

Full version of the interview with Alois M. Holzer (ESSL) by Michael Allen (YOURIS, published version see end of document) on the RAIN assessment of the current warning systems in Europe:

- I understand that, with other partners of the RAIN consortium, you have been assessing severe weather warning systems in Europe. So far, have you found them to be adequate?

Warning systems in Europe are still surprisingly diverse from country to country and also regarding the different hazards. Some countries are very advanced, others not, and also the philosophies behind warning thresholds differ, which can lead to unpleasant effects at the border between two countries. In a given situation one country puts out warnings, a direct neighbour not, although for example the forecasted wind gusts are higher there.

Some hazards, like river floods or large-scale windstorms, receive a big amount of public attention, and also relatively good budgets for research, preventive and mitigation measures and warning systems. Their predictability became quite good over the past 10 to 20 years, with possible warnings already a few days ahead of the impact.

Other hazards, typically small scale but high-impact ones, like wildfires or severe thunderstorms only very recently receive increased attention in Europe. Their predictability and availability on average is still very low, although forecasting concepts would be ready, and most national warning systems only start to seriously take for example large hail or tornadoes into account.

- What issues have you found with current severe weather warning systems in Europe?

A comprehensive warning system needs much more than only a text message to be put out by a hydrological or weather service. It starts with adequate hydrological and meteorological tools. Weather radars in Europe for example are typically well-tuned for hydrological applications, but less for the detection of severe thunderstorms or even tornadoes. Here the different user needs should be better balanced.

But also the excellence of the warning forecasters needs to be increased. Training programmes should be applied more systematically. Every plane pilot is required to perform regular trainings and tests. A similar system would be useful for the very important warning forecasters. They also have to deal with rare events that maybe happen once in their entire career, but in their defining moment they should be perfect. How can you ask someone to be perfect in an extremely rare but severe event, if she or he does not get regular training on the job? The EU needs to stronger support such coordinated programmes in human capacity building. I think warning forecasters should be required to spend each year one week in severe weather warning training. This would increase the quality of warnings a lot, together with ever improving models.

After the issuance of a warning the communication component is very important. And also public preparedness programmes need to be taken more serious, especially in regions with a specific high risk.

- How do you think the media and forecasting organisations in Europe could best improve their severe weather warnings, to avoid panic and best prepare people?

Since many decades in Europe the topic of “panic” after an issued warning is present in discussions. In some special events this can be a topic, as it materialized after a misleading tornado warning in the USA very recently. But usually people more complain about not being warned or not properly being warned. But indeed, you are mentioning it, preparedness is very important. The better lay people (and not only officials and emergency services) know about possible hazards and how to mitigate their effects or at least survive them, the better they can receive and mentally understand warning information – a necessary step on the way to appropriate action.

In Padova (VE, Italy) this July a woman died in a car, because her car was picked up by a violent tornado. In such a situation everybody should know that leaving the car and hiding in the lowest possible position, best in a sturdy building, would increase the likelihood of surviving such a situation dramatically. Most buildings in Europe are built very stable and make even most of the strong tornadoes survivable. That is just one example; similar things could be said about driving by car into flash-floods and so on. If people properly receive a warning about large hail and properly react, a lot of property loss can be avoided.

Regarding media, a well-established cooperation between the weather service and the media is essential. It should not overwhelm the TV or radio programme by a too high number of warnings, but should bring all attention to the really serious situations. Therefore thresholds need to be well-tuned, in order to avoid public over-warning. Critical infrastructure warnings are another topic; there the thresholds might be different.

- When would you define a weather event as being 'extreme' and what extreme weather events should forecasting in Europe focus on?

I often see that people talk about extreme events in a case when an event maybe takes place only in one of 100 comparable days. Such an event might be unusual, but it will typically not cause a big catastrophe. The really dangerous events might take place only once in 100 or even only once in 1000 years on the very local scale. But if you look on a whole country or on the whole of Europe, such events are not so rare. So, we can deal with them. But often it requires looking far back into historical archives in order to build a good climatology of such events, while our modern model data is only available a few years or a few decades back in time.

I think Europe will further need to specialize its warning services for specific hazards, and Europe will need guidance for especially medium and smaller sized countries, who hardly can build enough expertise on very rare events. The warning competence should always stay with the national or local authorities, but guidance on the European level would strongly help the local forecaster not to oversee something and to have a second opinion, if being alone on night shift.

Original published articles:

<http://rain-project.eu/sun-shining-lets-prepare-severe-weather/>

<http://www.youris.com/Environment/Methodology/The-Sun-Is-Shining-LetS-Prepare-For-Severe-Weather.kl>

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