



Many parts of Europe have been affected by floods, causing numerous deaths and considerable material damage to property and the environment (stock image)

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Urgent need for modern and efficient public warning systems

After the floods in Europe, **Benoit Vivier** insists that it is essential to deploy, without delay, modern public warning systems with clear and well-defined protocols on how to use such systems to ensure public safety

Many parts of Europe have been affected by floods, causing numerous deaths and considerable material damage to property and the environment. Experts have pointed to the consequences of climate change and predict that similar tragedies will occur more frequently. Hence, it is necessary to reflect on our capacities to predict and prevent natural hazards, as well as on the capabilities of crisis management tools.

When disasters occur, or are about to happen, an important element of the response is to alert everyone at risk, using public warning systems to provide them with clear safety instructions. This must be done rapidly. In the case of floods, communicating early with the public

is key to informing people about the existence and the nature of the danger, giving recommendations on how to stay safe, communicating about evacuation plans and providing updates. However, during the July 2021 floods that hit numerous countries, including Germany, Austria and Luxembourg, these public warning systems were either not fit for purpose or not used effectively, leaving many people unaware of the dangers.

To reach as many people as possible instantly, public authorities should rely on different channels to transmit warning alerts. While sirens have been used for decades, technological developments have also led authorities progressively to use radio, TV, message signs and social

media. However, as mobile phones are now used by almost everybody, this channel should be of paramount importance for public authorities. Cell broadcast and location-based SMS allow crisis management institutions to send, in near-real time, an alert to everyone (residents and visitors) in a specific area directly on their mobile phone, without any prior action required from the user. The alert is sent in a secure and privacy-friendly manner. Depending on the technology used and the way it is implemented, these alerts can be prioritised on the networks (making them effective even when telephone networks are congested). Furthermore, public authorities can enhance situational awareness by estimating the number of mobile phone users in the affected area.

In 2018, a new directive, the *European Electronic Communications Code*, required all EU member states to deploy, by June 2022, modern public warning systems that would use electronic communications networks to transmit alerts to the population. This new legal requirement was meant to improve protection of the population in the event of natural events or human-caused disasters. Several countries implemented cell broadcast or location-based SMS solutions, thereby allowing their authorities to inform the public of fires, floods, emergency number outages, or measures to limit the spread of the coronavirus. However, with the implementation deadline looming, many member states have not yet deployed these technologies, or are using unclear provisions in the law to rely on downloadable smartphone apps as an alternative to cell broadcast or location-based SMS.

Smartphone apps can be a good complement to other technologies, as they can allow authorities to communicate more regularly with users or provide additional safety information (images, maps, useful websites and numbers). However, experience has shown that these apps are not downloaded by a sufficiently large number of people to be considered a primary channel to transmit public warning alerts. Even in countries where large awareness campaigns have been set up to promote these apps, download rates very rarely exceed 20 per cent of the population, not counting visitors who would hardly ever download them or log in. Hence, apps should not be considered as an alternative to location-based SMS or cell broadcast solutions, which do not require any prior action from the user.

Numerous press articles in the aftermath of the floods revealed that German authorities had been opposing the inclusion of modern public warning systems in European legislation and advocating smartphone apps as an alternative. During the floods in July, civil protection authorities were unable to alert everyone properly about the imminent danger. As a consequence, the public and civil society have started to question their institutions' capacities and there are calls for the implementation of more efficient technologies. A few days after the catastrophe, the German Government announced that the cell broadcast technology would be rolled out by 2022.

However, it's not only about the technologies,

but also about how you use them.

From the use of smoke signals several centuries ago to alerting people on their mobile phones, we have always had public warning systems in our societies. Efficient and robust technologies now exist and there is even a legal requirement in European legislation to implement them. However, the success of a technology lies in how it is used. When a disaster occurs, crisis management authorities have little time to act, and failure is not an option. This is why the adoption of a technology should come together with a well-defined strategy that defines protocols on what alerting solution to use; when, how and where to use it; which authorities should have access to it; and which sections of the population should be targeted.

When it comes to alerting the public, many different channels are available to reach as many people as possible, instantly. While alerting people on their mobile phone is particularly efficient, it is impossible to reach everyone and to provide all the information required. Other channels should also be considered, from more traditional solutions such as public sirens, to more advanced ones (such as voice assistants and smart objects). In addition, other actors, including widely used online platforms or influencers, can also help spread the information. Public warning strategies should include a social media presence to interact with users, get better situational awareness of the incident and counter the spread of disinformation.

Deciding which authorities will be responsible for initiating the alert should also be considered when defining public warning protocols in order to avoid confusion and save time during an emergency. Furthermore, the role of local authorities should be defined carefully, as emergencies sometimes affect only a limited area of a territory.

Finally, an important part of the strategy on how to use public warning systems is related to the content of the message, as well as the moment when it is sent. The objective is to provide, in due time, the appropriate information to people and get them to do what they are expected to do. If a public

warning alert is not carefully drafted, it can cause unnecessary panic or indifference. In addition, the definition of the strategy should also consider people's specific needs, for instance in terms of languages spoken or people with physical or mental disabilities.

This summer is a reminder that natural hazards will probably happen more frequently in the future. While we cannot avoid them, technologies are there to help limit their consequences. We should not wait for large-scale disasters to occur before implementing basic technologies that protect the population. It is essential to deploy, without delay, modern public warning systems with clear and well-defined protocols on how to use them. **CRJ**

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