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MONITOR II

Stakeholder Feedback report

on contingency plans, hazard maps and CSA use

Stakeholder Meeting 21/03/2012
20 April 2012

On 21 March 2012 meeting was held in Vienna to analyze the experiences gained in the Helmuth Aigner, the responsible expert for hazard mapping in the Department for Vienna, Lower Austria and Burgenland of the Federal Forest Technical Service for Torrent and Avalanche Control informed about the identified deficits, needs and challenges regarding the interaction between hazard and contingency planning and the involvement of the relevant stakeholders. In this task he was supported by Clemens Liehr (Riocom, consultancy company for Water Management and Environmental Engineering; Data Processing and Information Technology), an expert in the field of contingency planning. In the frame of MONITOR II Riocom has been charged with development of Contingency Planning Guidelines and the implementation of the newly developed approach in domestic test beds of the MONITOR II project, one of which is the Tyrolean Stanzer Valley.

In a short presentation LIEHR described briefly the process of contingency planning as developed in MONITORII project

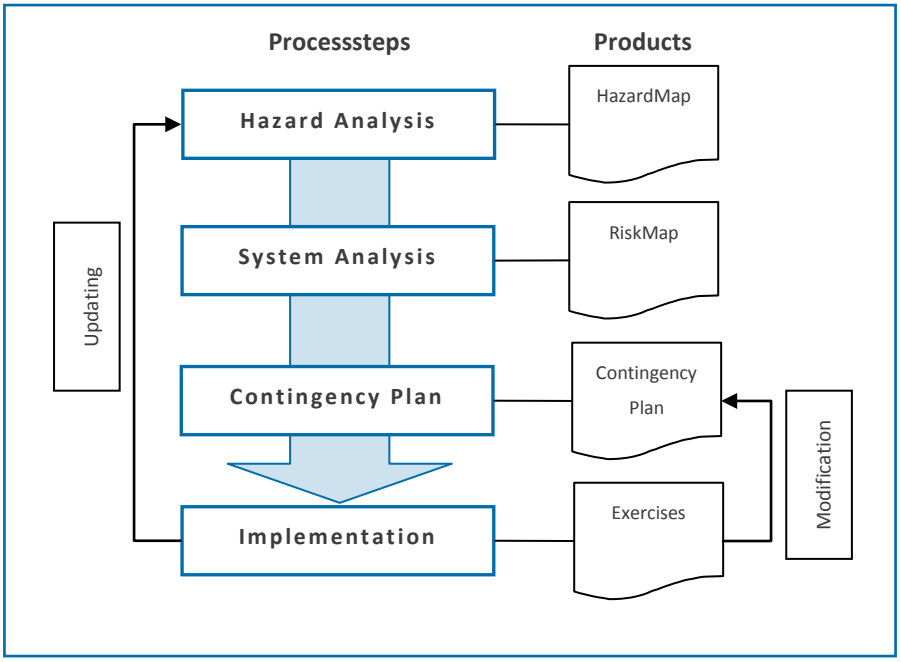

Figure1: Process of Contingency Planning (Riocom)

and underlines that newly developed process is promoting a comprehensive participatory approach. In this context the newly developed Guidelines are also taking into consideration

the requirements of the “Standards of Public Participation” published in year 2010 by the Austrian Federal Chancellery.

The administrative process of the approval of a contingency plan foresees that the first draft of a contingency plan has to be made public for four weeks and that the public has the right to deliver written comments within this timeframe. Furthermore, the regional as well as the responsible district offices of the Technical Service for Torrent and Avalanche Control are organizing, for most of the contingency planning projects, public events where experts present details and can be asked whatever question in regard to the project.

The analysis has revealed that cooperation of the technical Service for Torrent and Avalanche Control and the Emergency Services, administrated by the Regions according to the constitution has to be improved as the level of cooperation differs considerably. However, the Technical Service for Torrent and Avalanche Control is currently seeking to improve the cooperation with the Emergency Services by institutionalizing the coordination on regional as well as on national level. Simultaneously the Technical Service for Torrent and Avalanche Control is also strengthening its cooperation with the various administrations responsible for railway lines as well as roads.

Hazard zoning is a rather technical process requiring the collection of a multitude of data and information which are mainly collected in the concerned area by the experts of the Technical Service for Torrent and Avalanche Control. Furthermore, they make use of old chronicles and records about historic disasters and assign, if necessary, additional experts such as geologists for more in-depth analysis. To gain a better insight into the existing hazards, experts of the Technical Service are visiting the catchment areas to survey the terrain and hazard sources. Moreover, promoting a participatory approach, the involved experts make use of the local knowledge and interview residents about past events. ‘Silent witnesses’ are helping to complete the assessments necessary to develop a specific plan.

The Austrian Forest Act includes the legal obligation that a first draft of a hazard zone plan has to be made public for four weeks and the public has the right to be informed about a project and to deliver written comments. Since this approach represents just a low-level of participation, the Technical Service for Torrent and Avalanche Control supplements the legal requirement by offering public hearings. The level of participation was raised and today the activities of the Technical Service are going beyond the obligations of the Forest Act: For most of the hazard-zone projects the service organizes public events where experts present details and can be asked whatever question in regard to the project. Further each person who made use of his/her right to deliver a written comment can take up its position and discuss its with the responsible experts. In some cases the draft of a hazard zone plan is additionally presented to the local council of the concerned communities which constitutes an representative element of public participation. In the end experts have to make their decisions but due to public participation a higher level of objectivity and, even more important, a higher degree of acceptance by the affected population can be achieved. Therefore public participation in hazard-zone planning is considered as an important contribution to assure a high degree of quality. See figure next page (Figure 2: Process Study, AIGNER).

Responsible actor(s)
Participants mandatory
Participants as needed
In case of a change or a supplement the process will be put back to the previous level

			Head of regional division	Hazard-zone map editor	External (basic data survey)	Expert for hazard-zone mapping	Head of concerned department	Federal Ministry	Affected citizens	Municipality	District commission	Province
Initiation of hazard-zone map development												
Design of hazard-zone maps		Survey in the catchment areas, collection of historical data							Report about past events	Evaluation of relevant areas		supra-local spatial planning
		Calculations, analysis										
		Assessment										
		Definition of hazard-zones, reference areas and areas with reservations										
		Audit of draft										
Intra-departmental coordination		Presentation of draft of hazard-zone map to the concerned department										
		Technical and formal audit of the draft										
	FUNCTIONAL ROUTINE	Decision about a common coordination between the department and the expert for hazard-zone mapping										
	FUNCTIONAL ROUTINE	Common intra-departmental coordination on site and preparation of a protocol										
	FUNCTIONAL ROUTINE	Presentation of the protocol to the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water via the intern official channel										
	FUNCTIONAL ROUTINE	Approval of the draft by the concerned department, internal coordination as technical pre-audit										
	NON-FUNCTIONAL ROUTINE	Intra-departmental coordination on site, preparation of a protocol										
	NON-FUNCTIONAL ROUTINE	Request to the Federal Ministry of Agriculture, Forestry, Environment and Water Management for the technical pre-audit on site										
Pre-audit on site	NON-FUNCTIONAL ROUTINE	Technical pre-audit on site, preparation of a protocol										
Public information		Invitation to public event										
		Realisation of public event										
Publication of draft		Delivery of draft for official publication										
		Official publication of draft										
		Written comment on draft							Facultative	Facultative		
Audit by commission		Announcement of commissional audit					In coordination with the federal ministry					
		Audit by commission on site, Preparation of a protocol					Member of the commission	Head of commission		Member of the commission		Member of the commission
		Approval of the hazard-zone map on site						Optional				
Approval of the hazard-zone map		Presentation of the protocol to the Federal Ministry of Agriculture, Forestry, Environment and Water Management for the notification of the authorization number										
		Approval of the hazard-zone map										
Copies		Preparation of copies										
		Submission of copies to department										
		Verification of copies										
		Delivery of copies										

After the release of a specific hazard plan by the responsible department, digital copies of this plan are available at freely accessible regional GIS servers.

To be well prepared for an event of disaster, the Technical Service for Torrent and Avalanche Control is meeting regularly with the various commandos of the fire brigades - in Austria predominantly organized on a voluntary basis – as well as the civilian and military emergency services. In general, the cooperation can be considered as quite effective. However, various events have revealed that the cooperation could still be improved and should be tested more regularly. In near future the regional departments of the Technical Service for Torrent and Avalanche Control will join TETRON, the national wireless digital communication system for all professional as well as voluntary emergency services allowing an effective coordination of rescue measures in the case of an emergency event.

The new approach for contingency planning elaborated in the frame of the MONITOR II project has been implemented and tested in the inner alpine Stanzer Valley, the joint test-bed of the Austrian project partners. The test area comprises the eastern ramp of the Arlberg line of the Austrian Federal Railways located in the Region of Tyrol.

Following the theoretical concept of the contingency planning process the new approach was applied in the test bed area and the pre-defined products were elaborated (e.g. event flowchart, catalogue of measures). For each domain of the contingency planning process four so-called ‘technical points’ were determined (information point, critical point, observation point and response point).

Process domain: the test-bed was examined in regard to different hazard processes and hazard maps were produced providing a general overview on the identified processes.

Risk domain: building on the detailed process analysis the potential losses of life and assets were evaluated.

Response domain: General information was provided on the intervention measures and the locations were determined where the intervention measures should be implemented.

The intervention map for torrents elaborated for the Eastern ramp of the Arlberg railway line, the test bed of the Austrian project partners, shows catchments with medium or high protection deficit for the railway track. The map below displays the Austrian test-bed and informs about the about the domains and the technical points as described above.

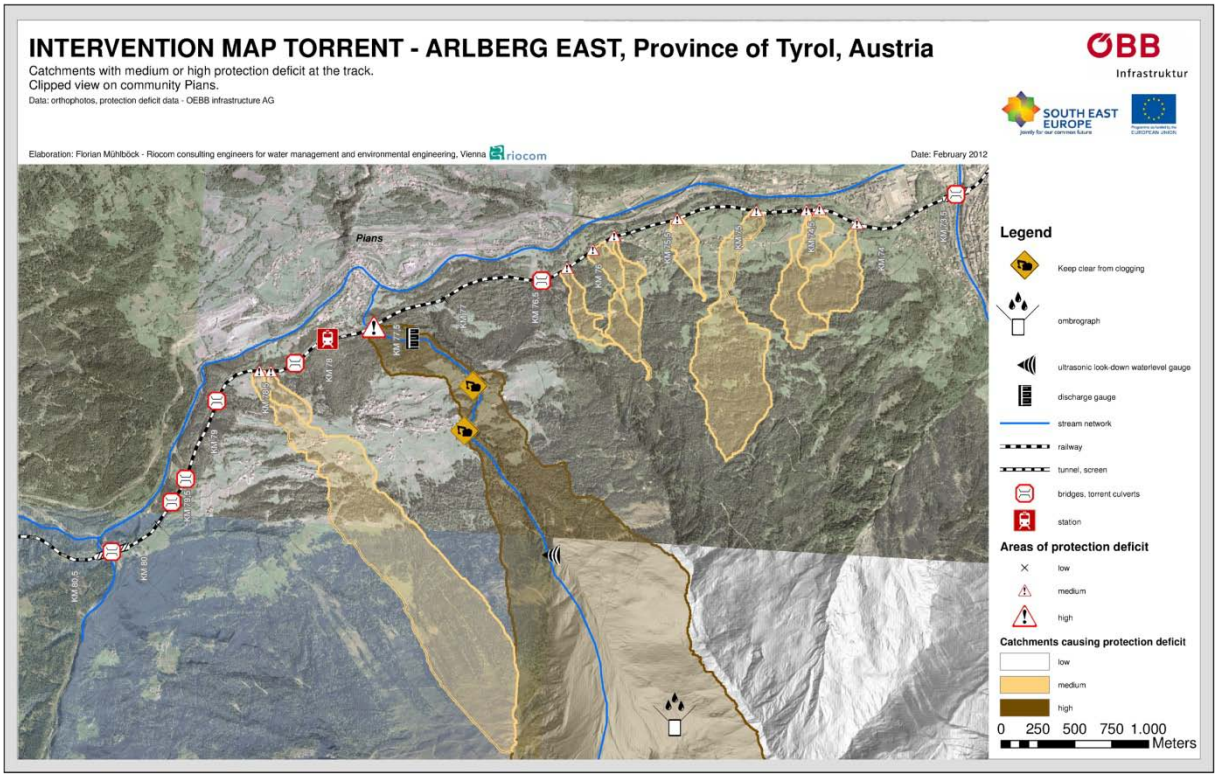

Figure 1: Intervention map of the test-bed in Tyrol/Austria (Riocom)

Furthermore, also an extract of a measures catalogue containing a list of responsibilities and measures for various comprehensively described, pre-defined scenarios was presented.

		D	E	I			n
1	Weather warning - intense rainfall forecasted				forecast	weatherdevelopment / decision / information	weather forecast
2	Provide information		Haz	regio local TCU			
3	Observation weather development - aerial precipitation and intensity pattern		Haz	regio local TCU			
4	Prepare rail replacement transport	RCB	RCB	TCU			
5	Gather information on catchment condition: Hydrological Service Tyrol		Haz	regio			
6	Gather information on potential debris in catchment: TACS ob. Inntal		Haz	regio			
7	Assessment of catchment by trained staff, completion of catchment condition form		CG				
8	Check culverts along the track on clogging (e.g. woody debris)		CG				
9	Consultation weather service: actual development		Haz			verification preparation	
10	Limited service / prepare closure	Haz					
11	Observation precipitation gauges St. Anton a.A., Pettneu, Flirsch, See/Paznaun, Kappl-Oberhaus, Landeck, Zams		regio HydS		precipitation	forecast development	discharge-/ precipitation gauge
12	Observation discharge gauge St. Anton/Salzhütte, St. Anton / Moos, lake Verwall, Strengen, See/Paznaun		regio HydS PPO				
13	Observe precipitation progress		regio HydS				
14	Carry out closure - if necessary stop trains in next safe station	Haz					
15	Prepare clearing team	Haz	regio				
16	Prepare repair unit	Haz	regio				
17	Observe discharge		IC		rising discharge	accident avoidance	
18	Keep clear sections that are prone to blocking (bridges, culverts,...) (see map)	Haz	clearT				
19	Summon regional crisis board	Haz			flooding	evaluation & repair	damage / victims
20	Summon emergency staff leader	RCB					
	SUBSCENARIOS TORRENTIAL FLOOD EVENT / **go to**						
	Catenary damaged? / CP 1.1						
	Catenary pole damaged? / CP 1.2						
	Train hit? / CP 1.3						
	Tunnel blocked? / CP 1.4						
21	Decide on reopening	RCB			no danger	all clear	expert decision
22	Dontinue regular service	RCB					
23	Dismiss regional crisis board	RCB					

D... decision, E... execution, I... information

Figure 2: Extract of a measure catalogue for the test bed

In the case of an emergency event the presented catalogue of measures has to be processed step-by step. The use of a Continuous Situation Awareness System (CSA)would facilitate a dynamic adaptation to the new circumstances caused by a change of the general conditions.

With the implementation of the Directive on the assessment and management of flood risks (2007/60/EG), some of these tasks have become obligatory:

The Floods Directive stipulates an approach in three stages:

- Preliminary flood risk assessment by the end of 2011
- Elaboration of flood hazard maps and flood risk maps for areas with a potentially significant flood risk by the end of 2013
- Elaboration of Flood risk management plans for these areas by the end of 2015

In meanwhile a technical working group has been established for the implementation of the Floods Directive. In Austria this Directive falls within a variety of competences of both the federal government and the Regions (e.g. Austrian water law, waterway navigation and torrent control and avalanche protection as federal competences, and spatial planning, civil protection and nature conservation as regional competences).