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SAFER AFRICA

ROAD SAFETY CURRICULUM FOR AFRICA

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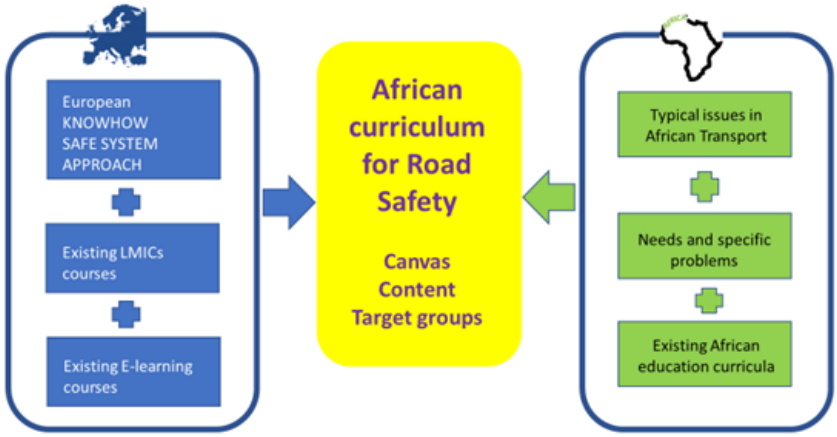
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1. Executive Summary

The specific aims of WP6 was to identify training needs and to develop capacity building programs on road safety in African countries. This deliverable will formulate the major issues for developing a curriculum for road safety experts in Africa.

The different tasks to reach the final goal of this deliverable, are summarized in the following figure



On the one hand, the available knowledge and education in Europe (but also worldwide) was gathered. On the other hand, the same was done for Africa and also the different needs and training issues were analysed.

Although we could not get information from each country or every existing high level educational institutes, there was enough material to make some analysis and conclusions.
Not in every African country, high level education for different professionals (engineers, economics, ...) includes a specific road safety module. Only at a few universities (South-Africa, Morocco, Ghana and Kenia) the curriculum for civil engineers includes a road safety module. Some institutions provide such a module as a post graduate training. A lot of African experts followed courses provided by international universities (Delft, Hasselt, ...), or organized by companies working in Africa (Renault, FedEx,...). Worldwide a lot of E-learning modules are available.
The deliverable gives an overview of the courses for Low and Middle Income countries (LMIC) and the different E-learning courses for professionals in English, French and Portuguese. -

To get a clear view on the educational needs, we developed a questionnaire (see annex 3). Unfortunately, the response was very low. Additional we made a limited literature review on the specific road safety issues in African countries. Both sources provide us with a good insight in the needs for education and training, as well as concerning the content as concerning some structural

conditions. Most surprising was the finding that E-learning modules were more preferred than the development of classroom courses.

Finally, this leads us to the development of a two level curriculum. A first level which provides a general introduction courses on the basic issues of road safety, taking into account the five pillars, defined by the WHO (WHO, 2011). These level exists of 6 modules that must be followed in its whole. Each modules consists of several sessions.
The level-2 course can be seen as a kind of specialization in one or more topics. People can chose which module they will follow. For each pillar, there is one module with several sessions defined. In the future other modules can be added. People can only follow the level-2 course, if they have succeed in the level-1 course.

Courses are offered on a E-learning platform and can be either followed on an individual basis, or as an embedded learning tool in an existing education.

The details of the modules (objectives, content, target group, ..) will be described in the manuals delivered for the training of the trainers in the next deliverable (D6.2 en D6.3).

2. Introduction

Safer Africa project aims at establishing a Dialogue Platform between Africa and Europe to improve road safety on the African continent. One of the work packets (WP6) is focused on education and training of professionals in the field of road safety, which is also one of the main recommendations of the World Report on Road Traffic Injury Prevention (WHO, 2004). Its recommendation 4 (allocate financial and human resources to address the problem) emphasis among other things on training programs across a range of disciplines for developing and implementing national road safety strategies.

In 2015, a mid-term review of the Global Plan (WHO, 2011) was conducted by the United Nations Economic Commission for Africa (UNECA). As a result, four challenges were put forward to accelerate the implementation of the action plan. The fourth was about transferring knowledge and expertise. For Small and Runji (2014) the lack of road safety education in universities and of specialized professional training, but also the lack of training standardization are the main difficulties in this area for African development.

The specific aim of WP6 was to identify training needs and to develop capacity building programs on road safety in African countries. The target group for these programs is very large and includes professional workers (in government, in the field,…) as well as future scientist in the field of road safety. By developing specific programs we must take into account two levels of education. A 'basic level – program' that could enrich the knowledge and competence of professionals like engineers, police officers,… and will help them to give more attention to road safety aspects in their daily work. A 'high level program' could be developed in function of national road safety strategies, but could be also seen, on the long term, as a start-up for the development of a specific 'road safety master degree'.

The work was based on country needs and existing training activities in African countries and courses offered by different organizations specific for low and middle income countries (LMICs). As stated by Bliss and Breen (2009), "*the challenge for low and middle-income countries will be to benefit from what has been learned and accelerate their adoption and adaptation of good practice to avoid unnecessary and unacceptably high level of deaths and injuries resulting from the evolutionary pathway taken by high-income countries*".

The actual evolution of traffic in African countries looks very similar to the one experienced by European countries some decennia ago. During that period European governments and institutions have learned, sometimes by trial and error and with a lot of mistakes, how to deal with the safety issue. Nowadays, many high-income countries are deciding their road safety actions based on the "safe system approach". This approach aims to develop a transport system that is able to accommodate human error and take into consideration the vulnerability of humans. The human limitations will be the basis for the development of the road environment and the vehicles. In this approach, the three components (vehicle, road and humans) are addressed in an integrated manner, through a wide range of interventions, with a higher attention to speed management than in traditional approaches (WHO, 2004).

This also means that the responsibility is in fact more in the hands of people who design the road system, but also on other players such as the health department, the juridical system, schools. It is in this frame work that all education and training initiatives would be placed.

The activities within this framework will be categorized according to the traditional five pillars (see below) that the WHO recommended in its Global Action Plan (WHO, 2011).

Pillar 1	Pillar 2	Pillar 3	Pillar 4	Pillar 5
Road Safety management	Safer Roads and mobility	Safer vehicles	Safer road users	Post-crash response

Although there are a lot of similarities in the traffic and safety trends between Africa and Europe, the goal of this work is not to impose the European approach as an indisputable truth. It is recognized that the traffic and transport system depends on a lot of other developments and evolutions. Besides economic and political issues and problems, also cultural aspects must be taken into consideration. Therefore it is important that every step in the development of education and training activities must be done in dialogue with local experts and key-figures.

Probably the biggest challenge in this work package concerns the question: how can the successful story of the safe system approach be adapted to the local needs and possibilities of African countries? The proposal of the different training modules adapted to the African context is an attempt to answer to this question.

1. Work plan

As stated in the Annex of the consortium agreement, the first task of this Work Package is identifying the types of knowledge and skills that road safety experts in Africa are expected to learn. This task requires the three following actions:

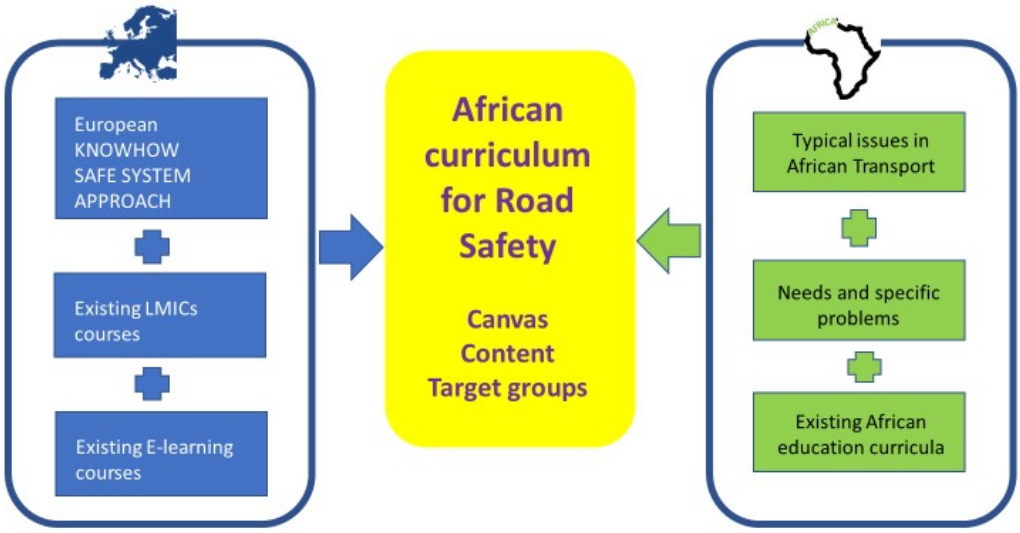
1) Analyse the differences, in terms of needs and available expertise, across Africa in order to assess the required level of differentiation.
2) Assess existing courses or training programs (in Africa and worldwide that could serve as bases for the modules; identifying gaps (in content, language, depth, etc.) for which new or adapted modules are necessary.
3) Defining a series of "required" education and training modules on road safety.

Several different steps were executed to reach these three objectives.

1) Listing all existing educations in Africa which have a possible link with road safety.
   It was also the idea to analyse their concrete curricula. Unfortunately, the level of response was very low, almost non-existing. In chapter 2, an overview of the different institutes and educations is presented, including some cautious conclusions about the available expertise in Africa.
2) Listing existing international educational programs and trainings developed for LMICs.
   In chapter 3 an analysis of the different courses is presented in order to develop a common curriculum. This curriculum must be compared with the needs, indicated by the African institutions and experts.
   At the same time an overview of several existing E-learning modules is provide, which could serve as an example or basis for the development of our own curriculum.
3) Survey of the needs on education and training in Africa.
   A questionnaire was developed and sent to experts in education in different African countries to indicate their needs for education or training programs. In chapter 4, the results of this survey will be discussed and compared with other sources.
4) Definition of a possible curriculum.
   Based on the results of the previous chapters, we will present in chapter 5 a canvas of a curriculum. It was clear from the beginning that working with E-learning modules would be the most effective way for creating substantial modules that could be used in several education programs in most of the countries.

Figure 1.1 puts all this in a more schematic view.

Figure 1.1: Schematic presentation of the work in WP6.1



The next step will be to create a few concrete modules and to create also a manual for the trainers who want to use these modules. This will be done in the coming tasks (6.2 and 6.3) in work-package 6 and will be reported in Deliverable D6.2.

2. Overview of existing education in African countries linked with road safety

2.1 Methodology

There were three primary options available to identify which tertiary level educational facilities (Universities, colleges, etc.) in African countries offered road safety engineering, transportation or traffic engineering training programmes and/or supporting courses These are:

3. An internet based search and evaluation of universities and tertiary level institutions offering civil engineering, psychology or transport economics and logistics as graduate level courses offering degrees or diploma's in traffic/safety engineering, traffic psychology, transport statistics or road safety management. The criteria for the search would be to use traffic safety keywords (engineering, psychology, management or other) featured as a subject or module in the course. Additional searches for post-graduate (or similar) training courses offered by these (or other) institutions as e-learning courses, correspondence courses, or hands-on courses would also be performed. Once these were identified these institutions would be contacted and requested for information regarding the content of the courses/training.
4. Perform a scientific search using Scopus and Google Scholar to source publications by African road safety researchers and scientists. A Limesurvey questionnaire would be used in order to contact these professionals on what concerns road safety training institutions and content of courses dealing with road safety in their respective countries.
5. Send personal partners's network of contacts in Africa with a request to complete an attached survey form requesting specific information or to complete and an internet questionnaire (via Limesurvey, Annex 2) in order to provide information regarding road safety training in their respective countries.

Given the available budget for this task, the choice relied on a combination of these three options with the initial effort being driven via the third option. Depending on the responses by the contact network of the SaferAfrica partners, limited internet searches were carried out to identify primary educational institutions and researchers dealing with road safety in Africa. These were then contacted and additional information was obtained as described previously.

2.2 Summary information on tertiary level road safety education in Africa

A total of 29 persons in 11 countries were contacted directly via email and with a request to complete the provided form or to complete the Limesurvey questionnaire.
Of this group, 7 persons responded. Two of these provided information via the attached form (Table 2.1) and 5 completed the Limesurvey form (Table 2.2). Of the group founded by the web search one person completed 3 questionnaires covering two institutions in their own country and one in a foreign country.

Country	University/College/Tertiary institution	Degree	Course
Ghana	Takoradi Technical University	Higher National Diploma (HND) Civil Engineering BTech. Civil Engineering	Highway & Transportation Engineering Highway & Transportation Eng.
	Kwame Nkrumah University of Science & Technology	BSc. Civil Engineering MSc. Road & Transportation Engineering	Highway & Transportation Engineering Road Safety.
	Kumasi Technical University	HND Civil Engineering BTech. Civil Engineering	Highway & Transportation Engineering Highway & Transportation Eng.
	Koforidua Technical University	HND Civil Engineering BTech. Civil Engineering	Highway & Transportation Engineering Highway & Transportation Eng.
South Africa	Centre for Road Safety and Transport Studies, University of KwaZulu-Natal, Durban, SA	BSc, MSc, PhD	Highways and Transportation

Table2.1: Graduate and post graduate road safety courses in Africa (email survey responses)

Respondent's country	Name of the University, school, or institution	Name/title of the degree	Name/title of the course, education or training	Other relevant information
Morocco	Mohammadia School of Engineers (Rabat)	Engineer	Traffic Engineering, Transport modelling, Road design	This Engineering school is looking for help to develop specific road safety courses to be included in the university curriculum
	Hassania School for Public Works (Cassablanca)	Master degree	Management and Operation of Transport	
	Saint Joseph University (Beirut Lebanon)	International Master Degree	Road Safety Management	Several specialisations: Road Safety engineering, Traffic behaviour,
Uganda	Eastern and Southern Africa Management Institute Uganda	Master of Business Administration Transport Economics and Logistics Management	Road and Transport Safety Planning and Management	This is taught as a course unit in the Masters Degree Course. The Institute also has short courses on Road Safety management.
Nigeria	University of Ilorin (Ilorin)	MSc; Ph.D. Economics	Transport Economics: road safety economics, education, psychology;	A student admitted into the Transport Economics specialization who takes road safety economics as his or her research interest will be asked to take readings in road safety education and traffic psychology for wider perspective
Nigeria	Kwara State University	B.Eng Bachelor of Engineering	Traffic ,Traffic System Design & Analysis and Transportation Engineering	Road Safety Engineering is proposed for Master of Engineering Degree
Ghana	University of Cape Coast	Diploma in Transport and Road Safety Management	Diploma in Transport and Road Safety Management	This training course addresses the issue of training and education of drivers in the country. It is also designed to facilitate a consolidation of university-industry

				collaboration in the mutual interest of the parties concerned as well as the country.

Table 2.2 Graduate and post graduate road safety courses in Africa (Limesurvey response)

What is evident from the additional information provided by the respondents from the Limesurvey is that road safety is in many instances being considered or is offered in the form of a short course (and therefore not as yet integrated into the curriculum). The content is uncertain but judging from some responses it is superficial and deals with aspects related to driver training and road user education. There is little evidence of graduate and post graduate courses related to geometric design, crash data analysis and statistics, road safety audit, vehicle safety, post-crash care management, traffic calming, traffic monitoring techniques, critical offence monitoring or other related road safety subjects.

In addition to these formal responses, data obtained from a survey conducted by the Delft Road Safety course for medium and low income countries revealed a number of countries which claimed to offer graduate and post graduate courses in road safety. Although the received information presented some overlap with what has been presented in Tables 2.1 and 2.2, new . However, this data also revealed a number of new countries and this is shown in Table 2.3.

Respondent's country	Name of the University, school, or institution	Name/title of the degree	Name/title of the course, education or training
Uganda	University of Makerere	Public health administration	
South Africa	University of Stellenbosch University of Pretoria	BSc; MSc PHD BSc; MSc PHD	Civil engineering, transportation engineering, road safety engineering AS above
Kenya	University of Nairobi	BSc and MSc	Civil engineering with masters in road safety
Lesotho	National University of Lesotho	Unknown	Education

Table 2.3 Graduate and post graduate road safety courses in Africa (additional sources)

The above results give an indication of the types of tertiary level road safety related education and training available on the African continent but is certainly not complete. The countries that are represented only cover four of the five geographic regions (central Africa is not being represented). From these results it seems that not all countries have tertiary level education in the field of (traffic/civil) engineering, (traffic) psychology, transport planning or transport economics and in which traffic or safety engineering, traffic safety management and road user behaviour are a standard part of the curriculum. However, looking at the results on a regional level it appears that in the four regions represented there is at least one university/tertiary institution offering graduate and post graduate level education in the fields of engineering or human sciences and in which traffic safety in some shape or form is offered as part of the course.

However we did not cover all African countries and institutes with this limited survey, the picture that emerges from this is that road safety management, road safety engineering, traffic psychology, road user education are offered in the many universities and tertiary institutions in Africa. However, the content of these has not been assessed and nor do the data reveal the scope of the subject material covered.

2.3 Potential gaps and opportunities for road safety training in Africa

The limited assessment of tertiary level education and training in Africa has indicated a number of potential opportunities for the SaferAfrica initiative. There is no immediate evidence of specialised courses being widely available to graduates or post graduates nor do any of the tertiary institutions seem to be offering specialised road safety short courses in for example road safety management, road safety audit etc. Some universities seem to have a road safety module in their (post) graduate training programmes but the content of this is not clear. To what extent this covers the field of road safety management (i.e. the institutional management functions, the interventions at road network level or the results/outcomes and covering vehicles, road users, roads and post-crash care) is unclear but should be further explored with these institutions.

What is however clear is that there is a need for further developing the content of graduate and post graduate level training in road safety at most tertiary level institutions on the African continent. There are a number of universities such as in South Africa, Morocco, Ghana and Kenya that appear to have a developed a specific curriculum for civil engineering that includes modules on road safety. It should be assessed to what degree these meet the needs regionally and whether they cover the concepts of the state of the art on road safety management and whether or not the pillars adopted in the Decade of Action are covered.

3. Overview of existing courses on road safety

In this chapter, two different overviews of several existing courses are presented. The first part is dedicated to short courses offered by international- institutes, developed for LMICs. The second part is a summary of existing E-learning modules in French, English and Portuguese on road safety and that could be useful for training and education for professionals.

3.1 Classroom courses

Several European institutions have developed courses on traffic safety and transport sciences especially developed for foreign students. In this subchapter an inventory of the different modules of these initiatives is presented.
Information was gathered on the following courses:

General Road Safety courses:

- Leading to a master degree:
  - University of Hasselt (Belgium): 'Master of transportation Science by distance learning'
  - Research Centre for Transport and Logistics (CTL) of Sapienza University of Rome (Italy): 'BeSafe, Belorussian Road Safety Network'
  - The Renault corporate foundation: 'The Road Safety Management Master's Degree Program'
- Leading to a specific certificate
  - Trafikverkksskolan in Angelholm (Sweden): 'International course in Vision Zero'
  - Delft University (The Netherlands): 'Delft Road Safety Course' and the specific program developed for Ghana.
  - BRSI-cours in Douala (Cameroon): 'Atelier de formation en sécurité routière et bonnes pratiques dans le transport'.
  - Program in Delhi (India) on transport safety. The terms and titles they use could cause some confusion in the sense that it looks like a medical course on injuries instead of road accidents

Related courses with a more specific content:

- Laboratoire d'économie des transports in Lyon (France): Certificat supérieur d'économie des transports.
- Centre interuniversitaire d'étude de la Mobilité (CIEM) in Brussels (Belgium) : Master de spécialisation en transport et logistique.
- Chalmers in Gothenburg (Sweden): Master in Automotive Engineering (MPAUT).

- School of Public Health (ULB) Brussels (Belgium): Advanced master in Public Health Methodology.

For every course, the official description of the different learning modules is presented. Most institutes have published an overview of the different sessions and modules. Some are more detailed than others, and only for the BeSafe course, we found explicit objectives and learning goals. Since it was not our goal to describe in details the content of the different courses, but only to have a broad view on the different domains, no additional information was collected.
The modules of every course were classified according to one of the 6 subjects we want to develop within the African e-learning system to be proposed:

- General introduction.
- Pillar 1: Road Safety Management.
- Pillar 2: Safer roads and mobility.
- Pillar 3: Safer vehicles.
- Pillar 4: Safer road users.
- Pillar 5: post-crash response.

The contents of some modules relate to several keywords, and could therefore be placed in different categories. For example 'biomechanics of impact' could be placed in three pillars: ('safer vehicles' and 'safer users' and also in 'post-crash care'). However, these modules are mentioned only once, and their categorization is based on the most relevant aspect of their contents. In our opinion, 'biomechanics of impact' is more related to the vehicle and the roadworthiness of them, so we placed it in pillar 3. The general idea was to give an overview of the themes that are covered by these courses, not to analyze every course on its own.
Modules that are too specific and have no link with our objectives are not mentioned in the overview. That means that for some courses, only a few modules were taken into account. This was the case for the ULB-master in public health course and for the CIEM master in transport & logistics course.

The Delft course had two versions: one organized in Delft (The Netherlands) and one organized in Ghana. For the later one, we only mentioned the different or more specific modules in comparison with the course in The Netherlands. The same approach was used for inventorying the two courses in Belarus, where they make a difference between a course for students with engineering or economical background.

The following tables present a brief overview of the topics, classified by the different pillars (terms and definitions were adapted from the original brochures).

topic	title of module	Organisation
PILLAR 1 - ROAD SAFETY MANAGEMENT		
Road safety management	ES analysis and methods	Sweden Vision Zero
	technology and intelligent transport systems	CIEM / U-Hasselt
	mobility management	U-Hasselt
	safe system approach	DELFT NL / DELHI
	RS management & policy	CTL Belarius / BRSI / Renault
ISO 39001	ISO norm on RS	CTL Belarius / BRSI
Road safety strategies, plans or targets	Vision Zero policy	Sweden Vision Zero
	Implementation & innovation processes	Sweden Vision Zero
	RS indicators and setting targets	DELFT NL / CTL / DELHI / BRSI
	effective implementation of interventions	DELFT GHANA
	Basic concepts of RS / conceptual framework	CTL Belarius / BRSI / Renault
	traffic flow	U-Hasselt
	critical risk factors	CTL Belarius / DELHI
	public transport safety	DELHI
	micro simulation models	U-Hasselt
Road safety data collection	potential risks in Africa	DELFT NL
	data collecting and analyzing	DELFT NL / CTL / DELHI / BRSI
	accident classification	CTL Belarius
	methods for evaluation of interventions / evaluation	DELFT GHANA /U-Hasselt
	research methods	Renault
	epidemiology & statistics applied to RS	Renault
Speed management	traffic calming	DELHI
Road safety policy	Safety benefits / cost effectiveness	Sweden Vision Zero / CTL
	Challenges and opportunities	Sweden Vision Zero
	RS policy in Africa	SITRASS
	Partnership public offices and private companies	SITRASS / BRSI
	Funding big projects / funding of RS interventions / fund raising	SITRASS / DELFT NL / CTL / Renault
	Policy for a region / policy and planning	SITRASS / CTL / Renault
	Transport and sustainable development	CIEM
	Politics, the law and sociology of transportation	CIEM
	RS as an individual, economic, social and health problem	DELFT NL / DELHI

	Cost of RS measures and crashes	DELFT GHANA
	evidence based decision making	CTL
	legislative issues	CTL / DELHI
	economic models for policy	CTL
	legal and ethical considerations	DELHI
	RS and the media	BRSI

Table 3.1: Modules of existing international courses for MLI-countries situated in Pillar1

topis	title of module	Organisation
PILLAR 2 - SAFER ROADS AND MOBILITY		
Road Safety Audits	human factor design	Sweden Vision Zero
	RS audits	Renault
	road design	Sweden Vision Zero / BRSI
Road safety inspections	audits & inspection	CTL / BRSI
	identification of road sections with high accident concentration	CTL / BRSI
Safe System	road and traffic engineering	DELFT NL
	road infrastructure management	CTL / Renault
Land use planning	Urban planning and transport	DELHI
	secure urban development	Renault
Safety impact assessment		
Road restraint systems		
Roadside safety		

Table 4.2: Modules of existing international courses for MLI-countries situated in Pillar2

topic	title of module	Organisation
PILLAR 3 - SAFER VEHICLES		
Safer vehicless	vehicle Vision Zero/vehicle RS engineering	Sweden Vision Zero/ DELFT GHANA
	human factor design / biomechanics of impact	Sweden Vision Zero / DELHI / Renault
	vehicle dynamics	Chalmers
	automotive engineering projects	Chalmers
	active safety	Chalmers
	vehicle and traffic safety	Chalmers / Renault
	speed impact / vehicle crashworthiness	CTL / DELHI

	freight transport	U-Hasselt
Technical maintenance inspection	control on vehicle charge	BRSI
Vehicle regulation harmonization		

Table 5.3: Modules of existing international courses for MLI-countries situated in Pillar3

topic	title of module	Organisation
PILLAR 4 - SAFER ROAD USERS		
Road safety education	road user behaviour	DELFT GHANA / DELHI / Renault
	effectiveness of education	DELFT GHANA
	behavioural influences	U-Hasselt
	campaigning	BRSI
	Modification of the behaviour of road users	Renault
Road safety risk factors: helmets, alcohol, seat belts, speed	vulnerable road users	DELFT NL / DELHI / BRSI
	drinking and driving	DELFT GHANA
	exploring human factors	CTL
	traffic and travel behaviour	U-Hasselt
	commute and professional drivers	CTL
	risk profiling	CTL
	research on behaviour measures	BRSI
Training of drivers instructors		
Training in road safety campaigns	specific elements or truck and truck drivers	BRSI
	strategies on a company level	DELFT GHANA
	work related road safety	CTL Belarius
	professional drivers and their health	BRSI
	professional drivers and workload	BRSI
Training in Enforcement	Enforcement	DELFT GHANA / DELHI
	struggle against corruption	BRSI

Table 6.4: Modules of existing international courses for MLI-countries situated in Pillar4

topics	title of module	Organisation
PILLAR 5 - POST-CRASH RESPONSE		
Post-crash emergencies	special research in emergency situations	ULB Public health
	accident scene management	Renault

	post-accident care / optimization	Renault
Prehospital care systems	principals of pre-hospital care	DELHI
	first aid training for lay persons	DELHI
Post trauma care		
Accident investigation	RS injury statistics	Sweden Vision Zero
	in-depth crash investigation	U-Hasselt / CTL
	frequency and nature of injuries	DELHI
	human tolerance to injury	DELHI
	injury severity scaling	DELHI
	cost of accidents	CTL Belarius
Accident prevention	crash prevention	CTL Belarius
Trauma rehabilitation		

Table 7.5: Modules of existing international courses for MLI-countries situated in Pillar5

3.2 E-learning modules

Several worldwide institutions have developed e-learning courses on road safety. This document presents an inventory of the most conspicuous available online road safety courses for agents dealing with road safety professionally.

3.2.1 Methodology

The web search was made in three languages (English, French and Portuguese) and according to several keywords. For the French spoken courses, both the French and Canadian Google search engines were used; and the same happened for the Portuguese spoken courses, with the Portuguese and Brazilian Google search engines. The definition of the relevant terms was also based on the five pillars, defined by World Health Organization (WHO) in the Global Plan for the Decade of Action for Road Safety 2011-2020 (WHO, 2011):

- Pillar 1 - Road safety management
- Pillar 2 - Safer roads and mobility
- Pillar 3 - Safer vehicles
- Pillar 4 - Safer road users
- Pillar 5 - Post-crash response

You can find the corresponding keywords in annex 4 in the three searched languages.

For each course the following data were collected:

- NAME
- WEB ADRESS
- COUNTRY OF ORIGIN

- COURSE ATTENDANCE REGIME
  - Online
  - E-blended
- TYPE OF COURSE
  - E-book / videos (no feedback)
  - Formal examination after conclusion of each module
  - Discussion forum without information control
  - Discussion forum with a mentor that replies to questions
  - Discussion forum with full control of the provided information
  - Other types
- TARGET GROUP
  - Teachers
  - Managers
  - Post-crash response personnel
  - Engineers
  - Others
- LEVEL OF THE COURSE
  - Basic (coded as *1*)
  - Advanced (coded as *2*)
- ADITIONAL INFORMATION

The contents of a few courses relate to several keywords, and could therefore be placed in different categories. However, these courses are mentioned only once, and their categorization is based on the most relevant aspect of their contents. Nevertheless, all content aspects were collected and presented in this report.

The web search revealed several courses that were not developed for professionals in traffic safety. Their main target groups are drivers (professional or not), children and youngsters. In general their content consists of defensive driving, knowledge about traffic rules, general discussion of risk perception, raising awareness of vulnerable road users while driving, etc.. These courses were not included in the collection, since this task is focused on courses dedicated to professionals acting on road safety.

The educational level of each course was classified according to the following considerations:

- Basic or elementary (Code '1')

  Basic generic courses on road safety issues, mainly with a practical focus for specific problems solution, but without a theoretical background.
- Advanced (Code '2')

  Advanced level courses on road safety, either focusing on specific problems or presenting a global overview, with a comprehensive theoretical background discussion on the issues offered. These courses are mainly intended for a target group with previous road safety knowledge or experience. Most of them are presented in a post-graduation format.

3.2.2 Discussion

A total of 49 courses were identified, of 24 in English, 6 in French and 19 in Portuguese; several courses are multilingual.

The following tables present an overview of the available courses, by language. The full information can be found in the excel file "WP6.1.A.1_e_learning courses_v7.xlsx". Keywords that did not generate a matching available course were removed.

Table 3.2 – English e-learning courses

NAME	LEVEL	COUNTRY OF ORIGIN	WEB ADRESS	ADDITIONAL CONTENTS
GENERAL KEYWORDS				
Road safety				
Online Diploma in Road Safety and Traffic Management	1	India	http://www.fireandsafetyforum.com/online_course/diploma/Road_Safety_Management.html	Road safety management Road safety data collection
Global Road Safety Online Training – Pilot	2	USA	https://www.public-health.uiowa.edu/iprc/grs/	Road safety data collection Road safety policy
Introductory Course on Road Safety Fundamentals	2	USA	http://www.hsrc.unc.edu/apply-now-road-safety-fundamentals/	Road safety management Road safety data collection Road safety risk factors: helmets, alcohol, seat belts, speed
PILLAR 1 - ROAD SAFETY MANAGEMENT				
ISO 39001				
ISO 39001 Course – Road Traffic Safety	2	Pakistan	http://www.omni-academy.com/course/iso-39001-road-traffic-safety/	Road safety Road safety data collection
Road safety strategies, plans or targets				
How to Develop a Pedestrian Safety Action Plan	2	USA	http://www.pedbikeinfo.org/training/gettraining_dpsap.cfm	Road safety Road safety management
Pedestrian Safety Workshop: A Focus on Older Adults	1	USA	http://www.rsa.unc.edu/psw/	Road safety management
Road Safety Legislation Course	2	USA	http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-international-injury-research-unit/training/road-safety-legislation.html	Road safety Post trauma care
Global Road Safety Leadership Course	2	USA	https://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-international-injury-research-unit/training/global-road-safety-leadership-course.html	Road safety management Road safety policy Safer vehicles Post trauma care
PILLAR 2 - SAFER ROADS AND MOBILITY				
Road Safety Audits				
Road Safety Audits	2	USA	http://www.citeconsortium.org/courses/RSA.html	-
Land use planning				
CIVITAS Integrated Planning Thematic Group - Tools for better urban mobility planning	1	Germany	http://capsut.org/events/tools-for-better-urban-mobility-planning/	Road safety policy
Urban Transport Roadmaps	1	Germany	http://capsut.org/events/urban-transport-roadmaps-webinar/	Road safety policy
TRB Webinar: Applications of Adaptive Lighting in Roadways	1	Germany	http://capsut.org/events/trb-webinar-applications-of-adaptive-lighting-in-roadways/	-
Roadside safety				
Utilities and Roadside Safety	1	USA	http://www.pdhonline.com/courses/c273/c273_new.htm	Road safety management Accident prevention
PILLAR 4 - SAFER ROAD USERS				
Training of drivers instructors				
Driving instructor training	2	UK	https://www.theaa.com/driving-school/driving-instructor-training	-

Training in Enforcement				
Drunk Driving course	1	USA	https://www.policeoneacademy.com/wp-content/uploads/2017/05/PoliceOne-Academy-Course-Catalog-May2017.pdf	Road safety risk factors: alcohol
Traffic Stops & Safety	1	USA	https://www.policeoneacademy.com/wp-content/uploads/2017/05/PoliceOne-Academy-Course-Catalog-May2017.pdf	-
PILLAR 5 - POST-CRASH RESPONSE				
Post-crash emergencies				
Emergency Vehicle Operations Course	1	USA	https://www.v-academy.com/product/le_1310-emergency-vehicle-operations-course/#.WYMrxoQrKUk	-
Prehospital care systems				
Safe Transport of Children in EMS Vehicles	1	USA	https://hscssl.unm.edu/EM/PED/emsc/training/SafeTransport/Part1/Intro.html	-
Post trauma care				
Certificate of trauma informed care	2	Australia	https://www.australianonlinecourses.com.au/product/certificate-of-trauma-informed-care/	-
Trauma Sciences	2	UK	http://www.qmul.ac.uk/postgraduate/taught/coursefinder/courses/121561.html	-
Accident investigation				
Crash Investigation (1 & 2)	2	USA	http://sps.northwestern.edu/program-areas/public-safety/programs/crash-investigation.asp#	Road safety data collection Training in Enforcement
Collision Investigation	1	Canada	https://www.cpkn.ca/fr/course_collision_investigation	Road safety data collection Training in Enforcement
Accident prevention				
Road Traffic Injury Prevention and Control in Low- and Middle-Income Countries	2	USA	http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-international-injury-research-unit/training/courses-in-injury-prevention/free-online-training/index.html	Road safety Road safety strategies, plans or targets Road safety policy
Strategies to Prevent, Reduce, and Mitigate Bus Collisions	1	USA	http://capsut.org/events/strategies-to-prevent-reduce-and-mitigate-bus-collisions/	Road safety strategies, plans or targets
Trauma rehabilitation				
Master of rehabilitation counselling	2	Australia	http://sydney.edu.au/courses/master-of-rehabilitation-counselling	

Table 3.3 – French e-learning courses

NAME	LEVEL	COUNTRY OF ORIGIN	WEB ADRESS	ADDITIONAL CONTENTS
GENERAL KEYWORDS				
Road safety				
Test your road safety knowledge *Testez voz connaissances en securité routiére*	1	Canada	https://testdeconnaissances.saaq.gouv.qc.ca/	-
PILLAR 2 - SAFER ROADS AND MOBILITY				
Land use planning				
Challenges and mobility issues *Challenges et enjeux de la mobilité*	2	France	https://www.fun-mooc.fr/courses/MinesTelecom/04015S02/session02/about	Road safety data collection
PILLAR 4 - SAFER ROAD				

USERS				
Road safety education				
Online Road Safety Training Platform *Plateforme de formation sécurité routière en ligne*	1	France	http://formation.education-securite-routiere.fr/	Road safety
PILLAR 5 - POST-CRASH RESPONSE				
Accident investigation				
Investigation and reporting procedures for accidents *Procédures d'investigation et de déclaration en cas d'accident*	1	France	https://eazysafe.fr/project/procedures-de-declaration-en-cas-daccident/	-
Accident prevention				
Police and road accidents: prevention measures *Policiers et accidents de la route: mesures de prévention*	1	Canada	https://www.cpkn.ca/fr/course_officer_collision	-
Roadworks signalizer *Signaleur de chantiers routiers*	1	Canada	https://aqtr.com/formations/nos-formations/signalisation-chantiers-routiers/signaleur-chantiers-routiers-attestation	-

Table 3.4 – Portuguese e-learning courses

NAME	LEVEL	COUNTRY OF ORIGIN	WEB ADRESS	ADDITIONAL CONTENTS
GENERAL KEYWORDS				
Road safety				
High Course in Traffic Safety Technology *Curso Superior de Tecnologia em Segurança no Trânsito*	2	Brazil	http://www.unisul.br/wps/portal/home/ensino/graduacao/seguranca-no-transito#?unidade=23	Road safety management; Road safety strategies, plans or targets; Data collection; Road safety policy; Post-crash emergencies; Accident investigation; Accident prevention
PILLAR 1 - ROAD SAFETY MANAGEMENT				
Road safety management				
Road management *Gestão em estradas e rodovias*	1	Brazil	https://www.certificando.com.br/cursos/gestao-em-estradas-e-rodovias.html	Road safety
Traffic management *Gestão de Trânsito*	2	Brazil	http://fenasdetran.com/cursos-ead/curso-de-gestao-de-transito-ead	-
PILLAR 2 - SAFER ROADS AND MOBILITY				
Land use planning				
Urban planning for engineers *Noções de planejamento urbano para engenheiros incorporadores*	2	Brazil	https://unieducar.org.br/catalogo/curso/nocoes-de-planejamento-urbano-para-engenheiros-incorporadores	-
Urban Planning and Environment *Planejamento Urbano e Meio Ambiente*	1	Brazil	http://cursos.r7.com/Curso.aspx?id=13075	-
PILLAR 3 - SAFER VEHICLES				
Technical maintenance inspection				
Expertise in inspection and evaluation of automobiles	1	Brazil	http://inscrim.org/institucional/vistoria-e-avaliacao-de-automoveis/	-

Perícia, vistoria e avaliação de automóveis Expertise in vehicle identification *Perícias em Identificação de Veículos*	1	Brazil	https://www.buzzero.com/legislacao-e-juridico-337/curso-online-pericias-em-identificacao-de-veiculos-com-certificado-26382	-
Vehicle inspection and identification of chassis and engine adulteration *Vistoria em veículos e identificação de adulteração de chassis e motores*	1	Brazil	http://www.wsnpericia.com.br/cursos/curso-de-vistoria-de-automoveis-a-distAncia-ead	-
PILLAR 4 - SAFER ROAD USERS				
Road safety education				
Traffic education *Educação para o Trânsito*	1	Brazil	https://www.educamundo.com.br/cursos-online/educacao-para-o-transito	-
Training of drivers instructors				
Training of drivers instructors and directors of driving schools *Instrutor / Diretor de Centros de Formação de Condutores (CFC)*	1	Brazil	https://ead.autoescolaonline.net/cursos/instrutor-diretor-cfc/	-
PILLAR 5 - POST-CRASH RESPONSE				
Post-crash emergencies				
Urgency and emergency *Urgência e Emergência*	2	Brazil	https://www.cursosabeline.com.br/curso-urgencia-e-emergencia	Prehospital care systems
Urgency and emergency *Urgência e Emergência*	1	Brazil	https://www.cursosgratisonline.com.br/saude/urgencia-emergencia	-
Post-graduation in urgency, emergency and ICU *Pós-graduação em Urgência, Emergência e UTI*	2	Brazil	https://www.uninter.com/pos-graduacao-ead/curso-urgencia-e-emergencia/	Prehospital care systems
Nursing care in urgency and emergency *Assistência de enfermagem em urgência e emergência*	1	Brazil	http://www.ibacbrasil.com/cursos/cursos-de-enfermagem/emergencia-e-cuidados-intensivos-na-pratica-da-enfermagem	Prehospital care systems
First Aid in Traumatic Emergencies *Primeiros Socorros em Emergências Traumáticas*	1	Brazil	https://www.educaedu-brasil.com/curso-de-primeiros-socorros-em-emergencias-traumaticas-cursos-57603.html	Prehospital care systems
Prehospital care systems				
Prehospital care *Atendimento pré-hospitalar*	1	Brazil	https://www.buzzero.com/medicina-e-saude-352/enfermagem-361/curso-online-atendimento-pre-hospitalar-com-certificado-7394	Post-crash emergencies
Prehospital care *Atendimento pré-hospitalar*	1	Brazil	https://www.portaldecursosrapidos.com.br/cursos/atendimento-pre-hospitalar--aph-.html	-
Accident investigation				
Expertise in road traffic accidents analysis *Perícias em Acidentes de Trânsito*	2	Brazil	https://www.buzzero.com/legislacao-e-juridico-337/curso-online-pericias-em-acidentes-de-transito-com-certificado-54382	-
Investigation and analysis of road traffic accidents *Investigação e análise de acidentes de trânsito*	1	Brazil	https://www.buzzero.com/outros-cursos-369/curso-online-investigacao-e-analise-de-acidentes-de-transito-com-certificado-61001	-

At this stage, only a broad view on course availability on the different domains was intended. Nevertheless, the description of some well-organized courses deserves to be detailed:

- **E-learning Diploma in Road Safety and Traffic Management**
  (http://worldsafetyforum.com/Courses/course_description.php?show=371)

  This course is provided by the World Safety Forum. It covers the core competence topics in the field of Health Safety and Environment Management Systems as well as traffic and transportation systems.
  Attendees have three options:
  - E-learning/Online/Correspondence: Full Course: 465 hours private study
  - Regular-Blended Program: Full Course: 180 hours Classroom Training + 3Day Practical + 300hrs Private Study
  - Regular Programs: Full Course: One Year classroom training, including Project, Seminar, Practical, Research etc., focused to Fresher Graduates to provide maximum exposure in the road safety field.

- **Road Traffic Injury Prevention and Control in Low- and Middle-Income Countries**
  (http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-international-injury-research-unit/training/courses-in-injury-prevention/free-online-training/index.html)
  This course is promoted by the Johns Hopkins International Injury Research Unit, and is composed by seven modules:

  1: Fundamentals of Road Traffic Injury Prevention

  2: Concepts in Injury Prevention

  3: Risk Factors and Choosing Interventions for Road Traffic Injuries

  4: Injury Surveillance Systems

  5: Evaluation of Road Safety Interventions

  6: Influencing Policy for Road Traffic Injury Prevention

  It is also possible to attend an optional Advanced Module: Assessing the Health and Economic Burden of road traffic injuries

- **Road safety education courses**
  (http://formation.education-securite-routiere.fr/)
  The French Ministry of Education provides some modules for school teachers to give them enough background and tools for enriching the traffic safety education in their schools.
  1) '*Culture de base en Sécurité Routière*' / Basic culture on traffic safety
     This course is promoted as a basic course for everyone who is involved in education. Attendance of this module is a mandatory pre-requisite for attendance to some other modules.
     a. Content
        i. Short history of education on traffic safety in France
        ii. Traffic safety as an integral part of safe citizenship
        iii. Specific problems for adolescents in traffic (15 -24 years old)
        iv. Accidents causes

v. Risky male behavior
vi. Older road users and possible issues related to incapacity
vii. Who are the stakeholders in traffic safety?

b. Methods

E-learning modules consist of text and illustration (pictures and videos), followed by a simple evaluation tool at the end, with a quiz and a crossword puzzle. There is no information about an official certificate. There is the possibility to contact the course developers about specific questions and to have some follow-up.

2) '*Sensibiliser au premier degré*' / Traffic safety awareness for primary school students

This course is developed for primary school teachers and follows the national official curriculum ('*Attestation de Première Education à la Route – APER*') that must be unfold in every school. To start this module, participants have to prove that they have already done the basic module 'Basic culture on traffic safety'.

a. Content
   i. The principles of organizing a road safety intervention (centered around projects to be developed during and after school hours)
   ii. Traffic Safety for kindergarten (3 – 5 years old)
   iii. Traffic Safety for first grades of primary school (6 – 8 years old)
   iv. Traffic safety for last grades of primary school (7 – 11 years old)
   v. Traffic safety for disabled children
   vi. The official program (APER)

b. Methodology

Presentation with videos and links for further reading. There is no mention to an evaluation procedure nor to certificate. Participants can ask for more information or support.

- **E-learning modules for police and emergency services**

(https://www.cpkn.ca/fr/course_catalogue)

A group of senior police officers created the *Réseau Canadien du Savoir Policier* – RCSP (Canadian Police Knowledge Network - CPKN), which developed a range of E-learning courses. Four of these courses are focused on traffic safety issues.

1) '*Policiers et accidents de la route: mesure de prévention*' / Preventing officer-involved collisions.

This program is build up on the fact that the likeliness of being involved in a car crash is much higher for police officers than to normal citizens. This course is meant for drivers but the content is focused on attitudes and awareness, rather than practicing defensive or extreme driving.

These courses are designed to engage frontline officers in a new level of road safety awareness. Focusing on risk management techniques, human factors, managing distractions, and improving self-awareness, this course helps officers to improve their ability to make good decisions while driving.

Upon completion of these courses the trainee will be able to:

i. Explain when an individual is at greater risk while driving
ii. Explain common misconceptions about officer-involved collisions

iii. Explain why many drivers underestimate the risk associated with driving
iv. Explain how human factors influence decision-making
v. Explain how to improve one's control of specific factors
vi. Explain why many drivers inherently change their driving behavior to match the amount of risk they prefer
vii. Recall the factors that influence individual risk
viii. Explain why distraction has such a negative effect on driving performance
ix. Explain how to improve one's ability to identify hazards
x. Make better decisions while driving

In this task, an extensive web search was carried out, covering three international languages (English, French and Portuguese). However, there is no guarantee that other e-courses not included in the presented tables might not be available within the defined subjects; also, courses might be available in languages not covered in the search. A summary on the availability of the courses per keyword was performed, which is presented in 3.5.

Table 3.5 – Overview of available courses

NAME	English	French	Portuguese
GENERAL KEYWORDS			
Road safety	□	□	□
PILLAR 1 - ROAD SAFETY MANAGEMENT			
Road safety management	□	□	□
ISO 39001	□	□	□
Road safety strategies, plans or targets	□	□	□
Road safety data collection	□	□	□
Speed management	□	□	□
Road safety policy	□	□	□
PILLAR 2 - SAFER ROADS AND MOBILITY			
Road Safety Audits	□	□	□
Road safety inspections	□	□	□
Safe System	□	□	□
Land use planning	□	□	□
Safety impact assessment	□	□	□
Road restraint systems	□	□	□
Roadside safety	□	□	□
PILLAR 3 - SAFER VEHICLES			
Safer vehicles	□	□	□
Technical maintenance inspection	□	□	□
Vehicle regulation harmonization	□	□	□
PILLAR 4 - SAFER ROAD USERS			
Road safety education	□	□	□
Road safety risk factors: helmets, alcohol, seat belts, speed	□	□	□
Training of drivers instructors	□	□	□
Training in road safety campaigns	□	□	□
Training in Enforcement	□	□	□

PILLAR 5 - POST-CRASH RESPONSE			
Post-crash emergencies	□	□	□
Prehospital care systems	□	□	□
Post trauma care	□	□	□
Accident investigation	□	□	□
Accident prevention	□	□	□
Trauma rehabilitation	□	□	□

The English and Portuguese searches were much more fruitful than the French one. The number of available French courses is much smaller than for the other two languages. In what concerns the courses in Portuguese, mention must be made to the fact that they are all from Brazil.
There are still some areas (keywords) not covered by an e-learning course, no matter the language:

- Road safety data collection
- Speed management
- Road safety policy
- Road safety inspections
- Safe System
- Safety impact assessment
- Road restraint systems
- Vehicle regulation harmonization
- Road safety risk factors: helmets, alcohol, seat belts, speed
- Training in road safety campaigns

In what concerns the differentiation of the courses based on their principal target group, it was possible to identify the following major groups:

- Educators and teachers
- Prevention managers and fleet managers
- Post-crash professionals (Police officers and emergency services)
- Engineers and road construction companies
- Others

The following tables present an overview of the available courses based on this disaggregation. A black X indicates the official target group; a blue X is what we assume as being a second target group for this module.

Table 3.6 – English courses according to their main target group

	Course	Teachers	Managers	Post crash response	Engineers	others
1	Online Diploma in Road Safety and Traffic Management		**X**	X		
2	Global Road Safety Online Training – Pilot	X	X	X	**X**	X
3	Introductory Course on Road Safety Fundamentals	X	X	X	**X**	X
4	ISO 39001 Course – Road Traffic Safety		**X**		X	
5	How to Develop a Pedestrian Safety Action Plan		X		**X**	
6	Pedestrian Safety Workshop: A Focus on Older Adults		X		**X**	
7	Road Safety Legislation Course		**X**			
8	Road Safety Audits		X		**X**	

9	CIVITAS Integrated Planning Thematic Group - Tools for better urban mobility planning		X		X	
10	Urban Transport Roadmaps		X		X	
11	TRB Webinar: Applications of Adaptive Lighting in Roadways				X	
12	Utilities and Roadside Safety				X	
13	Driving instructor training					X
14	Drunk Driving course			X		
15	Traffic Stops & Safety			X		
16	Emergency Vehicle Operations Course			X		
17	Safe Transport of Children in EMS Vehicles			X		
18	Certificate of trauma informed care			X		
19	Trauma Sciences			X		
20	Crash Investigation			X		
21	Collision Investigation			X		
22	Road Traffic Injury Prevention and Control in Low- and Middle-Income Countries		X		X	
23	Strategies to Prevent, Reduce, and Mitigate Bus Collisions				X	
24	Master of rehabilitation counselling					X

Table 3.7 – French courses according to their main target group

	Course	Teachers	Managers	Post-crash response	Engineers	others
1	Test your road safety knowledge *Testez voz connaissances en sécurité routière*					X
2	Challenges and mobility issues *Challenges et enjeux de la mobilité*		X		X	
3	Online Road Safety Training Platform *Plateforme de formation sécurité routière en ligne*	X				
4	Investigation and reporting procedures for accidents *Procédures d'investigation et de déclaration en cas d'accident*			X		X
5	Police and road accidents: prevention measures *Policiers et accidents de la route: mesures de prévention*			X		X
6	Roadworks signalizer *Signaleur de chantiers routiers*					X

Table 3.8 – Portuguese courses according to their main target group

	Course	Teachers	Managers	Post-crash response	Engineers	others
1	High Course in Traffic Safety Technology *Curso Superior de Tecnologia em Segurança no Trânsito*	X	X	X		
2	Road management *Gestão em estradas e rodovias*				X	
3	Traffic management *Gestão de Trânsito*	X	X		X	X
4	Urban planning for engineers *Noções de planejamento urbano para engenheiros incorporadores*		X		X	
5	Urban Planning and Environment *Planejamento Urbano e Meio Ambiente*		X		X	
6	Expertise in inspection and evaluation of automobiles *Pericia, vistoria e avaliação de automóveis*					X
7	Expertise in vehicle identification *Perícias em Identificação de Veículos*					X
8	Vehicle inspection and identification of chassis and engine adulteration *Vistoria em veículos e identificação de adulteração de chassis e motores*					X
9	Traffic education					X

	Educação para o Trânsito					
10	Training of drivers instructors and directors of driving schools *Instrutor / Diretor de Centros de Formação de Condutores (CFC)*	**X**				
11	Urgency and emergency *Urgência e Emergência*			**X**		
12	Urgency and emergency *Urgência e Emergência*			**X**		
13	Post-graduation in urgency, emergency and ICU *Pós-graduação em Urgência, Emergência e UTI*			**X**		
14	Nursing care in urgency and emergency *Assistência de enfermagem em urgência e emergência*			**X**		
15	First Aid in Traumatic Emergencies *Primeiros Socorros em Emergências Traumáticas*			**X**		**X**
16	Prehospital care *Atendimento pré-hospitalar*			**X**		
17	Prehospital care *Atendimento pré-hospitalar*			**X**		
18	Expertise in road traffic accidents analysis *Perícias em Acidentes de Trânsito*			**X**		
19	Investigation and analysis of road traffic accidents *Investigação e análise de acidentes de trânsito*			**X**		

4. Demands and needs of African countries concerning education in road safety

The definition of a good education and training program should be based on the specific situation of each country, according to its particular needs and opportunities and not only on a theoretical framework.
This chapter presents an overview of the specific needs and demands of some African countries, which was elaborated according to three different sources:

- The literature review, with a general view of the most important issues of the African traffic situation. These problems could be useful to determine the content of some of the modules in the curriculum.

- The questionnaire that was developed for WP4 and in which a few questions were centred on education and training. Although it was not possible to gather responses from every African country, we got a useful overview of existing trainings initiatives for several different professionals.

  A specific questionnaire (see Annex 3) was developed within WP6 to have a more precise view on the educational needs on a high level. Unfortunately the level of response was very low. The update of the contact list of the experts in Africa is something that could contribute to increase the number of responses.

4.1 Important issues on Traffic Safety in Africa

According to the Global Status report on Road Safety 2015 of the World Health Organization (WHO, 2015) the fatality rate of the African continent is nearly 3 times higher than the one in Europe. The expectation for the coming decade is not optimistic: the fatalities per capita in 2030 could be the double of the present rate. The increasing motorisation on one hand and the low economic grow on the other hand are the mean causes for this evolution (Chen, 2009). At the same time, the World Bank (World Bank, 2004) specifically warned for the possible collateral damage on health of air pollution in road transport. This is already an issue in Europe, where, over the last two decades, the number of fatalities due to car accidents has strongly decreased, but where the number of fatalities due to air pollution has increased by 11%. This could become also a problem in African countries knowing that most of the cars are wrecked vehicles coming from Europe (Chen, 2009).

Although the general trends concerning accident causes in Africa are similar to these in western countries, it is possible to identify some differences.

1) The risk for ***pedestrians*** is far more important in Africa (WHO, 2013). According to several publications (Vander Sluis, 2002; ASIRIT, 2006; Chen, 2009; Breen et al., 2013) this is caused by the lack of specific infrastructure for the vulnerable road users and the mixed functions of roads (e.g. transportation, market, …).
2) Although a lot of countries have specific laws on speeding, driving under the influence, drivers' licenses, and some regulations on vehicle road-worthiness and safety protection, the ***enforcement*** of these rules is inadequate (WHO, 2013). Several explanations are brought forward for this phenomenon.

a. Police force does not have the tools to do enough enforcement activities (Chen, 2009), or did not have sufficient training (ASIRIT, 2006). In some regions, police officers are very 'selective' in their enforcement and make 'fake-violations' to gain a normal income (WHO, 2013).
b. As a result of this, road users are not complying to traffic rules (Laraqui, 2011; WHO, 2011), which makes traffic behaviour very unpredictable. More educational measures could be helpful (Croix-Rouge, 2007).
c. Also enforcement of other rules (on car safety and maintenance) is lacking (WHO, 2013; Cheng, 2009).
d. The existing road safety agencies (like National Road Safety Councils) have sometimes not enough power to make laws, are missing resources (Cheng, 2009), and do not have integrated all the necessary disciplines or have missing links with other important players (World Bank, 2014).
e. Cheng (2009) also suggests that in some regions a culture fatalism could also be an obstacle to rule compliance.

3) It is possible that a non-negligible part of the fatalities in traffic are not the direct result of the crash, but are due to the lack of adequate ***rescue and medical care*** (WHO, 2013; Cheng, 2009; Croix-Rouge, 2007).
4) ***Road infrastructure*** lacks a general view, usually with no planned approach (Van der Sluis, 2002) and is mostly only perceived from driver's point of view. This is similar to what happened in high income countries in the previous century.

This brief description of the most critical issues of traffic safety in Africa, gives us a first start for educational activities. For each pillar we will indicate learning demands, formulated as questions. In table 4.1, we will also give a reference of a publication in which the learning demand was identified.

Pillar 1 **Road Safety management**	• How can the role of a RS agency gain more power? (Cheng, 2009) • How can this agency get more founding? (Croix-Rouge, 2007) • How can we integrate different information from different agency to gain a more reliable database? (Bhalla, ed. 2014) • How can we develop a concrete plan? (Breen et al., 2013) • How can we make good evaluations of our measures? (Airey, 2014)
Pillar 2 **Safer Roads and mobility**	• How can we execute audits and safety inspection on infrastructure? (WHO, 2011) • Which low-costs safety engineering measures can be used? • How can we implement the principles of a safe system approach in the actual infrastructure? (Van der Sluis, 2002) • How can we make our corridors safer? (Breen, et al. 2013)
Pillar 3 **Safer vehicles**	• How can we organize vehicle inspection on a reliable way? (WHO, 2011; Van der Sluis, 2002) • How can we define the definition of 'vehicle road-worthiness' taking into account the economic situation? (Cheng, 2009) • How can we reduce the number of imported vehicles from Europe? (Cheng, 2009)
Pillar 4 **Safer road users**	• How can we improve the compliance with traffic rules? (WHO, 2011) • How can we organize a low cost enforcement plan? (Cheng, 2009) • How can we improve the education of (professional) drivers? (Laraqui, 2011; Croix-Rouge, 2007) • How can we install a fitness to drive assessment, taken into account the limited resources in medical staff? (Laraqui, 2011) • How can education on traffic safety for youngsters be implemented? (Croix-Rouge, 2007)
Pillar 5 **Post-crash response**	• How can we organize a good chain of post-care and emergency care? (WHO, 2013) • What could be done for people with a permanent injury after a crash? (World Bank 2014)

Table 4.1 demands for education based on general problems in road safety in Africa.

4.2 Existing training on road safety in African countries

As already stated before, the questionnaire of WP4 included a few questions on road safety training and education, namely:

- B33 - Existence of training plans designed to support the national road safety program
- B48 - Existence of multidisciplinary courses on road safety provided by universities of other institutions.
- B49 - Existence of specialized courses for future professionals in road safety.
- B50 - Existence of further-training for professionals involved in road safety

In this chapter a first analysis of the responses per region is presented. In order to facilitate this analysis, countries were grouped on a geographical basis into: North Africa, West-Africa, Central Africa, South Africa and East-Africa.

The level of response was rather low. Overall, it was possible to collect 29 responses for 21 different countries. However, not all replies included answers for the specific questions mentioned above. Figure 4.1 presents an overview of the countries that replied the questionnaire.



Figure 4.1 – Countries which have replied to the questionnaire

4.2.1 North Africa

This region is composed by eight countries: Algeria, Egypt, Libya, Morocco, Sudan, South Sudan, Tunisia and Western Sahara (see also Figure 4.2).

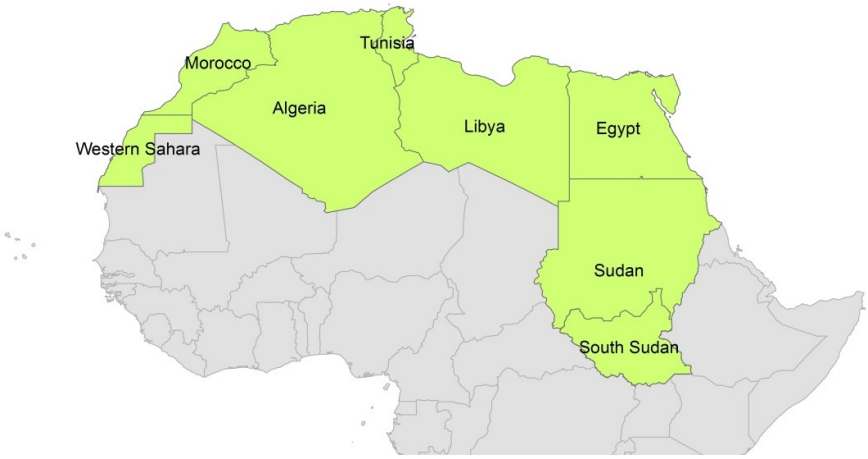


Figure 4.2 – Countries from North Africa

The level of responses was very low, only three persons of two countries (South-Sudan and Tunisia) filled in the WP4 questionnaire, and none of them sent information about the training and education on road safety.

4.2.2 West Africa

The region of West-Africa includes the following countries: Benin, Burkina Faso, Cote d'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Mauretania, Niger, Nigeria, Senegal, Sierra Leone and Togo (see also Figure 4.3).

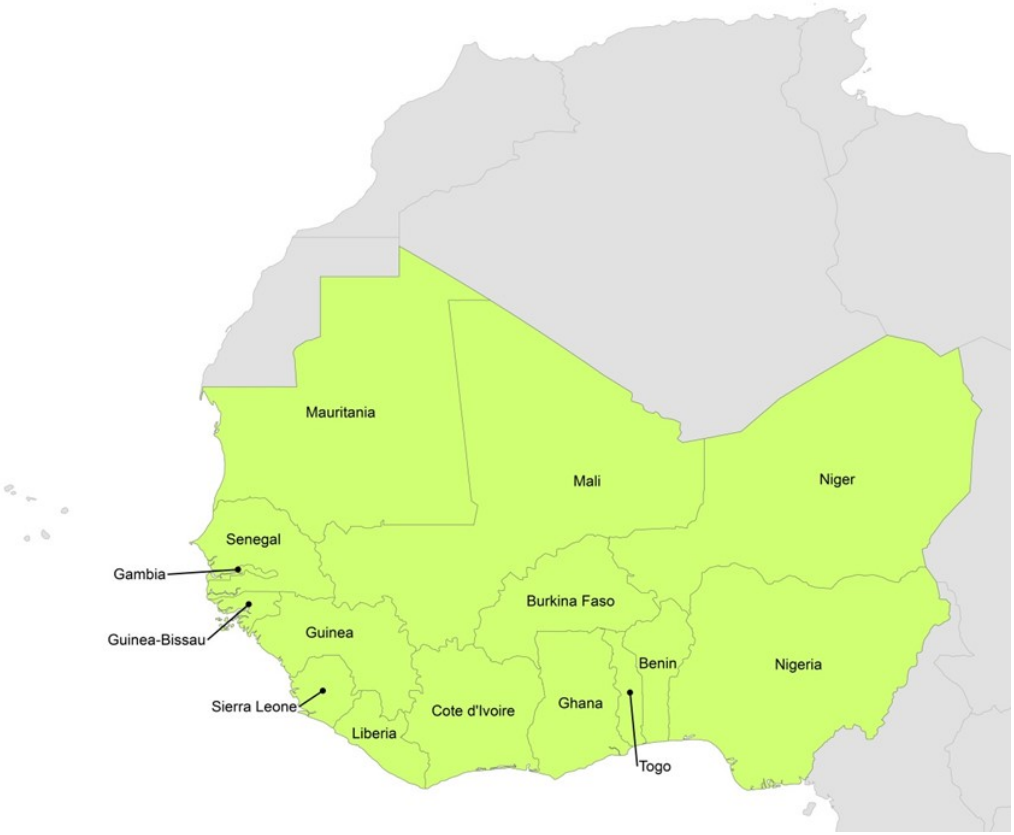


Figure 4.3 - Countries from Western Africa

It was possible to collect 13 answers to the questionnaire from nine countries: Benin, Burkina Faso, Gambia, Guinea, Mali, Nigeria, Senegal, Sierra Leone and Togo. The summary is presented below:

- Existence of training plans designed to support the national road safety program

  Burkina Faso, Guinea, Mali and Nigeria stated that their trainings are organized by the national institute working on traffic safety.

  Nigeria also mentioned that they work together with international institutes for this purpose.

  The respondents of Gambia, Senegal and Sierra Leone also indicated that there are training initiatives in their country, but they gave no further information.

- Existence of multidisciplinary courses on road safety provided by universities or other institutions

Benin, Nigeria and Togo stated to have some universities with multidisciplinary courses on road safety.

In Benin, such a course has started in 2016 for undergraduate students.

In Nigeria and Togo such courses exist, both for undergraduate as for post-graduate students, but the respondents gave no further information.

- Existence of specialized courses for future professionals and further-training for professionals involved in road safety

Table 4.2 presents an overview of the existence of specialized courses for professionals in West Africa, disaggregated by level (basic or advanced) and target (urban planners, road engineers, teachers, enforcement officers, driving instructors, health personnel, or others).

Table 4.2 Specific road safety education for professionals in West-African countries

	Basic education	Further-training
Urban planners	Burkina Faso – Nigeria – Togo	Togo (internships by Senghor students with the police, road transport department, road safety division)
Road engineers	Burkina Faso – Mali – Nigeria – Togo	Benin – Burkina Faso – Nigeria – Togo
Teachers	Burkina Faso – Gambia – Nigeria – Togo	Burkina Faso – Gambia – Togo
Enforcement officers	Burkina Faso – Mali – Nigeria – Togo	Gambia – Nigeria – Togo
Driving instructors	Burkina Faso (also driving examiners)	Burkina Faso – Nigeria – Togo
Health personnel	Gambia – Nigeria	Burkina Faso – Gambia – Nigeria – Togo
Other	Benin (students from ENAM) -	Togo, but no information about target group

4.2.3 Central Africa

The region from Central-Africa includes the following countries: Angola, Cameroon, the Central African Republic, Chad, Congo, the Democratic Republic of the Congo, Equatorial Guinea, Gabon, San Tomas and Principe (see also Figure 4.4).

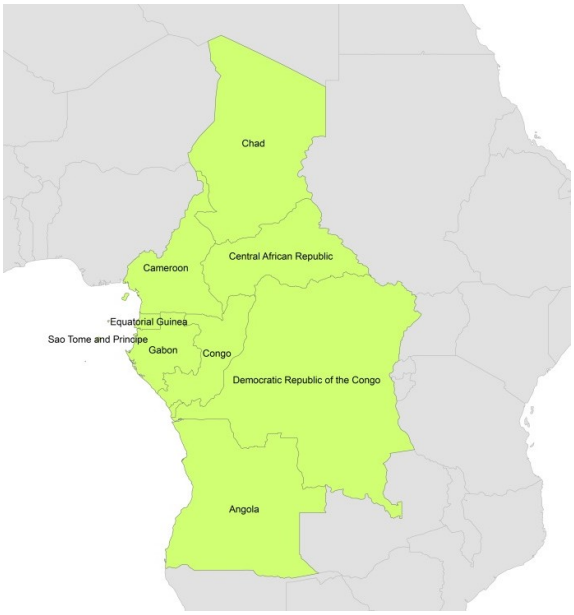


Figure 4.4 - Countries from Central Africa

It was only possible to collect 3 answers to the questionnaire from two countries: Cameroon and Congo. The summary of their replies is presented below:

- Existence of training plans designed to support the national road safety program

  Cameroun and Congo stated to have a training that is designed to support the national road safety plan, which is based on the actual needs and validated by scientific institutes.

- Existence of multidisciplinary courses on road safety provided by universities or other institutions

  No information provided.

- Existence of specialized courses for future professionals and further-training for professionals involved in road safety

  Cameroon stated that there are no further-training courses available in the country. Nevertheless there have been some international projects providing specific courses on road safety the last years.

On the contrary, Congo has a multidisciplinary course on road safety, a specialized training and further training for all specific road safety professionals

4.2.4 South Africa

This region includes the following countries: Botswana, Lesotho, Mauritius, Namibia, South-Africa and Swaziland (see also Figure 4.5).

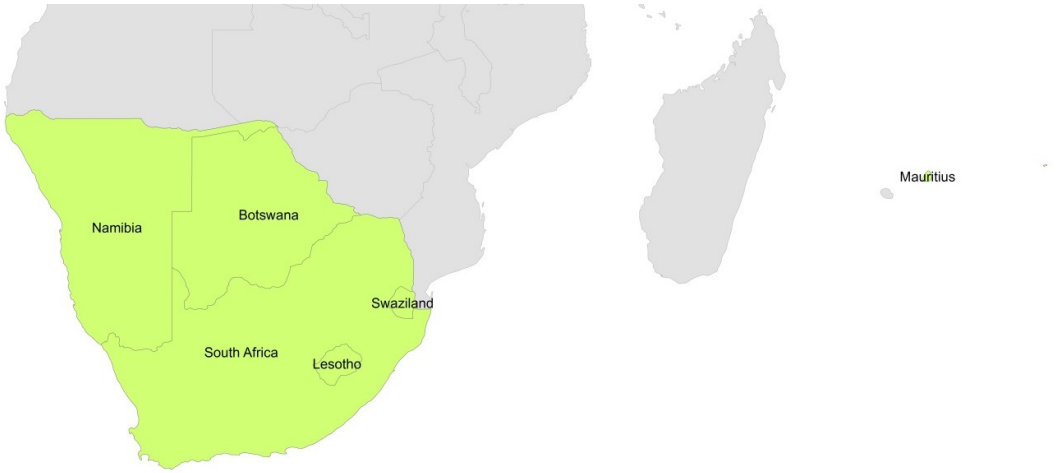


Figure 4.5 - Countries from South Africa

It was possible to collect six answers to the questionnaire from all countries, except Namibia. The summary of their replies is presented below:

- Existence of training plans designed to support the national road safety program

  Botswana, Lesotho and Mauritius indicated they have a specific training course on road safety, based on their national road safety plan. There are all based on specific needs, but only the training in Mauritius is also validated by a scientific institute.

- Existence of multidisciplinary courses on road safety provided by universities or other institutions

  South-Africa has a multidisciplinary course both for under- and upper graduates.

- Existence of specialized courses for future professionals and further-training for professionals involved in road safety

  South-Africa and Mauritius have also specialized basic and further training for different professionals. There is also a specific course for vehicle examiners in South-Africa.

4.2.5 East Africa

This region includes the following countries: Burundi, Djibouti, Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mozambique, Rwanda, Somalia, Tanzania, Uganda and Zambia (see also Figure 4.6).



Figure 4.6- Countries from East Africa

It was only possible to collect four answers to the questionnaire from three countries: Kenya, Malawi and Tanzania. The summary of their replies is presented below:

- Existence of training plans designed to support the national road safety program

  Kenya and Malawi referred the existence of training programs developed on basis of the national road safety plan, but didn't add any additional information on it.

  Tanzania has developed a training course for improving the national safety plan, but it is not implemented due to scarcity of funds.

- Existence of multidisciplinary courses on road safety provided by universities or other institutions

  No information provided.

- Existence of specialized courses for future professionals and further-training for professionals involved in road safety

  Malawi mentioned that the specific training or educational programs are not available in the country.

  Tanzania offers specialized courses on the basic education level developed for urban planners, engineers, teachers, enforcement officers and health professionals, but not for driving instructors.

4.2.6 Conclusions

It is difficult and probably unwise to draw conclusions on these limited responses. Besides not all the questionnaires were filled in entirely. Ten respondents gave no answers to question on education and training. Sometimes we saw different answers from people of the same countries. And last, but not least, viewing some comments and by comparison items in the same questionnaires, we have

the impression that some items were not clearly understood by the respondents. So we must be very careful to draw pertinent conclusions from these limited forms. During the next steps of the tasks in WP6 (developing E-learning modules, developing train-the-trainer-programs, …) we will on a more continuous basis get information on these issues.

Nevertheless, it was possible to identify some trends that could inspire the program of further actions on training and education:

1) Thirteen countries indicated that they have or are trying to develop a specific educational program, based on the national road safety plan. That is a promising fact, although we have no insight in the content or target groups. At the same time, this program was only established and/or validated by a scientific institute in five countries.
2) Five countries indicated that their universities provide multidisciplinary courses on Road safety, both for under and post graduate students. This could mean that most of the mentioned training is developed a specific module integrated in a broader education for a specific profession like engineers, social scientists, …
3) In general it looks that educational modules on road safety are more present in the basic education of professionals, but only in a few countries organized as a further-training.
4) In only one country (Burkina Faso) there is a basic educational program for driver instructors. In 4 other countries there is only a further-training.

4.3 Specific needs and demands for training and education provided by African education experts

Despite we send the questionnaire to more than 25 persons in different African countries, we got only 6 responses: 1 from Ghana, 2 from Algeria, 1 from Egypt and 2 from Burkina Faso.

Beside the responses on the questionnaire, we got some comments from Jean-François Wounba from Cameroon and also, thanks to Hans Godthelp, we got some insight in the responses on a questionnaire of the Delft Road Safety Course. In total twelve persons involved in road safety gave their reflections on road safety courses. Countries that are involved are: Uganda, Central African Republic, Morocco, South Africa, Ghana, Kenya, Lesotho and Nigeria.

Although the responses are very limited and certainly not representative for all countries and for all African experts and/or high level educational institutions, it was possible to identify some tendencies.

4.3.1Conclusions concerning the methodology and context

Emphasis must be put on the local situation and problems in each country or region.
Most of the respondents expressed, in one way or another, the idea to develop more tailor-made courses or modules. Several reasons are behind this wish. The specific situation in each African country, more specific problems like the enormous impact of two-wheelers, the existing road infrastructure that is based only on cars, the non-implementation of existing laws,… make a specific course content necessaire.

At the same time, there is already a group of high educated people, both in the educational system as in the government, who are ready to bring road safety education to a broader group of

professionals and in a higher level. A collaboration between these local experts and European experts, with a focus on local issues is not only possible, but also enriching for both parties.

Although a specific high-level course on traffic safety is wanted, more needs are noted to organize road safety courses for different professions.
Road safety is a on its own a multidisciplinary expertise. A lot of different professions work on aspects of traffic and transportation: road engineers, police officers, schoolteachers, etc. In their normal curriculum, no much attention is given to the specific items of road safety. It could be a good strategy to make road safety a part of it.
This demand is not only applicable for the education of new professionals, but also for further training (continuous learning system) specific modules must be developed.

The need of a train-the-trainer course.
To make it possible to implement road safety issues in several educations and trainings, more people must be educated to give this kind of courses. There is limited number of road safety experts in some countries (due to the different international training courses). Not all these experts have the necessary background to organize specific courses and training. A train-the-trainer program could offer some support.

A little more preference is given to e-learning modules.
In comparison with classroom courses, the development of e-learning modules and the creation of foreign internship experience are the most wanted initiatives for the Safer Africa project. The development of E-learning courses could be in contradiction with our first, and probably most important principle, namely to adapt the content on the specific situation. This would be a major challenge in the development of the modules.
Secondly, an on-the-job training, or a project-learning system is also seen as a good and fruitful approach.
Maybe these preferences are the result of the idea of a tailor-made course and the possibility of knowledge exchange between local and European experts.

The development of a policy on road safety training.
Some of the respondents suggested the necessity of creation of a regulatory framework to implement modules on road safety in the different educations of professionals. The implementation of a specific road safety education may not depend on the voluntary of some professors, or the coincidence that there is a road safety expert present (local or international). When there is an obligation to ensure this kind of education, it's achievement is facilitated by the existence of a road safety leading organization, and by the adequate support of the government, both in terms of organizational structure and fundas allocation.

4.3.2 Concerning the content

A general education on the principles of Road Safety for a broad spectrum of professionals.
The African experts see a need to implement in their educational programs a basic introduction course on traffic safety. In some countries this is already partially implemented.
Although the specific needs in each country are a little bit different, and the interpretation of some themes could be confusing, the most important aspects for this type of course could be described as follows:

- Basis concepts of traffic safety
- Making plans, strategies, developing measures, based on data
- Evaluation of its own actions

- Human behavior and psychologic factors involved in traffic safety

More specific education and training to enforce the safety of road infrastructure.
The fact that road infrastructure is mostly focused on motorized vehicles and the absence of specific facilities for vulnerable road users is very common, emphasizes the need of more audits and inspections of road infrastructure from the road safety point of view. This was confirmed by the responses received, which clearly indicated the need to enforce the education of engineers, urban planners and politicians with several topics on road safety. A further specialization of themes from the general introduction, enriched with more specific training in safety audits and inspections, policy and developing plans, actions and their evaluation on a larger (nationwide or regional) plan, was also highlighted. Additionally, mention was also made on the problem of homologation of products.

Developing knowledge on tools for implementations of legislation.
Most countries have already developed some pertinent laws on traffic safety, as well as for education, road users' behavior, and vehicle technical control. Nevertheless, the implication of all these laws and regulations is very poor. For a part, this is due to a general lack of compliance with laws, but also the organization and the education of the police forces. Besides this, cultural and economic factors play also a role in this problem. More knowledge and training for people involved in education (primary and secondary schools, driving schools, …) and for people involved in enforcement (police officers and magistrates) are necessary.

Specialized training in data collection and analysis.
Most countries have already a system for accident data collection. But they lack uniformity, sometimes even in one country between different agency (police, gendarmery, hospitals).
Data collection is the start, but to develop good plans, systematic analysis and comparison with other data is needed. Both topics need further education and training for research experts.
In this context the need for education in evaluation and the development of an observatory is mentioned.

Capacity for developing a road safety police in a country.
Besides the difficulty to implement laws and rules, the global management on road safety is not in every country on a high level. Politicians and civil servants need some training for the development of action plans on a more regional and country level, and its subsequent evaluation.
More knowledge on the organization of managing structure (how to create a leading agency, how to integrate the different players in one decision making policy, how to organize an emergency care system, …) is needed.

5. Plan to support traffic safety education in African countries

5.1 Structure and canvas

One of the objectives in Work Package 6 is the definition of a series of required education and training modules on road safety that could be incorporated into existing or new high level courses. This could form the basis for the creation of a curriculum for a full master's course, or could be used in training actions for professionals.

To achieve this objective, the consortium will develop a canvas of different E-learning tools categorized in two levels:

1) First level: a more general and basic introduction on the different elements of traffic safety.
2) Second (expertise) level: a series of different modules on specific issues, building on the knowledge and skills achieved in the first level.

These two levels will be defined according to several aspects like target group, structure, content, outcome, … An overview is shown in table 5.1.

	Level 1	Level 2
Objective	To give a general introduction on traffic safety issues	To give a more specialized education/training on specific issues
Access	No strict criteria, (First year) students bachelor or master in related studies, Professionals in the field of traffic safety	Criteria: have already a basic education in traffic safety (for ex. Level 1)
Structure	One basic course, with 5 or 6 sessions. An assessment after the last sessions.	Several independent courses, each consisting of minimum 2 sessions. Courses are grouped in one of the 5 pillars. After each independent course, there is an assessment
Content	Introduction on traffic safety covering the 5 pillars.	For each pillar several independent courses are developed.
Outcome	A general certificate on 'introduction course for traffic safety'	A specific certificate covering the content of the course + access to a discussion forum about the pillar in which the course is classified.

Table 5.1: overview of the differences between level 1 and level 2 courses.

5.1.1 Access

Level 1 is intended for a broad range of people who are interested in road safety issues. More specifically, the target group consists on people who are already active in road safety domains (engineering, policy, education, enforcement, amongst others) but also by who wants to have a more general overview of the field. The content of this level could also serve as an introduction

course for high level students (bachelor and master) in, for example: engineering, transport, economy, political studies, etc.

For accessing **level 2**, candidates must already have a good background on traffic safety sciences. In general, candidate users must have achieved the 'level 1-certificate', or prove that they have a robust background knowledge. For students, this can be guaranteed by their educational institute or school. For professionals, it's up to themselves to "prove" they have enough basic knowledge, which can be done, for instance through a proven curriculum on the field. Criteria must be developed and put into an easy to use system, executed by the e-learning system itself.

5.1.2 Structure

The **level 1**-course should consist on 5 or 6 different E-learning sessions which must be followed entirely for achieving the accompanying certificate. Between each session, an interval of one week will be programmed to give people time to process the content and to adapt this knowledge to their own practice. Therefore, specific propositions and questions will be formulated in order to motivate the pupil to really use the content in his practice.
Each session will also end with a questionnaire/examination, and also the new session will begin with a small recall of the headlines of the previous one. At the end of the course, the students will participate on an examination (online) to get an official certificate about this course.
We will explore the possibility to install a mentor system with local people.

The **level 2**-courses should have a different structure. Applicants can choose between different topics. For each topic they have to fulfill the different sessions before having the possibility to get a specific certificate. Between each session of the same topic, we also foresee a time interval of one week. A topic can be subdivided in two or more sessions, depending on the content and the methodology adopted. The different topics of the level 2-courses will be structured in accordance with the 5 pillars as defined by WHO's action plan for Road Safety)[1]: 1) road safety management, 2) infrastructure, 3) safe vehicles, 4) road user behavior, and 5) post-crash care.

5.1.3 General content

As said before, **level 1** is a more general introduction on Road Safety. Beside some general introductions, like 'Road Safety system approach', 'Road Safety data collection', 'Accident Causes', etc., there will also be a brief introduction on each of the 5 pillars.

[1] http://www.who.int/roadsafety/ministerial_conference/a_decade_of_action.pdf

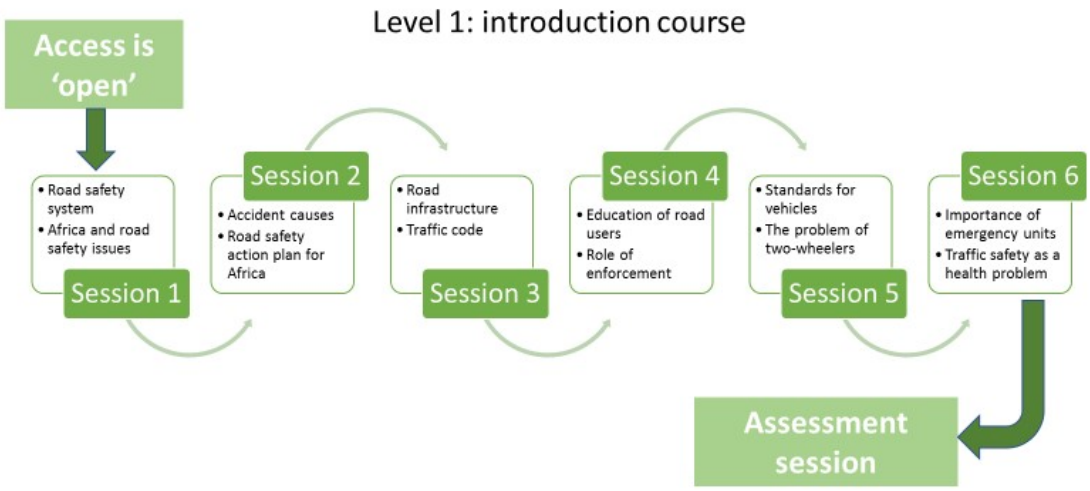


Figure 5.2: structure of the level 1 course (content is fictional and is only intended as an example).

Level 2 consists on different advanced courses with an adequate theoretical background support. Each course will be categorized in one of the five pillars. Each pillar provides a package of several independent courses. It would be preferable to have a short introduction for each pillar before getting access to a more specific module.

Content is flexible and depends on the specific needs of each country or regions. Here we give some examples:

- ***Pillar 1: Road safety management:*** 'Accident data analysis', 'From data to measures', 'Funds raising', etc.
- ***Pillar 2: Infrastructure***; 'Audit and inspections', 'How road users interpret infrastructure?', 'Black spot management', etc.
- ***Pillar 3: Safe vehicles***: 'Standards for technical inspection of cars', 'Active safety of cars', 'Charge control', etc.
- ***Pillar 4: Road User behavior***: 'Licensing systems', 'Raising awareness and campaigning', 'Effective enforcement', etc.
- ***Pillar 5: Post-crash care***: 'Mobility for handicapped people', 'Organization of emergency care', 'Incident management in an urban environment', etc.



Figure 5.3: structure of the level 2 courses (content is fictional and is only intended as an example).

5.1.4 Outcome

When a course is finished, applicants can (voluntary) subscribe for an online assessment (examination) about the content of the course they have fulfilled. If they pass the exam an official certificate for this course is provided. The idea of providing a certificate demands an organization that will manage the further rollout of the program. This would be a difficult challenge after the end of the Safer Africa project.

The **level-1-course** has only one 'official' assessment at the end of the whole course (after the last session).

In **level-2,** for each issue a separated assessment and certificate is available. After receiving the certificate, the participant has also access to a discussion forum, specific for the pillar in which he has participated. Also for this forum we need a local mentor.
We could also foresee a global certificate for the student who participated in all the level-2 courses.

5.1 Proposition of modules to be developed

5.1.1 Starting principles

To develop a basic curriculum for future African experts and professionals in the field of road safety, it is important to take into account the following principles:

- No duplication of what already exists.
  A lot of courses and E-learning modules already exist. The aim is to make a new version of

them, only when there is a necessity and a possibility to make them more linked with the specific African situation and need.

- Content must focus on local issues.
  The content of the courses must be based on the real African situation and examples that are used must be for the most, examples form African countries. The databases that exist in some African countries should be preferably used.
- The lead in the development of these courses is in the hands of a joint venture between an European and an African expert.
  The most important reason to keep this principle in mind, had to do with the previous principle. Working together between an European and an African expert can enrich the possible outcome of the course.
- Creating a balance between the 'ideal situation' and the 'available' reality.
  The content of the module must be based on what is possible and realistic in the African situation, but at the same time, encourage people to look further to create an idea of a more elaborated approach for the future.

5.1.2 Curriculum for the introduction course – level 1

Target group:
Everyone who is involved as a professional in road safety. There is no strict definition, access to these modules is wide open. The only condition is that everyone has to start with module 1 and has to follow, if wanted, the same order.

General description of each module:

LEVEL 1 – INTRODUCTION COURSE	
TOPIC	DESCRIPTION
Session 1 - MOD. 1 'problem of RS	• What's the situation in Africa? Specific context and issues. • Global view: RS as a health problem; impact on environment, on economy, on mobility…
Session 1 - MOD. 2 'road safety as a system'	• Basic concepts • Global system / safe system
Session. 2 'Management'	• Road Safety Indicators • Necessary data to realize good measures and action plans
Session 3 'safe roads for all'	• Function of roads • Safe infrastructure for vulnerable road users' • Traffic calming
Session 4 'awareness rising	• Road users and traffic laws • Question of knowledge, competence or motivation?
Session 5 'Safe vehicles'	• Roadworthiness • Technical control & maintenance
Session 6 'Post-accident care'	• Organization of emergence responses • The principal of filtering'

5.1.3 Curriculum for level 2 - modules

At this level, several modules can be developed. Nevertheless, within the scope of the Safer Africa project, we will develop only one specific module in each pillar, that can be seen as a pilot case.

Target group:
Professionals from different disciplines that are involved in road safety. Every module can be followed on his own. For each module a more specific main target group can be defined.
Access control has to be further discussed and depends on the persons or organizations who take the follow-up in hands.

The general description of the proposed modules:

LEVEL 2 – SPECIALIZED COURSES	
TOPIC	DESCRIPTION
MOD. 1 'management'	• Analysing data • Cross tables • From statistics to action
MOD. 2 'safe roads'	• Road safety audits and inspection
MOD. 3 'safe users'	• From regulation to implementation • Making rules logic • Campaigning based on cultural values
MOD. 4 'safe vehicles'	• Two wheelers safety • Helmet use
MOD. 5 'Post-accident care'	• Incident management on the spot • First aid

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7. ANNEX 1: List of Abbreviations

EC	European Commission
EU	European Union
LMICs	Low and middle Income Countries
SSTAP	Africa Transport Policy Program
UNECA	United Nations Economic Commission for Africa
WHO	World Health Organization
WP	Work Packet

8. ANNEX 2: List of Key words used to find E-learning modules

ENGLISH	FRENCH	PORTUGUESE
General keywords		
Road safety	Sécurité routière	Segurança rodoviária
Pillar 1 - Road safety management		
Road safety management	Gestion de la sécurité routière	Gestão de segurança rodoviária
ISO 39001	ISO 39001	ISO 39001
Road safety strategies, plans or targets	Stratégies, plans ou objectifs de la sécurité routière	Estratégias, planos ou objetivos de segurança rodoviária
Road safety data collection	Recueil de données sur la sécurité routière	Recolha de dados sobre segurança rodoviária
Speed management	Gestion de vitesse	Gestão de velocidades
Road safety policy	La politique de la sécurité routière	Políticas de segurança rodoviária
Pillar 2 - Safer roads and mobility		
Road Safety Audits	Audits de sécurité routière	Auditorias de segurança rodoviária
Road safety inspections	Inspections de sécurité routière	Inspeções de segurança rodoviária
Safe System	Système Sûr / l'approche systématique de la SR	Sistema seguro
Land use planning	Aménagement du territoire	Planeamento de usos do solo
Safety impact assessment	Évaluation d'impact sur la sécurité	Avaliação do impacto sobre a segurança
Road restraint systems	Dispositifs de retenue routiers	Sistemas de retenção rodoviários
Roadside safety	Sécurité des zones de récupération	Segurança da área adjacente à faixa de rodagem
Pillar 3 - Safer vehicles		
Safer vehicles	Sécurité des véhicules	Segurança de veículos
Technical maintenance inspection	Inspection technique de maintenance	Inspeção técnica de manutenção
Vehicle regulation harmonization	Harmonisation de la réglementation des véhicules	Normas de veículos
Pillar 4 - Safer road users		
Road safety education	Éducation à la sécurité routière	Educação rodoviária
Road safety risk factors: helmets, alcohol, seat belts, speed	Facteurs de risque de la sécurité routière: casques, alcool, ceintures de sécurité, vitesse	Fatores de risco de segurança rodoviária: capacetes, álcool, cintos de segurança, velocidade
Training of drivers instructors	Formation d'instructeurs de conducteurs	Formação de instrutores de condução
Training in road safety campaigns	Formation en campagnes de sécurité routière	Formação em campanhas de segurança rodoviária
Training in Enforcement	Formation à la politique criminelle de la sécurité routière / formation de contrôle de police	Formação em Fiscalização (Tispol)
Pillar 5 - Post-crash response		
Post-crash emergencies	Réponse aux situations d'urgence	Emergências pós-colisão
Prehospital care systems	Systèmes de soins pré hospitaliers	Sistemas de cuidados pré-hospitalares
Post trauma care	Soins post-traumatique	Cuidados pós-traumáticos (reabilitação pós-traumática)
Accident investigation	Investigation des Accidents	Investigação de acidentes
Accident prevention	Prévention d'accidents	Prevenção de acidentes
Trauma rehabilitation	Réhabilitation des traumatismes	Reabilitação

9. ANNEX 3: Questionnaire on learning needs (English version)

Inventory of training needs for a safer Africa.

Introduction

The *Safer Africa* project aims at establishing a Dialogue Platform between Africa and Europe, focused on road safety and traffic management issues. One of these issues concerns the **training and education** of a broad range of professionals in traffic safety. Work Package 6 is especially devoted to identify training needs and to develop capacity building programs on road safety in African countries.

This survey is therefore organized to broadly understand the needs and existing training (and educational) activities in different countries. This will provide us with the necessary information to create, in collaboration with existing African organizations and educational institutions, an educational framework, specific, well-adapted curricula and training tools.

With 'education' we mean activities that leads to an official diploma or a professional title. Training is used to indicate short courses for people who have already a certain professional title or diploma, and could be seen as a further training or specialization.

Thank you in advance for sharing us your feedback, ideas and wishes concerning these educational activities.

Aims

This questionnaire has two main objectives:

1) What are the key issues in education and training concerning road safety topics for professionals in different African countries?
2) What are the specific themes that define the African traffic situation and which are important for developing training and education?

Confidentiality

Obtaining feedback from different key persons in each country is vital to develop a good and accurate educational structure and frame work. So let your voice be heard! We would appreciate your taking the time to complete this questionnaire.

Your responses are voluntary and will be confidential. Responses will not be identified to individuals. All responses will be compiled together and analyzed as a group. Nevertheless we ask your name and your e-mail, if we have further questions to get more details about some topics. Of course, you are not obliged to fill in these data.

If you have any questions or concerns, please contact…..

Questionnaire on training needs

Section A: identification

Name	
Your country	
Your professional background/education	
Current profession	
Contact (e-mail)	

In your profession, are you involved in any specific road safety related activities? Please, put a circle around each activity you are involved. Please specify if there are other aspects we have not listed.

Data collecting/analysis	Campaigning	Communication	Education
Monitoring & evaluation	Planning & design	Infrastructure engineering	Vehicle safety
Enforcement	Research	Management	Policy making
Government lobbying	*Other:*	*Other:*	*Other:*

In which languages can education programs be provided in your country?

ENGLISH	FRENCH	PORTUGUESE	*Other:*

1.1 Section B: typical traffic safety issues

In the table on the next page, you can find a list of possible characteristics that could be important / specific for road safety in your country. Based on your experience, could you please choose the *5 most important* ones in your country, by putting a cross in the box next to the specific item?
You can also add other items that are more important than the ones we have mentioned.

Specific characteristics	
INFRASTRUCTURE	
Missing/insufficient construction standards	
Missing/poor safety audits/inspection	
Missing/poor road maintenance	
Roads are built only for cars	
Big difference between urban and rural conditions	
Extreme climate characteristics	
Lack of/poor facilities for pedestrians	
Other:	
VEHICLES	
Poorly implemented vehicle inspection	
Vehicle fleet is generally old	
Many motorized two-wheelers	
Other:	
HUMAN BEHAVIOUR	
Missing/poor driver education	
Drunk driving	
Use of mobile phones while driving	
Poor compliance with traffic rules in general	
Speeding	
Other:	
POLICY	
Lack of/poor reliable data on accidents	
Road safety is not a priority for the police	
Lack of/poor existence of official laws	
No implementation of official laws	
Bureaucracy	
Corruption	
Other:	
POST CRASH ARRANGEMENTS	

No specific trauma center for accidents	
Emergency care is far away/poorly organized	
Missing/poor education	
Other:	

Please, can you also give a brief explanation of why this 5 issues are of much importance for your country?

Your choice	Your explanation
1	
2	
3	
4	
5	

Section C: Specific education in Road Safety

Please put a cross in the correct box.

Is there any specific education in Road Safety in your country?		YES	NO
If YES At which level ?	Bachelor		
	Master		
	Post graduate bachelor		
	Post graduate master		
Are there any collaborations with foreign institutes to organize specific education courses/programs in Traffic Safety?			
Have you ever attended a traffic safety course in your country?			

In the next table we have described many different topics that could be implemented in a traffic safety course.

1) **If you have ever attended a traffic safety course in your country, please indicate in column A which of the topics that were addressed by this course by putting a "Y" (YES) in the box.**

2) **Can you indicate in column B if you were satisfied with this topic during the course by putting a "Y" (YES) if you were satisfied and a "N" (NO) if you were not satisfied.**

3) **In column C you can indicate if this topic should be included (in your opinion) in a road safety course on a university level. ("Y" (YES) if it should).**

TOPIC	A. Included in my course	B. I was satisfied with it Y (yes) or N (no)	C. Necessary Y (yes) or N (no)
Basic concepts of Traffic Safety			
Road Safety Management and organization			
Collection and analysis of crash data			
Developing strategies and measures / evaluation			
Road Safety Audit/inspection of infrastructure			
Road safety policies and plans			
Economic models for policy impact evaluation			
Safety management of vehicles			
Education / campaigning / drivers' licensing, ...			
Developing traffic rules / enforcement / reaction to offenders			
Incident management / insurance policy ...			
Psychology of the road user			
Infrastructure design			
Homologation of products			
Training of professional drivers			
Others: (please describe			

Section D: education on road safety for different professionals

Do universities or other educational institutions offer specialized courses or further-training modules (recycling) addressing professionals involved in road safety?

In the next table you will get an overview of:

- **the columns representing different professionals**
- **the rows representing different themes (the same as in the previous table) that could be addressed to in a training or course.**

Please put a "P" (PRESENT) if this course topic is present in courses for the specific professional, and a "R" (REQUIRED) if it is not present AND you think that it is necessary to develop?

TOPIC / PROFESSIONALS	URBAN PLANNERS	ROAD ENGINEERS	SCHOOL TEACHERS	POLICE OFFICERS	DRIVING TEACHER	HEALTH PERSONNEL	PREVENTION WORKERS IN COMPANIES	MAGISTRATES	POLITICIANS	CAR SAFETY ENGINEERS
Basic concepts of Traffic Safety										
Road Safety Management and organization										
Collection and analysis of crash data										
Developing strategies and measures / evaluation										
Road Safety Audit/inspection of infrastructure										
Road safety policies and plans										
Economic models for policy impacts evaluation										
Safety management of vehicles										
Education / campaigning / drivers' licensing, ...										
Developing traffic rules / enforcement / reaction to offenders										
Incident management / insurance policy ...										
Psychology of the road user										
Infrastructure design										
Homologation of products										
Training of professional drivers										
Others:										

P = already present – R = not present but required.

1. Section E: General considerations

In your opinion, what are the three most important actions / issues to improve education and training on road safety for professionals? Please explain.

Your choice Your explanation

1

2

3

Can you indicate the degree of importance of each of the following tools to be developed for improving education and training of professionals? You can score each tool from 1 to 5; where 1 means: 'very important' and 5 means 'not important'.

2. Section E: General considerations

In your opinion, what are the three most important actions / issues to improve education and training on road safety for professionals? Please explain.

Your choice	Your explanation
1	
2	
3	

Can you indicate the degree of importance of each of the following tools to be developed for improving education and training of professionals? You can score each tool from 1 to 5; where 1 means: 'very important' and 5 means 'not important'.

	1	2	3	4	5
Paper handbooks					
E-learning modules					
Web-based handbooks					
Classroom training					
Web forum and discussion panels on the internet					
On the job training					
(foreign) internship / (working as a trainee in a specific organization under supervision)					

Do you have any other remarks or suggestions?

Many thanks for your cooperation!