

# Road Safety Management in Africa: Challenges and Solutions for Tomorrow

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## ABSTRACT

With more than 1.3 million people killed and between 20 and 50 million injured in road crashes each year worldwide, road safety remains a huge challenge for authorities. This challenge is even greater in African contexts. Indeed, a large part of the population has to circulate in unsafe conditions. The response of the authorities is not straightforward as the economic and political situation is not suitable for a road safety policy. Interventions are still possible and can be included among the pillars defined by the WHO (infrastructure, users, vehicles, post-crash response and management). Road safety management suggests that the public response must be organised, conducted in cooperation with stakeholders. The results of the research proposed in this paper show that the situation in this way, although different for each country, remains unsatisfactory. There is room for improvement in order to face the future. They are presented as opportunities to improve the situation.

## KEYWORDS

Management, Road safety, Africa, Policy, Strategy

## 1. INTRODUCTION

It is estimated that around 1.3 million people are killed in road traffic accidents worldwide, with a further 20 to 50 million injured\*. Road traffic accidents are one of the leading causes of death worldwide and the leading cause of death for people aged between 5 and 29. It therefore particularly affects young people.

Road safety is therefore a major public health problem and a challenge for the authorities. Indeed, the human losses are considerable and the associated socio-economic cost amounts to nearly 3% of GDP. For France, this cost is close to 2%, while for some African countries the level can be over 5%.

While low- and middle-income countries have about 60% of the world's vehicle fleet, more than 90% of deaths occur there. Children are particularly affected, but also those are the wage-earner for the family. Road fatalities represent a considerable loss for families with limited income. Families are also particularly vulnerable to the non-lethal consequences of road accidents, when they have to care for family members with serious and disabling sequelae.

African countries have to deal with this reality, i.e. the need to be able to circulate but in relatively unsafe conditions. Insurance and medical care for victims is poorly developed. The road safety issue is therefore particularly important for African countries.

The authorities can intervene by mobilising various means, including management. Indeed, the institutional organisation of the road safety response requires the implementation of an efficient management system, which constitutes a basis for carrying out a policy. This contribution shows that African contexts are relatively unfavourable to the implementation of an efficient and effective response, which can be explained by limited economic resources and an unstable political context. However, responses are possible. Within the framework of a European project, the managerial dimension has been investigated. The results show that, while there are particularities for each country, there are also common findings. The latter are useful for establishing some recommendations in order to conceive the future, not as an eventual fate, but as a future on which the authorities can influence.

## 2. CONTEXT

### 2.1. The African continent: many challenges

Generally, when the road safety situation in Africa is discussed, it is presented in sufficiently broad terms to suggest there is a certain homogeneity. It is true that the trained observer can discern recurring patterns and common points. But this is not enough to consider Africa as a homogeneous continent, or at least to consider it as a unitary form [1]. Large regions can be distinguished, such as the Maghreb, West Africa, etc. Some countries have very different geographies with large areas, different population sizes and densities, different languages, cultures, religions and administrative traditions that are also the product of history. Experts speak of sub-regions and also of internal differences within countries. These differences resist simplification and to overlook them is to introduce a considerable bias into the analysis. These differences suggest that even if common features can be identified, they need to be placed in particular contexts. The vastness of the African continent and its great diversity present a considerable challenge in establishing a fine-grained analysis of road safety issues. The attempt to set up an African road safety observatory is an example of the

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\* <https://www.who.int/fr/news-room/fact-sheets/detail/road-traffic-injuries>, consulté le 23 janvier 2023.

difficulty of documenting the reality of road safety for the whole continent in a homogeneous manner.

Nevertheless, some contextual aspects can be provided to understand the framework in which road safety policies are implemented [2]. First of all, there is a particularly unfavourable economic context with a relatively low level of per capita income when compared to Western standards. The categories of low-income countries or least developed countries. Of the 20 countries with the lowest GDP per capita, 18 are from the African continent. Per capita income is about US\$37,500 for the most advanced countries, while it is US\$1,200 for the least developed countries, located mainly in Africa. With such a low level of income, it is easy to understand the deplorable state of the road network (mostly unpaved), an old and poorly maintained fleet of vehicles, an emergency system that is mostly non-existent or inaccessible to the greatest number of people within a reasonable timeframe, and the limited efforts to train road users. This economic constraint is therefore particularly strong in the African context.

Another important dimension concerns the political situation of the country. Indeed, a large number of countries are affected by a kind of political insecurity with situations of armed violence, intra-state and inter-state conflicts. In this way, nearly 70,000 people have been killed on average each year in conflicts over the last five years [3]. In addition to the risk of terrorism and regular attempts at political destabilisation (recently in Mali and Burkina Faso, etc.), there are also high social and political tensions in countries that have to deal with linguistic, religious and ethnic, or even clan-based fragmentation (Libya). The Arab Spring revolutions, the current power struggles in Algeria and Tunisia, for example, and the fact that Africa alone has accounted for almost half of the world's conflicts over the last thirty years, do not provide any favourable context for a road safety policy when the powers that be are mobilising a large proportion of their resources to be maintained in power [2].

Political insecurity also concerns the level of freedoms (political, human and personal)\*, which are measured with relatively low scores and unfavourable international rankings. Thus, of the 51 countries on the African continent, only 2 can be considered generally free†, 7 moderately free, while 32 countries have few freedoms and 10 are considered repressive. These relatively low scores on freedoms imply that the accountability of the authorities to the people is very limited and is not very conducive to the implementation of public health and road safety policies. The lack of consideration for freedoms and those who benefit from them is a breeding ground for personalised relations, clientelism, *priviligism*, and sometimes widespread and multi-faceted corruption among civil servants [4]. This bureaucracy, which can be described as an interface, contributes to the delegitimisation of the authorities in terms of road safety intervention. State regulations are no longer seen as a means of producing safety for users, but as an economy of rent extraction, the most visible form of which is corruption.

## 2.2. The Road Insecurity of the African Continent

It is still difficult to establish the extent of road insecurity on the African continent [5, 6, 7]. Reports follow one another, but the statistical data remain identical and not very accurate. Indeed, few countries have permanent, high-quality statistics on road accident victims. Thus,

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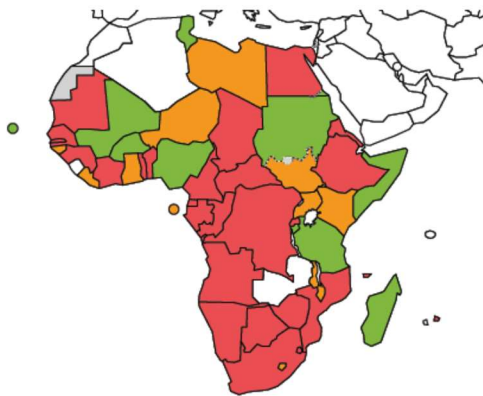
\* <https://www.agenceecofin.com/gouvernance/0310-80938-les-pays-africains-classes-selon-lindice-de-liberte-economique-en-2020-the-heritage-foundation>

† A country's category is based on a scoring approach that considers several parameters, the result of which makes it possible to determine the degree of state interference in the economy and the infringement of freedoms. See the website, <https://www.heritage.org/index/download>, for the used methodology.

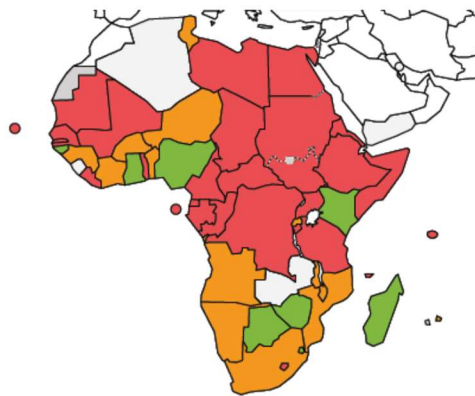
the aggregate figures remain more or less rough approximations of a reality that is complex to grasp. Most countries count victims killed on the spot, whereas the WHO estimates victims killed by taking into account those who die both during their transfer to hospital and following treatment.

The fact remains that the African continent has a relative over mortality on the roads when compared with other continents, and particularly with the European continent. For example, in 2016, the African continent had a fatality rate per 100,000 inhabitants of almost 27, whereas the world average was 18, i.e. 50% higher, and 9.5 in Europe. The excess mortality is almost 200%! Disaggregation of the casualty figures shows that a large proportion of the victims are pedestrians. The African continent has the particularity of representing a small share of the total number of vehicles in circulation, but a more than proportional share of the victims. According to the WHO, low-income countries have 1% of vehicles in circulation, but account for 13% of victims killed. The trend towards motorisation in African countries suggests a significant increase in road deaths in the coming years.

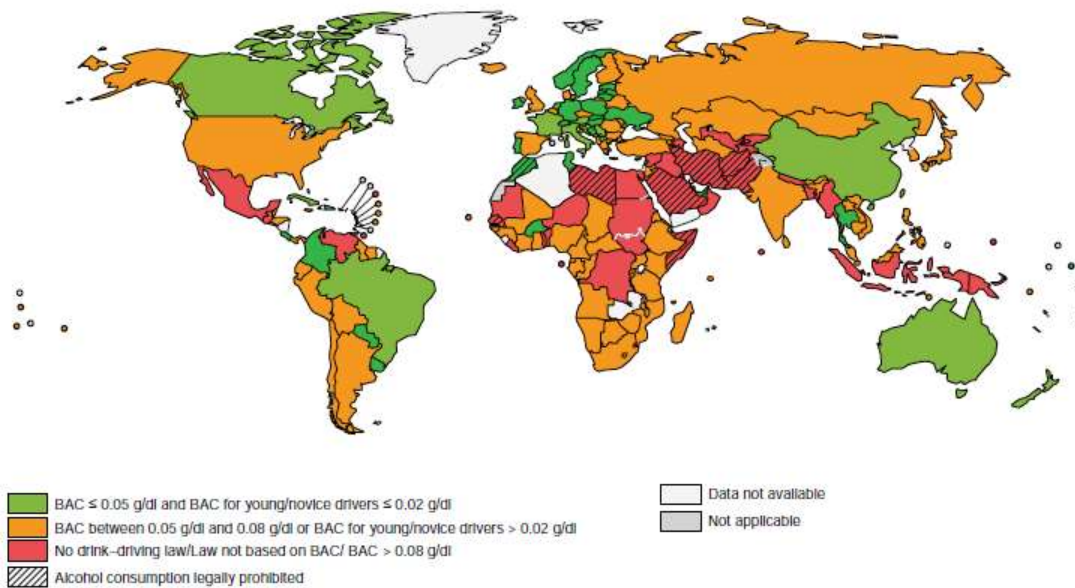
The factors of road risk are now well-known. Countries are encouraged to implement certain regulations, the best known of which are the introduction of speed limits, the obligation to wear helmets for motorcyclists and seat belts, and the definition of a threshold for blood alcohol levels at the wheel. One observation can be made from the various maps (below): the main road safety measures are rarely taken by policy makers in African countries. Moreover, the existence of regulations does not mean that they are effectively enforced. During a research mission in a Maghreb country, the authorities presented a strategic plan in which the use of helmets was highlighted as a success. However, observations in the field did not correspond: most motorcyclists did not wear helmets, or had them close at hand, and most of the time they were imported plastic helmets that were of no interest from a safety point of view!



Carte 1: Speed Limit  
(Source: WHO 2018b)

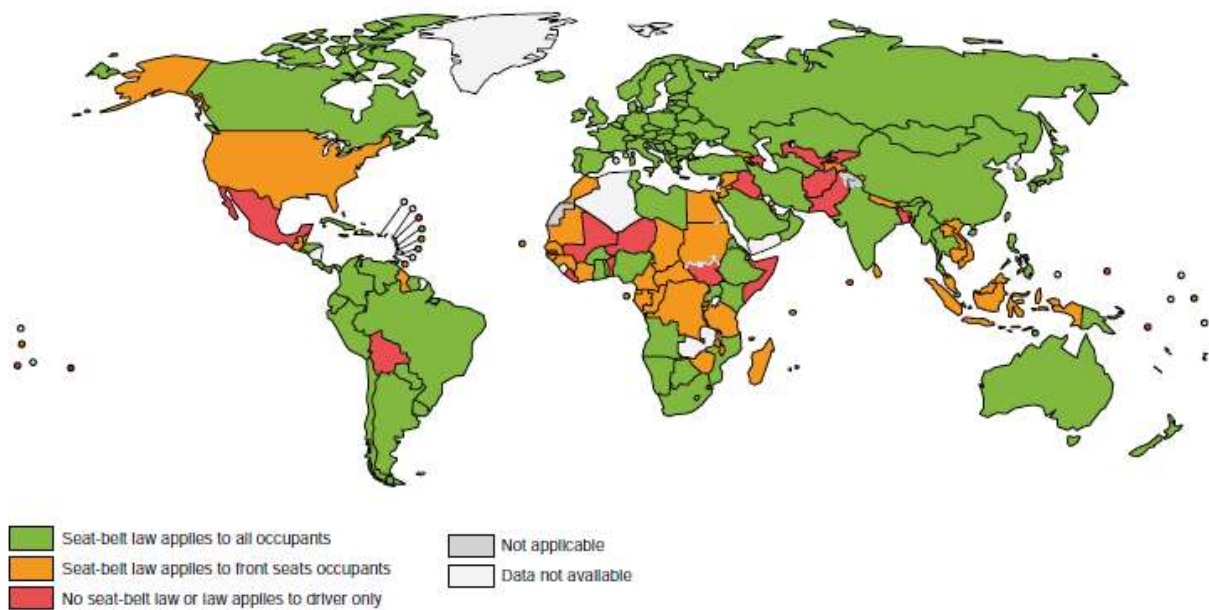


Carte 2: Helmet Regulation in Urban Area



Carte 3: Alcohol Threshold at the Wheel

(Source: WHO 2018b)



Carte 4: Safety Belt Regulation

(Source: WHO 2018b)

### 2.3. System Approach for Road Safety

As part of its decade of action for road safety, WHO has defined pillars of road safety [8]. Road safety actions fall under the following pillars: road safety management, safe vehicles, safe behaviour, safe roads, and post-accident management\*. This pillar approach to road safety underlines the systemic dimension of this public policy. While the vehicle, environment and user/driver approach emphasises the possible interactions between these

\* The document uses the qualifier 'safer', which quickly proved to be unsatisfactory as, for example, safer vehicles do not mean that they are safer

three poles, the pillar approach highlights the need for an integrative and not a silo approach, which requires a real systemic implementation [9].

<b>Pillar 1</b> <b>Road safety management</b>	<b>Pillar 2</b> <b>Safer roads and mobility</b>	<b>Pillar 3</b> <b>Safer vehicles</b>	<b>Pillar 4</b> <b>Safer road users</b>	<b>Pillar 5</b> <b>Post-crash response</b>
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Illustration 1: The WHP Road Safety Pillars (source [8])

The pillars of road safety, as defined by WHO, are based on the old triptych (vehicle-user-environment), with the addition of post-accident management and road safety management.

The managerial dimension of road safety is not a new issue [10, 11]. Its consideration underlines the interest in the institutional and organisational dimensions of road safety, in particular by emphasising the importance of having a lead organisation to implement the related interventions. The question of leadership is a crucial dimension, particularly in terms of monitoring performance, managing statistics, taking the initiative for regulations, financing research and studies, managing the promotion of communication campaigns and coordinating the partners. The managerial dimension requires setting up a statistical data collection system and ensuring its sustainability and reliability. It also requires the definition of objectives and performance criteria, but also their monitoring. The definition and development of a road safety strategy are also fundamental, in that they require the involvement of various actors, the co-ordination of their actions and the definition of the role and responsibilities of each. This overall vision requires that an organisation should provide leadership and take ownership of the public road safety issues, for which permanent and appropriate resources should be mobilised for the implementation of the various interventions. In this respect, a road safety policy is part of an institutional framework and needs to be organised, planned and arranged [12].

### 3. THE ROAD SAFETY MANAGEMENT IN AFRICA

#### 3.1. SaferAfrica Research project on the Road Safety Management in African Context

In 2015, UNECA conducted an evaluation of the road safety action plan for African countries [13, 14, 15]. UNECA's work defined monitoring indicators for the implementation of road safety actions for the different pillars. This assessment was based on a questionnaire that was most appropriately answered by referents. The objectives relating to road safety management concerned the implementation of a leading agency with resources and performance criteria for action, the provision of statistical data on road accidents and safety in line with international standards, but also the ability to establish partnerships with road safety stakeholders. In addition to the small number of countries responding, progress in road safety management is not very significant, and in some countries, it is non-existent.

Under the SaferAfrica project, a research project that received European funding, new knowledge was gained. This research project aimed to establish a platform for dialogue between European and African countries on road safety. The research was based on a questionnaire on road safety organisation, interventions and practices in the African context. In addition to the collection of information by questionnaire, the research was also based on field research with the completion of capacity reviews, the production of course materials, and the identification of good practices. As part of this research, an evaluation of the implementation of UNECA's action plan was carried out. It was based on a questionnaire

with new questions concerning all the pillars of road safety. This contribution focuses on the managerial dimension only.

### 3.2. Data Collection, Method and Analysis

The data was collected as part of a general road safety questionnaire. The questionnaires were submitted to focal persons, who were considered to be experts on road safety issues in the country. In some cases, two responses per country were obtained, thus making possible to confirm the information obtained [16]. The fact remains that the number of respondent countries (21) is still limited, even though it is within the range of the work carried out by UNECA. The limited number of responses shows the great difficulty in obtaining information on road safety in African contexts.

The responses were subjected to several processes to ensure their validity. Firstly, the data were reviewed by experts (other than the respondents) from the countries concerned to ensure consistency. Thus, data were excluded from the analysis due to inconsistencies in some responses. Furthermore, corrections were made (wrong answer, no answer), as road safety is based on very different pillars and an expert may not be aware of all the measures, especially when it comes to specific measures. This is generally not the case for measures concerning road safety management.

For the road safety management pillar, 6 main items were defined. They were based on a total of 57 questions, to which the respondent could answer yes, no and no (see Table 1). These items concerned the institutional organisation of road safety (leading agency, co-operation of associations, etc.), the formulation of policy (strategy, objectives, etc.), the financing and implementation of policy, its monitoring and evaluation, the existence of a research sector and of human resource training capacities in road safety, and the existence of road safety data.

Pillar 1: Road safety management (maximum score 57)

	Yes	No	NaR
Institutional organization and coordination (max score 9)			
Policy Formulation and adoption (max score 9)			
Policy Implementation and Funding (max score 11)			
Monitoring and Evaluation (max score 11)			
Scientific support and Knowledge and capacity building (max score 6)			
Key road safety resources (max score 11)			

Table 1: Items for the Road Safety Management Pillar

The purpose of filling in these various items is to obtain an overview of the degree of organisation, the means mobilised (budget, human resources, statistical data) for the implementation of road safety policy. To a certain extent, it is a question of assessing the quality of the institutional framework within which interventions concerning vehicles, roads, users and post-accident measures are implemented.

In order to measure this institutional quality, which thus comprises 6 categories and 57 dimensions, a scoring process was applied, awarding points for each sub-item. Finally, a colour code was decided and defined according to a quartile process: red (<25% of the whole total), orange (25 ;<50%), blue (50 ;<75%) and green (75 ;<100%). In addition, the interpretation of the results took into account the response rate. Indeed, obtaining a green performance does not make much sense if the response rate is low.

### 3.3. Results

Table 2 presents the results for the responding countries. The response rate for the management pillar is relatively satisfactory, which implies that the finding that can be made has a certain robustness.

	Benin	Botswana	Burkina Faso	Cameroon	Congo	Gambia	Guinea	Kenya	Lesotho	Malawi	Mali	Mauritius	Senegal	Sierra Leone	South Africa	Swaziland	Tanzania	Togo	Tunisia
Score	29.5	19	44.5	12.5	35	9	10	21	27	30	38	30	22	27	43	21	21	22	31
NaR																			

Table 2: Global Performance for Road Safety Management

Only one country performs very well (Burkina Faso), and a total of 10 countries report at least the implementation of the items, i.e. half. On the other hand, four countries, including Cameroon, performed very poorly. In the end, the picture that emerges is very mixed. Finally, even when the performances are satisfactory, they indicate that some measures are in place, but it is not possible to conclude from this that the functioning of these measures is satisfactory. Thus, it is one thing to declare the existence of a leading agency, but it is quite another to declare that it is functioning and that it is functioning correctly. A final remark concerns the aggregation of 6 dimensions, and therefore that the overall result may mask real divergences and diverse realities in the field. Consequently, it is necessary to go into more detail to assess the quality of the institutional structure.

In order to do so, it is now necessary to analyse the results by sub-items. Table 3 summarises the results obtained for the different institutional dimensions.

	Benin	Botswana	Burkina Faso	Cameroon	Congo	Gambia	Guinea	Kenya	Lesotho	Malawi	Mali	Mauritius	Senegal	Sierra Leone	South Africa	Swaziland	Tanzania	Togo	Tunisia
Item 1																			
Item 2																			
Item 3																			
Item 4																			
Item 5																			
Item 6																			

Table 3: Specific Performance for the Road Safety Management

The results show significant differences between the items. Thus item 1 concerning institutional organisation and coordination shows a higher performance than item 6 concerning key road safety resources (e.g. data, identification and sharing of good practices).

Item 1 shows the best overall performance for all responding countries. Indeed, a large majority of the respondents show a good performance, and few countries seem to be characterised by a poor score. This means that all countries have institutional structures dealing with road safety or identified ones for implementing road safety measures. Again, the existence of this institutional structure does not imply any efficiency and effectiveness in implementation. One can only conclude that there is a basis for building a road safety policy.



Item 2 concerns the formulation of the policy and its appropriation by the actors. It considers the involvement of road safety stakeholders in the formulation of the policy, whether they are key actors or associations. The item also takes into consideration the existence of a vision, strategy, objectives and programmes. In short, it is a question of understanding the existence of a policy, its formulation and its translation into objectives.

The results, even if they remain largely positive overall, are at a lower level than for item 1. Thus, these results show that the existence of an institutional structure helps the concrete implementation of a policy, but that this is not automatic. Some obstacles exist and sometimes prevent implementation in the field.

Item 3 concerns the implementation of the policy and its financing. More specifically, the questions aim to assess the existence of partnerships with the private sector, the existence of dedicated, permanent, institutionalised budgets that are suited to the issues. This item also considers the existence of human resources and training actions for road safety personnel.

Once again, the overall relative performance is deteriorating. Less than half of the responding countries now have a performance of at least 50%. These results again suggest that the additional effort of mobilising the necessary funds, trained personnel and involving stakeholders in the implementation of the measures taken is an additional step with its own difficulties.

Item 4 concerns the monitoring of policies and their evaluation. More specifically, this item concerns indicators on the permanence of information systems, the existence of a road safety observatory, the existence of data on transport and the measures taken. The aim is to understand the transmission mechanisms within the administrations involved and in the territories. The item also takes into consideration the existence of mechanisms for evaluating national road safety policies, evaluative approaches to the implemented interventions, mechanisms for comparing jurisdictions, and the measurement of the socio-economic consequences of road accidents.

Overall, the overall relative performance is very unsatisfactory. Indeed, 1/3 of the responding countries show a performance of at least 50%, while 1/3 of the countries report a poor performance (< 25%). More than half of the countries do not reach the 50% level! Consequently, these figures lead to the conclusion that the countries surveyed do not have a robust information system and do not evaluate their measures and policies. There is therefore no feedback and no steering of public road safety policy.

Item 5 characterises the efforts made in terms of road safety research and training. This involves determining whether or not there are research institutions or university teams working on road safety. The item also looks at the existence of research teams, training programmes for road safety personnel and students, and whether road safety is supported and promoted in the media. This item thus attempts to assess the efforts made to train road safety workers and whether there are programmes to produce human resources that can be mobilised in this field.

Only 20% of respondents gave a satisfactory answer (> 50%), which is very low. Almost 2/3 of the respondents are associated with a poor performance. The overall relative performance on this item is therefore very unfavourable. It leads to the conclusion that there is a lack of research and training programmes for road safety personnel. This means that the implementation of road safety measures will be hampered by the lack of road safety expertise to ensure their effectiveness, monitoring and evaluation.

The last item, item 6, deals with the resources available for road safety. The aim here is to identify the information resources and analytical capacities available to assess the issues. This item documents the available national and international statistical data sources, risk and mobility data. It takes into consideration the existence of statistical modelling, analysis methods, impact studies, cost-benefit approaches, study of the acceptability of measures but also the availability of good practice guides.

The overall relative performance is also very unfavourable. The performance of this item is the weakest in the management pillar. Only 25% of countries perform satisfactorily, while 75% of countries perform poorly. There is thus a strong contrast between countries. As a result, the information and analytical resources available to countries are scarce or non-existent. The performance of item 6 echoes that of item 5 highlighting both the lack of human skills and informational and analytical resources that are essential to ensure the successful implementation of road safety strategy and interventions. There are significant barriers to the implementation of effective policy by the authorities.

In the end, the results of this study show the challenges that exist in the African context to provide an effective response to road safety issues. Admittedly, the countries studied have a more or less well organised and structured institutional framework, but this does not necessarily lead to an elaborate and clearly defined road safety policy or strategy. The financing of road safety policy, in general, does not appear to be guaranteed and to be appropriate to the challenges. As for the steering of road safety policy, its control and evaluation, they appear to be very little present, no doubt due to the lack of available human skills and the poor informational and analytical resources to provide appropriate responses. In a way, the situation is terrible, with a considerable number of shortcomings and obstacles, while the stakes in terms of lives to be saved are considerable.

#### **4. RECOMMANDATIONS**

From the results obtained, recommendations can be suggested. At this stage, they remain general and should be adapted according to the country and its level of road safety capacity development.

The establishment of a lead agency or a lead organisation is necessary to create momentum and dynamics. There is no need to discuss its possible form here [11]. The real issue is to ensure that once created, this agency has the human and financial resources to function effectively and adequately. Senegal has just created its leading agency, ANASER, and it is interesting to note the efforts made to train staff and initiate a policy of change in the field of road safety. Consequently, countries that do not have such an agency should initiate its creation, while countries that already have such an organisation should ensure that it is properly funded and functioning.

In addition to the creation of a leading agency, a considerable challenge lies in the ability to define a vision for action, which takes the form of a road safety strategy, an intervention programme and associated objectives. The authorities must make a concerted effort by involving the stakeholders. Thus, Togo has conducted this type of reflection by working through workshops to which road safety stakeholders were invited. These workshops made it possible to define a shared diagnosis, but also to define a document establishing a strategy for the years to come.

Sustainable funding for road safety is an essential condition for an effective road safety policy. In addition to ensuring the operation of the lead agency, it must also make it possible

to fund road safety measures and the employment of trained staff. Several financing mechanisms are possible, such as the creation of a fund dedicated to road safety, the obligation to integrate road safety in road projects, but also funding from the State budget. External funding from international donors remains possible, even if it is limited to funding the impetus effort. In addition to financial resources, personnel must be trained in the framework of in-country training programmes or by attending courses at foreign universities, such as the university diploma in road safety for Africa set up recently by the Gustave Eiffel University. The development of intervention capacities with dedicated and sustainable funding, and staff trained and specialised in road safety, are essential.

The monitoring of interventions and performance and the development of evaluative approaches are also crucial to ensure the effectiveness and efficiency of the measures taken by the authorities. This approach also makes it possible to propose new measures in the face of new risks (the rise of motorbike taxis in some countries raises the question of their training and the implementation of preventive measures, particularly in terms of the wearing of safety helmets). It is not only a question of the authorities passing laws, but of ensuring that they are implemented in the field. For example, in Morocco, the wearing of helmets for motorcyclists became mandatory a few years ago. However, in the field, helmets are not systematically worn, and a large proportion of motorcyclists wear a simple plastic shell rather than an approved helmet. Similarly, the introduction of a technical inspection of vehicles can be hijacked by the complacency of inspectors or "fraudulent" behaviour on the part of owners. Finally, a better knowledge of the socio-economic cost of traffic crashes makes it possible to raise awareness of the need for action both for the authorities (justifying their action) and for the public (justifying their pressure on the authorities).

The existence of research in specialised road safety institutes or in universities is a valuable aid for the authorities. They have solid knowledge to take measures and understand the issues. The challenge is also to train people who will be the road safety actors of tomorrow. However, the attraction of this type of training implies the existence of job opportunities in the field that will support the services that will be created. Consequently, it is a question of structuring and organising the field of road safety by producing the human skills needed for the future. The promotion of road safety also requires the mobilisation of the various media, both to inform the population of the risks to which they are exposed and the measures implemented, but also the challenges for society to organise itself against the scourge of road insecurity. In a way, the media can help make a policy acceptable or serve as a lever to encourage the authorities to intervene.

Another recommendation concerns the provision of information resources. The collection of statistical data on accidents, their characteristics, exposure and traffic data, and also on the consequences ("sequels", economic losses) are essential to help steer an effective road safety policy. It is also a question of setting up analytical capacities (methods, models, statistical tools) to understand the country's issues. The organisation of the first African Road Safety Forum in 2018 in Marrakech made it possible to launch the African Road Safety Observatory (ARSO), highlighting the importance of collecting road safety data in a sustainable manner while ensuring that comparable data are available, but also illustrating the limits of the approach with a limited number of participating countries. The recent publication of a guide to conducting road safety data reviews [17] highlights the importance of having real expertise in this area, but also of relying on quality data. Setting up a statistical system is expensive, but is essential for effective action. Furthermore, the development of statistical equipment can be done in stages. It is not a question of having a collection system identical to that of the most advanced countries in road safety. Finally, there are considerable

resources available online, from research results published in journals to operational guides and manuals such as the one on road safety published by PIARC\*.

## **5. CONCLUSION**

Road safety is a difficult challenge in African contexts. Not only is the quality of road infrastructure, the vehicle fleet, the organisation of the health system, but also the training and education of drivers unsatisfactory, but these countries will experience new developments in terms of mobility in the future: increase in the vehicle fleet, increase in traffic, diversity of vehicles. The outlook in terms of fatalities and serious injuries is not very optimistic.

The facts have now been well-established. Solutions are possible. This contribution suggests that a particular effort should be made to improve road safety management. The latter is the indispensable basis on which safety policy must be organised and efforts coordinated with the stakeholders.

Possible courses of action are suggested. The major challenge for the authorities remains to take ownership of them and to initiate a policy of change. The challenge is great, but the stakes are high.

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\* <https://roadsafety.piarc.org/en>

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