

# Communication of Flood Forecasts – The View of Local Authorities: A Workshop Summary

**N. Demuth**  
Environment State Agency,  
Rhineland-Palatinate, Germany

**J. Elsener Metz, I.A. Leiss,**  
Ernst Basler + Partner AG,  
Zollikon, Switzerland

**M. Wagner**  
Ministry of Interior and Spatial Planning,  
Luxembourg

## Flood forecast systems

Floods damages cannot be prevented, but they can be reduced by the means of reliable forecast and warning systems. However, how shall uncertain information (e.g. forecast of run-off) be communicated?

## The TIMIS flood project

In the border area of Luxembourg, Germany and France (figure 1), seven administrations are developing the “Transnational Internet Map Information System on Flooding” (TIMIS flood). TIMIS flood aims to

- produce flood hazard and risk maps,
- improve the forecast system for the international Moselle basin,
- install a early warning system for small catchments.

The flood information provided by TIMIS flood will be published in the internet. The resulting web services will be customised for the different target users (figure 2).

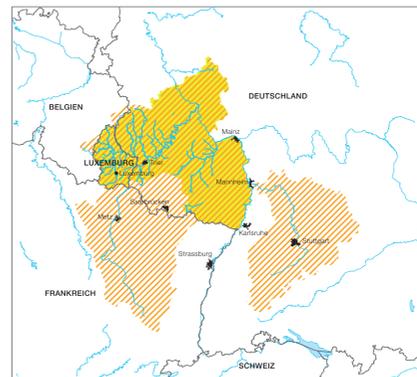
## Methodology

The possibilities and needs of the different users are going to be elaborated by workshops. By now, two workshops have been organised:

- for civil protection and intervention services (Wittlich, March 2006, figure 3)
- for spatial planning and municipalities (Trier, March 2006)

## Preliminary results

- For local authorities, gauging stations are very important to assess the flood situation clearly. Flood forecasts must be provided according to these reference points. For areas where no gauge stations exist, a forecast shall be provided for river sections (figure 4).
- Local authorities have a strong need for flood hazard maps and forecasts.
- The local authorities are familiar with the monitoring and interpretation of the local flood situation. The uncertainties of forecasts shall be communicated.
- Flood information (e.g. forecast) shall be indicated with respect to gauge levels. Forecasts with respect to event frequencies will be useful when flood area maps for different events are provided.
- In regions without flood alert service, the warnings from meteorological services are used. However, in regions with flood alert service, the meteorological warnings must coincide with the flood warnings.
- 'Uncertain information days before an event' is better than 'certain information hours before an event'.
- All relevant users (including the broad public) should have the same information at the same time. This would improve the communication and the collaboration.
- The online flood alert service must not be extended by further tools. However, the service must be stable and reliable.



**Figure 1**  
Hazard maps will be produced for an area of 22'000 km<sup>2</sup>. The forecast system covers an area of 55'000 km<sup>2</sup>.

	Hazard maps	Risk maps	GIS and Analyst	Service
Interested public				■
Concerned inhabitants				■
Municipalities				■
Civil protection and intervention services		■		■
Water authorities	■	■	■	■
Spatial planning authorities	■	■	■	■
Researchers and experts	■	■	■	■

**Figure 2**  
TIMIS flood wants to provide customised information for the different target users.



**Figure 3**  
Approximately 20 participants discussed in working groups the current practices and deficits, their needs and possibilities with regard to flood hazard maps and flood forecast.



**Figure 4**  
Run-off forecast for a small catchment showing four warning levels (red, orange, yellow, green). The measured water level for a specific point is extended by forecasts in two ways: temporally (e.g. for the next 24 hours) and spatially (i.e. for river sections).

## Conclusions and outlook

- The users want as much information as available, as early as possible.
- Uncertainties shall be communicated. By and by, unused users will learn to handle uncertain information.

Remaining questions:

- Would a series of false alarms change the opinion expressed by the local authorities?
- Is the immediate communication to the broad public useful in every situation, e.g. in case of an extreme but uncertain event?

Further workshops are planned (e.g. in June 2006 for water authorities, in September 2006 for public media representatives). Based on these results the project team will start to develop pilot applications before the implementation of the final web services.