



# Stakeholder feedback report

## Stakeholder feedback on proposed intervention map as a part of a contingency plan



At the initiative of representatives of two Slovenian Monitor II project partners (Faculty of Civil and Geodetic Engineering of the University of Ljubljana and Torrent and Erosion Control Service) several stakeholder meetings were held. At these meetings we spoke about the progress of MONITOR II project which runs under the SEE (South Eastern Europe) programme and methodology of elaboration of an intervention map was presented. This report presents stakeholder feedback from four stakeholder meetings.

All responses (comments and suggestions) given by the representatives of institutions that were involved in stakeholder meetings were sensibly summarized and grouped in a few major sections.

## Feedback to presented methodology

### Some comments on current situation

- Contingency plans in Slovenia (state, regional, local level) define authorities and tasks to assure protection, rescue and relief. They assure organised and coordinated response. We were told by some representatives of municipal civil protection that the existing municipal contingency plans lack in operational usefulness. The extensiveness of these plans often leads to partial use. It was said that one of the most useful parts of contingency plans are “lists of responsible” in the appendixes (names and contact data of responsible people respectively institutions). Moreover, we were told that improvements of contingency plans (especially on local level) would be desirable.

### General response to demonstrated methodology:

#### INTERVENTION MAP:

- Staff of regional branch of URSZR welcomed the idea of intervention map and valued such an approach as a step in the right direction. They highlighted the questionable quality of existing municipal flood protection and rescue plans. It happens very often that plans are drawn up by someone who doesn't come from the municipality, doesn't know the region well, and he only copies some contents from the regional or state flood protection and rescue plans. Of course this description is often too general for the municipal level since it doesn't contain enough information of local importance and problems of the relevant watercourse. In their opinion the intervention map proposed by the Slovenian partners of MONITOR II project contains plenty of information about where and who is at risk.
- Map could be interesting for the civil protection as some kind of printed admonishment. It could also serve as an aid for planning the necessary resources - on its basis it would be easier to predict the height of the needed funding and it would also be easier to justify the need to buy the equipment.
- We got different opinions regarding the proposed intervention map - contingency plans should be thoroughly re-formed and rewritten and a graphical solution for presentation of information is believed to be suitable.

#### SCENARIOS:

- Representative of municipal civil protection expressed his opinion that producing scenarios on one hand makes sense on the other hand it is unreasonable since the number of scenarios can be immense. Many scenarios

would be useless (in addition unforeseen (unwritten) scenario would happen and civil protection should improvise on the spot). He illustrated his opinion with an example when after a heavy rain a tree fell down (a force pulled it up by the roots) and it fell into the riverbed.

- Commander of municipal civil protection unit would keep the number of scenarios to a minimum.

### Contents that could be added to the presented intervention map

- **COMMISSIONERS' LOCATIONS:** The municipal civil protection headquarters also communicates with reliable citizens (so called commissioners – persons in charge for civil protection) from all settlements within the Municipality of Mozirje. These commissioners notify of the situation. It was suggested that the locations of the commissioners would be drawn in the map.
- **CONTACT DATA:** They would rather get as much information as possible from the map itself – names and phone numbers of responsible persons. Due to the torrential nature of floods which occur in an instant a clear and ultimate document (referring to protection and rescue plan) is crucial.
- **MAP LEGEND:** We were asked to supplement our map by adding a date and the name of the person and institution that produced the map.
- **INTERVENTION ROUTES:** Representatives of URSZR have suggested that the map would also include the potential route detours. Also commander of municipal civil protection unit said that it would be welcome if map was completed by adding intervention routes and these routes should be regularly maintained. All forest roads could be marked since they could be a solution for accessing some villages that would be cut off due to impassability of commonly used roads.

### Intervention map form

- **SYMBOLOLOGY:** We were reminded us that the symbol that we used on the map for the temporary shelter is inadequate as it is a symbol internationally recognised as a symbol of assembly point of a single building - not for gathering of citizens from an entire district.

### Terminology used

- To avoid misunderstandings we agreed that in the future we will refer to our output (proposal) with the expression '*intervention map*' or '*operational protection and rescue plans*' instead of '*protection and rescue plans*'. For the same reason we will use '*recommendation*' instead of '*guidelines*'.

### Contingency planning: current practice

In many cases literature that would cover certain fields of contingency planning is missing. Nevertheless knowledge exists among those who are involved in crisis management. Hence we tried to learn more about some unwritten principles of best practice and when possible include it in methodology.

- We asked if there is any written methodology or principle of how (where and how high) to erect temporary dykes (sand bags) during the intervention, when flood wave is expected. We were replied that there is no such document in Slovenia. Sand bags are distributed (from central and regional storage centres) to community and individuals who want to protect their own immovable

property. He also mentioned the example of Cologne: for a zone (a square) that is regularly flooded they have invented protection by using a temporary dyke made of some new materials.

- We were interested in the disposition of SOPs (standard operating procedure). We were told by representatives of URSZR Celje that they are currently established only in regional notification centres, where a SOP is fixed for each event. At the municipal level there are no SOPs of civil protection activities. (Police, fire brigade ... all have their own SOP depending on specification).
- We were briefly explained how the municipal civil protection headquarters works. Headquarters assembles and receives information from site regularly, e.g. someone calls and reports that there is a risk that a bridge will clog so they send a dredger to the spot.
- It was pointed out that it is in mayor's power to demand that an industrial plant's management (for example Chemistry Mozirje) elaborates a contingency plan for floods at the level of factory (if that is reasonable).

### Relevant projects and researches

Some projects, researches, expert's detailed reports or models were mentioned which might be of use for the next steps of Monitor II project. Some of this work is still in progress; some documents (respectively projects) had already been finalized.

- In addition, URSZR participants reminded us that Slovenian Environment Agency had developed a prognostic model (machine learning techniques) for Savinja river. They were interested if something like this will be included in the concept of the intervention map or CSA tool. Slovenian project partners replied that at this stage we have limited ourselves to simple static maps which will not include such models. We have kept the ambition to make a sophisticated tool but the future of CSA within the MONITOR II project is momentarily questionable.
- Representatives of URSZR pointed out that the URSZR Regional Section Celje is the coordinator of a project dealing with vertical connectivity of protection and rescue plans. Contractor (a company) is preparing a common ground for the form of graphical presentation of protection and rescue plans.
- Software was mentioned in which local data can be introduced – e.g. which house is flooded - this is bound to warning level values (H1, H2, H3, H4, H5). ARSO is authorised for data input, there are however no additional guidance on covering the points.

# Improvement of flood protection

## New ideas for the project

We got one suggestion what sort of results we could develop within Monitor II project in the future.

Representative of regional branch of URSZR had a suggestion. He proposed three substances that would comprise a comprehensive approach to protection and rescue plans:

1. Vulnerability assessment (what can happen - return period, scenarios)
2. Intervention map - a plan of actions
3. Working map which one could change and supplement all the time during the intervention - enter data on the number of emergency vehicles, the number of people on the set and their locations, number of residents, the number of injured persons etc.).

This would be a dynamic map (in a GIS environment or in more widely used software), updated with new information on the situation and could change during the intervention.

In addition the map would not only be useful during the intervention but could also serve as the basis for a report (which is also relevant for the refunds) and analysis of the event (on the basis of such analysis one could determine whether the risk assessment is adequate or some items should be changed).

## Comments to current state, ideas how flood protection in general could be improved:

- Commander of municipal civil protection unit stressed that it is very important to communicate with citizens – citizen should be provided with information and ideas what one can do for his flood protection himself. People usually just wait for the fire department to come. It would be reasonable to prepare instructions for the individual measures. He praised the campaign *poplavljen.si*, especially the leaflets, which were dispensed to residents of Ljubljana. Citizens should be aware of the importance of preventive flood protection and the possibility of individual protection during the event, so that in the future they will take an active part in protecting themselves and their property when the flood event takes place.
- New Slovenian legislation that introduced a new approach in connecting flood and erosion hazard mapping and spatial planning was applauded. It was stressed out that if people and administrative authorities will obey the new regulation regarding new limits in the use of land this will bring a truly welcome change.

## New information on test-bed

We obtained new information and hints regarding Slovenian Monitor II test-bed.

### Projects and researches relevant for Slovenian test bed

- We wanted to know if flood hazard areas and erosion hazard areas (or flood risk areas and erosion risk areas) have already been defined along Savinja river, especially along Savinja's reach within Municipality of Mozirje.

We got the answer that a study 'The preparation of flood and erosion hazard maps and flood and erosion hazard classes in the Municipality of Mozirje' was elaborated for the needs of municipal spatial plan. It was made by a company Water Engineering (responsible company representative: Rok Fazarinc; study was carried out by Miha Zidarič). We were advised to ask at Municipality of Mozirje if they can provide us with an electronic copy of the study.

### Events and critical sites within test-bed

Participants of stakeholder meetings shared their experience from interventions and pointed out specific (most critical issues) sites of their region.

Some of the features of the test bed area and events (as for flood and erosion) that had happened in the Municipality of Mozirje in the past:

- At ARSO they pointed out the problems with water facilities that can't cope with flood waves anymore, the reconstruction would be necessary. A highly critical facility within the Municipality of Mozirje on the Savinja river is alleged to be Mozirski jez – a weir that is in a very poor condition. Once high water levels are recorded there is an immediate alarming situation and a crew is sent to the site.
- A severe flooding was pointed out that took place in the Municipality of Mozirje in 1990. After that a large part of the municipality was restored (raising dikes ...). Whenever there is a risk of flooding they pay great attention to the bridges – they regularly check them and clean them if necessary.
- The torrential nature of the watercourses in the area makes things difficult.
- Most unpredictable are small brooks. They're usually almost dry, but when full they are extremely rich with water and they can really strike.
- Superficies of bridge openings are insufficient, culverts are problematic.
- Also logs (floating wood) cause difficulties. Once a campaign was carried out through which the awareness of the importance of cleaning of wood near torrential streams was to be raised. Via forestry inspectorate they appealed to forest land owners to ensure clean surfaces along torrential streams, because logs can significantly increase the consequences of flood events. The campaign was assessed as very successful because the owners of forests then proved well and responsible.
- Representatives of the civil protection unit of Municipality of Mozirje confirmed that the scenario of a blocked bridge over Trnava river was accurately predicted since flooding caused by bridge clogging had already occurred there.
- In surroundings of Trnava river an extensive landslide started coming down, it flooded the region upstream. The conditions of the area had been recovered and the mass doesn't cause problems anymore.

- Mozirnica is the most critical of all the rivers but the area along it is relatively unpopulated. Where the banks are populated the river channel can hold higher water flows.
- Mozirnica river is liable to erosion and landslides. Due to downstream water level boundary conditions the riverbed should not be deepened by river regulation.
- House of Mr. Kavčič is always flooded. Wastewater treatment plant is always flooded.
- We were reminded that we should use the name of Ločki jez instead of Delejev jez for a weir. For the mill stream which runs along Savinja in the Municipality of Mozirje we should use Mozirska struga instead of Mlinščica.
- A section of Mozirska struga near its outfall to Savinja river is extremely liable to erosion and the nearby settlement is facing flood risk.
- Ljubija river is also very liable to erosion. The process of erosion is going on all the time and it causes problems.
- Representatives of the civil protection unit of Municipality of Mozirje described an intervention when a dyke's surface was getting worn away by the action of a flood wave. They had to act fast and they stretched a foil all over the dyke, they fixed it firmly so that the water wouldn't sweep it away. Sediment load began to dispose. With this measure they've protected embankment from erosion and prevented the collapse of dyke.
- Representative of Municipality of Mozirje briefly summarized some of the characteristics of Savinja river basins within the Municipality of Mozirje, pointed out potential dangers and described measures that have already been accomplished.
  - Chemical Factory Mozirje doesn't face any flood risk since it is positioned quite high and has remained intact in the flood events that have occurred so far. It was also mentioned that in case if flood risk is identified for a plant within the municipality, the mayor may make a decision that the endangered plant produces its working plan for protection and rescue during floods.
  - Savinja river itself within the Municipality of Mozirje at slightly elevated flow rates isn't critical. Some of the tributaries are more risky. Trnava and Mozirnica can overflow already when they reach flow rates such as 10-year flood. In the past year they had increased flood safety (bankfull discharge) of Trnava by elevating a wall along the river channel. Affluent Ljubija normally doesn't overflow, but in certain local sections bank erosion may occur and in this case these sections become critical also concerning flood.
  - We were told that in the Municipality of Mozirje there was severe flooding in 1990. In 2007 it went pretty close but in the end the river didn't flood and the situation was considerably less critical as in the Celje valley.

**This report was created on the basis of the following stakeholder meetings:**

DATE	03.03.2011	31.03.2011	05.04.2011	19.04.2011
Location	Ljubljana	Celje	Mozirje	Mozirje
Represented institutions	URSZR PP3 (PUH) PP4 (UL FGG)	ARSO Celje PP3 (PUH) PP4 (UL FGG)	Mun. Mozirje URSZR Celje PP3 (PUH) PP4 (UL FGG)	local CP unit Mun. Mozirje PP3 (PUH) PP4 (UL FGG)
Participants	Daniel Kozelj Marko Lovše Jože Papež Tanja Prešeren Milica Slokar Franci Steinman Srečko Šestan Mojca Zupan Gašper Zupančič Andreja Žerjav	Nataša Kovač Jože Papež Tanja Prešeren Franci Steinman Borut Šalej Dragica Tofant Jančič Alenka Zupančič Gašper Zupančič Andreja Žerjav	Janko Franetič Janez Janko Jože Papež Tanja Prešeren Franci Steinman Silvester Šrampf Gašper Zupančič Andreja Žerjav	Janez Janko Robert Napotnik Jože Papež Tanja Prešeren Franci Steinman Gašper Zupančič Jože Zlatinšek Andreja Žerjav

**Institutions involved in stakeholder meetings:**

ABBREVIATION	FULL NAME OF THE INSTITUTION
ARSO Celje	The Environment Agency of the Republic Slovenia, Section area Savinja
local CP unit	civil protection unit of Municipality of Mozirje
Mun. Mozirje	Municipality of Mozirje
PP3 (PUH)	Torrent and Erosion Control Service
PP4 (UL FGG)	University of Ljubljana, Faculty of Civil and Geodetic Engineering
URSZR	Administration of the Republic of Slovenia for Civil Protection and Disaster Relief
URSZR Celje	Administration of the Republic of Slovenia for Civil Protection and Disaster Relief, Section Celje