Analyzing the Africa Road Safety Action Plan through the SaferAfrica Crowdsourcing tool

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Abstract

In 2011 the Africa Road Safety Action Plan (ARSAP) established a roadmap to reduce road traffic crashes by 50% by 2020. Despite this effort, Africa is the continent with the worst road safety performance. To reverse this trend, the SaferAfrica project, a joint effort of 17 partners from Africa and Europe, was launched in 2016. Within the framework of this project, the Crowdsourcing tool was developed and implemented through the African Road Safety Observatory. This tool aims to collect opinions and road safety needs from African citizens, report general road safety issues at the local level, and propose ideas to improve road safety in the country of origin. Seventy-three reports were received from 29 countries covering the five geographical African regions. However, Crowdsourcing participants frequently reported more road safety problems in a single report, so a total of 180 feedbacks were received. Thus, the objective of this paper is to perform a comparative analysis between the road safety reports from the Crowdsourcing tool and the ARSAP expected accomplishment and activities. Two main road safety issues, not included in the ARSAP, were highlighted by several respondents, which are unsafe school travel and informal transport. Further aspects highlighted, not addressed by the ARSAP, were a general lack of roads maintenance, the increasing use of personal mobility devices, like pedelecs, e-bikes, segway, electric kick scooters, obstruction and defacing of road signs and the safety conditions at road work-zones. These issues might represent emerging aspects worth considering in a future update of the plan for the decade of action for road safety 2021-2030.

Keywords: road safety; crowdsourcing; safety management; Africa; road safety observatory

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1. Introduction

According to the Global Status Report on Road Safety 2018, around 1.35 million people die, and 50 million are injured in road crashes every year [1]. Road traffic crashes are estimated to be the ninth leading cause of death, and projections reveal that it will be the third leading cause of death by 2020 [2].

A road traffic crash results from a combination of several factors, in particular, the accident risk, in terms of repeatability, localization, and severity, is related to three concurrent factors: infrastructure, vehicle, and human factors [3]. Infrastructure is a factor that affects road user behavior and consequently road traffic crash rates [4]. It is recognised that road users make mistakes and it is important to redesign a road transport system that accommodates human error, making the road environment more forgiving and self-explaining [5,6]. The planners and managers of the road network have the responsibility to provide the user with a safe infrastructure [5].

Relative to their level of motorization, Low- and Middle-Income Countries (LMICs) bear a disproportionately high burden of road deaths compared to more motorized High-Income Countries. Approximately 90% of the related deaths resulting from road traffic crashes (RTCs) occur in LMICs, while these countries account for 82% of the world's population, and their level of motorization stands at only 54% of the world's number of registered vehicles. In the same way, the accident risk (number of accidents per traffic exposure, such as vehicle-km) is generally higher in developing countries, with far more severe consequences, as well [7,8].

Africa is the worst performing Continent in road safety. In 2013, the mortality rate in this Continent (26.6 fatalities/10^5 population) was almost three times that of Europe, where the number of road fatalities represented 31% of the relevant global picture [9]. However, the most disturbing concern is that the disparity in road safety results seems to be increasing. Road trauma in Africa is expected to worsen further, with fatalities per capita projected to double over 2015-2030 [10].

In Africa, several actions are already ongoing and important high-level documents are already in place, paving the way for road safety improvements, such as the African Road Safety Action Plan (ARSAP) 2011-2020 [11], a result of the joint effort of the African Union (AU) and the United Nations Economic Commission for Africa (UNECA). However, the ARSAP is being updated for the 2021-2030 decade.

In this context, the *SaferAfrica* project, a joint effort of 17 partners from Africa and Europe, aims at establishing a Dialogue Platform between Africa and Europe focused on road safety and traffic management issues [12]. The Dialogue Platform comprises a high-level international institution in charge of providing recommendations to update the African Road Safety Action Plan and the African Road Safety Charter, as well as fostering the adoption of specific initiatives properly funded.

The African Road Safety Observatory (http://www.africanroadsafetyobservatory.org/) is one of the main outputs of the *SaferAfrica* project [13]. The Observatory is a web portal that combines both the traditional functions of gathering, analyzing, and sharing road safety performance data and a more innovative one aimed at actively involving road users and stakeholders to report data and road safety issues and provide ideas to improve road safety in Africa. The involvement of citizens takes place through crowdsourcing functions implemented in the Observatory. The scope of *SaferAfrica* crowdsourcing was to address the general (at country level) needs and problems of African citizens.

This paper aims to perform a comparative analysis between the road safety reports from the Crowdsourcing tool and the ARSAP expected accomplishment and activities, based on the actions promoted by each of the five pillars and their implementation status following mid-term review. Moreover, determine emerging aspects that are worth considering in a future update of the plan for the decade of action for road safety 2021-2030.

2. The Africa Road Safety Action Plan (ARSAP)

Over the years, the United Nations (UN) has been a key player in improving road safety around the world. The UN General Assembly adopted resolution 64/255 that proclaimed 2011-2020 as the Decade of Action for Road Safety in March 2010 [14]. The global goal of the Decade is to stabilize and then reduce the forecasted level of global road fatalities by increasing activities conducted at the national, regional and global levels. The rationale for the Decade is that it provides an opportunity for long-term and coordinated activities in support of regional, national and local road safety. It was adopted at a time when knowledge of the major risk factors as well as effective

countermeasures had improved considerably. The Decade provides a timeline for action to encourage political and resource commitments both globally and nationally.

In Africa, a result of the common effort of the African Union (AU) and the United Nations Economic Commission for Africa (UNECA) during the second African Road Safety Conference, held in Addis Ababa in November 2011, the African Road Safety Action Plan (ARSAP) for the Decade was adopted [11]. The ARSAP is organized under the five pillars of the Decade of Action for Road Safety 2011-2020, namely:

- Pillar 1: Road Safety Management, which concerns the institutional framework needed to implement road safety activities, and thereby sets the oversight of all other pillars;
- Pillar 2: Safer roads and mobility, that deals with road development, the safety of all road users, especially pedestrians and other vulnerable users;
- Pillar 3: Safer vehicles, which focuses on standards, entry and exit of vehicles into and from countries;
- Pilar 4: Safer drivers and other road users, that addresses driver training, testing and licensing, driving permits and enforcement of the driving code, awareness and education of the public, and the development of a safety culture; and
- Pilar 5: Post-crash response, which deals with on-site care, transport and trauma care of injured.

2.1. ARSAP actions promoted by pillar

The ARSAP (2011) established an Action Plan to meet the objective of reducing road traffic crashes by 50% by the year 2020. This Action Plan includes 15 Expected Accomplishments and 79 Activities distributed by 5 Pillars and a Section on Cross-cutting Issues (Table 1). The highest number of activities are provided for Pillars dealing with Road Safety Management (23) and Safer Road Users (27).

Table 1 Summary of the ARSAP 2011-2020 (Source: AU-UNECA, 2011)

Pillar	Expected Accomplishments	Number of Activities
Pillar 1: Road Safety Management	Lead Agencies established/improved	10
	Management of Data improved	9
	Partnership and Collaboration developed / strengthened	4
Pillar 2: Safer Roads and Mobility	Safer Roads Infrastructure for all Road Users	7
	Capacity-building and Training	1
Pillar 3: Safer Vehicles	Road Worthiness of Vehicles (Vehicle Safety)	5
Pillar 4: Safer Road Users	General Public educated (Road Users)	11
	Use of Helmets	3
	Use of Seat Belt	7
	Drinking and driving and influence of other drugs	4
	Mobile Phone Use	1
	Speeding	1
Pillar 5: Post-crash Response	Improved Emergency Care	11
Cross-cutting Issues	Rural Transport Safety	3
	Evaluation of the Decade	2
Total Number of Expected Accomplishments and Activities	**15**	**79**

3. SaferAfrica Crowdsourcing

The African Road Safety Observatory (http://www.africanroadsafetyobservatory.org/) is one of the main outputs of the *SaferAfrica* project [13]. The Observatory is a web portal that combines both the traditional functions of gathering, analyzing, and sharing road safety performance data and a more innovative one aimed at actively involving road users and stakeholders to report data and road safety issues and provide ideas to improve road safety in Africa. It can be seen as a "participative" web portal, in which various stakeholders can find data and technical information and provide opinions and information on specific road safety problems.

The involvement of citizens occurs through crowdsourcing functions implemented in the Observatory (i.e. functions/tools allowing the contribution of all stakeholders to the development of the background). The scope of

SaferAfrica crowdsourcing is to address the general (at country level) needs and problems of African citizens. In more detail, in the *SaferAfrica* project, crowdsourcing is used to:

- Collect opinions and road safety needs of an African country from African citizens;
- Report general road safety issues at country level;
- Propose ideas to improve road safety in the country of origin.

The main target was African citizens and community groups; however, the tool was opened to all, allowing local authorities, transport policymakers, road safety experts and other stakeholders in Africa to participate in the open discussions.

3.1. Reporting tool

Crowdsourced data can be related to perceived road safety issues, needs and suggestions to improve road safety in a country. Residents, closer to the existing problems, act as sensors in a country, filling the gap of the lack of information available. The reporting tool of *SaferAfrica* Crowdsourcing is targeted at African citizens and road safety stakeholders. Due to its nature as a means to involve many people, the tool is provided in three languages (English, French and Portuguese) and can be easily reached by both desktop and mobile devices (tablet or smartphone) using an internet connection. Participation was promoted by dissemination through social media campaigns and the active involvement of African road safety stakeholders in the project.

3.2. Explore tab

The "Explore" tab is a tool for viewing the confirmed reports and proposals on the map (Figure 1). There is a filter selection on the right side of the page that allows users to choose which markers will be shown on the map: either reports, proposals, or their subcategories.

Clicking on a marker on the map shows a popup containing the information about the report/proposal and a Comments button. Clicking on this button redirects to the page of the report/proposal, where users can see posted comments or submit their own.

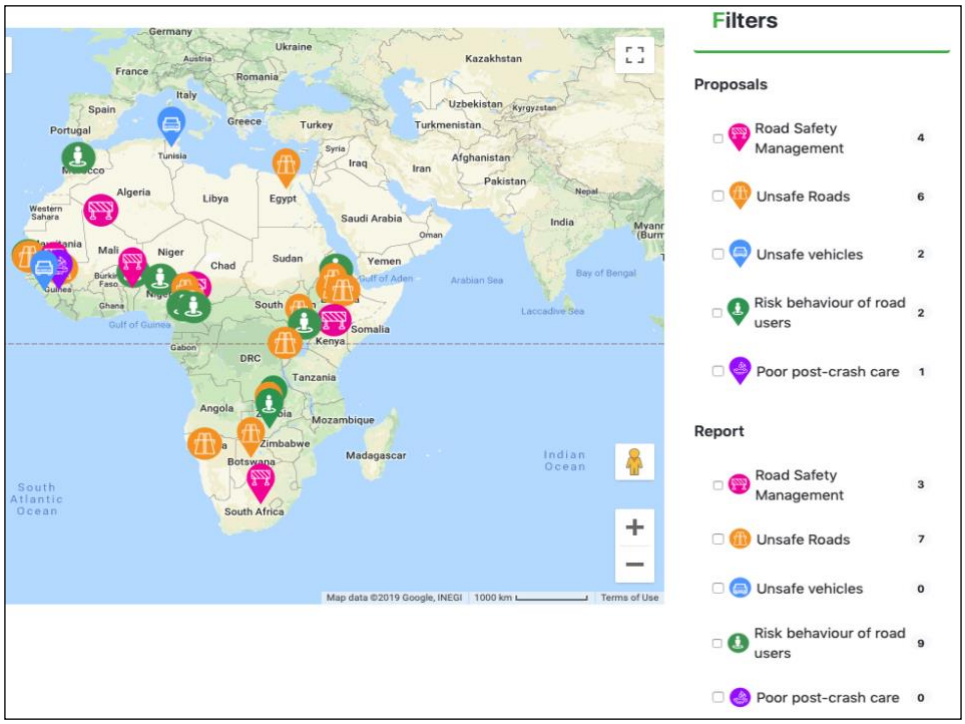

Figure 1 Explore tab with map and filters

3.3. Report or propose a solution tab

The “Report or Propose a solution” tab is the reporting tool. Here is shown a map with a placeholder on it. Using drag-and-drop functionality, users can move the placeholder over the country they would like to report. After positioning the placeholder, a submission form is opened. Moving at the edge of the map while holding the marker will move the map in that direction. Once released the marker over an African country (otherwise, an error popup will show off), users can fill the submission form (Figure 2).

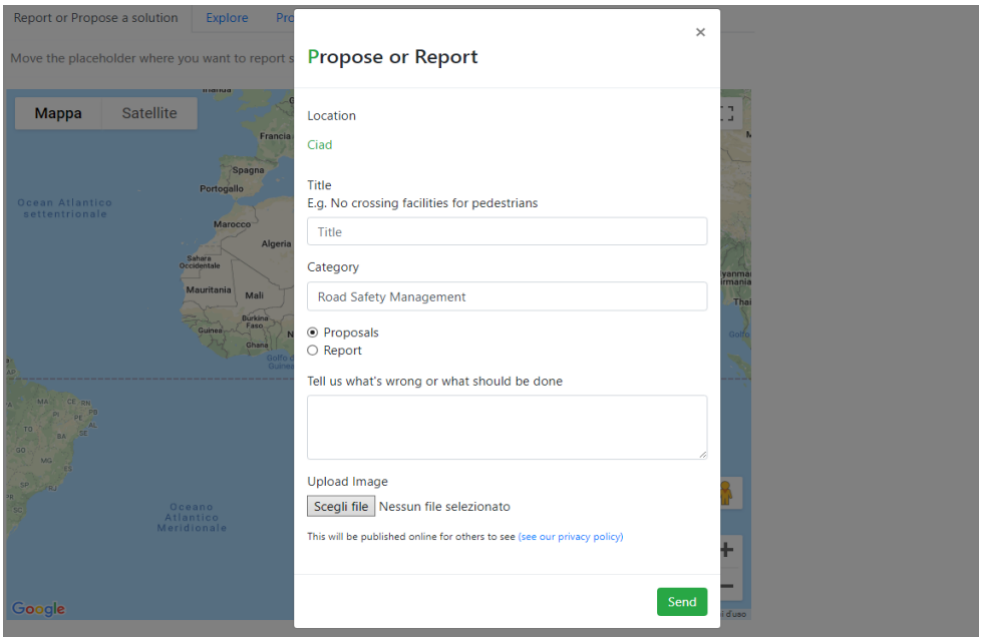

Figure 2 Propose or report submission form

4. Methodology

A comparative analysis was undertaken between the road safety feedback from the Crowdsourcing tool and those included in the ARSAP.

The objectives were twofold:

- To understand whether the road safety issues addressed by ARSAP are still relevant
- To highlight any emerging issue not specifically addressed by ARSAP

Firstly, all the feedbacks received were processed to be comparable with the ARSAP expected accomplishment and activities. Each report or proposal has been examined and associated with one or more expected accomplishments and to one or more activities. This was necessary because Crowdsourcing tool participants frequently reported more road safety issues or proposals in one feedback. There were also cases where the report could not be associated with any activity.

A database of (sub)feedbacks linked to the country of origin, the pillar, the expected accomplishment and one or more activities promoted by ARSAP was developed for the analysis. If feedback could not be associated with any accomplishment/activity, then a new "proposed accomplishment" was recorded.

The analyses were undertaken by road safety pillar and consisted in:

- Identifying the activities addressed by the Crowdsourcing tool participants
- Examining to which extent the road safety issue linked to the activity has been reported in the continent
- Comparing the identified activities with their implementation status according to the ARSAP Mid-term review
- Analyzing the new proposed accomplishment highlights the relevance of the problem in Africa and possible solutions suggested by the crowd or *SaferAfrica* recommended actions.

5. Results

In 2015 Economic Commission for Africa (ECA) carried out a mid-term review on the African Road Safety Action Plan [15]. The main objective of this review was to know the status of the implementation of the African Road Safety Action Plan and to identify the challenges and best practices in the implementation of the Action Plan. The review established baseline information on the implementation of activities in the Action Plan, with the view to facilitating the continuous monitoring of progress in the implementation of the Plan as well as its final evaluation in 2020.

Africa has 54 countries recognized by the United Nations (UN). Through the Crowdsourcing tool, 29 countries reported problems related to road safety. While in the ARSAP mid-term review, 23 countries were involved. The results from the analysis performed for each pillar are reported in the following.

5.1. Pillar 1: Road Safety Management

The ARSAP (2011) established three expected accomplishments: Established/strengthened Lead Agencies (ten activities); Improved Management of Data (nine activities); and Develop/Strength Partnership and collaboration (four activities) for the Pillar 1.

From the Crowdsourcing tool, a total of 11 road safety issues on Pillar 1 were reported by seven countries. Of the 11 reports, three were from Kenya; two from Guinea and Zimbabwe; and one from Algeria, Egypt, Uganda, and Zambia. Eastern Africa was the region with the highest reports (64%), while Northern and Western regions had 18% of reports each. From the Middle and Southern regions, no reports were received. 10 road safety issues on Pillar 1 were related to ARSAP Accomplishment "Established/strengthened Lead Agencies" and one related to "Improved management of data". No reports were received for the ARSAP Accomplishment "Developed/strengthened partnership and collaboration".

The most-reported activities were: "Allocate sufficient financial and human resources to improve RS" three times, and two times "Allocate 5% of road maintenance resources to road safety" and "Establish/strengthen national road safety lead agency with legal, financial and human backing". These three activities are related to financial resources, highlighting a perception of a general lack of sustainable financial resources allocated to the road safety sector.

The activities with the highest implementation percentage in Africa: "Allocate sufficient financial and human resources to improve RS" (78%) and "Establish / strengthen national road safety lead agency with legal, financial and human backing" (82%) are the ones that also have the highest number of reports. This seems contradictory; even if sustainable budgets for road safety have been put in place, funding is reported as a problem. However, one should consider the small number of feedbacks in this pillar, not necessarily reflecting the reality, and also that the group of countries monitored within the ARSAP mid-term review is different from the group of countries of the Crowdsourcing survey. Finally, and although progress has been made regarding the financial resources for the road safety sector, it is still due to improvement in this aspect.

5.2. Pillar 2: Safer Roads and Mobility

The ARSAP established two expected accomplishments: Safer Roads Infrastructure for all road users (seven activities); and Capacity Building and Training (one activity) for the Pillar 2.

The "Provide facilities for non-motorized/vulnerable road users in urban and Suburban areas" activity was the most reported for a total of 31 reports. This highlights an urgent need for policymakers to prioritize interventions specifically targeted at improving the safety of these vulnerable road users (pedestrians, cyclists, and motorcyclists).

The activities with the highest implementation percentage in Africa with 70%: "Establish effective safety engineering units in roads agencies with responsibilities to strengthen safety considerations in roads development" and "Capacity building Training is essential for all road safety professionals and road agency executives", have few reports, one and four respectively. On the contrary, the activity "Provide facilities for non-motorized / vulnerable road users in urban and suburban areas" with 31 feedbacks, has a 65% implementation in Africa. This can be in part explained by the strong relation of this activity to a specific local place, so despite the fact that some countries have implemented measures to improve the safety of non-motorized / vulnerable road users (in the main cities and road corridors), these measures can be hardly visible if not adequately disseminated. In general, a higher implementation of such measures is welcome, especially in smaller cities and more remote places.

5.3. Pillar 3. Safer Vehicles

For the Pillar 3, the ARSAP (2011) established one expected accomplishment: Road Worthiness of Vehicles and five activities.

Although vehicle safety is a key component for road safety, only two countries in Africa applies the seven-vehicle safety standards with priority of the UN [16], Vehicle standards for: Seat Belts and Seat Belt anchorages, Frontal impact, Side Impact, Electronic Stability Control, Pedestrian protection, and Child seats. And Motorcycle anti-lock bracking system. With a total of nine reports, Pillar 3 was the one that received the least reports through the Crowdsourcing tool. Governments must urgently sign up to the minimum international vehicle standards as

requirements for manufacturers and assemblers, and limit the importing and sale of sub-standard vehicles in their countries.

Although Pilar 3 was the one with the bit feedback. In this Pillar, the expected trend was found, the higher the percentage of implementation, the lower the number of reports through the Crowdsourcing tool. The activities with the highest implementation percentage in Africa were: “Encourage the use of fiscal advantage and other incentives for motor vehicles that provide high levels of road user protection and discourage import/ export of new or used cars that have reduced safety standards” (82%), and “Implement or strengthen enforcement in accordance with good practices” (70%).

5.4. Pillar 4: Safer Road Users

Law enforcement in accordance with good practices is critical in enhancing safety to ensure adherence to basic safety standards - including speed, safety belts, alcohol, helmet and fatigue management. This requires enhanced capabilities of traffic control agencies. The success of these actions requires full engagement and commitment from participating in traffic enforcement agencies.

The ARSAP (2011) established six expected accomplishment: Educated General Public (11 activities); Use of Helmets (three activities); use seatbelt (seven activities); Drink-driving and driving under the influence of other drugs (four activities); Use of mobile phone while driving (one activity); and Speeding (one activity) for the Pillar 4.

The most reported activities were: “Undertake & intensify safety awareness campaign” 32 times, “Implement or strengthen enforcement in accordance with good practice” 15 times and “Strengthen drivers’ training, testing and licensing standards and rules” 13 times. These three activities are related to educated road users, indicating that the people who reported perceive this as a fundamental aspect of improving road safety. According to WHO (2018) [16], in general, there is a good performance in the countries of the region in regard to Pillar 4, most African countries have legislation to National Motorcycle Helmet, National seat belt, National drink-driving, BAC limit, and National speed limit. For road safety legislation to be effective, there needs to be sustained and vigorous enforcement.

Of course, more can be done as highlighted by this report from Benin “*facilitating access to a 2-wheel driving licence by organising large-scale and cost-effective training courses; drawing up standards on motorcycle helmets and making them accessible to the public; organising national campaigns to promote the use of motorcycle helmets by both drivers and passengers; carrying out various studies to assess the development needs of the Beninese road network in favour of two-wheelers (cycle paths or lanes)”.*

For this Pillar, some activities' implementation percentage was not found, including the one with the highest number of "Undertake & intensify safety awareness campaign" feedback. The other activities with the highest number of reports: “Implement or strengthen enforcement in accordance with good practice” 15 feedbacks and “Strengthen drivers’ training, testing and licensing standards and rules” 13 feedbacks, have a high percentage of implementation (80%). This contradiction can be explained because the group of countries of the ARSAP is different from the group of countries of the Crowdsourcing, and although progress has been made regarding the educated road users, it is still due to improving in this aspect.

5.5. Pillar 5: Post-crash response

For the Pillar 5, the ARSAP (2011) established one expected accomplishment: Improved emergency care and 11 activities.

The “Train *first responders* (traffic controllers, fire fighters & commercial public transport drivers) in injury emergency response service” and “Train technicians in rescue operations and in handling crash extraction tools” activities were the most reported, with four and three reports respectively. All the activities reported in this pillar have an implementation percentage between 60 and 65%, in the same way the feedbacks vary between one and four per activity. Therefore, there is no evidence of a relationship between the number of feedbacks and the implementation of Pillar 5 activities in Africa.

5.6. Topics not covered by the ARSAP

Several specific aspects are highlighted not covered by the ARSAP, like a general lack of roads maintenance, informal transportation, the problem of journeys to/from schools, and the increasing use of personal mobility devices, like pedelecs, e-bikes, segway, electric kick scooters. The two most mentioned by the people who

participated in the survey are explored below, investigating the relevance of the problem in Africa and the solutions coming from the survey and *SaferAfrica* evidence.

5.6.1. Unsafe school travel

The problem of unsafe school travel refers to accidents involving school-age children on journeys to and from school. The journey is usually made as pedestrians, cyclists, or a passenger in a car or on a bus.

Nine respondents (about 12% of the total sample) have highlighted unsafe travel to and from school as a significant problem in their country: Benin, Uganda, Benin, South Africa, Cameroon, Ethiopia, Eswatini, Cameroon.

Factors contributing to increasing the risk of being involved in an accident during the trip to/from school are a lack of awareness and lack of the necessary facilities around schools and walkways (Ethiopia, Benin, Uganda, South Africa, Cameroon, Eswatini). For instance, in Cameroon it is claimed that "*the surroundings of the schools are not secure. 98% of primary and nursery schools in urban areas and 1% in rural areas do not have school signs and even fewer speed limits for drivers (cars and motorcycles)".* Problems related to geometric design, traffic calming, signage and other traffic management aspects are also reported by other studies [17].

The World Health Organization shows that globally motor vehicles are the number one cause of death for children and young adults under the age of 29 [16]. As pedestrians, children have a higher risk than in other modes of travel and a higher risk than adult pedestrians because of slow walking speed, low eye-sight level and short attention periods [18]. While in more developed countries, children often travel to school by car, in less developed countries such as South Africa, Kenya, Nigeria, over 65% of schoolchildren travel to schools by walking [19]. Another option adopted is informal transport, frequently performed on modified motorbikes without any protection. This is confirmed by a Cameroonian feedback claiming that 7% of students use the so called "*bachement*" (moto-taxi) on the way to and from school, without any helmet and with several students on a moto in order to pay a cheaper price.

The situation of unsafe journeys to/from schools could be improved by regulating the safety of children in vehicles and in and around schools, introducing safety requirements for school buses, improving school transport, providing specific road safety training to children and awareness campaigns in schools.

5.6.2. Informal transport

Informal transport refers to typically unregulated (or poorly regulated) and unconventional transport modes operating with flexible fares, schedules and routes [20]. A variety of transport means usually provides the service:

- Motorized two- and three-wheelers, for example, there are the *boda-boda* motorcycle taxis operating in several African cities like Yaoundè, Kampala, Nairobi.
- Non-motorized two- and three-wheeler, like pedicab or horse-cart.
- Shared taxi.
- Minibus frequently called *Matatu* buses (carrying between 14 and 25 passengers).
- Typically, some of the drivers own their vehicles, others partner with owners through rental agreements for a daily or weekly fee [21].
- In several African countries, informal transport is characterized by the low quality of vehicles, but it also provides cheap, accessible and door-to-door solutions for the urban poor.

According to Kenya Capacity Review, Boda-Boda motorcycles account for 24% of the fatalities, and this proportion seems to be rising [22]. Six respondents have pointed out the road safety issues concerning informal transport in the following countries: Benin, Cameroon, South Africa, Guinea, Uganda, Ethiopia.

Informal transport provides an alternative to public transport. A Guinean survey participant said that *the lack of public transport in Conakry and the country's main secondary cities, coupled with chronic youth unemployment, has opened the way to motorcycle taxi transport*. There are several advantages of using boda-boda compared to official public transit, motorcycle taxis are quick, able to travel on roads that are in poor condition, provide door-to-door services, can be purchased with a very small capital outlay, in some cities in the Niger bend they are able to run on contraband fuel from Nigeria, and their fares are lower than for other vehicles for short distances [23].

However, most drivers are low-skilled younger men who migrated to cities from the countryside [16, 20] and in most cases, vehicles are often low-performing and old. Moreover, the ongoing business model where the vehicle

owners claim a fixed daily revenue and drivers keep the variable balance as income, results in destructive competition, dangerous and poor-quality service.

In Guinea, one of the respondents stated "*the operating conditions are so far outside the existing regulatory framework (training and holding of the A1 or A license, holding a transport authorization, compulsory wearing of helmets for drivers and passengers, prohibition of overcrowding, etc.), thus causing major physical accidents".*

The proposals coming from the crowdsourcing tool suggest the development of an affordable public transport system for the urban poor, the revision of the regulatory framework to adapt it to the realities and apply it rigorously, professionalizing the activity and reinforcing the initial and continuous training of informal transport drivers.

6. Discussion and Conclusions

This study presents a comparative analysis between the road safety reports from the Crowdsourcing tool and the ARSAP expected accomplishment and activities. Collecting opinions and highlighting on road safety needs from African citizens could be useful and low-cost support for assessing general road safety needs at the country level, especially considering the poor availability and reliability of road safety data in many Africa countries. Another important feature is gathering new ideas to improve road safety from residents closer to the existing issues in a country.

On Pillar 1: Road Safety Management, 11 road safety issues were reported by seven countries: Algeria, Egypt, Guinea, Kenya, Uganda, Zambia, and Zimbabwe. On Pillar 2: Safer roads and mobility, a total of 56 road safety issues were reported by 21 countries: Algeria, Benin, Botswana, Burundi, Cameroon, Côte d'Ivoire, Egypt, Eswatini, Ethiopia, Gambia, Ghana, Guinea, Kenya, Madagascar, Morocco, Namibia, Nigeria, South Africa, Tunisia, Uganda, and Zambia. On Pillar 3: Safer vehicles, a total of nine road safety issues were reported by four countries: Cameroon, Mauritius, Morocco, and Tunisia. On Pillar 4: Safer Road Users, a total of 92 road safety issues on Pillar 4 were reported by 21 countries: Algeria, Benin, Burkina Faso, Cameroon, Côte d'Ivoire, Egypt, Ethiopia, Ghana, Guinea, Kenya, Libya, Madagascar, Mali, Niger, Nigeria, South Africa, Togo, Tunisia, Uganda, Zambia, and Zimbabwe. On Pillar 5: Post-crash response, a total of 13 road safety issues on Pillar 5 were reported by three countries: Guinea, Kenya, and Tanzania.

Two main road safety issues (unsafe school travel and informal transport), not included in the ARSAP, were highlighted by several respondents. Further aspects highlighted, not addressed by the ARSAP were a general lack of roads maintenance, the increasing use of personal mobility devices, like pedelecs, e-bikes, segway, electric kick scooters, obstruction and defacing of road signs and the safety conditions at road work-zones. These issues might represent emerging aspects worth considering in a future update of the plan for the decade of action for road safety 2021-2030.

Among the limitations of the present study, the small amount of feedbacks (180), and specially on Pillars 1, 3 and 5 should be considered, which does not necessarily reflect reality. Also, the group of countries monitored within the mid-term review of ARSAP is different from the group of Crowdsourcing countries. Similarly, the reports did not pass any filter and their veracity was not controlled. Another limitation is the temporality; while the implementation percentages are from the ARSAP mid-term review of 2015, the feedbacks were received in the Crowdsourcing tool between 2018 and 2019.

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