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Impact-oriented and Impact-based Warnings in European NMHSs

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Recently a survey regarding IoWs and IbWs has been carried out among 37 NMHSs participating in the EUMETNET Meteoalarm Project. 30 NMHSs have responded so far, making it a valuable dataset for estimating trends in warning philosophy, format and dissemination of warnings.

Most of European NMHSs are currently in the transition phase from climatology-based thresholds to impact-based criteria. In five years from now, 15 out of 30 NMHSs will likely use subjective impact-based criteria/thresholds as their main warning decision criteria, whereas 14 will use objective impact-based criteria/thresholds. Currently warnings from 12 NMHSs contain a tangible and understandable description of a damage scenario/impact-scenario, 6 are not yet there and 10 are seeing this as a task of another authority. 77% don't see legislative reasons preventing them from issuing IoWs or IbWs whereas 17% are facing are legal obstacles since this is the responsibility of civil protection/another authority. 63% agree that many NMHSs cannot afford to run impact models because they do not have the necessary IT-infrastructure/expertise. 17% of NMHSs currently have research cooperations in the field of impact modeling, 33% are planning to do so. 50% are leveraging results from impact studies into daily warnings through raising awareness of forecasters, 40% are adapting existing criteria, 20% are adopting guidelines/SOPs and 3% are implementing results into impact-models. 63% agree that it is important to include expert advice from social sciences into IoW/IbW products and services.

43% of respondents don't have a national strategy/national hazards partnerships to implement impact-oriented/impact-based warnings, 37% are planning to do so. 11 NMHSs are verifying their impact-oriented or impact-based warnings on a regular basis, 8 are doing this just for high level alerts. In 23 NMHSs forecasters on shift are using images/videos posted in social media or other channels to see "what's happening out there". A majority of 63% is not systematically collecting impacts in terms of an in-house impact database. Of those who do so, most are collecting data provided by emergency authorities followed by media reports and impact observations based on targeted human assessment.

97% see crowdsourced weather- and impact observations as important for forecasters to have them available in real-time "to see what's happening out there", 87% agree, that they are important, because they have the potential to close the gap of "ground truth", and 77% see them important for the verification of IoWs/IbWs. The majority of all participants agree, that technical standards are needed to exchange cross-border impact data and that a standardized catalogue of weather- and impact reporting parameters will be necessary to exchange crowdsourced data internationally. 80% say that forecasters will always have the last voice in the warning decision whereas 40% do see warnings being mostly automatized within the next decade.