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**ELEMENTS OF EVALUATION FOR THE AFRICAN ROAD SAFETY  
ACTION PLAN 2011-2020, BASED ON SAFERAFRICA PROJECT**

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**Abstract:**

The challenges of road safety in African countries are huge. Appropriate and proactive public policy measures are needed to avoid the deterioration of the situation and to save a considerable number of lives.

UNECA has put in place a pillar-based action plan and an evaluation of interventions taken by the African countries for encouraging the implementation of new measures. At the mid-term of the action plan, the expected results are not forthcoming or even disappointing.

The SaferAfrica research, whose objective is to contribute to the improvement of the road safety situation in Africa, consisted, among other things, in defining a framework for updating the evaluation of the UNECA action plan. With a detailed questionnaire, respondents filled out numerous items that allow for an updated assessment of the policies implemented.

This contribution details the followed approach and methodology. It provides also an analysis of the outcomes and some recommendations. The results show progress on some pillars, but little improvement on many others. In the end, the challenges remain unresolved and require that effective policies should be implemented.

**Keywords:** Road safety, Management, Policy analysis, Africa

**1 Introduction**

According to the *Global Status Report on Road Safety 2015* (WHO, 2018), “road traffic injuries claim more than 1.35 million lives each year and have a huge impact on health and development”. Africa is especially concerned with the current road safety situation by bearing a huge burden characterized by a high number of fatalities and injuries. The picture is worse when such numbers take into consideration the ratio per inhabitant or per vehicle. Using WHO classification of regions, there has been a further deterioration in road fatality rates in the WHO Africa region from 24.1 fatalities per 100,000 populations in 2010 to 26.6 fatalities per 100,000 in 2013. Over the same period, there was a further improvement in road fatality rates in the

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WHO Europe region. Road trauma in Africa is expected to get worse, with fatalities per capita projected to double over the period 2015-2030 (Small and Runji, 2014).

The road safety target in the 2015 UN Sustainable Development Goals (SDG's) and African Road Safety Action Plan to reduce by 2020 the number of global deaths and injuries by 50%, was a major challenge, which implied some innovations and new initiatives in terms of public policy for making this ideal a reality. For Africa, this would mean a saving of more than 130.000 deaths per year and a reduction of millions of injuries per year.

This contribution proposes an evaluation of the UNECA action plan focusing upon the different road safety pillars. The results provided through this contribution are an outcome from a European research project, *SaferAfrica*, in which the authors were involved. The aims of this research were to better characterize the current road safety situation and to provide an overall assessment of African countries road safety situation. In this respect, the general objective of *SaferAfrica* project consisted also in creating favourable conditions and opportunities for effective implementation of actions on road safety in African countries, by setting up a Dialogue Platform between Africa and Europe.

The present contribution is based upon especially *SaferAfrica* work package 3 dealing with the road safety management and policy issues. The main objective of this contribution is to present the outcomes of the assessment of the implementation of Action Plan 2011–2020 and to contribute to the final evaluation of the Action Plan by UNECA. UNECA realized a mid-term evaluation of that plan (AU-UNECA, 2015a, 2015b).

Section 2 presents the current approach of the UNECA action plan. Section 3 provides an overview of the methodology for assessing the action plan. The last sections deal with analysis and recommendations.

## 2 Current Road Safety Actions in Africa

Several actions are already on-going. They rest upon important policy documents, which elaborate a strategy framework for African countries. Indeed, the African Union (AU) and United Nations Economic Commission for Africa (UNECA), on the basis of the UN “2011-2020 a Decade of Action for Road Safety”, defined the African Road Safety Action Plan 2011-2020 (ARSAP). ARSAP is organized around five pillars for which specific objectives are associated. The pillars are the following:

- **Pillar 1: Road safety management**, to build institutional capacity, improve capacity building at local government level and to develop local research and road safety monitoring.
- **Pillar 2: Safer roads and mobility**, to properly consider road safety in infrastructure development and to introduce or improve facilities for pedestrians and other vulnerable road users.
- **Pillar 3: Safer vehicles**, to review safety standards for vehicles and safety equipment.
- **Pillar 4: Safer road users**, to review standards and rules for the provision of license to private, commercial and public transport drivers and strengthen the law enforcement.
- **Pillar 5: Post-crash response**, to improve capacities in term of on-site care, transport of the injured to appropriate medical facilities, and trauma care.

The main outcomes of the mid-term evaluation of UNECA action plan show a poor road safety management, some major defects and lacks of regulation concerning the construction and maintenance of road infrastructures, some important issues with the quality of the vehicles fleet and its maintenance. While some regulations are in place, most part of time they are poorly enforced and obeyed by the road users. Some important regulations are lacking. The post-crash

response shows also some insufficiencies in terms of capacities and capabilities for ensuring the care of the road crash victims and the rehabilitation of victims.

### **3 Methodology for the assessment of implementation of the Action Plan and of regional instruments**

In 2015, UNECA conducted a Mid-term Review of the Action Plan in order to assess the road safety progress made by each country. Instead of providing a new and different evaluation, we chose to take into account the recommendations from this mid-term evaluation and to proceed to their assessment through the sending of a questionnaire. Thus, it implied to go through the five pillars of road safety proposed by UNECA action plan and its main items. The main advantage to follow the same framework is to be able to share a common reading grid. Indeed, there is a need for assessing the efforts accomplished by the countries and taking into consideration the evolution at different levels since the last review.

The work package 3 proposes a complete assessment of the road safety situation by using a SWOT and PESTEL (Bougueroua and Carnis, 2016; FME, 2013a, 2013b) analysis completed at different geo-political scales (continental, regional economic communities/corridors and country), which makes possible to identify the weakness, the strengths, the assets and the dynamics a country faces for the different levels of intervention in the road safety field according to the political, economic, social, technical, environment and legal dimensions.

The SaferAfrica approach of the assessment of application of the Action Plan and of regional instruments could be undertaken at three different layers: institutional, organisational and operational. This approach in terms of layers rests upon a broad scientific literature and some applications to road safety issues (Hill and Hupe, 2009; Carnis, 2017). The first layer can be defined as the institutional layer; this concerns the systemic considerations and constraints that road safety issues have to deal with (e.g. economic development, social and demographic constraints, geographic issues, etc.). The second layer is concerned with the organizational dimension: how road safety is organized, what organizations are involved, etc. The last level deals with the operational dimension: how road safety actions are concretely implemented, how they work at the local level. Each layer benefits from some interactions with the two others. For instance, the vote of a new regulation is not limited to the definitions of new enforcing obligations; it can also specify the body in charge of the enforcement and the conditions of enforcement, etc.

The approach through the layer has to be completed with some other characteristics of the environment of the country or some interventions. Indeed, their nature and their contributory impact have to be taken into consideration. Consequently, each layer has to be coupled with SWOT and PESTEL approaches (FME, 2013a, 2013b). The SWOT matrix makes possible to identify the contributory effect of the measure or a phenomenon, while the PESTEL matrix characterises the nature of the latter, that is to say it belongs to the legal dimension or the economic field, etc.

This framework permits to assess how road safety subsystems works and facilitates the identification of failures. The objective is to assess the effectiveness and consistency of road safety solutions adopted by countries committed to the Action Plan. Assessing other instruments will provide inputs for completing the analysis, understanding whether and how different instruments are correlated to the Action Plan, and addressing standards (e.g. on vehicles, road design, traffic, public transport, overloading, hazardous materials, etc.).

The present contribution will focus for constraints of writing space only on the main outcomes related to the UNECA grid of assessment and consisting in an updated assessment of the

UNECA action plan. This methodological framework is then applied to each pillar of the ARSAP (road safety management, road user, roads, vehicles and post-crash response).

Data were collected through questionnaires distributed by SaferAfrica Work Package 4 (Thomas et al., 2017; Folla et al. 2018) and international databases (mainly WHO data). Data collected are based mainly on material provided by questionnaire forwarded to local contacts in African countries. Data is issued from a questionnaire, which was distributed to the people in charge of road safety or acquainted with road safety issues in the different African countries. For some countries, no answer was collected while many contacts were taken. For some countries, two or more answers were collected, so that it was possible to check the validity of information. For others, only an answer was provided. A specific process of data validation was proposed and realized by partners in order to reinforce quality of the information. First, that information is completed with WHO databases. When the information was not available from the mentioned sources, local experts completed the information. Second, abnormal answers could be detected by a careful analysis of the consistency of answers (only no or yes answers): one country was excluded from the study. Second, when the rate of answers was too low, the data could not be considered (another country was excluded from the analysis). Lastly, all the questionnaires were reviewed from an expert to check the validity and the quality of answer, which could drive to minor corrections (some items could have been misinterpreted by the respondent).

The question of reliability of the data is a very difficult question for all countries in the world and particularly in Africa, because it needs financial and human resources and of course priority on the political agenda of Governments. Even in main international databases (IRTAD, WHO) some information should be considered with caution. Data also differ depending on the source. For example, in few countries, national data and international database information for the same country may differ. Our material, even completed by data issued from international databases, was still questionable in few cases.

So, based on these choices the matrix per pillar was then filled for 21 countries. Results are presented here only for 19 countries. Two countries were excluded because of the unreliability of some data. The limited number of countries emphasizes the huge issue related to the availability of data and the consideration given to road safety stakes in African countries.

Then data are extracted for the analysis of each pillar to be able to assess the mid-term ARSAP recommendations. The analysis sustains 21 items for which 230 sub-items were collected through the questionnaire. Finally, it has been possible to produce some scores per pillar which permits to calculate a score for each item and each pillar related to ARSAP recommendations. Each sub-item gives 1 point for a full application and 0.5 point for a partial application. Some sub-items are valued at 0.5 points, especially for very specific measure. All details are available with the full report (Mignot et al. 2018).

Table 1: Global Performance Outcomes for the 5 pillars

Pillar	Management	Safer roads	Safer Vehicles	Safer road user behaviour	Post-crash
Items	6	4	4	3	4
Sub-items	57	60	45	46	22

#### 4 Analysis per Pillar and recommendations

The overall analysis was realized through the five pillars of the ARSAP identifying main items of Road Safety governance and evaluating main recommendations issued from the ARSAP mid-term review (AU-UNECA, 2015a, 2015b).

The analysis per pillar can be completed by a broader approach combining all five pillars for the 19 countries, so that it is possible to point out performance per country on all dimensions. Table 2 presents global performance scores for the 5 pillars.

Table 2: Global Performance Outcomes for the 5 pillars

GLOBAL SCORE	Benin	Boswama	Burkina Faso	Cameroon	Congo	Gambia	Guinea	Kenya	Lesotho	Malawi	Mali	Mauritius	Senegal	Sierra Leone	South Africa	Swaziland	Tanzania	Togo	Tunisia
Pillar 1 : Road safety management (max 57)	29,5	19	44,5	12,8	35	9	10	21	27	30	38	30	22	27	43	21	21	22	31
Pillar 2: Safer roads and mobility (max 28)	11,2	4,4	21,5	9,6	17,4	2,1	4,4	2,6	11,4	7,5	14,3	12,6	3,4	2,4	11,9	2,5	4,5	3,4	8,5
Pillar 3 : Safer vehicles (max 25)	9,8	5,8	18,8	13,3	12,6	2,3	5,8	4,2	11,5	8,9	12,7	12,3	8,7	6,4	15,3	6,5	6,5	8,8	12,8
Pillar 4 : Safer road users (max 28,5)	10,8	12	23,5	17,7	19,8	8,7	6	10,5	15,5	13	17,7	16,5	8,5	11,5	16,3	7,5	9,5	7,3	16,8
Pillar 5 : Post crash response (max 17)	3,2	11,2	4,3	7,9	13,7	4,2	1,1	3,4	10,0	5,2	10,1	8,4	5,1	3,2	4,4	3,3	2,9	3,2	8
Total score pillar evaluation (max 155,5)	64,5	41,2	108,3	53,1	84,8	26,3	26,2	38,3	65,4	59,4	82,7	71,4	42,6	47,3	86,5	37,5	41,5	41,5	77,1

Table 2 shows that

- Five countries are associated with quite good results at the global level and for all pillars (Burkina-Faso, Congo, Mali and South-Africa). Burkina-Faso shows a good performance;
- The majority of the countries have not a good performance (less than 50% of good performances on items) and have clearly to progress. For these countries, main efforts have to be focused upon first on pillars 2 and 5, and then on pillar 3, pillar 1 and pillar 4;
- Four countries present the lowest results (Gambia, Guinea, Kenya and Swaziland). For these four countries, scores appear very low for all pillars and for each pillar for the most of items (Table 3).

It is also possible to highlight the items on which efforts have to be done. Table 3 shows Global Performance Outcomes and Items for the five Pillars and the 19 countries. This overall view highlights clearly the best or worst performances per Item.

Table 3: Global Performance Outcomes and Items for five Pillars and 19 countries

	Benin	Botswana	Burkina Faso	Cameroon	Congo	Gambia	Ghana	Kenya	Lesotho	Malawi	Mali	Mauritius	Senegal	Sierra Leone	South Africa	Swaziland	Tanzania	Togo	Tunisia
Pillar 1: Institutional organization and coordination																			
Pillar 1: Policy formulation and adaptation																			
Pillar 1: Policy implementation and funding																			
Pillar 1: Monitoring and Evaluation																			
Pillar 1: Scientific support, knowledge, capacity building																			
Pillar 1: Key road safety resources																			
Pillar 2: Institutional dimension																			
Pillar 2: Organizational dimension and monitoring																			
Pillar 2: Key road safety resources																			
Pillar 2: Road Safety Data & Measures																			
Pillar 3: Institutional dimension																			
Pillar 3: Organizational dimension and monitoring																			
Pillar 3: Key road safety resources																			
Pillar 3: Regulation																			
Pillar 4: Institutional dimension																			
Pillar 4: Organizational dimension and monitoring																			
Pillar 4: Key road safety resources																			
Pillar 4: Regulation																			
Pillar 5: Institutional dimension																			
Pillar 5: Organizational dimension and monitoring																			
Pillar 5: Key road safety resources																			
Pillar 5: Regulation																			

Table 4 shows a synthesis of outcomes par pillar. For Pillar 1, the global performance, measured by the grand total of different items and for all the countries is below the average. It shows medium performances concerning “Evaluation of the Established/Strengthened Lead Agencies” and weak performances concerning “Improved Management of Data”. The analysis of the item “Develop/Strengthen Partnership and Collaboration” focuses only upon the involvement of NGO and the association of private sector with the road safety policy. Two items are not informed, due to limitations of the used sources (questionnaire). The general performance could be considered as quite good.

For Pillar 2, based on the data collected for the 19 countries investigated, the implementation process of ARSAP recommendations is quite slow. Except for Benin, Burkina Faso, Mali and South Africa, the level of implementation appears to be poor or very poor.

For Pillar 3, the way to assess whether African countries are incentivizing the import of safer vehicles is based on the application of standards. Those countries applying one or more standards are considered to have “incentives for the importation of safer vehicles”. However the analysis is unable to differentiate on whether the standards are applied to new- and/or in-use vehicles. Therefore, it still may be some room for improvement in those countries concerning the countries with some standards.

For Pillar 4, the interim resulted in two recommendations where, at the time of the review, little action had been taken in the area by those countries included in the interim review. More action needs to be taken in respect of child restraints, particularly to promote the use of child restraints. While there is progress in relation to educating children in safe road user behaviour, this should still be considered a priority due to the vulnerability of children as road users, particularly as pedestrians or cyclists.

Table 4: Mid-term recommendations outcomes (indicators for Pillars 1 and 2, recommendations for pillars 3, 4 and 5

	Benin	Botswana	Burkina Faso	Cameroon	Congo	Gambia	Guinea	Kenya	Lesotho	Malawi	Mali	Mauritius	Nigeria	Senegal	Sierra Leone	South Africa	Swaziland	Tanzania	Togo	Tunisia	
<b>Pillar 1</b>																					
Established/strengthened lead agencies	Red	Red	Blue	Yellow	Red	Red	Red	Red	Blue	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Blue	Red	Red	Red	Red	
Improved management of data outcomes	Red	Blue	Blue	Blue	Red	Red	Red	Red	Blue	Yellow	Yellow	Red	Red	Yellow	Yellow	Blue	Red	Red	Red	Red	
Develop/strengthen partnership and collaboration	Blue	Yellow	Blue	Blue	Yellow	Yellow	Yellow	Yellow	Red	Blue	Blue	Yellow	Yellow	Yellow	Blue	Yellow	Yellow	Yellow	Yellow	Yellow	
<b>Pillar 2</b>																					
ARSSAP mid-term review indicators	Blue	Yellow	Blue	Yellow	Yellow	Red	Red	Red	Red	Blue	Yellow	Yellow	Red	Red	Red	Blue	Red	Red	Red	Red	
<b>Pillar 3</b>																					
Introduce incentives for importation of safer vehicles	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	
<b>Pillar 4</b>																					
Promote the use of child restraints - regulation	Red	Blue	Blue	Red	Red	Blue	Red	Red	Red	Blue	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	
Promote the use of child restraints - campaigning	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	
Establish or strengthen Road Safety Clubs in Schools	Blue	Blue	Red	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	
<b>Pillar 5</b>																					
Introducing emergency medical services coordination centres at strategic locations	Red	Green	Red	Green	Red	Green	Red	Red	Green	Red	Red	Red	Green	Green	Green	Green	Red	Red	Red	Red	
Providing fully equipped ambulances with medical supplies, and crash extraction and rescue equipment	Yellow	Green	Yellow	Red	Red	Red	Red	Red	Red	Red	Red	Red	Green	Green	Yellow	Yellow	Yellow	Red	Red	Red	
Developing capacity for long term hospital trauma care and rehabilitation	Red	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	
Health facilities along main highways with emergency medical system supplies and facilities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

For Pillar 5, “Universal 3 digits emergency telephone” is still available in the main part of the countries, but it is not in use in seven countries. For “Emergency medical services coordinating centres at strategic locations”, the item “Designated trauma care centers” of our questionnaire is used, and 10 countries are aligned with this item. For “Long-term hospital trauma care and rehabilitations”, it is approached with Hospital beds per 1000 inhabitants (WHO), the coverage of Hospital in African countries should be reinforced.

#### 4.1 Evaluation of the Mid-term Review and recommendations for Pillar 1

The global performance, measured by the grand total of different items, and for all the countries is below the average. Only 15 % of countries perform quite well, such as South Africa. Burkina, Cameroon, Lesotho, and have a good score and outcomes have to be consolidated. 40 % of the countries have a performance above the average. Benin, Gambia, Guinea and Kenya have a very low score, suggesting a complete and general administrative and institutional capacity building is necessary to obtain the first steps of progress for road safety. Finally, Malawi, Mauritius, Senegal, Sierra Leone, Swaziland, Tanzania, Togo and Tunisia present insufficient performance, which suggests a voluntary policy is required for reaching positive performance.

Concerning Evaluation of the Established/Strengthened Lead Agencies, The global picture for that item shows a medium performance. There is also an important heterogeneity among the different countries. Burkina Faso, Lesotho, Mali, Malawi, South Africa and Tanzania show a good ranking. 65 % of the countries are above the average, while 35 % show a weak score. Cameroon, Congo, Sierra Leone, Mauritius underperform. Finally Benin, Botswana, Gambia, Guinea, Kenya, Swaziland and Togo record bad performance. For other countries, evaluation cannot conclude.

Communication, better knowledge of road safety issues and appropriate funding mechanism could be improved. The most problematic issue remains the dedicated and appropriate funding.

Concerning Evaluation of the Established/Strengthened Lead Agencies, the general performance of the whole countries is quite weak concerning that item. Only 30 % of countries

are above the average. Burkina Faso and South Africa perform quite well, while Togo, Tunisia, Mali, Malawi and Sierra Leone have to improve their performance. It represents 20 % of the number of investigated countries. 40 % of them show very low score, such as Benin, Botswana, Guinea, Gambia, Kenya, Mauritius, and Senegal. 15 % of our data are inconclusive. It appears that countries manage national road safety data basis and are able to harmonize data basis and to define a baseline for road safety performance and associate research centers. However, it appears there is a true difficulty for having systematic and detailed statistic information, especially for vehicle registration. Systematic report of data faces also some difficulties.

The analysis of Develop/Strengthen Partnership and Collaboration focuses upon the involvement of NGO and the association of private sector with the road safety policy. Two items are not informed, due to limitations of the used sources (questionnaire). The general performance is quite good. Again some heterogeneity among countries can be noted.

From these above results, some recommendations can be given. First, the African countries need to strengthen the institutional framework by consolidating the current position and the prerogatives of the lead agency where it exists, and to develop and complete its fields of operation. A specific effort has to be accomplished concerning communication and more especially to allocate appropriate level of resources for promoting and enforcing road safety policy.

Those countries have to develop consistent and systematic collection of data. It requires the setting-up of robust and performant data system. It would also consist in elaborating new data collection and in making possible detailed analysis and evaluation, and ultimately in helping public bodies for designing their public policy.

Finally it is important that those countries continue cooperation with NGOs and private sector representatives where it is already at work and to sustain effort for developing further cooperation where it is partially operated or inexistent.

#### **4.2 Evaluation of the Mid-term Review and recommendations for Pillar 2**

The ARSAP for Pillar 2 focuses especially on Road Safety Audits (RSA) and Inspections (RSI). It states that 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. Based on this and the (poor) results related to this measure in the Mid-term Review, the main recommendation is to “Develop road safety audit and inspection guidelines”. Our collected data show that the implementation process of ARSAP recommendations seem to proceed quite slowly. The worse performance are identified with Benin, Burkina Faso, Mali and South Africa.

Our results confirm that road safety audit and inspection guidelines are hardly available (only in South Africa) to technicians in the selected countries, even if it must be stated that 65% of respondents did not provide any answer. Therefore, the recommendation on the adoption of guidelines for RSA and RSI is still valid.

Moreover, based on the highlighted findings, the following recommendations can be suggested:

- To establish or improve a technical structure with high capability in road infrastructure safety management providing a statutory budget and the necessary training to be fully operational and capable;
- To improve the existing crash data collection system both in terms of coverage (crashes in rural roads seem to be highly under-reported), commitment and tools; starting with an appraisal of the current data collection processes and defining the required steps to reach a sustainable and reliable system;



- To develop the required expertise and premises for establishing road safety audit and inspection procedures. This could be done for instance by involving the national or a local road authority in a pilot phase. Based on the results of the pilot phase, a strategy for wider implementation could be developed and implemented. One step beyond this would be creating a National Road Safety Auditors Accreditation System and Agency to ensure that skills and capacity is built in the country and checked regularly and transparently.

#### **4.3 Evaluation of the Mid-term Review and recommendations for Pillar 3**

Whereas vehicle inspection is very much spread in the continent, the regional deployment and the quality of inspection is questioned. Our results also highlight the issue of the vehicle age in Africa that makes essential the definition of technical criteria to admit used vehicles and how to apply them.

Any activity related to new and used vehicle compliance requires skills and knowledge for the authorities to define, implement, manage and control the appropriate schemes. Therefore, it is very much likely that training and capacitation initiatives are identified as steps forward.

Moreover, African countries have to incentive the import of safer vehicles based on the application of standards (UNECE, 2017a, 2017b): such as frontal impact, side impact, electronic stability control, pedestrian protection. While countries applying one or more standards are considered to have “incentives for the importation of safer vehicles”, it was taken into account that the answers do not differentiate on whether the standards are applied to new-and/or in-use vehicles. Therefore, it still may be some room for improvement in those countries with a positive answer.

This information may be completed with the limitation of the age of imported vehicles. Nevertheless, this data was not retrieved so far and side effects of that initiative jeopardizing road safety must be analysed.

In fact, the 3<sup>rd</sup> pillar of the Global Plan for the Decade of Action for Road Safety 2011-2020 does not contain considerations on how to manage the existing car fleet and how to ensure the suitability of vehicles once they are registered and in use. Nevertheless, the governments of African countries and other parts of the world have already identified that need and are defining and implementing provisions to ensure vehicles’ roadworthiness.

Finally, it is necessary to consider the safety of vehicles in all the stages of their life: new vehicles, used vehicles in international trade, modification of vehicles and maintenance.

We can also highlight side factors which have to be taken in account:

- To ensure the registration of all kind of vehicles, and in particular of the two- and three-wheelers because of their big impact in fatalities and injuries;
- To promote a skilled, equipped and country-wide network of workshops that ensure repair and maintenance;
- To ensure the availability of quality spare parts.

#### **4.4 Evaluation of the Mid-term Review and recommendations for Pillar 4**

Thirteen items related to safer road users were evaluated in the mid-term review of progress towards the African Road Safety Action Plan. The interim resulted in two recommendations where, at the time of the review, little action had been taken in the area by those countries included in the interim review. The recommendations were to:

- Promote the use of child restraints split into regulation and campaigning;

- Establish or strengthen Road Safety Clubs in Schools.

For the current evaluation, the WHO Global Status Report on road safety (2015, 2018) provided information on the existence of a national law governing child restraint use and this was verified independently by expert evaluation. This resource indicates that out of the 19 countries included in the current evaluation, 10 do not have a law. Concerning campaigning to promote the use of child restraints, this is only confirmed (through expert review) for Botswana and Tunisia, both of whom also have a law governing the use of child restraints.

Concerning the existence of '*compulsory / voluntary education programmes in primary / secondary schools*', the responses, in conjunction with subsequent literature review in relation to education programmes and expert review, revealed that 63% of the countries are taking some action towards promoting road safety among.

First of all, recommendations of the interim review are still relevant. For the item "Promote the use of child restraints split into regulation and campaigning", more action needs to be taken in respect of child restraints; this includes both establishing laws and promoting use. Clearly promoting the use of child restraints is difficult if no law exists governing child restraints. This should also be complemented with the introduction of regulations relating to appropriate standardised fixings for child restraints. For the item "Establish or strengthen Road Safety Clubs in Schools", whilst there seems to be progress in relation to educating children in safe road user behaviour, this should still be considered a priority due to the vulnerability of children as road users, particularly as pedestrians or cyclists. The following new recommendations are made in respect of road user behaviour, based upon the information available from the current review:

- Dedicate financial and human resources for the implementation of policies relating to road user behaviour that is aligned with some recommendations for pillar 1;
- Build capacity for monitoring and evaluating road safety interventions;
- Encourage monitoring of public acceptance of road safety measures in order to identify education and awareness campaigns to maximize effects;
- Identify the training needs for those individuals involved in road safety implementation process;
- Seat belt laws should be enhanced to include all vehicle occupants. This should be in conjunction with vehicle standards governing the fitment of seat belts in all occupant positions;
- Enhance national helmet laws to include a requirement that the helmet is fastened and meets required safety standards;
- More action could be taken in relation to road user education and campaigning potentially starting by targeting vulnerable road user groups.

#### **4.5 Evaluation of the Mid-term Review and recommendations for Pillar 5**

The mid-term evaluation of the African Road Safety Action Plan proposed four recommendations for post-crash response:

- Introduce emergency medical services coordination centres at strategic locations;
- Provide fully equipped ambulances with medical supplies, and crash extraction and rescue equipment;
- Develop capacity for long term hospital trauma care and rehabilitation;
- Develop health facilities along main highways with emergency medical system supplies and facilities.

For the item "providing fully equipped ambulances with medical supplies, and crash extraction and rescue equipment", there is no direct data. It was assumed that the "estimated % of SI

patients transported by ambulance” (WHO) is a proxy. However, while there are some equipped ambulances for the most part of countries, the major part of injured people is taken in charge by private vehicles, which are mainly not equipped to rescue the injured.

In addition to the issue of the allocation of equipped ambulances, the necessity of defining a procedure to take in charge injured people from the accident location to the first rescue station has to be highlighted.

The following recommendations identified in the mid-term ARSAP evaluation are still relevant for the coming years for African countries:

- Universal 3 digits emergency telephone;
- Long-term hospital trauma care and rehabilitations;
- Emergency medical services coordinating centers at strategic locations;
- Coverage of emergency assistance.

It is also recommended to adapt some recommendations, because they appear no more suitable or are unrealistic for the African context. Then, it is proposed to replace “Providing fully equipped ambulances with medical supplies, and crash extraction and rescue equipment” by developing a protocol for the transport of injured people whatever the location of the road accident and provide simple rules and information about the first aid kit for the people in charge or in relation with rescue activity (taxi drivers, members of associations, health associations and bodies).

First aid training is clearly an important issue, especially for commercial drivers, by-standers, and all those passing their driving-license exam.

Additional recommendations are:

- Develop relationships about strategy between health sector and road safety authorities;
- Develop an evaluation culture based on reporting procedures for fatalities and injuries, in both health and road safety sectors;
- Reinforce fatality and injury reporting linked to crash databases that link police and hospital data.

## **5 Conclusion**

This contribution proposes a mid-term review of the ARSAP and advances some new recommendations, which are important in order to improve Road Safety in Africa. It is based upon information and data basis, which are analysed through an appropriate grid related with an approach through pillars.

The question of reliability of the data is a crucial issue for all countries in the world and particularly for Africa. So, a specific process of data validation has been proposed and realized by partners in order to reinforce the quality of the information and the robustness of the analysis. Our analysis is, thus, based on inputs from questionnaires, international databases and expert’s knowledge.

This evaluation clearly highlights that ARSAP mid-term evaluation recommendations are still relevant and have to be enhanced in most African Countries for improving the road safety performance of African countries.

Although ARSAP mid-term evaluation proposes few recommendations for the pillars 3 and 4, our analysis is able to propose some additional and innovative recommendations such as:

- Develop standards for full lifecycle of vehicles (old and news);
- Promote the use of child restraints.

Two other major recommendations could be made:

- Develop consistent and systematic collection of data, in order to help public bodies for designing their public policy.
- Enforce cooperation with NGOs and private sector representatives.

The main objective of SaferAfrica project is to provide African Countries tools for their road safety policies. These recommendations have of course to be discussed with national contacts and authorities in charge of road safety in each country and with UNECA. Moreover the analysis has also to take into consideration regional contingencies and the network logic at play especially with the corridor issues and transnational flows of people and goods.

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