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RAINMAN

INTEGRATED HEAVY RAIN RISK MANAGEMENT

Newsletter #6
May 2019 — August 2019

Dear readers,

if you would not like to receive the newsletter any longer you can unsubscribe at any time: in that case, please send an e-mail to rainman@iu-info.de. If you are still happy to hear from us, we are looking forward to providing you with news of our project!

Your RAINMAN Team

NEWSFLASH

25/09 - 26/09/2019

7th transnational partner meeting in České Budějovice

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The next RAINMAN partner meeting will take place in České Budějovice on 25th and 26th September 2019.

The focus of the partner meeting will be on the preparation of the project results for the RAINMAN-Toolbox. During the meeting the RAINMAN partners will deal with the content structure and design of the tools, the instructions for using the tools and the experiences from the pilot actions. One of the main goals is to make the toolbox as user-friendly as possible and to ensure a long-term use.

July 2019

RAINMAN @ Interreg Journal BBSR

© BBSR 2019

The Interreg team of the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR) publishes the Interreg B Journal four times a year. It provides information on current developments in the Interreg B programme and on interesting projects.

The RAINMAN project was presented in issue 03/2019. The journal is available at https://www.interreg.de/INTERREG2014/DE/Service/JournalundNewsletter/DL/dl-journal-3-2019.pdf?__blob=publicationFile&v=2 (in German language only).

End of June 2019

Gauging station installed in Graz

© Cornelia Jöbstl/Land Steiermark 2019

As part of the RAINMAN project, the water management department of the Province of Styria co-financed a gauge measuring station in the Graz pilot area. This enables the water level and the discharge in the Stiftingbach to be measured.

In the event of flooding, the collected data provide important information. These data are evaluated by experts and serve as a basis for the selection of suitable measures.

27/06/2019

Technical exchange with the Interreg project ProteCHt2SAVE

RAINMAN partner VUV (T. G. Masaryk Water Research Institute, p.r.i.) presented the current status and experiences of the RAINMAN project at an international conference in Prague. The conference was organized by the Interreg project ProteCHt2SAVE. The project focuses on improving the capacities of the public and private sectors to reduce the impact of climate change and natural hazards on cultural assets. Further information can be found on the project's website: https://www.interreg-central.eu/Content.Node/ProteCHt2save.html.

17/06 - 20/06/2019

17th International Conference EUROPE-INBO

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RAINMAN partner IMGW presented the RAINMAN project and first results of the Polish pilot action at the 17th international conference EUROPE-INBO in Lahti, Finland. Mariusz Adynkiewicz-Piragas (IMGW) explained the effects of heavy rain on agricultural land in Central Europe using the pilot action from Poland.

The presentation "Danger of heavy rain on agricultural land in Central Europe – Case study Poland" as well as further information on the international EUROPE-INBO conference can be found on the website https://www.inbo-news.org/en/events/europe-inbo-2019.

16/05/2019

Towards a greener Europe

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RAINMAN is one of 24 Interreg projects presented in the publication "Working for a Greener Europe – 24 Stories by transnational Interreg projects". The publication was produced on the occasion of the Green Week of the EU and can be downloaded under the following link:

https://www.interreg-central.eu/Content.Node/MadeWithInterreg-May2019-SMALL-v2.pdf.

Furthermore, the project objectives of the RAINMAN project were presented in session 2.2 "Investments and financing strategies to fill the implementation gap of the EU water legislation".

06/05/2020

Save the date – RAINMAN-Abschlusskonferenz in Dresden

The final conference will take place on 6 May 2020 in Dresden. The conference will focus on findings to support the management of heavy rain risks at various administrative levels, including the presentation of the experiences of stakeholders from our pilot actions. Participants will be able to exchange their experiences during the event. Of course, the main result of our project will also be presented: the RAINMAN-Toolbox!

Stakeholders from different administrative levels are invited to the conference. The event will be held in German and English. Invitation and registration forms as well as the agenda will be available on the RAINMAN website.

RAINMAN @ "Forum zum Hochwasserrisikomanagement" in Mainz

Note: This article summarises the contributions made by RAINMAN partner LfULG at the 11th "Forum zum Hochwasserrisikomanagement" (Forum on Flood Risk Management) held in Mainz on 27 June 2019. The contributions include on the one hand the presentation "Tools for Heavy Rain Risk Management in the RAINMAN Project" by LfULG, which were presented in the session "Implementation Examples". On the other hand, in the context of the "Forum zum Hochwasserrisikomanagement" the contents of the presentation are published in the conference proceedings as well as in the German journal "WasserWirtschaft".

Within the framework of the 11th "Forum zum Hochwasserrisikomanagement", LfULG has addressed the significance of the local level in heavy rain risk management from a European perspective in a presentation and two publications. Results from different approaches were brought together in this context.

Dr. Uwe Müller (LfULG) based his presentation on the one hand on two scoping studies of partner institutions that were developed within the framework of the RAINMAN project. In these, current findings were summarised for the countries and regions of the RAINMAN project with regard to a) the assessment and mapping of heavy rain risks (Broer & Spira 2018) and b) the legal framework and measures for reducing heavy rain risks (Balvin et al. 2018).

In the studies it was stated that there are very different approaches to dealing with heavy rain risks due to different data availability and heterogeneous institutional and natural framework conditions. In addition, the authors of the scoping studies note that the responsible institutions of the federally organised states, e.g. in Germany and Austria, use different methods, while centrally organised countries, e.g. the Czech Republic and Hungary, develop a national method (Broer & Spira 2018, Balvin et al. 2018).

In addition to challenges with regard to data availability and the methodological approach, local stakeholders in particular often face uncertainty as to how they can best implement a strategy for heavy rain risk management and communicate the risks successfully.

The RAINMAN consortium identified the needs and requirements of municipalities for effective heavy rain risk management in the course of the project through various participation formats, for example through a close exchange with stakeholders of heavy rain risk management in the pilot regions of the project as well as through an extensive online survey on the status of heavy rain risk management in the partner countries (see Dreßler et al. 2019). The findings were integrated into further project work.

With these approaches, both the current state of knowledge and the needs of relevant actors are included in the project. On this basis, tools and approaches for the reduction of heavy rain risks will be developed in the project and conclusions for offering support to municipalities will be derived. Particularly relevant points will be taken into account in further project work:

There is a high awareness of the need for public heavy rain risk management.

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One result of the online survey showed that the vast majority of participants had already experienced heavy rain events. As a result of the heavy rain events, municipal infrastructures, private buildings and cultivated land in particular were damaged.

The vast majority of survey participants expect an increase in heavy rain events as a result of climate change. Two thirds of all respondents believe that the public authorities have a duty to initiate more activities to protect against heavy rains.

The choice of method for assessing and mapping heavy rain risks depends on a variety of factors. Municipalities can be supported in selecting the appropriate methodologies by the experience of other stakeholders and guidelines.

Heavy rain risks are assessed and mapped using a wide variety of methods. The methods range from simple hazard assessments based on the documentation of past events to complex and costly modelling. A uniform European methodology does not exist and, due to the clear regional differences and framework conditions, harmonisation of the methods applied cannot be the goal. Within the framework of the European cooperation in the RAINMAN project with regard to the assessment and mapping of heavy rain risks, the participating countries can, however, share experiences on the application of the different methods. On this basis, important contents can be formulated for guidelines on some of the methods used.

© Sarang/Wikipedia, 2016

With numerous measures, heavy rain risks can be minimized. However, in many places there is no coordinated planning and integration of measures into a risk management planning process.

The risks of heavy rain can be minimized by implementing appropriate measures. To date, a clear systematisation and cataloguing of measures specifically for heavy rain risk management in the six partner countries of the RAINMAN Consortium is only available in rudimentary form (Balvin et al. 2018). At the same time, however, the online survey (Dreßler et al. 2019) showed that many institutions are already planning or implementing measures to reduce the heavy rain risk. A systematic approach, such as the coordination of measures, is used, but in many places only to a limited extent. Stakeholders involved in heavy rain risk management can be supported by a compilation of suitable measures to reduce the heavy rain risks, by information on the effectiveness of these measures and by guidelines for initiating a risk management planning process.

The RAINMAN project partners draw the following conclusions from the findings: The results of the project should enable the responsible authorities to select and implement a suitable method for risk assessment as well as suitable precautionary and protective measures, taking into account the specific local framework conditions and requirements. The RAINMAN-Toolbox is thus a valuable compilation of possibilities, good examples and guidelines to support local stakeholders in all steps of an effective heavy rain risk management up to the implementation of measures.

Literature

Balvin, P., J. Blöcher, M. Caletka, J. Holm & P. Štěpanková (2018): Scoping study – collection and development of risk reduction measures. Web address: https://www.interreg-central.eu/Content.Node/WP-2-Risk-Reduction-EN.pdf. Last access: May 6th 2019.

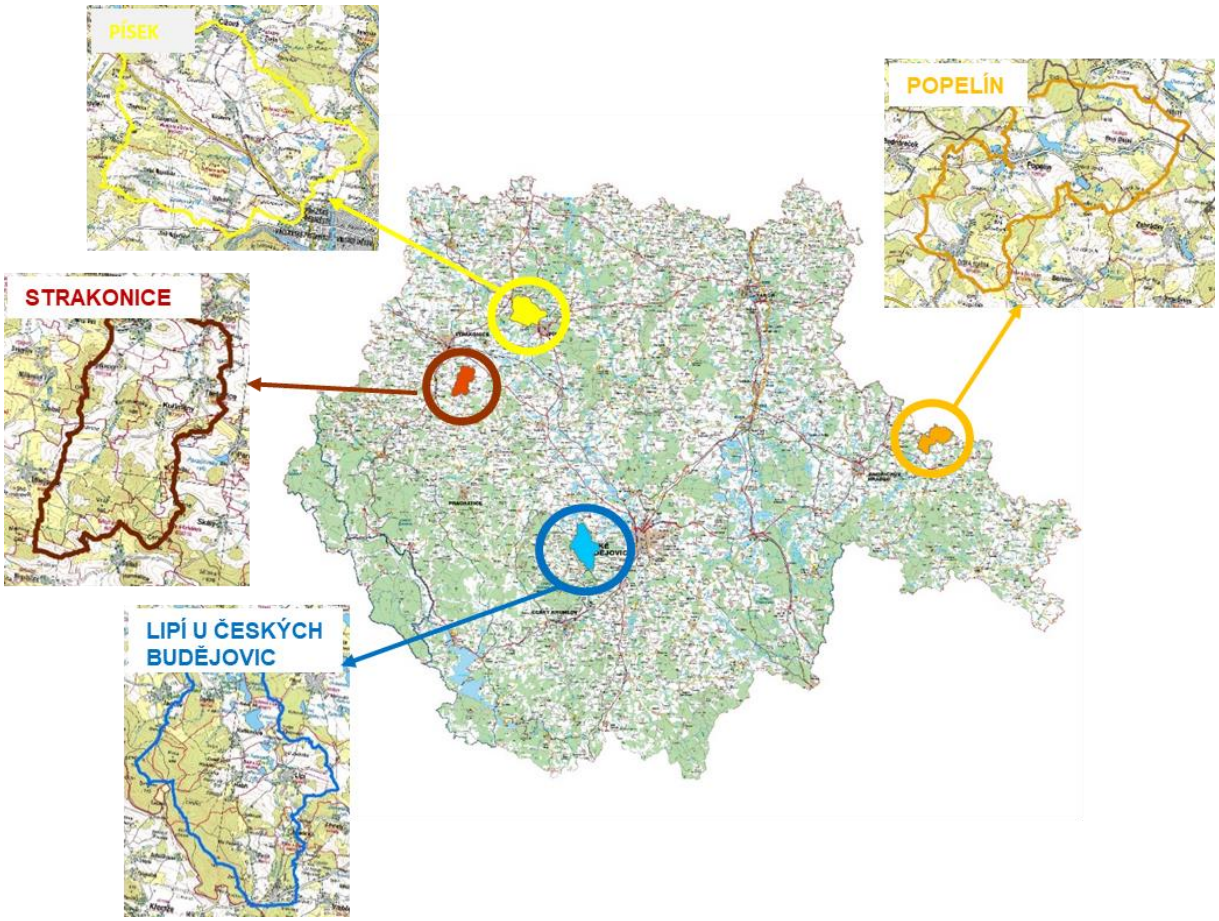
Broer, M. & Y. Spira (2018): Scoping study – existing approaches and methods for heavy rain modelling, mapping and risk assessment. Web address: https://www.interreg-central.eu/Content.Node/WP-1-Risk-Assessment-EN.pdf. Last access: May 6th 2019.

Dreßler, D., L. Scharmann, R. Hille, A. Goris, S. Weiner & P. Heiland (2018): Online survey on heavy rain risk management in pilot /partner regions. Web address: https://www.interreg-central.eu/Content.Node/WP-4-Online-Survey-on-Heavy-Rain-Risk-Management.pdf. Last access: May 6th 2019.

More information:	Saxon State Office for Environment, Agriculture and Geology Dr. Sabine Scharfe Rainman.LfULG@smul.sachsen.de https://www.umwelt.sachsen.de/umwelt/wasser/17525.htm (content only in German language)

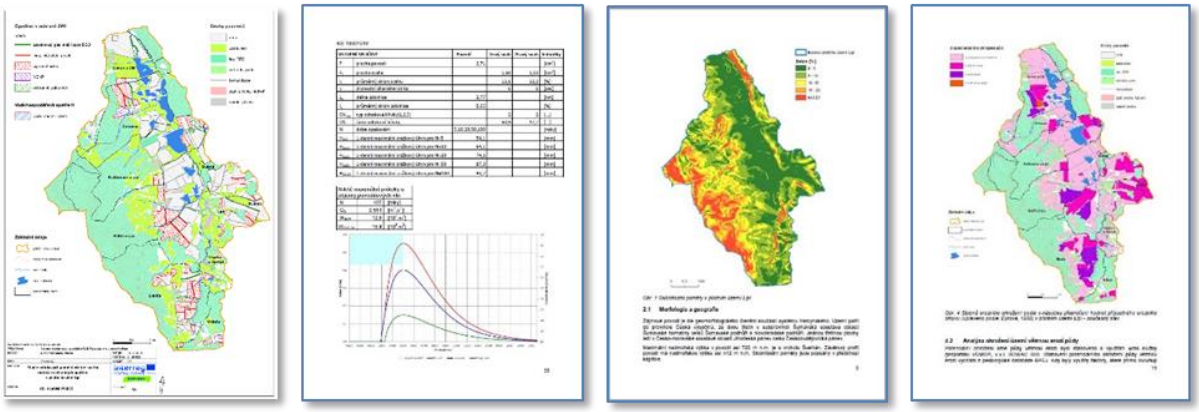
Experiences from meetings in the Region of South Bohemia with a focus on the importance and possibilities of spatial planning

The developed joint methods and tools of the RAINMAN-Toolbox are tested in different pilot regions to prove their feasibility and applicability. One of the 7 pilot actions is the region of South Bohemia which is supported by the RAINMAN project partners Jihočeský kraj (Region of South Bohemia, Section of Territorial Planning) and Výzkumný ústav vodohospodářský T. G. Masaryka, v.v.i. (VUV; T. G. Masaryk Water Research Institute, p.r.i.). In South Bohemia, VUV identified four pilot sites on the basis of the critical point method, which are expected to be at high risk of losses in built-up and undeveloped areas in the event of heavy rain. These locations are:



Pilot sites in South Bohemia
(© The section of Territorial Planning, the Regional Authority – The Region of South Bohemia, 2019)

For each of these pilot sites, VUV carried out an evaluation of the outflow conditions at the location and proposed risk reduction measures. These evaluations have become the basic pillar of the activities of the Region of South Bohemia in the pilot sites.



The Study of runoff conditions, including the proposal of possible protective measures in the pilot site Lipi (© VUV, T. G. Massaryk Water Research Institute, p.r.i., 2019)

Due to its professional focus on spatial planning, the Region of South Bohemia has set up a study on how to implement flood protection (risk reduction measures) in spatial planning documents, taking into account all legal requirements and limits regulations of the Czech Republic. The study "Study of applicability of risk reduction measures in spatial plans" was conducted in close cooperation with the external contractor Architectural studio Štěpán.

ÚVODNÍ VEŘEJNÉ JEDNÁNÍ

STUDIE APLIKOVATELNOSTI PROTIPOVODŇOVÝCH OPATŘENÍ DO ÚZEMNÍCH PLÁNŮ

pořizované v rámci projektu

„RAINMAN"

Invitation to public meetings (© The section of Territorial Planning, The Regional Authority – The Region of South Bohemia, 2019)

To prepare the study, the Region of South Bohemia initiated meetings with stakeholders, the public and farmers at the individual pilot sites. At the meetings, the RAINMAN project was presented, VUV explained initial proposals for measures to reduce the risks caused by heavy rain events and the Architectural studio Štěpán presented possibilities for implementing the measures in spatial planning documents. The meetings also aimed to obtain information from local residents, farmers and community representatives. A total of 26 municipalities were invited to the meetings at the pilot locations. All municipalities received five more invitations from the Region of South Bohemia in addition to their own invitation, which they could issue in public places to invite the local public.

The first meeting took place in Popelín on 20 May 2019. It was meeting with the lowest number of participants during which it became clear that the participants had already dealt with the issue of heavy rain in recent years. The participants reported that agriculture had changed in this area. Since then, heavy rain events have not caused any damage and no sediment deposits have occurred in the villages.

Public meeting in Popelín (© The section of Territorial Planning, The Regional Authority – The Region of South Bohemia, 2019)

The second meeting took place in Písek on 21 May 2019. The participating communities were very active and pleased that the project focused on the whole small basin and not only on the area of one municipality, so that the discussion about heavy rain induced risks can be conducted in a reasonable way. During this meeting, many questions were raised about the binding nature and possible use of the study. When comparing the risk reduction measures proposed by VUV with the local spatial plans, it was found that, for example, the proposed soil protection measures are in conflict with a traffic bypass.

Public meeting in Písek (© The section of Territorial Planning, The Regional Authority – The Region of South Bohemia, 2019)

The third meeting took place in Lipí on 22 May 2019. This pilot site is of special importance in the spatial planning study, as only in this location will a specific modification of a spatial plan be simulated, including an official negotiation process with the public as required by law in the Czech republic. In view of this specificity, many concerns were expressed during the meeting regarding negotiation with the public (especially with the owners) and the promotion of changes in this pilot site. In addition, similar to the meeting in Písek, many questions were raised about the binding nature and possible use of the study.

Public meeting in Lipí (© The section of Territorial Planning, The Regional Authority – The Region of South Bohemia, 2019)

The fourth meeting took place in Milejovice (the pilot site Strakonice) on 23 May 2019. It was the meeting with the highest number of participants. The participants were very active and reported on their experiences in implementing risk reduction measures against heavy rain events (for example a dike was built in recent years, see picture). During this meeting, funding policy and the issue of raising public awareness were discussed.

Public meeting in Milejovice (© The section of Territorial Planning, The Regional Authority – The Region of South Bohemia, 2019)

Based on the discussions in the pilot site meetings, basic common conclusions can be drawn:

1. The participants evaluate complex solutions in a small basin very positively.
2. In the vast majority of cases, an effective solution can be found to combine risk reduction measures with the required spatial development of the municipality
3. Problem with measures financing.
4. Agriculture is linked to subsidy policy. Subsidies are based on the area of cultivation.
5. Municipalities fear the reactions of landowners during negotiation processes.

Dike in Milejovice © The section of Territorial Planning, The Regional Authority – The Region of South Bohemia, 2019)

In summary, the current system of agricultural subsidies prevents greater fragmentation of the agricultural landscape and, together with land ownership and user relations, is the greatest obstacle to the implementation of measures to reduce the risks of heavy rain. Spatial planning documents cannot fully overcome these obstacles, but a binding definition of risk reduction measures in spatial planning can help to protect future solutions.

More information:	Region of South Bohemia Věra Třísková, Štěpán Luksch, Dana Fialová RAINMAN-PP6@kraj-jihocesky.cz http://geoportal.kraj-jihocesky.gov.cz/gs/rainman/

6th RAINMAN Partner meeting in Wroclaw, Poland

In June the RAINMAN partnership met for two days in the beautiful city of Wroclaw.

The first day of the meeting was dedicated to the exchange of the RAINMAN consortium with Polish experts. The experts presented insights into current findings and questions on the management of heavy rain risks in Poland. The presentations focused on the official organisation of heavy rain risk management in Poland, on the consideration of natural hazards in the spatial development plan of the Lower Silesia Voivodeship and on a newly developed catalogue of measures for the sustainable handling of precipitation on road surfaces.

RAINMAN partners presented interim results from the pilot regions for the assessment and mapping of the heavy rain risks and hazards there. The findings from the pilot regions will be incorporated into the RAINMAN-Toolbox. A methodology guide for the assessment and mapping of heavy rain hazards and risk mapping will be implemented in the toolbox to support users in the selection and application of a suitable methodology. Together, Polish experts and RAINMAN partners collected ideas as to which information is particularly important for the toolbox users and which possibilities for compiling this information are particularly attractive for municipalities.

In the afternoon of the first day, the RAINMAN partners dealt with the current status of a comprehensive catalogue containing measures to reduce heavy rain risks. In the context of this work package, the toolbox will provide instructions for the identification and implementation of suitable measures as well as for the fields of spatial planning, early warning, hazard prevention and building precaution. In this context, for example, the provincial government of Styria is developing a toolkit to support the authorities in the preparation of alarm and emergency planning.

The discussion of these toolbox contents also focused on the question of how to prepare the information as user-friendly as possible, so that users like to use the service and are motivated to implement the contents.

The discussions on the second day of the meeting initially focused on the importance of risk communication, including raising awareness and involving stakeholders and interest groups in heavy rain risk management. The RAINMAN partnership is also developing measures on this topic which will be integrated into the RAINMAN toolbox. For example, the RAINMAN partner IMGW-PIB is developing an awareness package for schools with which children can raise awareness of the risks of heavy rain in a child-friendly way.

Besides this information package, the consortium is developing other offers for pupils and students, such as a lecture on heavy rain risk management at a university. The project partners agreed to keep a special eye on the target group of students in future activities.

In addition, recommendations for the integration of heavy rain risk management into flood risk management planning are to be derived from the project results. On the basis of the current findings, the project partners discussed possible conclusions that could be introduced at European level. For further discussion of this topic, next steps were identified and a working group was formed.

In the afternoon of the second day, a visit of the water crossing in Breslau took place by ship. Polish experts explained the historical origin to the RAINMAN consortium and reported on the effects of past flood events.

More information:	Institute of Meteorology and Water Management – National Research Institute Dr. Mariusz Adynkiewicz-Piragas, Iwona Zdralewicz, Irena Otop mariusz.adynkiewicz@imgw.pl

RAINMAN Key Facts

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RAINMAN-Website & newsletter registration:	**www.interreg-central.eu/rainman**

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Amt der Steiermärkischen Landesregierung

Das Land Steiermark → Wasserwirtschaft

Výzkumný ústav vodohospodářský T. G. Masaryka. v.v.i.