EMERGENCY RESPONSE PLANNING FOR HEAVY RAIN RISKS

Recommendations

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Contracting authority

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Preface

RAINMAN

The Interreg CE project RAINMAN aims to reduce damages caused by heavy rain in urban and rural regions. The project establishes tools for dealing with heavy rain risks for local, regional and national public authorities. The partners jointly develop a transferable toolbox with various tools. The toolbox is available on www.rainman-toolbox.eu.

Emergency Response Toolkit

One tool is the emergency response toolkit. It supports local and regional authorities with manuals and templates in creating emergency response plans for heavy rain events.

The toolkit is available in two different versions:

SINGLE DOCUMENTS

Here specific topics are available as 8 single downloads.

➔ IMPORTANT: Please note the references between the individual documents.

	General information & application assistance
	Recommendations (.pdf)
Step 1 – Review of the existing hazard analysis	
	Manual (.pdf)
	Templates (.zip)
Step 2 – Review of the existing vulnerability analysis	
	Manual (.pdf)
	Templates (.zip)
Step 3 – Define suitable measures	
	Manual (.pdf)
	Templates (.zip)

COMPLETE VERSION

Here all documents are available as 1 complete download.

➔ IMPORTANT: Please note that the numbering of the chapters differs from the version of the single documents.

	Emergency Response Toolkit (.zip) Content of the ZIP-File Part A – Recommendations & Process flow Part B – Templates

1. Introduction

The aim of emergency response planning is to avoid critical danger for human health and life, the environment, critical infrastructure or relevant valuable goods. In the sense of this, measures should be created in order to minimize the damage potential.

In general, emergency response plans (ERP) are set up to respond to a flood event in a way to help keeping the damage to a minimum. Heavy rainfall events tend to be natural hazards with only a short warning time and critical floods can develop within minutes. Hence, the few minutes between the first warning and the occurrence of flooding need to be used best. This is why a good planning process is essential.

In order to be well prepared for heavy rainfall events, a good knowledge about potential hazard scenarios and the areas where the highest damage potential is located is very important. Hence, this toolkit sets the focus not only on the detailed planning of emergency response measures, but also on a detailed review on the hazard and risk situation.

This document aims to give general recommendations for emergency response planning, in particular concerning heavy rainfall events. Regarding the following topics, short recommendations are proposed:

- Legal situation
- Crisis communication
- Goals and limits of emergency response plans for heavy rain risks
- Data
- Integration of existing systems (e.g. emergency response plans for fluvial floods)
- Action plans for different rainfall scenarios
- Regular training with the emergency response plan

2. Legal situation

The legal situation concerning the obligation to create emergency response plans might differ between countries. Further, the legal responsibility resulting from the existence of emergency response plans needs to be evaluated on the applicators country basis. Legislation might even differ between federal states of one country.

For example in Austria, municipalities are obliged to create emergency response plans for their regional specific hazards. Details on who is responsible for planning, adapting and applying of measures are legally regulated by the federal state's disaster protection laws.

Hence, legal situation settles the basis of all the developed emergency intervention measures and needs thus be clarified first. In addition it should be written down in the preliminary remarks of the final emergency response plan. This applies not only for heavy rainfall risks. Therefore it might already be put on record in existing emergency response plans.

3. Crisis communication

Heavy rainfall events are often characterised by short warning times. Communication during the events must thus be well organised. Crisis communication can be distinguished between the communications within operating organisations (e.g. the operational head advises to build up the planned road barriers) and the information to the affected public.

For communications within the operating organisation it must be clarified first who bears the legal responsibility and must thus be informed about every step. Communication itself must be direct and short. As communication channels, phone calls are to prefer against emails, because a direct receipt is given.

Regarding the information of the affected public, authorities should always keep the informational leadership. Hence, information needs to be given as soon as possible, in an easy-understandable way, describing the situation and planned further steps in a realistic manner. As communication channels both official websites and official social media accounts can be used.

4. Goals and limits

The overall goal of developing emergency response plans is to minimize risks. Most likely the affected region already dealt with risk caused by natural hazards. The aim is to create documents, which comprehensibly record what, by whom and when to do, even if those who have previously handled such emergency operations are not present. Things that are already common practice should be reflected in the emergency response plans.

Limiting are usually the non-existent short-term forecasts, which would allow setting detailed measures during the heavy rainfall events. Hence it makes sense to take into account medium to long term measures (spatial planning, structural changes, awareness raising, information of affected citizens, and self-provision of citizens).

5. Data

Data is the most important prerequisite for the generation of emergency response plans for heavy rainfall risk. Rainfall events can vary widely concerning the local spread and the intensity. Thus, maps showing certain heavy rainfall scenarios (hazard maps) can only depict one part of the potential hazard situation. Most likely a real rainfall event will not match exactly with the scenarios depicted in the hazard maps. It is therefore important to be aware of the inputs used to create the hazard maps.

Before an emergency intervention is started, measures should always be critically reviewed concerning the present event. Eventually, measures need to be applied or cancelled during the operation. In any case, all deviations from the emergency response plan need to be documented.

6. Integration of existing systems

The developed plans should reflect things that are already common practice. Thus, existing emergency response plans need to be evaluated and specific parts can be implemented in the documents for heavy rainfall risks. Especially plans for fluvial hazards contain important information and should be integrated in emergency response plans for heavy rainfall risks.

7. Action plans for different rainfall scenarios

Emergency intervention measures are always developed based on a specific hazard scenario. Hence, when the real event differs from the modelled scenarios, modifications during the emergency interventions are essential.

Heavy rainfall events are natural hazards which tend to differ locally and temporarily. Knowing this, one has to be aware that the scenarios depicted in any hazard map will most likely not exactly match any real event. Considering the fact that forecast data quality is often not precise enough to obtain a detailed knowledge which scenario is expected, this toolkit recommends to focus with the measure planning on a rather extreme rainfall event and cancel the inappropriate measures during the emergency intervention. If hazard and risk maps for different rainfall intensities are available, it is advisable to work out the differences in the area affected when developing measures. This will ensure that the available resources can be used optimally even during less intensive events. For the individual measures in the action plan, the expected event intensity at which the measures are to be set can then be specified.

Only if it is possible to clearly distinguish between different scenarios, like flash floods or long lasting heavy rainfall events, where the possible inundation areas differ largely, it might be useful to establish more than one critical scenario. If so, for each scenario a single action plan needs to be developed.

8. Regular training with the emergency response plan

The work with emergency response plans need to be regularly trained to be well prepared when it comes to emergency interventions.

The first training should be carried out immediately after the ERP is finalised, in order to train those who are in charge to operate with the plan. After that the plan needs to be checked if all the information is still correct. Additionally this toolkit recommends yearly training with the documents.

This training is not meant to train how to set up measures in detail, but more to work through the documents, to know the responsibilities and how the alarm concept and further communications work.

RAINMAN Key Facts

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RAINMAN website:	**www.interreg-central.eu/rainman**

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