

INTERREG CENTRAL EUROPE Programme 2014 - 2020

RAINMAN

Integrated Heavy Rain Risk Management



Project Partners

- Institute of Meteorology and Water Management
- Saxon State Office for Environment, Agriculture and Geology
- Saxon State Ministry for the Interior
- Leibniz Institute of Ecological Urban and Regional Development
- T. G. Masaryk Water Research Institute
- Region of South Bohemia
- Middle Tisza District Water Directorate
- Environment Agency Austria
- Office of the Styrian Government
- Croatian Waters

Information on the INTERREG CE Application
(submitted June 2016 – 2nd Call)



Why this project?

Risks of heavy rain events are increasing all over Central Europe.

Heavy rain events can hit any location with only very short warning time. Every year people die, thousands lose their homes, and environmental damages like water pollution occur. In 2015 economic loss amounted to 1.2 billion Euros (GDV, 2016). The devastating impact of extreme rainfall is the most significant natural risk in Central Europe. Only in May/June 2016 20 people died in CE in heavy rain events. The project's main objective is to improve integrated management capacities of public authorities to mitigate heavy rain risks. Partners from 6 countries jointly develop practice oriented innovative methods and new tools to reduce fatalities and damages. They implement alert infrastructure in the participating regions. The project will change the regions towards a safer place to live and work sustaining economic growth. Inhabitants, businesses and the environment will benefit from the project.

The main joint outputs will be:

- A transferable toolbox with new tools and methods to assess, map and reduce heavy rain risks.
- Implementation of innovative forecast and warning tools for short warning time.
- Implementation of innovative measures to reduce health and environmental damages and improve emergency response.

Reducing the risks means better living conditions for Central Europe.

The project achieves a sustainable change at all levels of the public sector. New techniques and innovative tools will be implemented with benefit for e.g. local business, agriculture, cities and people. Capacities are increased by trainings and educational measures. Policy makers at regional, national and EU-level are part of the process. Recommendations for the integration of heavy rain risks into the EU floods directive are developed.

The new tools go far beyond existing practice in CE and in overall Europe. The transnational strategic approach will effectively reduce these risks and damages. Experience of river flooding projects is considered and developed further for heavy rain events.

Programme relevance?

The project contributes to the programme objectives:

Programme objective:

Cooperating beyond borders in central Europe to make our cities and regions better places to live and work

Priority axis 3

Cooperating on natural and cultural resources for sustainable growth in CENTRAL EUROPE

Specific objective 3.1

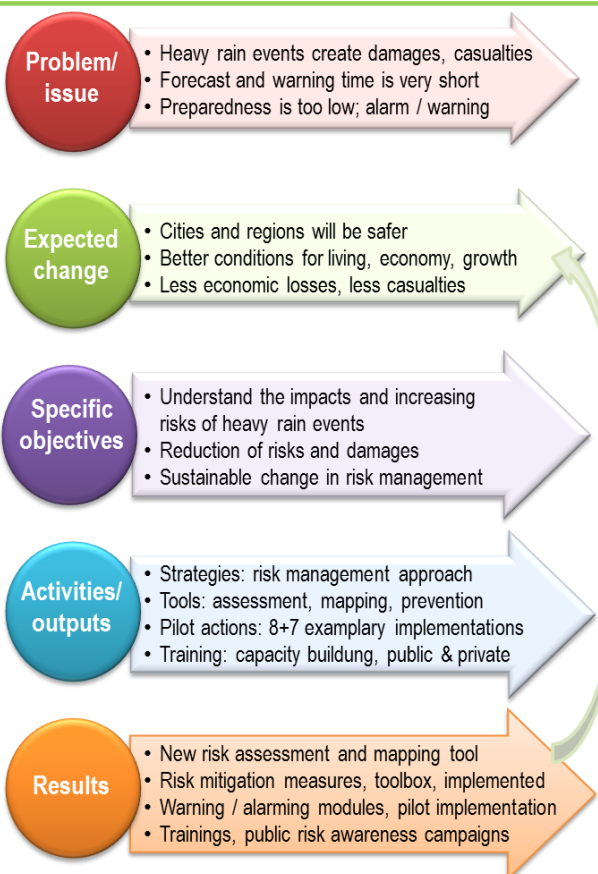
To improve integrated environmental management capacities for the protection and sustainable use of natural heritage and resources

Project objectives:

- Improve integrated management capacities for the reduction of environmental risks of heavy rain events to reduce the losses in the natural and build environment.
- Make cities and regions in Central Europe safer and better places to live and work; improve economic development.

Project outputs:

- A joint transferable method to assess & map heavy rain risks.
- Implementation of innovative forecast and warning systems.
- Implementation of innovative measures to reduce damages and improve emergency response
- Raise awareness for risk oriented and preventive behavior.



The Problem



West - Poland: Heavy rain event, flash flooding; August 2010

- Intensive high precipitation in short time
- Flash flood events without forecast; Numerous houses and a dam were destroyed
- High economic losses



Mšeno (Czech Republic): Heavy Rain; Flash floods, Mai 2014

- Flood caused by flash rain –extreme rain during very short time
- Due to a longer period of rain falls, the landscape wasn't able to absorb the flash rain
- High economic loss



Bavaria (Germany): Flash flood after heavy rain, June 2016

- Parts of Bavaria were flooded.
- Many people lost their homes
- High economic losses
- infrastructure / several roads were destroyed and closed



Middle Tisza District (Hungary): Heavy Rain Events, Flash Floods (2013)

- The area is affected by heavy rain events as well as droughts
- The whole area is nearly flat, so in case of rainstorms large areas can be inundated by water
- Regularly high economic losses



Graz (Austria): Heavy Rain / Flash Flood; August, 2005

- Heavy rain, flooding
- State of civil emergency was declared
- Hundreds of cellars and ground floors were inundated; high economic loss in households and businesses
- The damage amounted to 5 million euro



Gunja (Eastern Croatia); heavy rain, flash flooding, 18 May, 2014

- Heavy rain, flooding in 2/3 of Croatia
- Flash Floods caused over 2,000 landslides
- Damage ranges up to several billions Euro in the Balkan countries, including Croatia

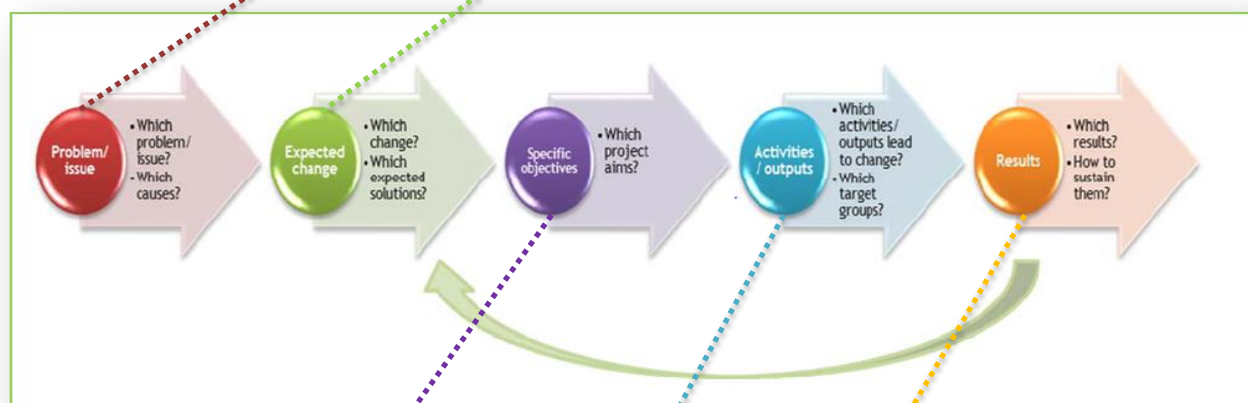
The Intervention Logic

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Reducing the risks means better living conditions for Central Europe.

The project achieves a sustainable change at all levels of the public sector. New techniques and innovative tools will be implemented with benefit for e.g. local business, agriculture, cities and people. Capacities are increased by trainings and educational measures. Policy makers at regional, national and EU-level are part of the process. Recommendations for the integration of heavy rain risks into the EU floods directive are developed.

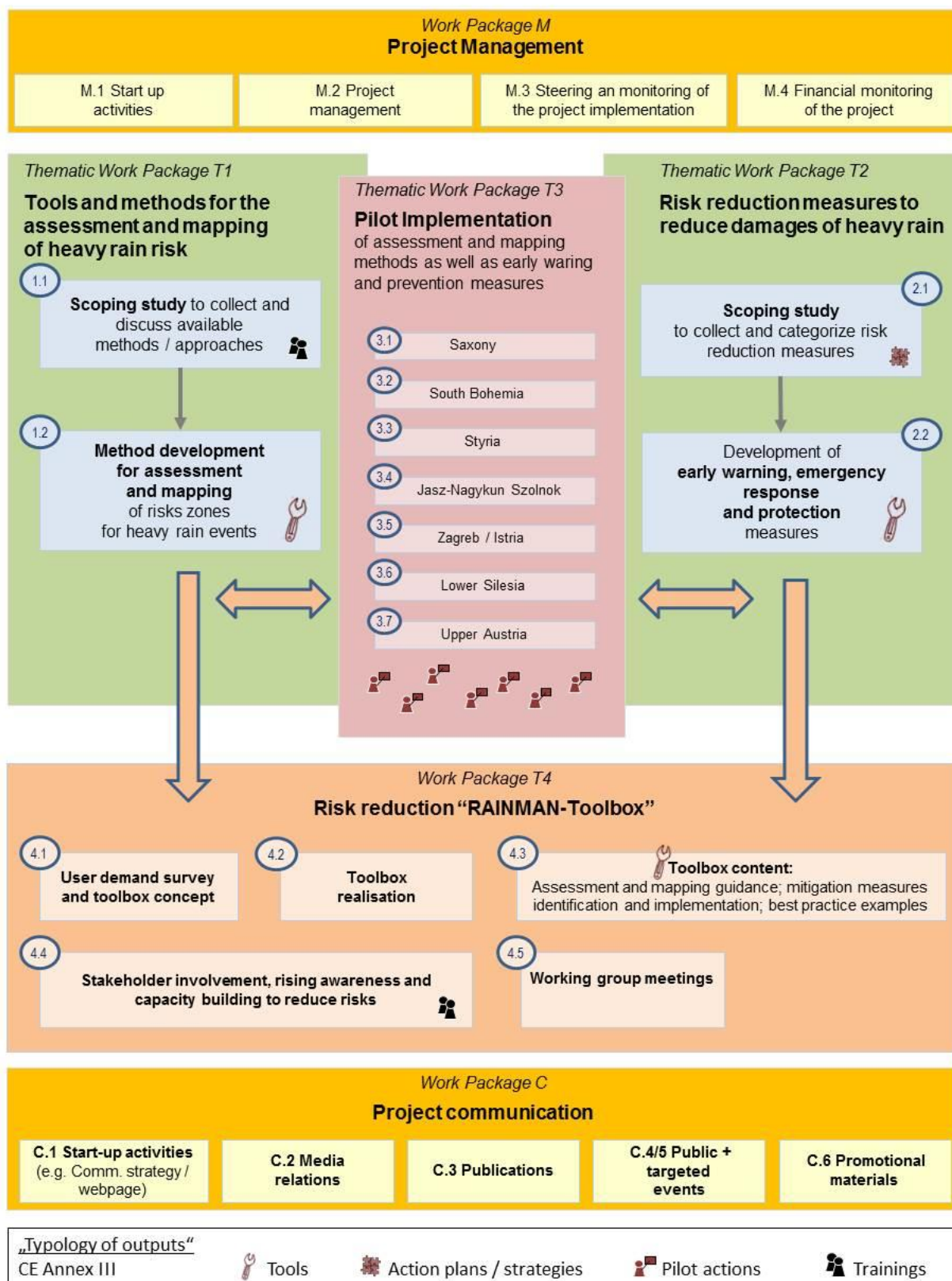


The project's main objective is to improve integrated management capacities of public authorities to mitigate heavy rain risks.

- A transferable toolbox with new tools and methods to assess, map and reduce heavy rain risks.
- Implementation of innovative forecast and warning tools for short warning time.
- Implementation of innovative measures to reduce health and environmental damages and improve emergency response.

Partners from 6 countries jointly develop practice oriented innovative methods and new tools to reduce fatalities and damages. They implement alert infrastructure in the participating regions. The project will change the regions towards a safer place to live and work sustaining economic growth. Inhabitants, businesses and the environment will benefit from the project.

Work-Plan (preliminary)



Thematic Work Packages

WP T1:

Tools and methods for the assessment and mapping of heavy rain events

The partners develop jointly a transferable tool and methods to assess heavy rain risks under different categorized physical conditions and land uses of areas in CE. The tool will support the identification and communication of high risk areas. The tool is the fundament to reach the specific project objective to improve risk management capacities and to reduce heavy rain risks in future. Without such tools no reliable risk reduction measures and decisions can be implemented (like risk-adapted land use planning or investments, warnings, evacuations).

In a first step, the PPs will analyse preconditions, starting points and requirements for the method development in a scoping process and study that evaluates the existing approaches and methods for hazard modelling, risk assessment and mapping. In 2 workshops existing knowledge and experience also from further experts of the EU and related projects will be discussed and integrated.

In the 2nd and main step, the partners develop an analytical framework for heavy rain risk assessment including methods applicable with regionally specific territorial conditions. The methods are tailored for different levels of complexity and different geographical and physical preconditions of European regions. Thus, e.g. adapted methods for urban and rural land uses in mountainous and low land, settings etc. will be specified. The PPs deliver input to the method from their regional application, reflect the method development, test the methods in pilot actions (WPT3) and give feedback to the tool development. In regular working group meetings the development will be coordinated and discussed.

The outputs create the fundament for public authorities to adapt their regional and local development to the existing risks and by this to improve their management capacities.

WP T2:

Risk reduction measures to reduce damages of heavy rain

In WPT2 the PPs jointly create a tool and a strategy to reduce the risk of heavy rain events for Central Europe. The tool will include a catalogue of risk reduction measures for different risk situations and framework conditions, guidance for the selection of best options for measures in specific situations and guidance for the application and implementation of the measures. In addition the PPs develop a joint risk management strategy for heavy rain risks in urban and rural areas. The strategy has two goals: Firstly a guidance for local and regional actions to cope with increasing heavy rain risks, to be implemented in local and regional policies throughout Central Europe, secondly it will be submitted to the EU-COM-WG-Floods as “bottom-up” contribution to the improvement of flooding policies, especially the EU-floods Directive.

Thus WPT2 contributes significantly to the improvement of integrated environmental management strategies in the public sector in Central Europe. It reflects two specific objectives of the project and aims at reducing risks by improving heavy rain risk prevention and risk management capacities.

First step is the collection and evaluation of available approaches and experiences with those. Second, a joint catalogue of measures and examples is generated, including guidance for the selection & implementation and regional specifications for different frameworks. New innovative measures will be developed and added. Guidance for the application under specific conditions, good examples and monitoring advice are added to the risk reduction tool. The heavy rain risk management strategy integrates the tool into local and regional actions plans. It is drafted and discussed with all PPs and Ass. PPs, also in the pilot regions.

WP T3:

Pilot actions to test and improve the developed methods for risk assessment and prevention

Pilot activities in all participating partner regions are implemented to test the developed joint methods and tools and to prove their feasibility and applicability. Outputs are 7 pilot actions, with different characteristics to give a wide range of application conditions. The pilot actions have different focuses to test the variety of developed methods: all focus on heavy rain risk assessment & mapping and on different measures in rural and urban areas. The pilot actions are fundamental to test the developed methods, to improve them with experiences from the pilot actions and make the applications transferable. In addition the pilot actions deliver show cases for implementations that help the target groups to anticipate the project deliverables.

Furthermore the pilot actions create the platform for the involvement of local stakeholders, often as Ass. PPs. Intensive consultation processes on site ensure that the joint results are tailored to the needs of local and regional target groups. In all pilot actions an ex-ante evaluation on the status of heavy rain risk management will be done by an online survey with the target groups and stakeholders. This is organized jointly in national languages and with regional specifications. The survey shall also deliver expectations and requirements on the methods and tools from the potential users. Based on this, risk assessment and mapping will be done by using the tools of WPT1 for the pilot areas. Each pilot area tests a selection of the risk mitigation measures developed in WPT2. The implementing partners cooperate closely in the working groups on the tool box development, in which the feedback from the pilot actions and vice versa will be a key issue. An ex-post evaluation at the end of the activities will be done to survey the success of the communication activities.

Pilot implementation specification

No.	Partner Name	Pilot Area	Ass. Partner	Area features		Activities / Products								Communication			
				Urban	Rural (no special land use)	Assessment / mapping	Warn. Em-Re	Prevent. Protect.	Spatial planning	Local working group	Stakeholder involvement	Information material (flyer, brochures)	Involve others (e.g. policy makers)				
1	LfULG / SMI / IÖR	Saxony	Oderwitz, Meißen	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	VUV / SoBoh	South Bohemia	Ministry of the Environment of the Czech Republic	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3	Stm / UBA	Styria	City of Graz	X		X	X	X	X	X	X	X	X	X	X	X	X
4	MTDWD	Jász-Nagykún Szolnok	Jász - Nagykun Szolnok County, Tiszakécske City, Kunhegyes City	X		X	X	X	X	X	X	X	X	X	X	X	X
5	HRVode	Zagreb / Istra	Zagreb City, Istra peninsula	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	IMGW	Lower Silesia	IRT, Regional Water Management Board in Wrocław		X	X	X	X	X	X	X	X	X	X	X	X	X
7	UBA	Upper Austria	BMLFUW, Federal Government of Upper Austria		X	X	X	X	X	X	X	X	X	X	X	X	X

WP T4: Risk reduction "RAINMAN-Toolbox"

The core output of WPT4 is the development and realisation of the "RAINMAN-Toolbox" with five tools to reduce heavy rain risks and to improve the integrated environmental risk management capacities of regional and local administrations in Central Europe. The toolbox contains:

Tool 1:

Assessment and mapping tool for heavy rain risks

Tool 2:

Implementation guide for risk reduction measures, warning and emergency response

Tool 3:

Recommendations for Flood risk management plans

Tool 4:

Awareness raising and stakeholder involvement

Tool 5:

Catalogue of good-practise examples for the integrated reduction of heavy rain risks.

An online survey at the beginning delivers the demands of end users. The toolbox concept will be drafted, discussed with PPs and Ass. PPs, stakeholders and experts. It is adjusted to the consultation outcome. The toolbox is designed as web-based application of all tools incl. guidance to select, use and implement the tools. Also guidance for decision making based on gathered experiences from the project is one feature. The Toolbox-content is created partly from WP T1, T2, T3 or developed in this WP in separate activities. To obtain a detailed toolbox, all PPs actively contribute to the tools and

are involved in the development and tests. The toolbox development in this WP also serves as overall scientific coordination platform for the project, since all outputs shall finally generate the toolbox. Therefore 10 working group meetings will ensure the transferability and practicability of the inputs to the toolbox and the toolbox itself. The contributions of all PPs will be discussed and coordinated in the working group meetings and explained in trainings with stakeholders on local, regional and national as well as international level.

The output of this WP contribute to improve management capacities of local authorities and to reduce the risk of flash floods.

Dates – Budget - Funds

- The application was submitted in the 2nd Call of the INTERREG-VB-Central Europe programme (submission June 2016).
- Project duration: July 2017 – June 2020 (36 months)
- Indicative planned budget: 3.0 million €; application for ERDF funds: ca. 2.5 million €

The project applied for being co-financed by the European Union – European Regional Development Fund (ERDF)



Partner organisations – Contact Persons

Lead Partner:

Saxon State Office for Environment, Agriculture and Geology, DE

Dr. Uwe Müller
Uwe.Mueller@smul.sachsen.de
+49 351 8928 4000

Saxon State Ministry of the Interior, DE

Dirk Dreßler
Dirk.Dressler@smi.sachsen.de
+49 351 564 3450

Institute of Meteorology and Water Management - National Research Institute, PL

Dr. eng. Mariusz Adynkiewicz-Piragas
Mariusz.Adynkiewicz@imgw.pl
+48 71 32 00-356

T. G. Masaryk Water Research Institute, p.r.i., CZ

Pavel Balvín
pavel_balvin@vuv.cz
+420 220 197 313

Region of South Bohemia, CZ

Daniela Řežábková
rezabkova@kraj-jihocesky.cz
+420 386 720 210

Middle Tisza District Water Directorate, HU

Gábor Harsányi
harsanyi.gabor@kotivizig.hu
+36 30 7484134

Environment Agency Austria, AT

Dr. Yvonne Spira
yvonne.spira@umweltbundesamt.at
+43 (1) 31304 5932

Office of the Styrian Government, AT

Dipl.-Ing. Rudolf Hornich
rudolf.hornich@stmk.gv.at
+43 316 877 2031

Croatian Waters, HR

Alan Cibilić
alan.cibilic@voda.hr
+385 98 406 723

Leibniz Institute of Ecological Urban and Regional Development, DE

Alfred Olfert,
A.Olfert@ioer.de
+0351 46 79-292