

TECHNICAL ASSISTANCE FOR THE CAPACITY BUILDING OF KGM FOR THE ROAD INFRASTRUCTURE SAFETY MANAGEMENT IN TÜRKİYE

EUROPEAID/140089/IH/SER/TR

ACTIVITY 1.8 STAKEHOLDER WORKSHOP
07.11.2023











AGENDA

Welcome

- Summary and Objective of the Project
- Road Safety and Safe System Approach
- Strategy and Policy Framework in Türkiye
- Information on RISM Directives
- Strategy for the Harmonization of RISM Acquis

Component 1

Studies Conducted within the scope of the Project

Component 2

Studies Conducted within the scope of the Project











PROJECT SYNOPSIS

Project Name*:	Technical Assistance for the Capacity Building of KGM for the Road Infrastructure Safety Management in Türkiye
Contract Number:	TR14SR102
EuropeAid Number:	EuropeAid/140089/IH/SER/TR
Implementation Period:	33 months
Contract Budget:	2.078.880 EUR
Provision for Expenditure Verification:	12.000 EUR











OBJECTIVE OF THE PROJECT

- To improve safety in transport, provide safer service in road network and develop institutional capacity to operate this system effectively and efficiently
 - To harmonize Turkish legislation with Directive 2008/96/EC amended with 2019/1936/EU
 - To enhance and strengthen capacity at KGM to implement road infrastructure safety management (RISM)











Rationale for the project

- Road Infrastructure Safety Management (RISM) is one of the elements to achieve the target of a 50% reduction in road casualties in this decade,
- It is a systematic approach, to make road and its environment safer for all road user, consists of tools focusing on different stages of project life cycle,
- Represented by Directive 2008/96/EC as amended, which is now being transposed in Türkiye by KGM.











SOME CRASH STATISTICS -2022

Türkiye wide number of Loss of Life: 5.229

Türkiye wide number of injured people : **288.696**

More than 14 persons lose their lives and 791 persons are injured daily due to traffic crashes

➤ Based on value of statistical life for Türkiye which is around 1.4-1.5 million USD, Daily economic lost is around 20 million USD.

KGM Network Number of Loss of Life: 2.815

KGM Network Number of Injured People: 82.141

- > Around 50 % of crashes occurred in single vehicle crash (KGM Network)
- > Around 80 % of crashes occurred plain section of the road (KGM Network)





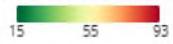






FATALITIES PER MILLION INHABITANTS

Number of people killed in road accidents per million inhabitants (2021)



Denmark: 22

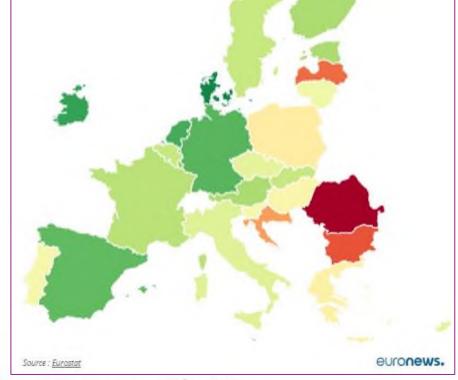
Spain: 32

EUROPEAN UNION: 42

Bulgaria: 81

Romania: 93

TÜRKIYE (2022): 62













RISM ECONOMICAL BENEFIT: CBR

Studies of the benefits of Road Safety Audits show that they save money and reduce casualties:

- UK study Audited schemes 5x more effective at reducing crashes than unaudited schemes
- UK study Implementing safety changes at the design phase saved an average of \$22,000 per site
- Denmark first year rate of return from auditing schemes 146%
- Jordan first year rate of return of 120%
- Australia Average benefit/cost ratio of audits at design stage is 36:1; of existing roads,
 6:1

Source: (Evaluation of the proposed actions emanating from Road Safety Audits – Austroads 2002) & CAREC Road Safety Engineering Manual 2018)



RISM ECONOMICAL BENEFIT: CASUALTIES REDUCTION

UK study 1: A study undertaken by Surrey County Council in the UK <u>compared the</u> <u>effects on injury accidents from 19 audited and 19 non-audited traffic schemes</u>. For sites with audited schemes, the average number of casualties dropped by 1.25 per year from 2.08 to 0.83 (60,1% CASUALTIES REDUCTION). Non-audited sites dropped by only 0.26 per year from 2.60 to 2.34

Source: (Surrey County Council 1994 in Elvik et al. 2009).

UK study 2: A statistical study made by TMS Consultancy estimates a general Casualties Reduction between 32% to 35% in the Roads where RISM is implemented Source: (TMS Practical Auditing 2015).











THE SAFE SYSTEM APPROACH

Safe System Approach principles

Humans Make Errors

Humans are Vulnerable to Injury

Responsibility is Shared

No Death or Serious Injury is Acceptable

Proactive vs. Reactive















THE SAFE SYSTEM APPROACH

The Safe System approach is a core feature of the UN Decade of Action for Road Safety 2021–2030

It recognizes that **road transport** is a **complex system** and places **safety at its core**. It also recognizes that humans, vehicles and the road infrastructure must interact in a way that ensures a high level of safety.



This **Global Plan** has been developed by the World Health Organization and the United Nations Regional Commissions, in cooperation with partners in the United Nations Road Safety Collaboration and other stakeholders, as a guiding document to support the implementation of the Decade of Action 2021–2030 and its objectives.











THE GLOBAL PLAN FOR THE DECADE OF ACTION FOR ROAD SAFETY 2021-2030

UN General Assembly Resolution 74/299 declared a Decade of Action for Road Safety 2021-2030, with the target to reduce road traffic deaths & injuries BY AT LEAST 50 % during that period.













SELF-EXPLAINING ROADS (SER)

- aim at delivering a road environment which matches users' expectation and in turn triggers safer behaviour, speed, manoeuvres, and interaction with other users.
- Limiting road types and consistent design elements of layout, road furniture and signing are important concepts of SER.











SELF-EXPLAINING ROADS (SER)

- **@General Principles of Self Explaining Roads**
 - **Easy Recognisable** (Roads that have the same function, the same speed profile, the same type of road users should look similar)
 - **Easy Distinguishable** (Roads of different categories should look differently. In other words, there should be clear differences in appearance and layout between roads that belong to different road categories)
 - **Easy Interpretable** (It should be clear from the design what the desired behaviour should be on that route. The road characteristics should induce this type of behaviour.)











FORGIVING ROADS

Aim to minimize the consequences of driver errors

Either:

- By allowing errant vehicles the opportunity to get back onto to the road to prevent any fatal or serious injury crash by leaving sufficient free space to do so, Or
- By reducing the severity of outcome in case a vehicle leaves the road











FORGIVING ROADS

Provide a Clear/Safe Zone

- Giving enough space to drivers for a recovery manoeuvre to be back to road safely,
- Which is a risk-free zone decreasing severity of run-off event in case it occurs













STOCKHOLM DECLARATION

SAVING LIVES BEYOND 2020: THE NEXT STEPS

Recommendations of the Academic Expert Group

for the 3rd Global Ministerial Conference on Road Safety New milestone in policy approach of road safety











5 PILLARS OF ROAD SAFETY

Pillar 1 Road safety Management

Pillar 2 Infrastructure Pillar 3 Safer Vehicles Pillar 4 Road User Behaviour

Pillar 5 Post Crash Care

- The 5 Pillars are the cornerstone of the 'Safe System Approach',
- The Safe System Approach assigns responsibility to all participants in the road transport system,
- lts aim is to ensure that crashes, if they occur, have the best possible outcome for those that are involved.











STRATEGY AND POLICY FRAMEWORK IN TÜRKİYE

Policy Documents:

- National Development Plans.
- Annual Presidency Programs,
- 12th Transport and Communication Forum,
- 2021-2030 Highway Traffic Safety Strategy Document
- 2021-2023 Road Safety Action Plan
- Accessible Transport Strategy and Action Plan for 2021-2025
- 2019-2023 Strategic Plan of the General Directorate of Highways











2021-2030 HIGHWAY TRAFFIC SAFETY STRATEGY

Traffic Safety Vision;

TÜRKİYE, where no loss of life and serious injuries happen due to traffic accidents

Objective: increasing traffic safety

"The main target of the Strategy Document for 2030 is reducing the loss of lives and serious injuries by 50% compared with the 2020 level "

"The 2050 target: a country where no road user is subjected to loss of life and serious injury"

Intervention 2: "Infrastructure; Road and Road Environment" by enhancing the safety standards of the infrastructure, road and road environment











THE DIRECTIVES

Directive 2008/96/EC of the European Parliament and of the Council of 19 November 2008 on road infrastructure safety management as amended by:

Directive 2019/1936/EU of the European Parliament and of the Council of 23 October 2019 amending Directive 2008/96/EC on road infrastructure safety management











DIRECTIVE 2008/96/EC

- The EU Directive 2008/96/EC introduced in November 2008 covers road infrastructure safety management and was concerned with guaranteeing a high level of road safety on the Trans European Transport Network (TEN-T).
- The Directive requires establishment and implementation of procedures relating to road safety impact assessment, road safety audits, network safety management and road safety inspections.
- The Directive also refers to appropriate training and certification for Road Safety Auditors and that crash data is of sufficient quality.











DIRECTIVE 2019/1936/EU

- © EU Directive 2019/1936 introduced in Oct 2019 amends Directive 2008/96/EC.
- This directive refers to the "Safe System Approach".
- The decision was made to amend the original directive as overall progress on reducing road deaths within the EU had stalled but it was acknowledged that progress had been made on reducing road deaths on the TEN-T network. Therefore, this Directive expands the scope to cover more of the road network.











BRIEF INFORMATION ON DIRECTIVES

Directive 2008/96/EC	Directive 2019/1936/EU
Trans European Road Network	Trans European Road Network, Motorways, Primary Roads
Road safety impact assessment	Road safety impact assessment
Road safety audit	Road safety audit
	To provide guidance for the design of 'forgiving roadsides' and 'self-explaining and self-enforcing roads' in the initial audit of the design phase, as well as guidance on quality requirements regarding vulnerable road users
Safety ranking and management	Network-wide road safety assessment
Safety inspections	Periodic road safety inspections
	Targeted road safety inspections
	Joint road safety inspections (tunnels)
	common specifications for effective readability and detectability of road markings and road signs for human drivers and automated driver assistance systems











REQUIREMENTS OF THE DIRECTIVE

Actions for the directive to be adopted:

- Road Safety Impact Assessments (RSIA) are performed on planned changes (planned new roads or improvements) to the network,
- Road Safety Audits (RSA) are performed on design, newly (re) constructed and roads in early operation,
- Road Network Safety is monitored through Network-wide Road Safety Assessments (NRSA) and Periodic Road Safety Inspection (P-RSI),
- Identify remedial action through Targeted Road Safety Inspection (T-RSI)











ARCHITECTURE OF RISM STRUCTURE

EXISTING ROAD NEW ROAD OR IMPROVEMENT Direct Remedial RSIA RSA NRSA Action RSA-2 RSA-3 RSA-4 RSA-1 Final/ Road Pre-Early P-RSI **Preliminary Planning Stage Detailed** Design **Opening** Operation Infrastructure T-RSI Design Stage **Safety Action** Stage Stage Stage Plan Fatal & **Black Spot Injury Crash Analysis Analysis**

Preventive/ Pro-active

Curative/ Re-active

RSIA: Road Safety Impact Assessment

RSA: Road Safety Audit

NRSA: Network-wide Road Safety Assessment

P-RSI: Periodic Road Safety Inspection T-RSI: Targeted Road Safety Inspection









STRATEGY FOR THE HARMONIZATION OF RISM ACQUIS

- Preparation of Gap Analysis and New Institutional Reports
- Amending the existing legislation in line with EU Directive 2019/1936
- Defining alternative organization structures available to KGM complementing the proposed legislative changes
- © Guidelines to define the processes for carrying out RSIA, RSA, RSI and NRSA
- Mandbook to define the technical procedures for carrying out RSIA, RSA, RSI and NRSA
- Revision of highway and motorway design manuals
- Preparation of the training programme and training material











COMPONENT 1: SUPPORT TO THE HARMONIZATION OF TURKISH LEGISLATION TOWARDS DIRECTIVE 2008/96/EC (AMENDED WITH 2019/1936/EU) ON ROAD INFRASTRUCTURE SAFETY MANAGEMENT











HARMONIZATION STATUS AS OF THE BEGINNING OF THE PROJECT

The regulation regarding Road Infrastructure Safety Management system stipulated by the EU Directive 2008/96/EC on the Turkish TEN-T Highway Network was published in the Official Gazette numbered 30572 dated on 21.10.2018.











ACTIVITIES CONDUCTED WITHIN THE SCOPE OF THE PROJECT (COMPONENT 1)

Component 1: Support to the Harmonization of Turkish Legislation towards Directive 2008/96/EC (amended with 2019/1936/EU) on Road Infrastructure Safety Management

- Activity 1.1. Gap analysis and report of current situation about organizational structure, implementation of Directive 2008/96/EC (amended with 2019/1936/EU) and legal aspect
- Activity 1.2. The Technical Visit to investigate good practices in the legislative documents in the EU State
- Activity 1.3. Workshop for Executives on gap analysis and final gap analysis report
- Activity 1.4. Preparation for the harmonization of the legislation: preparation of the final draft legislations and guidelines for the implementation of Directive 2008/96/EC (amended with 2019/1936/EU) in Türkiye
- Activity 1.5. Complementary technical visit to compare the implementation of Directive in another EU Member State except in Activity 1.2
- Activity 1.6. Workshop for executives on final draft legislations and guidelines
- **Activity 1.7.** Finalization of the draft documentation prepared (draft legislations and guidelines for the implementation)
- Activity 1.8. Workshop for the personnel of road designers, contractors, consultants, municipalities, universities and other related institutions work on road infrastructure safety









Gap analysis and report of current situation about organizational structure, implementation of Directive 2008/96/EC amended with 2019/1936/EU and legal aspect

GAP ANALYSIS FRAMEWORK;

© Legislation

This required a detailed understanding of EU Directive 2019/1936 aims and delivery expectation, and how to realise this for KGM's road safety service and function, by way of KGM's legislation documentation

Institutional (organizational structure)

KGM's department, teams and specific expertise situation with EUD requirements were reviewed. KGM capacity was also assessed for achieving each EUD article's aim, duty and output expectation

® Technical (procedure and duty) components of KGM's legislative framework

The technical component included review of KGM's procedures, manuals, and guidelines' suitability











OUTPUTS

- ✓ Current situation and Analysis report
- ✓ First version of gap analysis report
- ✓ New institutional report for KGM











Technical visit to investigate good practices in the legislative documents in an EU Member State

Technical visit to Germany and Netherlands

OUTPUT

✓ Technical visit report











Workshop for executives on gap analysis and final gap analysis report

Organizing a workshop to discuss the first version of gap analysis report

OUTPUTS

- ✓ Workshop report
- ✓ Final version of gap analysis report and new institutional report











Preparation for the harmonization of the legislation: Preparation of the final draft legislations and guidelines for the implementation of Directive 2008/96/EC amended with 2019/1936/EU in Türkiye

- By-law on Road Infrastructure Safety Management
- By-law on Duty, Authority and Responsibility of General Directorate of Highway (Requirement- Authority)

Guidelines(Administrative Aspects)

Handbooks (Technical Processes)











OUTPUTS

- ✓ Strategy paper
- ✓ Draft legislative documents
- ✓ Guidelines for RSIA, RSA, NRSA and T-RSI











Draft legislative documents - Outputs

- ✓ Harmonization Plan
- ✓ Draft Part 17 of Presidential Decree No. 4 on the Organization of Affiliated, Related, Associated Institutions and Organizations to Ministries and Other Institutions and Organizations
- ✓ Draft Law on the Services of the General Directorate of Highways No.6001
- ✓ Draft By-law on Road Infrastructure Safety Management
- ✓ Draft By-law on Duty, Authority and Responsibility of General Directorate of Highway
- ✓ Responsibilities, Duties of New RISM Department and Other Departments
- ✓ Job Descriptions of New RISM Department











Guidelines - Outputs

- ✓ Road Safety Impact Assessment,
- ✓ Road Safety Audit,
- ✓ Network-wide Road Safety Assessment & Periodic Road Safety Inspection,
- ✓ Targeted Road Safety Inspection
- These guidelines serve as KGM's corporate memory and institutionalize the:
 "What", "When" and "How" to initiate any of the 4 RISM actions.











Complementary technical visit to compare the implementation of Directive in another EU Member State except in Activity 1.2

Technical visit to Portugal

OUTPUTS

✓ Technical visit report













Workshop for executives on final draft legislations and guidelines

Organizing workshop on final draft legislations and guidelines

OUTPUTS

- ✓ Workshop report
- ✓ Revised version of the draft legislations and guidelines











Finalization of the draft documentation prepared (draft legislations and guidelines for the implementation)

OUTPUTS

✓ Final draft legislations and guidelines











Workshop for the personnel of road designers, contractors, consultants, municipalities, universities and other related institutions work for road infrastructure safety

Organizing workshop on final draft legislations and guidelines

OUTPUTS

✓ Workshop report





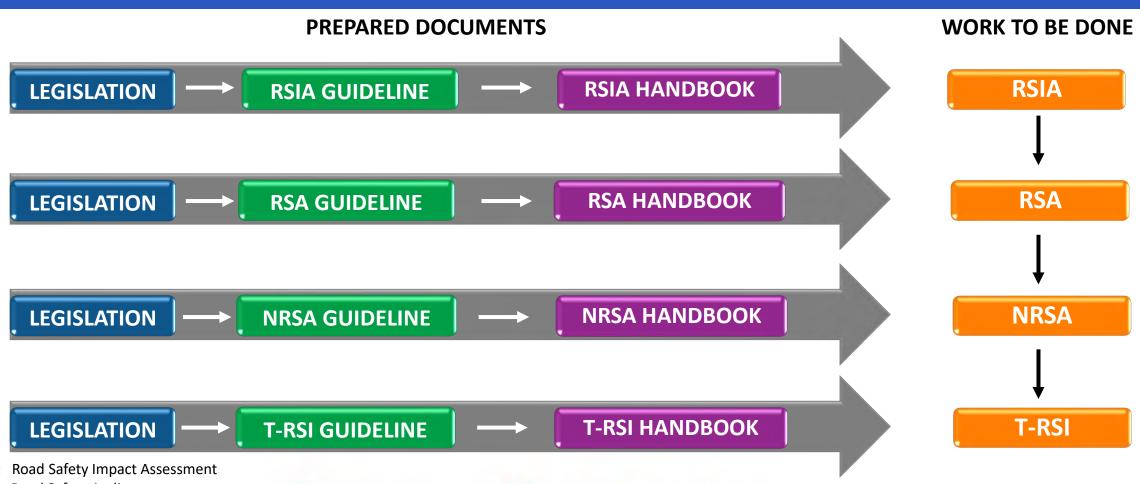








SUMMARY AND CONCLUSION (COMPONENT 1)



RSIA: Road Safety Impact Assessment

Road Safety Audit

NRSA: Network-wide Road Safety Assessment

T-RSI: Targeted Road Safety Inspection









SUMMARY AND CONCLUSION (COMPONENT 1)

- 1. Draft legislation proposal for the adoption of EU RISM acquis,
- 2. The need for a dedicated unit to exclusively manage and control the entire process,
- 3. Expantion of the road network scope,
- 4. The provision of extensive guidelines facilitating the implementation of RISM.











COMPONENT 2: ENHANCED CAPACITY AT KGM TO IMPLEMENT ROAD INFRASTRUCTURE SAFETY MANAGEMENT











ENHANCING CAPACITY COMPONENT-2 CONTENT

AIM OF COMPONENT-2

To increase the technical capacity of KGM through;

- Revision and Preparation of <u>Highway Design Manual</u> and <u>Motorway Design Manual</u>
- Preparation of <u>Handbooks for RISM</u> Components
- Preparation of <u>Training Materials</u> and <u>Delivery of the Trainings</u>
- Study visits











ENHANCING CAPACITY COMPONENT-2

Activities 2.1 - 2.2

Highway Design Manual and Motorway Design Manual

Handbooks for RSIA, RSA, NRSA and T-RSI

Activities 2.3 - 2.9

Training Materials and Trainings for RSIA, RSA, NRSA and T-RSI

Activities 2.10

Technical Visits to observe best practices in EU











Revision and Preparation of Highway Design Manual and Motorway Design Manual

OUTPUT

HIGHWAY DESIGN MANUAL:

- Revised to increase the road safety,
- Self-Explaining Roads, Forgiving Roads and Roadsides, Self-Enforcing Roads
- especially for VRU











Revision and Preparation of Highway Design Manual and Motorway Design Manual

OUTPUT

MOTORWAY DESIGN MANUAL: Existing Motorway Design Criteria was revised

Design Manuals of best practice countries in EU was studied in detailed, compared and tailored to Türkiye's situation











Handbooks for RSIA, RSA, NRSA and T-RSI

OUTPUTS

<u>Handbooks</u> are the technical documents to actually implement each component of the Directive. (RSIA, RSA, NRSA and T-RSI)

Each handbook contains;

- Purpose of the study and Relationships with other components (why)
- Required conditions for a need of implementing that component (when)
- For the use of technical staff who will conduct the study (who)
- Detailed explanation of the process and steps of implementing (how)
- Format of the reports (how)









Training Materials and Training Delivery

Essential Knowledge on Road Safety (EKRS) Trainings

3 Sessions

10 Days for each session

54 KGM personnel

Road Safety Impact Assessment (RSIA) Trainings

1 Session

3 Days

18 KGM personnel

Road Safety Audit (RSA) Trainings

3 Sessions

10 Days

54 KGM personnel

Network-wide Road Safety Assessment (NRSA)

1 Session

3 Days

18 KGM personnel





2 Sessions

3 Days for each session

Targeted Road Safety

36 KGM personnel







Site visits including workshops

To observe how RISM work in best practice countries

Lessons learnt

Exchange of experience

How RISM can be implemented in Türkiye

1-Spain

7 Days

10 KGM personnel

2- Belgium

7 Days

10 KGM personnel

2 CA Personnel

3- Spain

6 Days

11 KGM personnel

1 CA personnel

4- Poland

5 Days

10 KGM personnel

2 CA personnel







