work? Explain your answer.
11. In some areas they are using volunteers from the community to raise road safety awareness. What are your thoughts and opinions about this?
12. Has any of your family members / relative been involved in road crashes? Are you willing to further discuss the incident openly / privately?

FOCUS GROUP C: FREQUENT LOCAL ROAD USERS

1. How often do you use this road?
2. Have you ever witnessed any road crash / accident in this road? If so, what happened?
3. What are your comments about road safety in this road? Do you think that road safety is a priority in this road? Explain your answer.
4. What in your opinion are the characteristics of a good road, driver, pedestrian and cyclist?
5. In some areas they are using volunteers from the community to raise road safety awareness. What are your thoughts and opinions about this?
6. Who in your opinion should be in the forefront / leading of resolving road safety issues? Explain your answer.
7. How do you feel about road safety publicity around Newcastle? Do you think that it would work? Explain your answer.
8. Has any of your family members / relative been involved in road crashes? Are you willing to further discuss the incident openly / privately?

ANNEXURE D: INTERVIEWS AN FOCUS GROUPS SCHEDULE



INTERVIEWS AND FOCUS GROUP DISCUSSIONS SCHEDULE

NAME	INSTITUTION	POSITION	DATE	TIME	VENUE
Noxolo Mbambo	KZN-DOT:TECHNICAL	Chief Industrial Technician	11/03/2016	10:00	NEWCASTLE
Sondiso Mgojo	KZN-DOT:ROAD SAFETY	Principal Road Safety Officer	11/03/2016	12:00	NEWCASTLE
Ricardo van der Plank	LOCAL MUNICIPALITY	Chief Superintendent	14/03/2016	09:00	NEWCASTLE
King Gama	ROAD TRAFFIC INSPECTORATE	Station Commander	16/03/2016	11:00	NEWCASTLE
Shooz Magudulela	SOUTH AFRICAN POLICE SERVICES	Station Commander	23/03/2016	10:00	NEWCASTLE
Nobelungu Mathews	WARD COUNCILLOR	Ward councillor	10/03/2016	09:00	NEWCASTLE
Makhosazana Mthembu	LOCAL CLINIC	Clinic sister	26/03/2016	11:00	NEWCASTLE
Ngcebo Hadebe	TRADITIONAL LEADER	Local Induna	28/03/2016	13:00	NEWCASTLE

FOCUS GROUP DISCUSSIONS

DATE	TIME	PLACE	GROUP	DESCRIPTION
05 APRIL 2016	10H00	COST CENTRE – DOT	A	CRSC
12 APRIL 2016	09H00	BLAAUWBOSCH PRIMARY	B	SCHOOL EDUCATORS
18 APRIL 2016	14H00	BLAAUWBOSCH COMMUNITY HALL	C	LOCAL FREQUENT ROAD USERS

ANNEXURE E1: FOCUS ROUP A PARTCICIPANTS



FOCUS GROUP MEMBERS LIST

GROUP A PARTICIPANTS: COMMUNITY ROAD SAFETY COUNCIL (CRSC)

NAME	SECTOR	GENDER	CONFIRMED ATTENDANCE		FEEDBACK REQUIRED	REMARKS
			YES	NO		
1. JJ MAHLANGU	LOCAL BUSINESS	M				
2. SG NTOMBELA	INTERFAITH	M				
3. EHN ZWANE	TOURISM	F				
4. GN NDABA	SMALL BUSINESS	F				
5. BL MHLONGO	ARTS AND CULTURE	F				
6. TC ZONDO	TRADITIONAL LEADERS	M				
7. SB MASONDO	HOSPITALITY	F				
8. MTM ZWANE	FARMERS ASSOCIATION	F				
9. BW NTULI	BUS INDUSTRY	M				
10. HN ZULU	WOMEN	F				
11. BA SIBIYA	PHYSICALLY CHALLENGED	M				
12. BG GWEBU	RED CROSS NGO	M				
13. MC GULIWE	YOUTH	M				
14. SG HLONGWANE	SAFETY & SECURITY	M				
15. TW ZWANE	PROFESSIONALS	M				
16. DZ NTULI	TAXI INDUSTRY	M				
17. LL MABASO	LOCAL MUNICIPALITY	M				
18. TJ BUTHELEZI	MEDIA & COMMUNICATION	F				
19. SM XULU	SMALL FARMERS	F				
20. VC NDLOVU	MAYOR'S OFFICE	M				
		M = 12 F = 8				

ANNEXURE E2: CRSC MONTHLY MEETING SCHEDULE



UBUHLEBAMAKHOSI COMMUNITY ROAD SAFETY COUNCIL MONTHLY MEETINGS 2016/2017

APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
05/04/2016	03/05/2016	07/06/2016	05/07/2016	02/08/2016	06/09/2016
OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH
04/10/2016	01/11/2016	06/12/2016	10/01/2017	07/02/2017	07/03/2017

ANNEXURE F: FOCUS GROUP B PARTICIPANTS



FOCUS GROUP MEMBERS LIST

GROUP B PARTICIPANTS: SCHOOL PRINCIPALS AND EDUCATORS

SCHOOL NAME	EDUCATOR'S NAME	ROAD NUMBER	CONFIRMED ATTENDANCE		FEEDBACK REQUIRED	REMARKS
			YES	NO		
1. NZIMENDE PRI	MRS CT MHLUNGU	P483				
2. SIZAKANCANE PRI	MS ZC NKOSI	P296				
3. SIZWE PRI	MR ZJ MNTAMBO	P296				
4. SIKHONA PRI	MR JP MDHLULI	P296				
5. BLAAUWBOSCH PRI	MS FZL NKABINDE	P296				
6. MZAMO SEC	MR BM MADLALA	P296				
7. NHLOSOKUHLE SEC	MR TM MNGUNI	P483				
8. ST LEWIS SEC	MR DL MSIBI	P483				
9. SISIZAKELE PRI	MR AB BINDA	P483				
10. EZAMAKHANYA PRI	MR NDLANGAMANDLA	P296				
11. SIYATHUTHUKA PRI	MS ZI ZWANE	P483				

12. CEBELIHLE PRI	MR BG SHANGE	P483				
13. SIZANANI SEC		P483				
14. SGODIPHOLA PRI	MR NGCOBO PW	P483				
15. BLAAUWBOSCH PRI	MS ER ZWANE	P483				
16. SIKHONA PRI	MS PC NTANZI	P296				
17. NHLOSOKUHLE SEC	MR DW SITHOLE	P483				
18. MZAMO SEC	MS MB MDAKANE	P296				
19. SIZWE PRI	MS SD SIKHAKHANE	P296				
20. SIZAKANCANE	MS NM MNGUNI	P296				
		P483 = 11 P296 = 9				

ANNEXURE G: FOCUS GROUP C PARTICIPANTS



FOCUS GROUP MEMBERS LIST

ANNEXURE G

GROUP C PARTICIPANTS: FREQUENT LOCAL ROAD USERS

NAME	CONTACT NO.	SECTOR	RESIDENTIAL ADDRESS	CONFIRMED ATTENDANCE		FEEDBACK REQUIRED	REMARKS
				YES	NO		
1. Thandazile Sithole		Street vendor	BLAAUWBOSCH				
2. Zama Simelane		Motorist	BLAAUWBOSCH				
3. Nombuso Sukazi		Pedestrian	BLAAUWBOSCH				
4. Ntandakazi Dlulane		Cyclist	BLAAUWBOSCH				
5. Lungile Ndebele		Shopkeeper	BLAAUWBOSCH				
6. Simangele Ntoni		Spazashop owner	BLAAUWBOSCH				
7. Nana Nkonyeni		Hawker	BLAAUWBOSCH				
8. Bonisiwe Nkambule		Traditional healer	BLAAUWBOSCH				
9. Nana Madlala		Jogger	BLAAUWBOSCH				
10. Mavis Msibi		Shepherd	BLAAUWBOSCH				

11. Sindi Dimba		Goat herder	BLAAUWBOSCH				
12. Nkanyiso Shezi		Cattle herder	BLAAUWBOSCH				
13.Charles Dlamini		Local pastor	BLAAUWBOSCH				
13. Phiwokuhle Guma		Pensioner	BLAAUWBOSCH				
15.Lethukuthula Mtshali		Housekeeper	BLAAUWBOSCH				
16. Khangelani Masuku		Carwash owner	BLAAUWBOSCH				
17. Sipiwe Mathonsi		Commuter – mall worker	BLAAUWBOSCH				
18. Jabulani Zwane		Commuter – mall worker	BLAAUWBOSCH				
19. Mbuso Mdluli		Local contractor	BLAAUWBOSCH				
20.Sazi Kunene		Unknown	BLAAUWBOSCH				

ANNEXURE G1: SAMPLE FLYER C FOR FOCUS GROUP C RECRUITMENT



SAMPLE OF FLYER FOR FOCUS GROUP RECRUITMENT

UNISA | university of south africa

“ROAD SAFETY BEGINS WITH YOU!”

FOCUS GROUP

*Come, share your views about road safety, and
save a life TODAY!*

Date: 18 April 2016
Time: 14h00
Place: Blaauwbosch Community Hall

Please confirm your availability:
Samu: 082 2555026

** Incentives will be given to the participants.

inhaler054-101001022

NOTES:

- Focus Groups will be categorized as follows:
 - Group A : Community Road Safety Council members
 - Group B : Local Schools Educators
 - Group C : Frequent local road users
- Each group will have 15-20 people. A total of 60 people is expected (meetings will be conducted over three different dates / times).
- Discussions will be conducted in Isizulu and then translated into English.
- Each participant will sign a consent form and will be given a copy of a signed consent form.
- Incentives will be given to each participant.

ANNEXURE G2: FOCUS GROUP C CONFIRMATION LETTER



FOCUS GROUP CONFIRMATION LETTER

Date:

Dear

Thank you for your willingness to participate in our focus group. We would like to hear your views and ideas about road safety in the area of Blaauwbosch, and in general. You will be in a group of 15 - 20 people sharing ideas and opinions about road safety. Your responses to the questions will be kept anonymous. Light refreshments and incentives will be provided at the focus group discussion session.

The date, time and place of the discussion are listed below. Please look for signs once you arrive at the venue, directing you to the room where the focus group will be held.

DATE:
TIME: 14H00
PLACE: BLAAUWBOSCH COMMUNITY HALL (CONFERENCE ROOM)

Looking forward to seeing you at the discussions.

Yours sincerely;

.....

Samu Ndawo

Unisa Student Researcher



unisa/022-30000122

ANNEXURE H: GROUND RULES FOR FOCUS GROUPS



FOCUS GROUP DISCUSSIONS GROUND RULES

1. Participants must do most of the talking.
2. Everyone should participate at a maximum potential.
3. There are **NO** right or wrong answers.
4. Everyone's views and opinions are important.
5. What is said in this room, stays here.
6. There will be note-taking and tape-recording done during the discussions.
7. No one will be identified by their names in the reports.



0141156526 - 30001022

ANNEXURE I: CONSENT FORM



STUDENT: S.T. NDAWO: 3239-003-3 / 082 2555026
SUPERVISOR: PROF. M.D. NICOLAU: 011-4712084

TITLE OF RESEARCH PROJECT:

“Community-driven road safety in Blaauwbosch, Newcastle, Kwazulu-Natal”

Dear Mr / Mrs / Miss / Ms _____ Date: 25 March 2016

NATURE AND PURPOSE OF THE STUDY

I am conducting research for my Master of Science in Geography with the University of South Africa (UNISA), under the above-named title. I am studying how can Participatory Rural Appraisal (PRA) be used as a tool to improve road safety and the lives of people in the Blaauwbosch rural community, with the aim of facilitating community involvement and participation in road safety activities.

I would like to request your help by participating in this study in a manner that I will explain to you thoroughly. Participation in this study is voluntary, and you may decline to answer some of the questions asked.

Kindly note that I will be using the following research process:

1. Participants will be recruited at random to form Focus Groups that will be interviewed in a formal and interactive setting. Other participants will have semi-structured interviews on one-to-one basis.
2. Information required from the participants is all about road safety issues. This will be used to assist in improving the road safety status of the area of Blaauwbosch.
3. There will be repeat and follow-up sessions where necessary, and the relevant participants will be notified accordingly.
4. All the information gathered will then be analysed and used to formulate findings and conclusions about the study. This data will be stored in my personal computer for the duration of the study and will be discarded afterwards.
5. The findings of the study can be made available to you, as a participant, if you wish so, at the end of the research study.

NOTIFICATION THAT PHOTOGRAPHIC MATERIAL, TAPE RECORDINGS, ETC WILL BE UTILIZED

Kindly note that all conversations will be recorded through cellphone recording and note-taking. Photographs of the participants will also be taken, but not showing their faces. These recordings and photographs will be stored safely during the duration of the study, and will be used entirely for the purpose of the study.

CONFIDENTIALITY AND ANONYMITY

All information, photographs and notes gathered will be kept safely, and absolute confidentiality will be ensured by not mentioning the names of the participants or any quotations by them will be used. Participants are allowed to remain anonymous if they wish so, or pseudo-names may be used on participants' consent.

WITHDRAWAL CLAUSE

Further, please note that you may decide to withdraw from this study at any time without any negative consequences, by advising the researcher concerned. Please note that this will not endanger or victimise you in any way.

POTENTIAL BENEFITS OF THE STUDY

The study will assist the developers and planners to come up with strategies to improve road safety and the lives of rural communities using Participatory Rural Appraisal as a tool. This will also enhance community participation, empowerment and involvement in all development programmes. Ultimately the road crashes and statistics will be reduced because communities will understand the role that they can play.

INFORMATION

For further information, please do not hesitate to contact my supervisor: Prof M.D. Nicolau at 011-4712084 or nicolmd@unisa.ac.za (e-mail address).

My contact details are also provided, should you wish to contact me for any other information related to the research study.

Please note that you will be provided with a signed copy of this consent form.

CONSENT

I, the undersigned, (full name) have read the above information relating to the project and have also read the verbal version, and declare that I understand it. I have been afforded the opportunity to discuss relevant aspects of the project with the project leader, and hereby declare that I agree voluntarily to participate in the project.

I indemnify the university and any employee or student of the university against any liability that I may incur during the course of the project.

I further undertake to make no claim against the university in respect of damages to my person or reputation that may be incurred as a result of the project / trial or through the fault of other participants, unless resulting from negligence on the part of the university, its employees or students.

I have received a signed copy of this consent form.

YES	NO
-----	----

Signature of participant

Signed aton this.....day of..... 2016.

WITNESSES

1.

2.

ANNEXURE J: BLACK SPOT IDENTIFICATION PROGRAMME NOMINATION FORM

	REFERENCE NUMBER (for office use only)
NOMINEE DETAILS	
1. Title: (Dr/Mr/Ms/Mrs/Miss)	
2. Surname:	
3. First Name:	
4. Organisation / Sector	
5. Address (Postal / Residential)	
6. Contact Number:	
7. E-mail address	
8. Date of submission	
SITE NOMINATION	
9. Site area / location	
10. Site description:	
11. Road Name / Number:	
Signature: (nominee)	

SITE ASSESSMENT BY THE ROAD AUTHORITIES	
1. Road network demarcation	
2. Geographic location	
3. Problem diagnosis	
4. Crash History	
• Fatal crashes	
• Injury crashes	
5. Period reviewed	
TREATMENT PROPOSAL	
2. Estimated cost	
3. Other contributions to the project	
4. Estimated duration of project	
5. Contact Person	
• Name	
• Contact Number	
• E-mail address	
Signature (Road Official)	

ANNEXURE K: ETHICS APPLICATION APPROVAL



CAES RESEARCH ETHICS REVIEW COMMITTEE

Reference: W:bt+/Ub!Y/0:1'1

Name: Mphahlele Mphahlele

Student #: 111100121

Dear Ms Ndawo,

Decision: Ethics Approval

Proposal: Community-driven road safety in Blaauwbosch, Newcastle, KwaZulu-Natal

Supervisor: Prof M. Mokoena

Qualification: Postgraduate Degree

Your application for research ethics clearance by the CAES Research Ethics Review Committee for the proposed research project, 'Community-driven road safety in Blaauwbosch, Newcastle, KwaZulu-Natal', has been reviewed and approved.

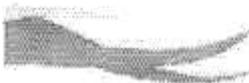
Please consider points 4 and 5 below for further action.

The application was reviewed in compliance with the Unisa Policy on Research Ethics by the CAES Research Ethics Review Committee on 25 February 2015.

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may now commence with the proviso that:

- 1) The researcher/s will ensure that the research project adheres to the values of the University of South Africa, as set out in the Unisa Policy on Research Ethics, and to the relevant national legislation, professional codes of conduct, institutional guidelines and standards.
- 2) The researcher/s will ensure that the research project adheres to the relevant national legislation, professional codes of conduct, institutional guidelines and standards.
- 3) The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and standards.



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Fax: +27 (0) 11 471 2000
Website: www.unisa.ac.za

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any community members may be approached to take part in the study.

5) The permission letter from the Department of Transport stipulates that the findings of the study be communicated to them. The researcher is reminded to adhere to this stipulation.

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Kind regards,



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