

Assessing road safety data collection systems and definitions in Africa

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Abstract

Reliable and accurate data are a fundamental prerequisite to understand the magnitude of road safety problems in Africa and convince stakeholders to take certain actions. Reliable and accurate data are also needed to identify problems, risk factors and priority areas in order to formulate strategies, set targets and monitor performance. Towards this direction, the objective of the present paper is to outline the results of a relevant survey undertaken within the EU funded SaferAfrica project in order to assess the current situation of Africa in terms of road safety data collection systems and definitions. In total, 29 road safety stakeholders, either governmental representatives or independent experts, from 21 African countries participated in the survey. The assessment of the existing road safety data collection systems in African countries revealed similarities but mostly differences since besides the existence of formal systems for recording road accidents for almost all countries, the data collection practices from the road safety monitoring and evaluation points of view are addressed in various ways. Based on the stakeholders' responses it was found that there is a significant demand for data and knowledge in order to be used for road safety-related decision making. Currently, such information is poorly available in African countries. This fact makes the work of road safety stakeholders difficult, therefore, their discontent was expressed. In several cases, it was found that stakeholders are not even aware of the availability status of items that they consider to be irrelevant to their work. Generally, stakeholders seem to be poorly informed about the availability of road safety data and tools. A number of the questioned issues for many African countries are collected for the first time and can be very useful to road safety decision-makers to take into consideration for future actions.

Keywords – Road Safety, SaferAfrica, Data Collection, Questionnaire

1. Introduction

Africa is the worst performing continent in road safety. In 2013, the mortality rate in Africa (26.6 fatalities/10⁵ population) was almost three times that of Europe, where the number of road fatalities represented 31% of the relevant global picture (Figure 1) [8].

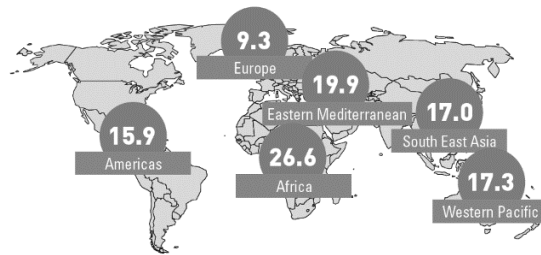


Figure 1. Mortality rate (fatalities/100,000 population) per region in 2013 [1].

However, the most disturbing concern is the fact that the disparity in road safety results seems to be increasing. Specifically, according to the World Health Organisation [1], in Europe, fatality rates improved from 10.3 per 100,000 population in 2010 to 9.3 per 100,000 population in 2013. Over the same period, road fatality rates in Africa increased from 24.1 per 100,000 population to 26.6 per 100,000 population. As far as Africa is concerned, road trauma is expected to worsen further, with fatalities per capita projected to double from 2015 to 2030 [6] unless necessary actions are taken.

Despite these pressuring and unfavourable potentials, several actions are already ongoing and important documents are already in place, paving the way for road safety improvements. Such an example is the African Road Safety Action Plan 2011-2020 [7] developed by the common effort of the African Union (AU) and the United Nations Economic Commission for Africa (UNECA). In the same report it is stated that fewer than 18% of countries monitor important road safety performance indicators, such as seatbelt or helmet-wearing rates.

Moreover, Europe could play an important role in supporting African countries to improve their road safety and traffic management performance. These considerations are addressed through the *SaferAfrica* project; a joint effort of 17 partners from both continents, aiming to create favorable conditions and opportunities for the effective implementation of road safety and traffic management actions in the African countries, by setting up a Dialogue Platform between Africa and Europe.

In order to improve road safety performance in African countries, many barriers need to be overcome. Among them stands the substantial lack of detailed knowledge on road casualties in terms of their number as well as associated factors leading to road accidents or affecting their consequences. There is a serious lack of road safety data in African countries, and even when data are available (e.g. through the reports of WHO, International Road Federation - IRF, etc.), little is known about data collection systems, data definitions, etc.

Reliable and accurate data are a fundamental prerequisite to understand the magnitude of road safety problems in Africa and convince stakeholders to take certain actions. Reliable and accurate data are also needed to identify problems, risk factors and priority areas in order to formulate strategies, set targets and monitor performance.

As an initial approach, existing national data should be gathered, assessed and processed to improve quality. Safety data should be enhanced through additional data and indicators, which may be available at the individual country level but are not currently published (e.g. exposure data, road

safety performance indicators, road safety management, etc.). As a second step, data should be analysed to provide a factual appraisal of road safety level in Africa, to reveal critical issues and to indicate priority areas with high potentials for road safety improvement.

At the same time, it is essential to assess the needs of road safety stakeholders in African countries in terms of knowledge, data and information tools, and to deliver concrete data and information that can be accessed by all stakeholders involved in road safety.

Towards this direction, the objective of the present paper is to outline the results of relevant survey undertaken within the SaferAfrica project in order to assess the current situation of Africa in terms of road safety data collection systems and definitions.

2. Methodology

A key assignment within the SaferAfrica project is to thoroughly assess the needs of stakeholders involved in road safety in terms of knowledge and information tools and convey a clear view of current road safety practices followed in Africa.

For this purpose, an extensive survey was conducted, where, besides other concerns, detailed demands and views of road safety stakeholders, not necessarily directly involved in decision-making, in each examined African country were recorded.

The structure of the respective questionnaire, feedback to which is continuously received, was partially based on relevant questionnaires developed in the framework of the EU funded research project "DaCoTA-Road Safety Data, Collection, Transfer and Analysis" [5]. The DaCoTA project has been established with the support of DG-MOVE to further develop the content of the European Road Safety Observatory with additional data types and output tools. Within DaCoTA data from 30 European countries on a wide range of road safety topics were gathered and analysed. The aim was to share the benefits of this leading-edge research and the decision-making tools with the international road safety community in an effort to reduce casualties worldwide through data and knowledge-based policy-making.

Specifically, previously developed questions on respondent's background information, road safety management and data collection practices were adjusted to the needs and particularities of SaferAfrica and included in this extensive questionnaire. Furthermore, the survey was enriched with new questions on road safety resources and basic road safety data, developed appropriately to reflect the conditions in Africa. It consists of two sections; namely, Road Safety Activities (including subsections A, B, C) and Data & Data Practices (including subsections D and E). Specifically, the sections contain:

- Section 1 – Road Safety Activities
 - ✓ A: Activity in the field of road safety
 - ✓ B: Road safety management practices per country
 - ✓ C: Key road safety resources utilized in questioned person's daily work
- Section 2 – Data and Data Practices
 - ✓ D: Data collection practice
 - ✓ E: Basic road safety data per country

It is more than evident that the road safety fields raised above deliver a broad view of road safety activities and practices in Africa. However, since the objective of the present paper is to identify the current status of Africa in terms of road safety data collection systems and definitions, only responses related to these aspects are further assessed.

The countries, per region, that provided feedback on the entire survey, as well as the distribution of respondents per their professional status (i.e. governmental representatives or independent experts), are presented in Table 1. It can be seen that the majority of the replies were received by governmental representatives. Up to August 2017, 29 stakeholders from 21 countries had provided feedback.

As seen through Table 1, in certain countries responds from two different stakeholders were received. However, most of them were from public stakeholders and independent experts only from Benin, Kenya and South Africa provided responds. Initially the questionnaire was distributed during two Road Safety workshops sponsored by the joined efforts of the World Bank and IRTAD, in Nairobi (Kenya), December 2016 and Marrakesh (Morocco), February 2017 respectively. Since then, the survey is being continuously distributed via e-mail to appropriate contacts of the project partners, and therefore there is great potential to improve the sample in terms of collecting additional road safety data from more countries as well as stakeholders.

In almost all countries, the respondents had a considerable experience in the field of road safety. More specifically, the involvement in road safety for the majority of the contributors (approximately 55%) was found to be over 10 years. Thus, the information they provided is considered accurate and reliable.

As far as the road safety activities fields of the participants are concerned, several types appear more common. Among them campaigns, training, communication, education, vehicle safety and data collection & analysis seem to prevail.

Based on the feedback provided up to August 2017, an overall as well as a comparative analysis of road safety data collection systems and road safety definitions is compiled in order to identify good practices and priority areas for improvement. It should be noted that the results described in the following sections are based on experts' opinions and views, not on concrete data, and therefore, should be treated as such.

Table 1. African countries participating in the extensive survey.

No	Region	Country	Governmental Representative	Independent Expert	Total
1	Northern Africa	Tunisia	1	-	1
2	Eastern Africa	Kenya	-	1	1
3	Eastern Africa	Malawi	1	-	1
4	Eastern Africa	Mauritius	2	-	2
5	Eastern Africa	South Sudan	2	-	2
6	Eastern Africa	Tanzania	2	-	2
7	Central Africa	Cameroon	2	-	2
8	Central Africa	D. R. of the Congo	1	-	1
9	Southern Africa	Botswana	1	-	1
10	Southern Africa	Lesotho	1	-	1
11	Southern Africa	South Africa	-	1	1
12	Southern Africa	Swaziland	1	-	1
13	Western Africa	Benin	1	1	2
14	Western Africa	Burkina Faso	2	-	2
15	Western Africa	The Gambia	1	-	1
16	Western Africa	Guinea	1	-	1
17	Western Africa	Mali	2	-	2

18	Western Africa	Nigeria	1	-	1
19	Western Africa	Senegal	1	-	1
20	Western Africa	Sierra Leone	1	-	1
21	Western Africa	Togo	2	-	2
Total		21	26	3	29

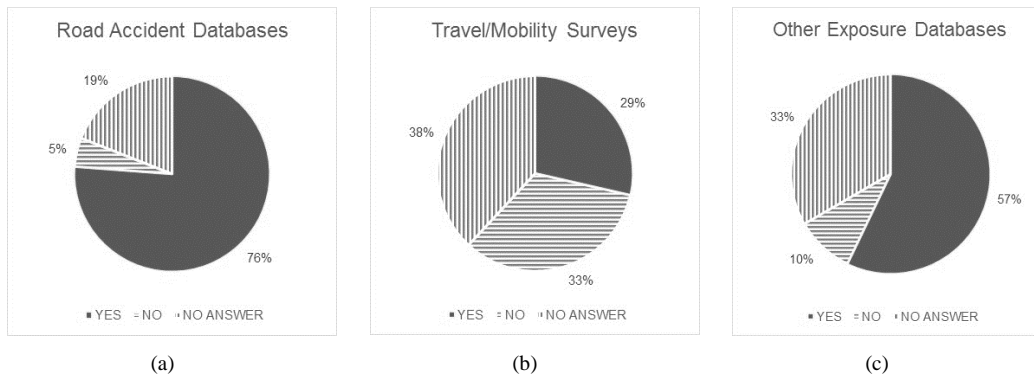
3. Road safety data collection systems in African countries

3.1. General

The present chapter aims in clarifying the current status in terms of the existence, extent and level of road safety data collection systems in African countries.

As an initial approach the existence of road safety databases and information at national level in the examined countries was explored through question: "Do you use any national databases/information sources? a. Road accident databases; b. travel/mobility survey results; c. other exposure databases (e.g. vehicle fleet); d. other, please specify". Alternative answers for each database/source: yes, no, don't know).

From Figure 2 it can be seen that in most examined countries there are formal systems in place for recording road accidents. Also it is interesting to know that other exposure databases are utilized in more than 50% of the countries. On the other hand, surveys regarding travel or mobility demands seem not so widespread.



- Notes: a: No feedback provided from Kenya, South Sudan, Senegal and Tunisia
b: No feedback provided from Benin, Kenya, Sierra Leone, South Africa, South Sudan, Senegal, Tanzania and Tunisia.
c: No feedback provided from Gambia, Kenya, Sierra Leone, South Sudan, Senegal, Tanzania and Tunisia.

Figure 2. Existence and use of databases – information at national level.

As a second approach, core road safety management concerns related to data collection practices in the examined African countries, were addressed from the road safety monitoring and evaluation points of view. The replies per country for these basic aspects, are shown in Table 2. In the first column of Table 2, shortcuts of the questions on availability of road safety management items are shown. The alternative answers were: yes, no, don't know.

Experts revealed that sustainable and reliable systems (durable, funded and maintained) to collect and manage data on road accidents, fatalities and injuries are available for a number of African countries. On the other hand, sustainable in-depth accident investigations for road safety

purposes seem to be conducted for 8 out of 21 examined countries (Malawi, Cameroon, D.R. of the Congo, Lesotho, Mali, Nigeria, Senegal and Togo). A national observatory centralizing the data systems for road safety is available in almost 50% of the responding countries. On the whole, the same countries also have a reporting procedure to monitor road safety interventions in place. Last but not least, benchmarking is not really utilized in most countries except for D.R. of the Congo, South Africa, Burkina Faso, Nigeria, Sierra Leone and Tunisia.

In the following sub-chapters, additional and more detailed aspects of road safety data collection systems for the examined African countries as a whole are presented. The fields of such data collection practices are classified as follows:

- Road accident data
- Risk exposure
- Road safety performance indicators

Table 2. Basic aspects in monitoring and evaluation of road safety data collection practices in African countries.

Notes: ✓: Yes, Empty cell: No, N/A: No Answer, U/K: Unknown.

	Eastern Africa					Central Africa		Southern Africa				Western Africa						Northern Africa			
	KENYA	MALAWI	MAURITIUS	SOUTH SUDAN	TANZANIA	CAMEROON	DR CONGO	BOTSWANA	LESOTHO	SOUTH AFRICA	SWAZILAND	BENIN	BURKINA FASO	THE GAMBIA	GUINEA	MALI	NIGERIA	SENEGAL	SIERRA LEONE	TOGO	TUNISIA
1	✓	✓	✓	N/A	✓	✓	✓	✓	✓	✓	✓	U/K			✓	✓	✓	✓	✓	U/K	✓
2		✓				✓	✓		✓						✓	✓	✓			✓	N/A
3		✓				✓	✓		✓	✓		U/K	✓		✓	✓				✓	✓
4	N/A	✓	U/K			✓	✓			✓		✓			✓	✓					✓
5			U/K	N/A		✓			✓			✓			N/A	✓	N/A	✓			✓

3.2. Road accident data

As seen through Table 2, for 10 countries a national observatory is available for centralizing the data systems for road safety. For these countries, different types of data included in the national observatory were further specified through question: "Is there a national Observatory centralizing the data systems for road safety? If yes, does it include data on: accidents; fatalities or injuries; in-depth accident investigations; behavioural indicators; exposure (traffic); violations or fines; driver licensing; vehicle registration; other data (please specify)". Alternative answers were: yes, no, don't know.

Although in general such data vary, all 10 countries incorporate in their observatories data on accidents, fatalities and injuries, 50% of them incorporate data regarding in-depth accident investigations, and also 50%, data on behavioural indicators.

Monitoring road safety interventions through a reporting process is available for 8 of the examined African countries (Table 2) (Question: "Has a reporting procedure been set up to monitor the road safety interventions carried out in the country?"). Aiming to further understand such practices in these countries, further questions were addressed and the results are presented below.

The reporting of monitoring road safety interventions is mostly linked to intermediate phases of the country's national road safety programme as found in 4 out of the 8 countries of Table 2 (Question: "Is the reporting: periodical; linked to intermediate phases of the RS programme?").

On the other hand, the most common areas of intervention to which the reporting procedure applies are driver training, campaigns, enforcement and vehicle related measures (Question: "Does reporting apply to all areas of intervention: Engineering measures on rural roads; Planning and engineering interventions in urban areas; Enforcement operations; Traffic education; RS campaigns; Driver training; Vehicle related measures; Others (please specify)").

Another interesting fact of the reporting process to monitor road safety interventions is related to the level at which this is performed, which is mostly performed at regional / local (60%) level and only in 3 countries at national level (covering ministries, government agencies, etc.) as well (Questions: "Is reporting performed "horizontally" at the national level (covering ministries and government agencies)?" and "Is reporting performed "vertically" to cover activities at the regional and/or the local level?").

However, the information of this process is addressed mainly to the road safety lead agency or the government itself (Question "Is the information addressed to?: the Lead Agency; the high level inter-sectoral decision-making road safety institution; the technical inter-sectoral road safety institution; the government; the Parliament?").

An additional but also important issue of concern is whether certain actions have been taken based on the information collected through the reporting process and towards which direction (Question: Has some action been taken on the basis of the outcome of this information: limited changes in the action programme; allocation of funds or human resources; training; others (please specify)) It was found that these actions in most cases (75%) concern training as well as slight changes in the action programme, while allocation of funds or human resources take place in less than 50% of these 8 countries.

Safety interventions need time to show results. However, it is important to check whether such measures work as expected and do not generate undesired side-effects (Question: "Does some "process evaluation" of safety interventions take place during the implementation period of the programme (i.e. checking that measures work as expected and do not generate undesired side-effects)?"). It was found that such a process is undergoing in approximately 35% of all the examined countries (Figure 3). Additional responses from these 7 countries which provide further insight into this process are summarized below.

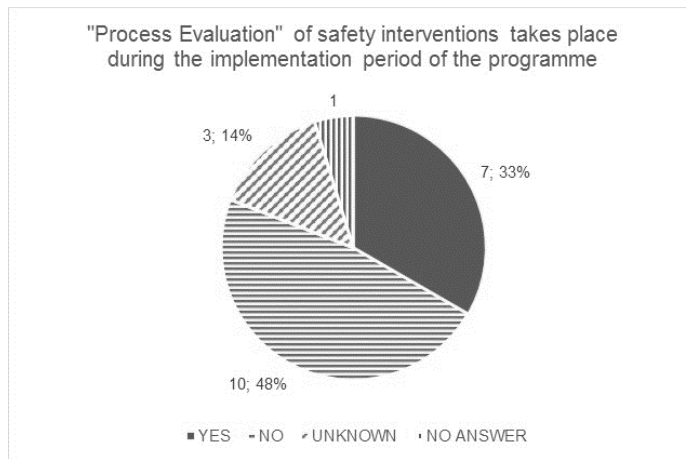
It was found that in all 7 countries the evaluation for interventions addresses road safety campaigns, in approximately 70% it addresses enforcement and vehicles and in around 50% other areas (Question: "Is the evaluation for interventions addressing: all areas; infrastructure; vehicles; enforcement; road safety campaigns; other areas (please specify)?").

The evaluation is performed using observations and/or field surveys or measurements in 5 of the countries, whilst, for this task, safety performance indicators are utilized by 4 countries. (Question: "Does it involve: performance indicators; observations and/or field surveys or measurements?").

Scientific expertise seems to be present in performing process evaluation in more than 50% of the countries (Question: "Are scientific expertise involved in performing process evaluation?")

while the evaluation results are available to all stakeholders in 70% of the countries (Question: "Are the evaluation results available to all stakeholders?").

Finally, actions taken on the basis of the evaluation process results for most of these 7 countries involve both improvements of the implementation conditions and well as partial changes in the action programme (Question: "Has some action been taken on the basis of the outcome of this information such as: partial changes in the action programme; improvement of implementation conditions?").



Notes: The number of respondents and the respective percentage per answer alternative are shown in the graph. No feedback provided from South Sudan.

Figure 3. Existence of process evaluation for safety interventions.

Furthermore, a process to assess the effects on accidents and injuries or socio-economic costs of certain policy components seems to be available in 6 (29%) of the examined 21 countries (Question: "Has an evaluation process been planned to assess the effects on accidents and injuries or socio-economic costs of some policy components ("product" evaluation)?").

For these 6 countries the areas of interventions covered by the evaluation plan are mainly enforcement and vehicle related measures, while infrastructure is slightly less covered (Question: "Which areas of intervention are covered by the evaluation plan: infrastructure; enforcement; vehicle related measures; others (please specify)?").

3.3. Risk exposure

The amount of travel in each country is one of the main determinants of road fatality risk. However, traffic measurements are not systematically carried out in all countries. In general, the lack of sufficient and reliable exposure data is still a major limitation of road safety analyses and may significantly affect the potential for evidence-based policy making in the African countries, regions and cities.

In terms of data collection systems, availability of exposure indicators were found in the examined countries' national observatories. As already discussed (Table 2), a national observatory for centralizing the data systems for road safety seems to be available in 10 countries. From these

10 countries managing national observatories, approximately 50% (5 countries) seem to include exposure data in them.

3.4. Safety performance indicators

In order to develop effective measures to reduce the number of accidents/ injuries it is necessary to understand the processes that lead to accidents. Safety Performance Indicators (SPIs) can serve this purpose since by providing information, they serve as a link between the casualties from road accidents and the measures to reduce them.

Road users' behavioural aspects are a vital field of safety performance indicators. The collection and management of such information are assessed through certain behavioural indicators, such as speeding, drinking and driving, use of protection systems, distraction, etc.

Concerning data on behavioural indicators (Question: Are sustainable and reliable systems in place to collect and manage data on behavioural indicators: vehicle speeds; safety belt wearing rates; alcohol-impaired driving; others, please specify), a sustainable system for their collection and management is in place for less than 50% of the 21 questioned countries. For example, safety belt wearing rates are systematically collected and managed in fewer countries (7 countries) compared to speeding and alcohol impaired driving (9 countries).

During the implementation period of a country's national programme or policy, it is very important to assess its safety performance (Question: Has a procedure been set up to evaluate safety performances of the national programme or policy? If yes, are the performances assessed on the basis of performance indicators; against national quantitative targets?). Unfortunately, such a process is currently available in only 4 countries (19%), where the safety performance is assessed based on national quantitative targets as well as on performance indicators.

4. Road safety definitions in African countries

4.1. General

Road safety definitions affect data quality by determining which incidents are counted as road accidents and by determining injury and accident severity classifications. Standard definitions of road accidents and fatal – non fatal road injuries are not universally applied [9].

In the present analysis, demands and views of road safety stakeholders concerning road safety definitions and practices related to broader road safety procedures in African countries are assessed. This assessment is performed based on the responses in certain fields of data collection practices in Africa and specifically through questions on:

- Data and resources for fact finding and diagnosis of road safety issues
- Data and resources for the implementation of road safety related measures

The respondents were asked to evaluate specific items on two different dimensions:

- the perceived priority for their personal work (high, medium, low, not relevant to my work)
- the perceived availability at the level of their country, (available, partially available, currently not available, unknown)

The respondents were asked to assess from their professional standpoint as well as to rate based on the above mentioned options the priority and availability of road safety definitions and practices related to broader road safety procedures in the following fields:

- Road accident data
- Risk exposure

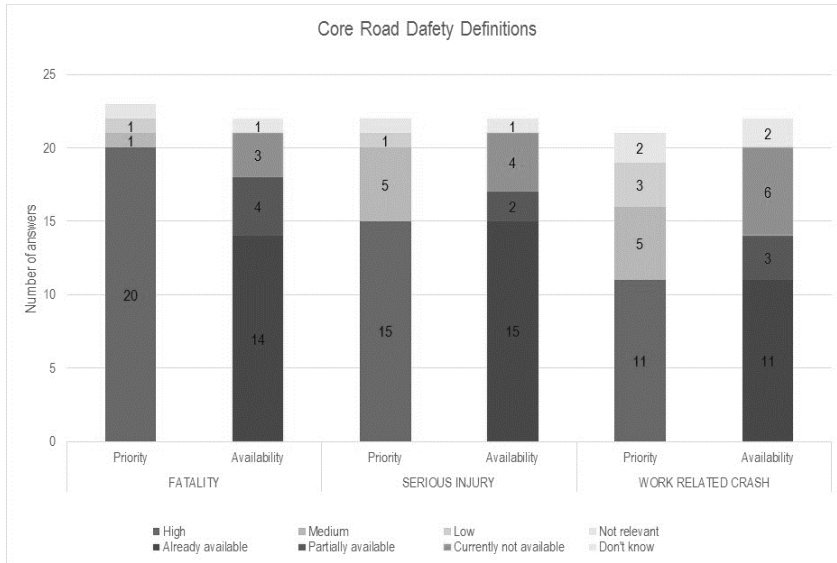
- Road safety performance indicators

The subsequent sections present and discuss in more detail the results of this assessment.

4.2. Road accident data

Although, as seen previously, almost all African countries have a formal system of regularly recording road accidents, not all of them adhere to the international definitions [1]. Therefore, the assessment presented in this chapter is essential in order to assess the status of road safety more consistently for all African countries.

Stakeholders were asked initially to assess a common definition for road accident fatalities, serious injuries and work related accidents. Their responses can be seen in Figure 4 where the most interesting outcome is that although the respondents prioritize rather highly the existence of a common fatality definition, this is not available in all the examined countries.

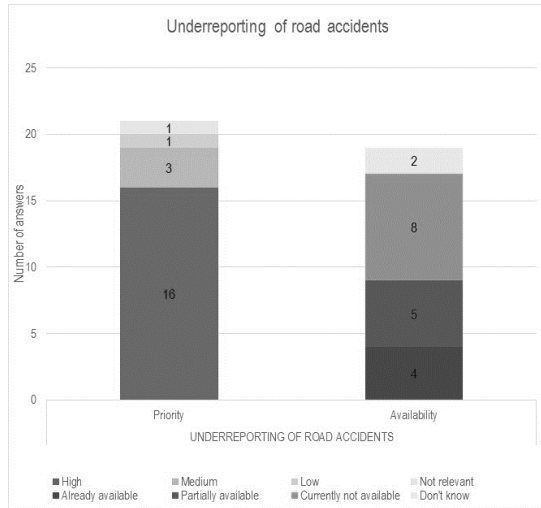


Note: No feedback provided from South Sudan and Swaziland.

Figure 4. Core road safety definitions - availability and priority.

Underreporting affects the degree to which the statistical output of a data system reflects reality on the roads. In Africa, it has long been recognized [1] that a rather vast problem exists with underreporting of road accidents, not limited, however, to those that result in slight injury or are property-damage only.

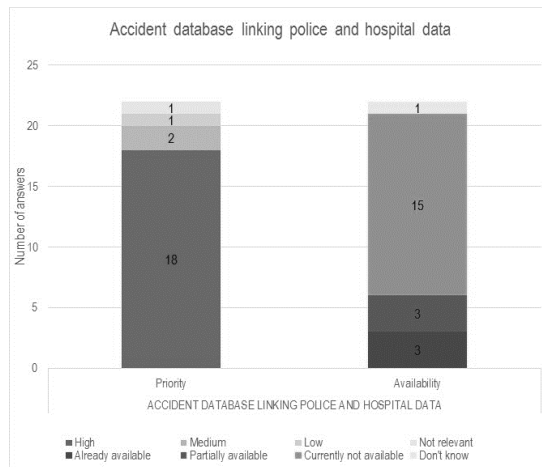
Considering data and resources needed for the identification of specific road safety problems, the general setback of underreporting of road accidents was highlighted by the stakeholders who, in their majority, consider the accessibility to relevant data a high priority but to most of them, however, such data are only partially available (Figure 5). Although these answers are based on a limited number of experts' opinions, underreporting is an issue of general concern in Africa and affects the degree to which the statistical output of a country's data system reveals the actual situation of road safety.



Note: No feedback provided from South Sudan and Swaziland.

Figure 5. Data on the underreporting of road accidents - availability and priority.

Another important resource that would also be useful for tackling the underreporting problem is the availability of road accident databases that link data from the Police and the hospitals. In almost all the examined countries, such accident databases are of a high priority. However, as seen through Figure 6, at the moment such joined databases are not available to the majority of stakeholders.



Note: No feedback provided from South Sudan and Swaziland.

Figure 6. Accident databases linking Police and hospital data - availability and priority.

As far as research on road safety data is concerned, although there seem to be no significant results available from studies related to in-depth accident investigations, naturalistic driving and data from driving simulators, the stakeholders prioritize such research activities rather highly, with the higher rate being given to in-depth accident investigations.

In terms of defining common methodologies for accident analysis, the respondents consider the identification of high risk sites more important than performing in-depth accident analysis. Specifically, the existence of a common practice to identify high risk sites is greatly appreciated by the stakeholders but at the same time a common methodology available for in-depth accident analysis is rather limited.

Road user behaviour assessment is the subject of an increasing number of studies worldwide and new methods are being introduced for this purpose. Simulation of road user behaviour is one of the most popular methods at the moment. Therefore, it was not surprising to see that tools for simulating road user behaviour are of medium priority. At present time such tools are available to very few stakeholders and mainly in Mauritius.

It is well known that road safety is a typical field with high risk of expensive investments not bringing results. On the other hand, since every country experiences road safety budget limitations, it is very important for relevant stakeholders to gain as much information as possible on the costs and benefits of a road safety measure. As a starting point it is essential for a country to sustain data on the costs of road safety measures. Almost 50% of the stakeholders prioritized highly this process, where such tools are once again available to very few stakeholders.

The utilization of modern technologies may improve marginally road accident data collection processes. As an example Global Positioning System (GPS) and Geographic Information System (GIS) technologies are wide spread, continuously evolving, and may support more integrated user demand actions. The expediency of these tools seems to be recognized by many stakeholders for which the implementation rates, at least at present time, seem rather weak.

4.3. Risk exposure

Exposure indicators are typically divided into three groups: those relating to road users and their behaviour, those relating to the vehicles being used, and those relating to the road infrastructure. Road safety policies and measures operate upon one or more of these groups. The most relevant exposure measure for the number of fatalities is the number of kilometres travelled (either by road users or by vehicles).

Exposure data were found to be highly appreciated by more than 50% of the stakeholders but only 20% of them have such information available.

4.4. Safety performance indicators

As road users are considered the most important factor of road accidents it is not surprising that information on their behaviour and attitudes were found to be highly prioritized by more than 70%

of road safety stakeholders in all countries. On the other hand, availability of such information is rather limited to almost 30% of stakeholders.

Apart from information on road users' behaviour and attitudes, it is shown that road safety stakeholders are also very interested in acquiring information on road accident causation factors in general, in order to be able to select the most appropriate countermeasures. The relevant percentages of stakeholders' priority and availability of information on accident causation factors is approximately 60% and 20% respectively.

Information on socio-economic cost of accidents, fatalities and injuries consists a core field for identifying and developing evidence-based, cost-effective road safety policies. However, such data were rated with lower percentages such as 50% and 8% concerning priority and availability respectively.

Finally, information related to road safety from the road infrastructure point of view seems to be highly valued by the stakeholders. Specifically it was found that more than 75% of the respondents greatly appreciate data from road safety audits and inspections, although such information is currently available to less than 8% of them. Data related to road layouts, signing, marking etc. is another area of interest where 50% of the respondents prioritize highly such information for which, however, availability is below 5%.

5. Conclusions

The assessment of the existing road safety data collection systems in African countries revealed similarities but mostly differences since besides the existence of formal systems for recording road accidents for almost all countries, the data collection practices from the road safety monitoring and evaluation points of view are addressed in various ways.

Among the most important is the fact that sustainable systems to collect and manage data on road accidents, fatalities and injuries are in place for many but not all the examined countries. On the other hand, it was surprising to see that in-depth accident investigations for road safety purposes are conducted for approximately 40% of the countries. More or less, the same countries have a national observatory centralizing data systems for road safety as well as a reporting procedure to monitor road safety interventions. For about 35% of the countries there is a process for assessing the progress of the applied safety measures (process evaluation) in place during the implementation period of a road safety programme which is mainly addressing road safety campaigns.

Exposure indicators were found in the examined countries' national observatories, where 5 countries out of 10 seem to include exposure data in their national road safety observatories.

Approximately 50% of the examined countries have in place a sustainable system for the collection and management of data on behavioural indicators emphasizing on speeding and alcohol impaired driving. Safety belt wearing rates were found to be somehow lower. In general, apart from behavioural indicators, the countries utilizing safety performance indicators during a process evaluation seem to be no more than 4.

The assessment of the needs and priorities of road safety data and information to stakeholders in African countries is performed based on the responses in certain fields of the extensive questionnaire and specifically in the following sub-sections:

- Data and resources for fact finding and diagnosis of road safety issues
- Data and resources for the implementation of road safety related measures

Regarding the critical aspect of a common definition for road accident fatalities, serious injuries and work related accidents, it was found that although the existence of a common fatality definition (mainly) was highly prioritized such a classification is not available in all the examined countries.

Another highlighted issue of general concern is the underreporting of road accidents for which the accessibility to relevant data, though regarded as a priority of major importance for the majority of the stakeholders, is only partially available. Road accident databases that link Police and hospital data may serve as a potential solution to the underreporting issue. Such a perspective for joined databases, although once again highly acknowledged by the respondents, at present, seems not available to the majority of stakeholders. Identifying high-risk sites is considered more important compared to performing in-depth accident analysis, where regarding the latter, the existence of a common methodology seems rather limited.

Exposure data although appreciated by more than 50% of the stakeholders are fully available to approximately 20% of them.

Information on road users' behavioural aspects and attitudes were found to be highly prioritized by more than 70% of road safety stakeholders in all countries. However, availability of such information is rather limited to almost 30% of stakeholders. Almost the same percentages in terms of priority and availability ratings respectively were found regarding information on road accident causation factors. From the road infrastructure point of view, data on road safety audits – inspections were greatly appreciated by the stakeholders, although such information is currently available to less than 10% of the respondents.

The examination of the existing situation regarding road safety data collection systems and definitions in African countries based on the survey results, provides some important insight on deficiencies of current practices which might partially explain poor road safety performance in these countries. Furthermore, in combination with the special characteristics of these countries, common deeper problems in structures and policies may be identified.

A number of the questioned issues for many African countries are collected for the first time and can be very useful to road safety decision-makers to take into consideration for future actions. In addition, identification of the specific problems may enhance participation of the African countries in road safety initiatives and undertaking a more active role which will promote their efforts towards the improvement of road safety in the area.

Future research that would analyse the current situation in road safety data collection systems in more countries and with more participants is the key to better comprehend the existing problems and suggest the most appropriate interventions. Moreover, it would be interesting and useful to examine the specific road safety data collection system and definitions implemented in the most advanced in road safety African countries, identify their strengths and weaknesses and cross-examine them with road safety outcomes (i.e. accidents, fatalities and injuries).

Based on the stakeholders' responses it was found that there is a significant demand for data and knowledge in order to be used for road safety-related decision making. Currently, such information is poorly available in African countries. This fact makes the work of road safety stakeholders difficult, therefore, their discontent was expressed. In several cases, it was found that stakeholders are not even aware of the availability status of items that they consider to be irrelevant to their work. Generally, stakeholders seem to be poorly informed about the availability of road safety data and tools.

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