

Road Safety Management in Africa

Road Safety Management in Africa:

The Need to Calibrate Effort

By

João Canoquena

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This book is dedicated to João Rodolfo de Sousa Webba, who lost his life while standing by the side of a road in Luanda, Angola. A distracted, incompetent female driver in her early forties veered too far off the unfenced and unmonitored roadway. She panicked when she saw uncle Webba too close to her speeding car. Instead of hitting the brakes, she hit the accelerator. Upon his landing, uncle Webba sustained far too many fractures to describe here. In his loving memory, may the road traffic management institutions in Africa assume ownership of the road toll and commit to the dictum that every life matters.

Rest in peace, our dear uncle, father, stepfather, cousin, brother, father-in-law, godfather, son-in-law, son, and colleague. Your memories shall live on, uncle Webba.

Sadly, João Rodolfo Webba, once a physical education teacher of the previous President of Angola, fell victim to poor driving skills in a country marred by rampant corruption, which infiltrated the licensing system. Unfortunately, João Rodolfo de Sousa Webba's road death triggered no government policy response. The licensing of drivers did not change. Retesting of driver's license holders has not been introduced to licensing. The road he died on has not been fenced off. Speed management in Angola has not been implemented along the stretch of road where uncle Webba lost his life. There has been no search focused on ways to detect or inhibit distracted driving.

Just how many lives need to be lost on African road networks for governments in Africa to react to road deaths is not known. Indeed, African governments need to value every life equally and commit to doing their utmost to prevent future road deaths by continuously calibrating effort through, among other measures, coronial inquests and constraint-based crash investigations.

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I would like to thank Dr Mark King from the Centre for Accident Research and Road Safety—Queensland, Australia, for his unwavering and ongoing support through much of the initial period of conceptualisation of the book. Similarly, I would like to extend my gratitude to his colleague, Professor Barry Watson, who has shared specific and well-thought-out feedback on data handling ideas as well as institutional strengths and weaknesses in Africa.

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PREFACE

The greatest challenge facing Africa's management of road traffic injury prevention from an institutional standpoint concerns the inward looking perspective adopted by its institutions. This can be illustrated through a description of the quintessential government machinery in most African countries. Countries tend to build roads, issue driver's licenses, and register vehicles. This system has various departments involved. Often the transport department or a road traffic police agency licenses "competent" drivers and registers "compliant" vehicles. The Transport Ministry or a separate department (road agency) may be charged with the design and construction of "compliant" roads. The system turns its wheels as more driving schools forward potential licensees to licensing offices, vehicles are purchased and/or imported, and someone sees a dollar out of a new road project. Designs are made for new road corridors, with scant regard for safety or environmental impact. Bidding processes are hastily organised and tender submissions "evaluated." A winning constructor is quietly announced. Both the Ministers and bureaucrats report on the way the system is functioning "perfectly well," much like a *well-oiled machine*. The costs have been contained. Staff turnover is down. Funds have been disbursed in line with the budgetary guidelines from the Finance Ministry. The accounts have been audited. No "irregularities" have been found with the accounts.

Unbeknown to the high echelon, often represented by the President and/or Parliament, this inflexible *bubble* is not actually organised to deal with its dynamic environment. In fact, legislative frameworks in Africa tend not to cover this space between institutions and society (the environment beyond institutional boundaries). For instance, while many countries in the developed world have laws for almost every aspect of daily life and the provision of services, in Africa, with the exception of crime laws, most legislative frameworks tend to cater mostly for the manner in which the government wheel turns—that is, the machinery of government. There is, rarely, a piece of legislation in Africa which governs the quality of roads designed by government agencies or private contractors, the accessibility and mobility of the population, the quality of driver licensing and vehicle registration services, the provision of public and private transport, the treatment of crash victims, the application of levies for road improvement, the regulation of transport fares, the safety of roadways and roadsides, the

roadworthiness of public and private transportation vehicles, and so on. As a result, Africans are forever deprived of the right to sue their governments for failing to provide or improve on transport service provision. Put differently, service provision is not legislated from a user's perspective in Africa. Indeed, the obligations of institutions to ensure that vehicle controllers are competent and vehicles are roadworthy along with the rights of African road users are often poorly legislated. This is more remarkably observed in respect to vulnerable road users—pedestrians and cyclists. Their right to protection as users of roadways and roadsides is not often legislated in Africa. In the rare cases where this right is legislated, it is not enforced. In this respect, Africans have not benefited from the cornerstone of democracy—that is, circular causality. In democratic countries such as Australia and the United States of America, the populace are empowered by laws drafted with road users in mind. These laws allow the populace to influence government policies on mobility, accessibility, road design, driver licensing, road maintenance, vehicle registration, and so on. Other laws confer on governments the power to influence road-user behaviour. This circular causality or mutual ability to influence one another allows safety efforts to be calibrated and lives to be saved on the road.

The *institutional bubble* in Africa is, in Robert W. White's words, not competent. It is not able to deal effectively with its environment, the space beyond the bubble. If the very cars they have registered prove to have contributed to a series of multi-fatality crashes, the bubble will not alter. If a series of drivers they have licensed cause a succession of fatal crashes, the bubble will not change its licensing scheme. If the roads they have christened recently make it hard for post-trauma care to access road traffic victims on multiple occasions, the bubble will simply not modify its way of designing roadways or roadsides. This issue of access to crash victims is no small matter. In most events, the window of rescue is less than ten minutes post-trauma. Cars do not usually carry first aid kits. Drivers are not usually trained in first aid administration either. Timely access by paramedics to crash scenes in Africa is, therefore, crucial. If a series of collisions are exacerbated by resulting fires that cannot be extinguished due to the absence of fire extinguishers in vehicles, the bubble will not make first aid kits and fire extinguishers compulsory for all vehicles. This is so because the recalibration of effort in response to adversity is not built into the bubble's remit in Africa. It does not have to report on the extent to which it changes in response to contingencies outside its processes. Environmental scans are not part of its remit either. Instead, the administrative part of the bubble may tacitly blame the police for not doing much more to prevent "accidents." The police will implicitly hold the administrative part of the bubble

responsible for not building or maintaining safe roads and allowing old vehicles to be imported. The police may also impugn the political will of the other part of the bubble due to the low provision of resources and funding for enforcing road rules and managing speed. Ultimately, the bubble will openly blame drivers for causing crashes on poorly maintained, unmonitored, and sparsely distributed roads in the fifty-four African nations.

Unsurprisingly, despite committing to the African Union Action Plan on Road Safety, a large number of African countries have neglected this public health challenge. This book is intended to reverse this trend by training future policy analysts, consultants, and advisors in the hope that they will become change agents and help mainstream road traffic injury prevention in Africa. Furthermore, this book represents a primer for further research. As such, it has not been designed to be exhaustive about any of the conceptual and practical themes contained in it. Its main audience are university students at master's and doctoral levels wishing to secure employment in road traffic injury prevention. Its parts are intended to cover the broad issues of road traffic crash data surveillance capacity, road death reduction ability, critical incidents, institutional designs, threats, and opportunities to remove threats. The rationale for this thematic arrangement stems from the need for Africa to calibrate its effort in road traffic injury prevention. To understand this need, the reader is provided with ten chapters of scenario analyses, exposition, empirical research, and cross-case examinations.

GLOSSARY

CONCEPT	BRIEF EXPLANATION
Accessibility	Condition of not being isolated or too remote
Aggregate figures	Relative numbers, e.g., ratios
Behavioural change	Stopping drink-driving, drug-driving, fatigue-impaired driving, driver distraction and recklessness on the road
Blame culture	Blaming drivers and road users for crashes
Bubble	Inward-looking, insular agency programmes
Capacity review	Examination of strengths, weaknesses, threats, and opportunities for institutions to reduce road deaths
Circular causality	Mutual dependence between the top and bottom parts of a system; grass-roots changes in government programmes and vice versa
Crash data	Road deaths and injuries by demographics
Critical incident	Major failure requiring a response
Data surveillance	Collection and dissemination of crash data
Elitism	A system in which a small group of “very important” people control and/or influence the road network system for their own benefit
Environmental scan	Search for threats and opportunities outside the institutional boundaries
Fatality rate	Road deaths per 100,000 (heads of) population
Lead agency	An agency created by a statute to coordinate the implementation of indicators of agreed targets and held accountable for road death reduction
Leading agency	Prominent institution in the fight against road crashes with no legal power to calibrate effort
Medical episode	An event associated with a medical condition, e.g., a stroke or heart attack

Mobility	The ability to fulfil travel needs
Motorisation rate	Number of registered passenger vehicles per 1,000 (heads of) population
Policy Response	Government programmes targeting societal issues
Post-trauma care	Emergency care for crash victims
Road death targets	Road death reduction percentage from a baseline year/year range over a period of time
Road trauma	Injuries and deaths caused by crashes
Safe systems	The focus on providing a safe road network system; often applied as a set of pillars (roads, vehicles, road users, speed, etc.)
Self-interest	Greed, lining one's pockets
Silo-functioning	Isolated, not coordinated action
Social outcomes	Housing, employment, transport efficiency, etc.
Speed management	Setting speed limits in line with road conditions, monitoring them, and issuing infringement notices
Systems thinking	A focus away from road users to focus instead on roads, vehicles, licensing and registration systems, speed management, post-trauma care, etc.
Transport mix	Road, rail, maritime, and air transport integration

KEYWORDS

Bubble; road traffic injury prevention; effort calibration; competence; Africa; crash; fatality rates; road safety; whole of government; blame culture; safety culture; silo-functioning; elitism; injury prevention; road traffic management; safe systems; systems thinking; theory of constraints

INTRODUCTION

The fifty-four recognised countries in Africa share heritage, a colonial past, and cultural identity, despite being ethnically very diverse largely due to the colonial legacy of social cleavages. Other features associated with Africa may be more controversial such as corruption and nepotism. This author contends that these are symptoms of system-wide weaknesses. Corruption stems from flaws in the rule of law and the misconception of being above the law (a consequence of elitism). Nepotism is a symptom of elitism, cult of personality, and self-interest. It may also have anthropological origins. African cultures are known to have traded favours long before colonisation. This culture of trading favours may have given rise to preferential treatment of relatives, friends, acquaintances, and colleagues. Nevertheless, because this is not a book about African culture per se, these controversial connotations shall be kept out of the discussions in this book. The only exception to this rule is observed in those cases where corruption and nepotism adversely affect institutional capacity to reduce road deaths. This is the case with corruption, which affects road traffic injury prevention accountability (see Chapter Nine).

This book argues that the metaphor of corporations in road traffic injury prevention as “well-oiled machines” ought to give way to the view of these enterprises as ecologies of expert stakeholders. These keen change agents and influential champions of road trauma reduction and elimination work in an interdependence associated with the shared responsibility to achieve zero road deaths.

Organised in five parts and ten chapters, the first part of this book explores the accuracy of fatality rate reporting in Africa. This examination confirms the suspicions of a road safety specialist at the Centre for Accident Research and Road Safety—Queensland, Australia. Dr Mark King suspects that the accuracy of the crash data published by the World Health Organisation (WHO) in the early 2000s has since improved. In his view, there have been *wide error bounds* in the data used in the global status reports on road safety published by the WHO, especially in the early years. In addition, this book examines the extent of reduction/increase in road traffic fatality rates in the sampled African countries. Subsequently, the first part of the book presents some country-based case studies to

illustrate more closely the challenges in preventing road traffic deaths in Africa, using Kenya as a case study.

The second part of this book analyses some critical incidents (crashes) involving high profile Africans. The two case studies were selected because of the prospect of some recalibration effort emerging from the death of prominent Africans. An additional rationale for the inclusion of these cases is the fact that they have generated sufficient information to allow institutional road death reduction capacity to be thoroughly examined. This second part of the book applies systems-thinking crash investigation models to understand institutional weaknesses in road traffic injury prevention in Africa. This application of systems thinking is aided by references to the theory of constraints. The resulting intercept of these two theoretical conceptualisations (systems thinking and theory of constraints) represents a deeper understanding of crash prevention (Chapter Six).

Part III analyses the agencies in Africa (elsewhere labelled as “lead” agencies) spearheading the fight against the carnage on the roads. The aim of this examination is to understand the ability of these institutions to coordinate the road death reduction effort.

While Part III provides an overview of the remit of the institutions in Africa assigned the title of “lead” agencies, Part IV illustrates the key underlying threats to Africa’s institutional ability to reduce road deaths. This latter part focuses on the factors hampering African institutions’ ability to reduce road deaths and injuries from a strategic perspective.

In its last part, Part V, the book explores opportunities for removing institutional threats.

This book will suit university students wishing to undertake a master’s or doctoral degree in the management of road traffic injury prevention, especially (although not uniquely) in Africa. Upon completion of a course of study based on this book, master’s and doctoral students may seek employment as Policy Analysts, Compliance Officers, Ministerial Advisers, Policy Officers, Business Improvement Officers, Community Engagement Officers, Capacity Review Officers, and/or Consultants. The practice activities at the end of each chapter in this book should stimulate these students’ intellectual interest in the subject of designing and running programmes associated with road traffic injury prevention. For this reason, the book deals primarily with strategic issues, without ignoring more operational challenges. The terms *road safety* and *road traffic injury prevention* will be used interchangeably throughout this book. Both denote a concerted and specialised effort to reduce road deaths and injuries.

The word *Africa*, as used in this book, represents a denominator, a reference to commonalities. When stark contrasts or exceptions exist, the actual country names are used. This is employed mostly when a country stands out in a particular way. Like all parts of the world, African countries differ on specific development indicators. In any event, when the allusion to countries in Africa goes to ingrained, deep-seated issues shared across a range of African countries, the word *Africa* shall be used. When, on the other hand, the allusion to the countries on the old continent is intended to be specific to indicators of socio-economic progress, the names of the relevant countries will be used. This may not always be consistently observed throughout the book. Any such inconsistencies are mere lapses rather than any deliberate attempt to generalise.

PART I

ROAD TRAFFIC DEATHS IN AFRICA

Overview

Comprising four chapters, this initial part begins with a review of the accuracy levels of the road deaths reported by WHO member countries in Africa. In addition, it illustrates the level of road deaths in Africa by examining the road traffic fatality rates across the sampled African countries. This examination allows the extent of the change (increase/decrease) in road traffic fatality rates to be established. This fluctuation is viewed as a proxy of the effort made by countries in Africa to reduce road deaths. Furthermore, this initial part contextualises in a case study the various factors contributing to road deaths. Its purpose is to provide the reader with some background information about the low level of effort being made in Africa, which may explain its weak capacity to reduce road deaths.

The following African countries were not included in all examinations in this book as they did not report road traffic fatalities to the WHO either in 2009 or 2015: Algeria, Côte D'Ivoire, Djibouti, Gabon, The Gambia, Guinea, Liberia, Madagascar, and Somalia. In most cases, there were no data for 2007 in the *2009 WHO Global Status Report on Road Safety*.

It is important to stress that the error bounds in the African crash data published by the WHO make effort calibration all the more challenging. Indeed, any reliance on WHO African crash data for effort calibration may be counterproductive. In addition, there is a two- to three-year time lag in the WHO road death data. For instance, the data published in 2009 referred to 2007 road deaths. The data in the WHO's 2015 report accounted for road deaths that occurred in 2013. The latest WHO global status report on road safety issued in December 2018 described 2016 road deaths. As a result, the use of 2013 data in the first chapter of this book does not make the examinations outdated because the timeliness of the original data has already been a priori compromised. Put otherwise, for the academic purposes of this book, it is not desirable to use the latest global crash data to illustrate how to conduct the analyses used in this book

because the best data we have dates back some two to three years. If decisions are to be made to improve road death prevention, other local sources of road death information must be used to help adjust road traffic death prevention. For example, hospital vital registration data must be triangulated with police and insurance records to ascertain the actual road traffic fatality rates in each country. Other data surveillance factors (e.g., classification of road deaths) must be agreed upon. These and other considerations associated with data accuracy are discussed in this part.

CHAPTER ONE

ASSESSING THE ACCURACY OF ROAD DEATH DATA REPORTED BY AFRICAN COUNTRIES TO THE WORLD HEALTH ORGANISATION

Abstract

Road traffic deaths are reported to the World Health Organisation (WHO) as one of a number of indicators of mortality. The global promoter of the fight against morbidity and mortality disseminates the information provided by its member countries to stimulate sustained road death reduction action. This information has not always been verified by the WHO and may contain errors. In fact, in 2009, the road traffic fatality data provided to the WHO by its member countries were not subjected to verification against the broad set of vital registration data annually provided by the countries. In 2015, this verification was conducted. It was then realised that some countries over-reported while others under-reported the number of road traffic fatalities. This chapter looks closely at the road traffic fatalities reported by African countries in 2013 in order to establish whether there has been over- or under-reporting. Accordingly, it compares the country reported road traffic fatalities with the WHO's estimates to arrive at a reporting accuracy percentage for African nations and other countries with the best track record in road death reduction. When compared with the reporting accuracy of countries with single-digit road traffic fatality rates, African countries were three and a half times less accurate than their counterparts. While the average reporting accuracy for the nations in the world with the lowest road traffic fatality rates was 91 per cent, Africa's mean reporting accuracy for road traffic fatalities in 2013 was only 25 per cent. The implications of these results are discussed and practice activities suggested.

Opening remarks

The exact number of African countries is disputable. In fact, the latest 2018 *WHO Global Status Report on Road Safety* uses 47 as the total number of countries in Africa. Other sources refer to 54 African countries. This publication shall use the widely cited figure of 54, which refers to states and territories with United Nation's recognition.

Irrespective of the number of countries, Africa has led the statistics in terms of road deaths. Its road traffic death rate is the highest in the world at just over 26 road deaths per 100,000 (heads of) population. Worse still, this figure, over the years, has tended to rise, especially in the pedestrian and cyclist categories of road users. The factors contributing to this rise vary widely between African countries. However, socio-economic disparities, poor governance, poor accountability, and poor investment in human capital tend to feature widely in the literature as determinants of weak road death prevention capability across all African countries. Furthermore, poor data surveillance has hindered progress in the prevention of road traffic deaths in Africa. Nevertheless, data surveillance as a determinant of low road death prevention capability in Africa has received little attention in the literature, despite the WHO acknowledging the existence of deficient death registration practices in Africa. In fact, in its latest global status report on road safety, the WHO found good death registration data in only three of the 44 African countries surveyed: Egypt, Mauritius, and South Africa.

This initial chapter examines the level of accuracy of the road death data reported by African countries between 2009 and 2015. The road death data published in 2018 came out too late in the preparation of the present manual to merit its inclusions.

Road trauma

Road trauma is a generic term for both deaths and injuries on the road. In fact, two terms are often used interchangeably to refer to deaths on the road: *road deaths* and *road traffic fatalities*. Both phrases refer to the number of people killed on the road. When a comparison is made between countries, an aggregate number is used instead, that is, deaths per 100,000 (heads of) population. This latter concept is called the *road traffic fatality rate*. However, these notions differ from that of *road traffic injury*.

Definition of road traffic deaths

The term *road deaths* (or road traffic fatalities) refers to a fatality directly attributed to a crash. Countries define it in a similar fashion, although some may specify the location of the crash. Essentially, this book will limit the analysis of crash fatalities to those occurring on a public road. By this definition, deaths that occur on driveways are excluded and so are deaths at work sites. However, there is no way of knowing from the WHO aggregate data whether any of the reported deaths happened either on driveways or at work sites.

Definition of road traffic injuries

Non-fatal crashes may result in injuries. Road traffic injuries can be minor (e.g., bruises, cuts, etc.), moderate (e.g., chest pain, small amount of bleeding, etc.), or serious (e.g., gash, fracture, muscle damage, etc.). Serious injuries lead to hospitalisation. In some health systems, a scale is used to establish the severity of the injury. In most countries, minor injuries are under-reported for not requiring, in some cases, hospitalisation or police attendance at the scene of the crash. In some countries in Africa, the police facilitate a process of negotiation in the case of minor and moderate injuries. This process entails having the alleged guilty party undertake to pay all medical expenses and damage associated with the crash. In most other cases of minor injury, police involvement is avoided at all costs in Africa for fear of being asked for a sum of money to have the case resolved. In any event, compulsory third-party insurance, which pays for medical bills and injury liability, is not widely spread in Africa. Comprehensive car insurance, which pays for damage to a vehicle and vehicle damage liability, appears to have limited use in Africa too. Therefore, countries like South Africa have created a road traffic crash fund to meet the medical costs of road crash victims.

Causes of road deaths

Because the events around road crashes tend to draw much of the attention in both the literature and the practice of attending to crash scenes, our understanding of the actual causes of road deaths is still embryonic. A crash may be caused by a sequence of sudden events related to a vehicle and its interaction with the roadway or roadside. A road death can be caused by the intensity of the trauma sustained, the severity of the injuries, the delays in rendering post-trauma care, medical episodes (cardiac arrest),

or any other failure of vital organs in the human body. There have been crashes in which the victims survived the crash; however, due to poor or delayed post-trauma care, they died. This type of event has led to the emergence of the concept of survivability. Making a crash survivable has become a crucial policy target in developed nations. This may mean having first aid kits in vehicles, ensuring seatbelts are worn, having a wide range of safety features in vehicles, improving response times and the quality of post-trauma care, and training medical specialists in road trauma, to mention but a few.

There is still much to clarify in relation to the actual causes of deaths on the road. Coroners' inquests provide a fairly reliable way to explore this knowledge deficit. However, not all countries conduct coroners' inquests at the same rate, thus leaving a large number of road death causes to be defined.

The studies purporting to study the causes of road deaths tend to be superficial. In most cases, impaired driving is cited as a major cause of road deaths. Speed has also been cited as a cause of road deaths. Fatigue, lack of restraint, and lack of protection have also been thought to cause road deaths. Likewise, loss of control of a vehicle has featured in some publications as a causal factor in fatal crashes. Similarly, road user errors are equally cited as causal factors in road deaths. Some of these errors include, but are not limited to lane changes on highways, lane departure, and failure to stop. While these can be said to be contributing factors to crashes, with one exception, their role in raising the trauma level beyond the tolerance limits of the human body may benefit from further research. The exception here is speeding. The force and power generated by the impact of a vehicle travelling at 80 km/h upon another or a hazard (e.g., a tree) may exceed the tolerance limits of the human body. This idea has prompted research into the tolerance levels of the human body. It has been widely agreed that crashes at 40 km/h provide humans with the best survival chance. Nevertheless, this author sounds a word of caution in relation to simplistic conclusions about road deaths and road crashes. At any speed, if the occupants of a vehicle are not wearing a seatbelt and get ejected from the vehicle as a result of a crash, their survival may hinge on a number of localised conditions (e.g., landing place, traffic, etc.).

In addition, in a large number of cases, statistics are misleading when the word *involvement* is used. Involvement does not always mean causation. Admittedly, not even the reconstruction of a crash can capture the role every single aspect of the crash may have played in causing the sequence of failures of vehicles, drivers, roadways, roadsides, and post-trauma care that lead to road deaths. Nevertheless, investigations into road

deaths must not single any aspect out as the sole causal factor. A multitude of factors (mostly system failures) contribute to road deaths.

Reporting road deaths

Road deaths are reported in two main ways. The first refers to the absolute number of people killed on the road network in a given country. This is often called *road traffic fatalities* or simply *road deaths*. Countries report this figure in the thousands. In the best performing and relatively small countries (<50 million people), this figure tends to hover around one to three thousand. In the worst performing nations in absolute terms, the road toll can be as high as tens of thousands of deaths. However, these absolute figures tend not to help comparisons across countries be made. Accordingly, an alternative figure is used—that is, *road traffic fatality rates* or simply *fatality rates*. This statistic is expressed as the number of deaths per 100,000 (heads of) population. This aggregate figure is often quoted in *league tables* where countries are compared against other similar nations. In Norway and Sweden, the fatality rate is close to zero. In Africa, it exceeds, on average, 26 deaths per 100,000 population.

Vital registration data and global status reports

Road deaths are often reported to the World Health Organisation (WHO) in two ways. First, the countries provide the WHO with periodical updates (vital registration data) on the total number of deaths, including road deaths. Second, the WHO asks the countries every two to four years (approximately) to self-report road traffic deaths. These figures are then reported in *Global Status Reports on Road Safety*. Since 2004, these reports have been issued four times (2009, 2013, 2015, and 2018), to this author's knowledge. The years 2009–18 refer to publication years. The data in them are actually for earlier years. For instance, in 2013, the global status report contained road death data for 2009–10. This tradition was maintained in the *WHO Global Status Report on Road Safety 2018*. The data in it refer to road deaths that occurred in 2016. The reasons for this time lag vary widely from country to country. In any event, countries reporting road deaths on a 30-day basis (i.e., deaths occurring 30 days after the crash) may allow up until the middle of the following year to finalise crash data for a given year. For instance, the crash data for 2017 may not be definite until July 2018. This also allows for coroners' inquest findings to assist in the establishment of the causes of road deaths in a given country.

Country versus WHO reporting

While the WHO calculated the fatality rates for the years since 2015, it did not do so in 2009. In addition, the WHO's 2009 report contained 2007 data whereas the 2015 report relayed 2013 data. In the 2015 *WHO Global Status Report on Road Safety*, the 2013 data reported by the countries was accompanied by the WHO's own estimates. In other words, the report had two figures for 2013 for each member country. The first number of road deaths had originated from the countries (self-reported). The second number of road deaths (WHO's estimates) represented the number the WHO believed to be more accurate. In a large number of African cases, the two sets of figures differed widely. The next section shows how the 2013 road traffic death data reported by African countries differed from the WHO's road traffic death estimates.

Treatment of 2007 road death data

Africa is a relatively large and dense continent. Its population size is comparable to that of India. As such, its diversity and complexity are too wide to capture in a single reference. Accordingly, road death data were gathered for all 54 African nations for the period 2000 and 2015 with a view to grouping them in some meaningful way. The *WHO Health Observatory* and the 2015 *WHO Global Status Report on Road Safety* provided the data for 2013. The 2009 *WHO Global Status Report on Road Safety* was used to obtain road death data for 2007. Because the 2009 and the 2015 WHO reports recorded the road death information differently, this author had to calculate the fatality rate for 2007 and rely on the WHO estimates for 2013.

Sources of data in Africa

African countries varied in terms of the institutions charged with reporting road death data (crash data, in general) in 2013, although the police tended to outnumber other institutions. As illustrated in Table 1.1, in more than half (58.5%) of the 41 African countries sampled in this chapter, the police had the responsibility to report crash data. Transport departments reported crash data in less than a fifth (14.63%) of the African countries examined. Interestingly, road safety agencies accounted for less than ten (9.7%) per cent of the crash data reported in 2013.