

Road Safety Issues Addressed by Africa Road Safety Action Plan: are they Still Relevant?

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Abstract. In 2011 the Africa Road Safety Action Plan (ARSAP) established an Action Plan to meet the objective of reducing road traffic crashes by 50% by the year 2020. Despite this effort, the situation worsens year after year and Africa is the continent with the worst road safety performance. To contribute reverse this trend, the *SaferAfrica* project, a joint effort of 17 partners from Africa and Europe, was launched in 2016. Within the framework of *SaferAfrica* project, the Crowdsourcing tool was developed and implemented through the African Road Safety Observatory. The Crowdsourcing tool aims to collect opinions and road safety needs of an African country from African citizens; report general road safety issues at country level; and propose ideas to improve road safety in the country of origin. In total, 73 reports were received from 29 countries covering the five 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, and determine if the road safety problems addressed by ARSAP are still relevant, based on the actions promoted by each of the five pillars and their implementation status in accordance with the mid-term review.

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].

Relative to their level of motorization, Low- and Middle-Income Countries (LMICs) bear a disproportionately high burden of road deaths when 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 [3], [4].

Africa is the worst performing Continent in road safety. In 2013, the mortality rate in this Continent (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 [5]. However, the most disturbing concern is the fact 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 the period 2015-2030 [6].

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 [7], a result from the common effort of the African Union (AU) and the United Nations Economic Commission for Africa (UNECA). However, at this time 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. 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 principal outputs of the *SaferAfrica* project. 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 involve road users and stakeholders to report data and road safety issues and to 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 is to address the general (at country level) needs and problems of African citizens.

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, and determine if the road safety problems addressed by ARSAP are still relevant, based on the actions promoted by each of the five pillars and their implementation status in accordance with the mid-term review.

2. The Africa Road Safety Action Plan (ARSAP)

Over the years, the United Nations (UN) has been a key player in efforts to improve 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 [8]. 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 counter measures had improved considerably. The Decade provides a timeline for action to encourage political and resource commitments both globally and nationally.

In Africa, a result from 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 [7]. 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;
- Pillar 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

- Pillar 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	1. 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 principal outputs of the *SaferAfrica* project. 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 involve road users and stakeholders to report data and road safety issues and to 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 specialized information and provide opinions and information on specific road safety problems.

The involvement of citizens takes place 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, giving the possibility to local authorities, transport policy makers, 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 to African citizens and road safety stakeholders. Due to its nature as a mean to involve a multitude of 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 on map the confirmed reports and proposals. On the right side of the page, there is a filter selection 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 and/or submit their own.

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.

4. Methodology

This paper aims at understanding if the risks and the proposals reported during the survey promoted by the *SaferAfrica* project comply with the activities promoted by the African Road Safety Action Plan. 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

A comparative analysis between the road safety feedbacks coming from the Crowdsourcing tool and those included in the ARSAP is undertaken.

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 accomplishment and to one or more activities. This was necessary because Crowdsourcing tool participants frequently reported more road safety issues or more proposals in one single feedback. There were also cases in which the report cannot 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 of the 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
- Analysing the new proposed accomplishment highlighting the relevance of the problem in Africa and possible solutions suggested by the crowd or by *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 [9]. The main objective of this review was to know the status of 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 a total of 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

A few countries in Africa have established and substantially implemented modern road safety policies: they have a functioning Lead Agencies; crash information systems producing regular data that is disseminated and used to continuously improve the effectiveness of road safety actions, and; enjoy substantial coordination between relevant public and private institutions from an array of sectors. For the majority of countries, however, it will take time to establish institutional frameworks with all the necessary functions and to develop the appropriate participation of the private sector and civil society. The Decade of Action will provide the opportunity for African countries to intensify or to develop activities towards building their institutional capacity. Countries that have made more progress in putting in place structures and processes to improve road safety can focus on more advanced targets, such as capacity building at local government level, and developing local research and road safety monitoring.

The ARSAP (2011) established three expected accomplishment: Established/strengthened Lead Agencies (10 activities); Improved Management of Data (9 activities); and Develop/Strength Partnership and collaboration (4 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 18% of reports each. From 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”. For the ARSAP Accomplishment “Developed/strengthened partnership and collaboration”, no reports were received.

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 to be contradictory, even if sustainable budgets to 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

Road safety should be given appropriate consideration in infrastructure development, and appropriate facilities for pedestrians and other vulnerable road users should be introduced or improved. To ensure basic safety conditions of the infrastructure, member countries should carry out safety audits for the most travelled portions of the network throughout planning, designing, construction and operation stages – and conduct corrective upgrade programs - so that mitigation measures become part of day to day network management. Road safety audits need to specify the safety of the infrastructure for each type of road user, including and especially vulnerable users. Road safety audits also ensure capacity development and mainstreaming.

The ARSAP established two expected accomplishment: Safer Roads Infrastructure for all road users (7 activities); and Capacity building and Training (1 activity) for the Pillar 2.

The “Provide facilities for non-motorised/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 ensure the prioritization of 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 Sub urban 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 kind of measures is welcome, especially in smaller cities and more remote places.

5.3. Pillar 3. Safer Vehicles

Low standards for vehicles contribute to a significant number of crashes. The private sector has an important role to play in updating the commercial fleet in African countries. Safety standards need to be reviewed for all motor vehicles as well as related safety equipment such as seat belts, and helmets for motorcycles and bicycles – and law enforcement needs to be strengthened to ensure compliance with international standard/good practices, including regulations related to import of vehicles.

For the Pillar 3, the ARSAP [10] established one expected accomplishment: Road Worthiness of Vehicles and five activities.

Although vehicle safety is a key component for road safety and that according to the [11] only two countries in Africa applies the 7 vehicle safety standards with priority of the UN, 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 braking 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 Pillar 3 was the one with the least 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

Standards and rules governing the provision of a license to private, commercial and public transport drivers need to be reviewed - including the specific standards for high risk younger drivers. Legislation and institutional framework regarding driving schools, instructor training and testing, driver testing, driving license system, and passenger transport need to be reviewed and modernized.

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 (3 activities); use seatbelt (7 activities); Drink-driving and driving under the influence of other drugs (4 activities); Use of mobile phone while driving (1 activity); and Speeding (1 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, which indicates that the people who reported perceive this as a fundamental aspect to improve road safety. According to [11], 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. In order for road safety legislation to be effective, there needs to be sustained and strong 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, the percentage of implementation of some activities 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 due to: 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

Post-crash care diagnostic should evaluate capabilities and practices of emergency services to road crash victims on national roads, including: on-site management; transport of victims to health facilities; emergency and trauma care services for the injured; coordination and financing of stakeholders involved in post-crash services. Post-crash management is a long-term effort. It needs to consider on-site care, transport of the injured to appropriate medical facilities, and the trauma care of the injured. Emergency communication systems, equipment and training for accident on-site care, and an ambulance service along priority roads are the first steps to be taken. The role of private sector is again paramount here.

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 most reported, with 4 and 3 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 1 and 4 per activity. Therefore, there is no evidence of a relationship between the number of feedbacks and the implementation of Pillar 5 activities in Africa.

6. Discussion

There are several specific aspects highlighted not covered by the ARSAP, like a general lack of roads maintenance, informal transportation, the problem of journeys to/from schools, 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 proposed coming both from the survey and from *SaferAfrica* evidences.

6.1. Unsafe school travel

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

6.1.1. Why it's a road safety problem? Unsafe travel to and from school has been highlighted by 9 respondents (about 12% of total sample) as a major 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, see for instance [12]

The World Health Organisation shows that globally motor vehicles are the number one cause of death for children and young adults under the age of 29 [11]. 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 [13]. 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 school children travel to schools by walking [14]. Another option adopted is using 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.

6.2. Informal transport

Informal transport refers to typically unregulated (or poorly regulated) and unconventional transport modes operating with flexible fares, schedules and routes [15]. The service is usually provided by a variety of transport means:

- Motorized two- and three-wheeler, 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 [16].
- In several African countries, informal transport is characterized by low quality of vehicles, but it also provides cheap, accessible and door-to-door solutions for the urban poor.

6.2.1. Why it's a road safety problem? According to Kenya Capacity Review, Boda-Boda motorcycles account for 24% of the fatalities and this proportion seems to be rising [17]. The road safety issues concerning informal transport have been pointed out by 6 respondents in the following countries: Benin, Cameroon, South Africa, Guinea, Uganda, Ethiopia.

Informal transport provides an alternative to public transport. The Guinean survey participant says 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 [18].

Most drivers are however low-skilled younger men who migrated to cities from the countryside [15], [19] 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 and a dangerous and a poor-quality service.

In Guinea, as the *operating conditions are so far outside the existing regulatory framework (training and holding of the A1 or A licence, holding a transport authorisation, compulsory wearing of*

helmets for drivers and passengers, prohibition of overcrowding, etc.), thus causing major physical accidents.

6.3. Limitations

Among the limitations of the present study, the small amount of feedback in 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 type of 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.

7. Conclusions

This study presents the main objectives of crowdsourcing in the *SaferAfrica* project and provides a comparison of the results from crowdsourcing and the ARSAP activities.

The Road Safety sector requires actions from all fronts: political leaders, leaders of companies and public agencies, policy makers and academics in a position to influence change in a local, regional or national government, corporate or social setting, also with the financial support of multilateral organizations and development banks. Collecting opinions and highlights on road safety needs from African citizens could be a useful support for assessing general road safety needs at 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 in a country from residents, closer to the existing issues.

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, not included in the ARSAP, were highlighted by several respondents, these are: unsafe school travel and informal transport.

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

Concerning informal transport, the proposals coming from the crowdsourcing tool suggest the development of an affordable public transport system for 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.

These results were also confirmed by several studies performed found in the literature.

Further aspects highlighted, not addressed by the ARSAP, were like 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 that are worth being considered in a future update of the plan for the 2021-2030 decade.

Acknowledgements

The study presented in this paper is part of the research project titled “*SaferAfrica* -Innovating dialogue and problems appraisal for safer Africa”, funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No. 724029.

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