

Project Nr: TR80A 2008:72148

Co-operation level: Common Obligation

RIMAROCC: Risk Management for Roads in a Changing Climate

Start date of project: 01.10.2008

End date of project: 31.07.2010

Duration: 22 Months

Monitoring Progress Report 1

Reporting period from 23.10.2008 to 01.12.2008

**This report is prepared by the Contractor of the research project
and presented to the Project Executive Board.**

Project Executive Board:

AT,	Federal Ministry of Transport, Innovation and Technology (BMVIT)
DE,	Federal Ministry of Transport, Building and Urban Affairs (BMVBS)
DK,	Ministry of Transport, Danish Road Directorate (DRD)
ES,	Centre for Studies and Research in Public Works (CEDEX)
FI,	Finnish Road Administration (Finnra)
IE,	National Roads Authority (NRA)
NL,	Directorate of Public Works and Water Management (RWS)
NO,	Norwegian Public Roads Administration (NPRA)
PL,	General Directorate of National Roads and Motorways (GDDKiA)
SE,	Swedish Road Administration (SRA)
UK,	Department for Transport, Highways Agency (HA)

Project Leader:

SE, SRA

Programme Executive Chair:

AT, BMVIT

Contractors:

SE,	SGI (Coordinator)
FR,	EGIS
NL,	Deltares
NO,	NGI

Objectives

Describe the objectives of the project stated in the MoU and any modifications introduced later (not more than ½ page):

The objective of the proposed project is to develop a common ERA-NET ROAD method for risk analysis and risk management with regard to climate change (we agree with the view in the GfA, that a common *method* i.e. a systematic way of structuring and calculating is more needed at this point than a *model* – a numerically based tool for detailed calculations and e.g. simulations). The purpose is to support decision making concerning adaptation measures in the road infrastructure. To facilitate the work of end users the method will be based upon, or at least be compatible with, general existing methods for risk analysis (and management) within the ERA-NET ROAD funders and other relevant methods. Specific improvements of existing methods will be developed where they are necessary to effectively deal with climate change.

The project is focusing on Topic 2 in the call, Risk Analysis – with risk assessment, risk management in cost-benefit analysis and level of acceptable risk, and Topic 5, Risk management Options. This integrated approach will greatly facilitate the consistency of methodological deliverables and the work of end users among road authorities.

A specific attention will be given to both **new** road design and improvement/maintenance/operation of **existing** roads. The project will take into account the present knowledge of future climate evolution (short, medium and long-term) and the design life of roads and structures ; at the same time it will add value and qualities today. The architecture of the methodologies will be designed to facilitate their easy-updating when new knowledge appears and to facilitate the complementary responsibilities of the various concerned organisations.

Appropriate coordination with research organisation responsible for topics 1, 3 and 4 are very worthwhile for effectiveness.

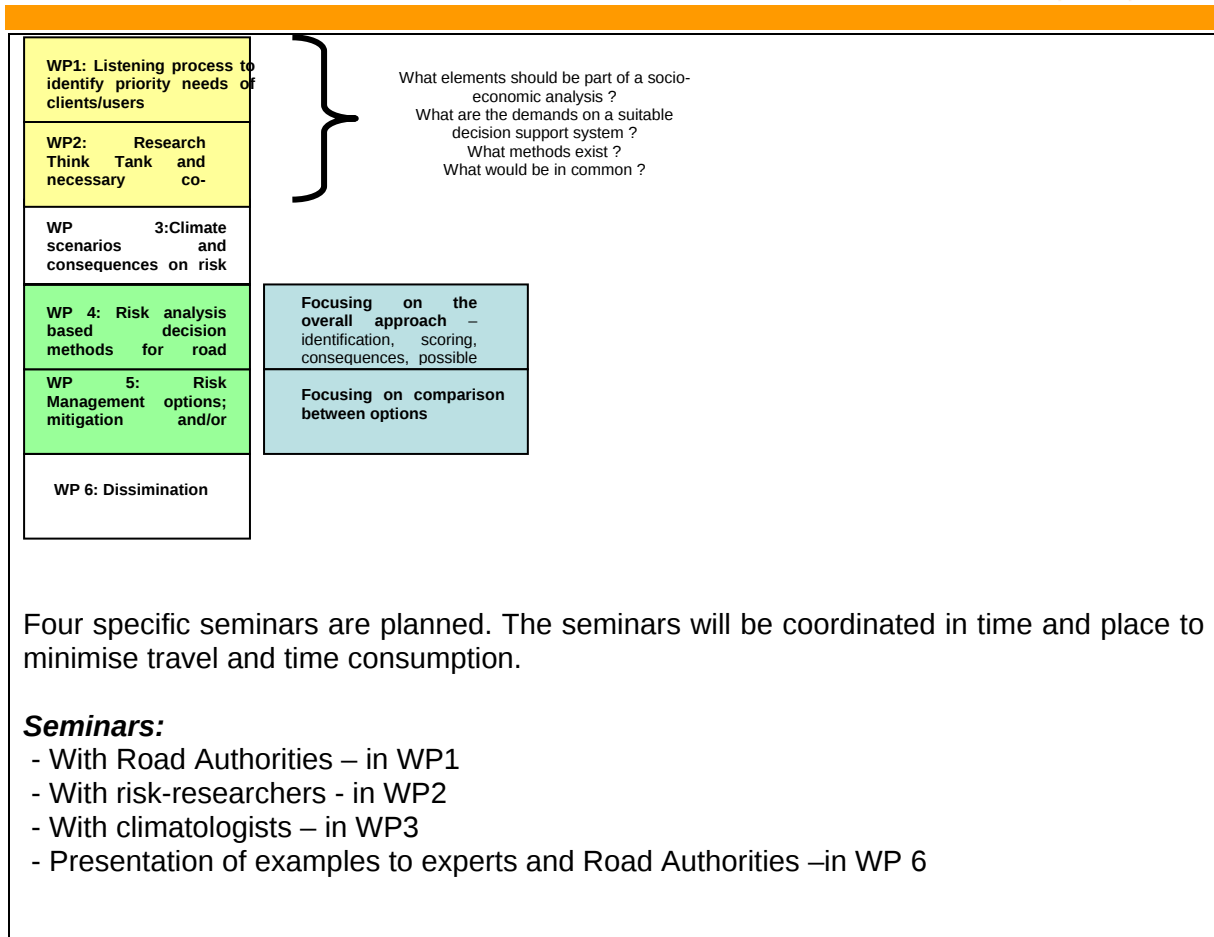
Technical Description

Describe the items of technical work, the mode of operation, possible subdivision in Working Groups and how management is organised (no more than 2 pages):

The project is directed by a Project Management Group with representatives from all partners. The project management group will meet regularly when needed, and at least every six months. The specific Electronic Board Room at Deltares may be used to facilitate concurrent engineering, i.e. for identification and classification of risks via expert sessions.

An ERA-NET Steering Group is formed to follow the project.

The project is organised in 6 Work Packages, each with a responsible WP-leader. All WP:s are connected, but specifically W1 and WP2 respectively WP4 and WP5.



Participation and coordination

Project Steering Group (PSG)

Project Manager:

Åsa Lindgren, SRA, Sweden

Members:

Alberto Compte, CEDEX, Spain

Geoff Richards, HA, UK

Contractors

Chair, Secretary:

Bo Lind, SGI, Sweden

Chalmers Vasa, Hugo grauers gata 5 B

Tel., +46 31 778 65 66

email bo.lind@swedgeo.se

Fax., +46 31 7785940

Members:

France, Michel Ray, EGIS

The Netherlands, Thomas Bles, Deltares

Norway, Frode Sandersen, NGI

Meetings of the Contractors and PSG:

13-14 October 2008

SGI, Göteborg, Sweden

Report on Results (so far)

Objective/Milestone:	Assessment																				
1 Partner Presentation of our organisations A Project Management Group has been formed : SGI, Bo Lind; EGIS, Michel Ray; NGI, Frode Sandersen; Deltares, Thomas Bles. 2 Climate scenarios for Europe As a common basis of the project climate scenarios have been discussed. Dave Ryner from Göteborg University presented a climate change overview. One important point to address in the project is uncertainties and level of confidence. Scenarios for Europe show that, it's 90 % consistency in the models that the interpretation will increase in northern Europe and that it will be drier south. The river run off will be higher in the Northern Europe and less south. The sea level rise is certain, but the magnitude uncertain. Regarding winds there are great uncertainties. 3 Meeting the views and comments from the ERA-NET Board Comments from the ERA-NET Board have been discussed and the project plan adjusted accordingly. <table border="0"> <tr> <td>Comments: ERA-NET Road Programme Executive Board</td><td>Response Rimarocc</td></tr> <tr> <td>Better definition of resources.</td><td>Resources specified on partner level and WP level</td></tr> <tr> <td>More specifics/specification for the collection of experiences from road authorities</td><td>Should be developed in WP1 and WP2.</td></tr> <tr> <td>Climate change should be more clearly defined.</td><td>Defined in WP3.</td></tr> <tr> <td>Project management needs better/more clarification.</td><td>In contract.</td></tr> <tr> <td>Clarify the seminars, participation of experts.</td><td>Clarified in Appendix 1 to Project Agreement.</td></tr> <tr> <td>State-of-the-art review needed.</td><td>Yes, should be developed in WP1</td></tr> <tr> <td>Funding from other sources needs to be specified (more clearly?) and reported.</td><td>No other sources than self investments.</td></tr> <tr> <td>Reference to climate analogues required.</td><td>Yes, should be developed in WP3.</td></tr> <tr> <td>A cost benefit analysis should be included</td><td>Included in the WP 4 and WP 5</td></tr> </table>	Comments: ERA-NET Road Programme Executive Board	Response Rimarocc	Better definition of resources.	Resources specified on partner level and WP level	More specifics/specification for the collection of experiences from road authorities	Should be developed in WP1 and WP2.	Climate change should be more clearly defined.	Defined in WP3.	Project management needs better/more clarification.	In contract.	Clarify the seminars, participation of experts.	Clarified in Appendix 1 to Project Agreement.	State-of-the-art review needed.	Yes, should be developed in WP1	Funding from other sources needs to be specified (more clearly?) and reported.	No other sources than self investments.	Reference to climate analogues required.	Yes, should be developed in WP3.	A cost benefit analysis should be included	Included in the WP 4 and WP 5	GREEN
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The project description will be revised and a contract will be established with the SRA.

4 Project planning

The time table for the different WP:s, see paragraph 5.

Further work within the WP:s are discussed – and a process have started, as described below:

WP1: Listening process to identify priority needs of clients/users

Information from ERA-NET Road members will be collected to get information of their existing tools for risk analysis and risk management. Existing tools also outside the member states will be collected and evaluated. The ERA-NET Road member's needs are the most important input for the project. We are planning a seminar in February 2009 where we invite all ERA-NET Road countries to discuss existing methods and their needs from the RIMAROC –project(*). A state-of-the-art report on existing methods used by Road Authorities will be produced. All partners have started to look for existing literature and information.

(* This seminar will be exchanged for the proposed "Oslo seminar".)

WP2: Research Think Tank and necessary co-ordinations - Introduction, SGI

We are planning a seminar in May 2009 where we invite researchers and organisations from all ERA-NET Road countries to present and discuss ongoing specific work "on risk analysis", "risk management options" and cc. In addition "invited researchers" could also bring the most advanced practices from other countries.

A specific question is, what would be in common and what should be specific for different regions and countries? It is important to see that the actual risks are significantly varying over Europe and that end-user tool for risk analysis and management must be "site specific" to a certain extend, but we also think that we have much in common.

WP 3: Climate scenarios and consequences on risk approach.

The basis of the project is to use the current climate scenarios that are presented as average over different seasons and with a great variety of climate index maps and to give special attention to the case of extreme weather events. It is important to address the uncertainties of the climate scenarios and evaluate the pace at which the knowledge of climate change will develop that can facilitate risk management options. Meteo France is already committed to EGIS and can be an active part in the WP3. A seminar will be held between the project group and the Climate experts. A deliverable from WP 3 will be produced with relevant climate index.

WP 4: Risk analysis based decision methods for road authorities, EGIS

A common method/procedure for risk analysis considering climate change will be developed which can be adopted by ERA-NET partners, either in complementary to existing methods or if necessary with a new proposed method. The work includes methods for calculating and comparing the costs of preventive measures and the costs of damages and methodology of cost benefit analysis. Economists from Deltares and ev. EGIS will participate.

Input is needed from WP1 and WP2. Four case studies will be used where data is collected from each country. They will be based on real climatic data events and simulations at appropriate level. Important to have pedagogical cases. The cases can improve the methodology.

WP 5: Risk Management options; mitigation and/or emergency plans, Deltares

Decision Support Systems, DSS, is an interaction between problem, policy and political stream. Deltares have developed the GeoQ riskmanagement methodology with six risk management steps.

WP5 is very much integrated with WP4. It is not possible to choose between measures without overview of whole risk management approach and vice versa. The needs and demands from WP1 should be part of the analyses e.g. delays, costs, value of a passable road, safety. Facts from WP2, 3 and 4 is needed.

Output of WP5 is a methodology / approach, not a calculating tool / model.

WP 6: Dissemination, NGI

The project has discussed examples of how to best disseminate results: reports, publications, papers, web-sites, seminars/workshops, participate at conferences.

The primary goal with WP6 is to present how the worked-out method can be used at different levels. A final seminar/workshop with presentation of case studies should be arranged in July 2010.

From discussions with ERA-NET Road it is concluded that the final report should be a short report with recommendations step by step, like for example the UK method, with references to publications.

An editorial group with one person from each partner will be established to discuss e.g. the format, editing roles, pedagogic, content.

WP6 shall make a report of the case studies. The case studies give feed back to the methodology and comparison between national methods and the one the project present. 2 climate scenarios should be used in the case studies. It is important that road owners give free information to the project.

5 Time table