

We thank Thorsten for his thoughtful considerations in particular as Massimiliano Zappa points out that he has written papers in similar style.

This is an interesting discussion paper regarding how to improve HEPS. I think that this is generally an interesting paper that fits into the requirements for publication in HESS. I will limit my comments to things not already raised by reviewer 1. Here are some discussion points for the authors to consider:

[1] In how far is the discussion here place specific? All authors are from Europe. If this is not generic beyond Europe, then title and abstract should reflect that.

A: The discussion in the paper is specific to Europe and EFAS, and we could include that in the title, however we do prefer to keep this to the abstract to keep title attractive for the reader. We will clearly define Geography in the abstract.

[2] If this is Europe focused, then how would the discussion change for other parts of the world? Have other groups in other parts of the world already solved some of these issues, or are they handling them already significantly better?

A: This highlights the novelty of this opinion paper as there is too our best knowledge nearly no grey (or other) literature in this area at all. In particular, publications on forecasters priorities and their influence on system design are limited. We will find out more in the future through the development of the HEPX (<http://www.hepex.org>) network. Please note that Hydrological Ensemble Prediction Systems are still very rare in operational environments (for a table see <http://wp.me/p3tVcm-9q>)

[3] It would be useful to have more background about the people involved in the survey. What is their background? Institutions? Roles? Etc. Could be additional information in the supplemental material.

A: Most of the authors are operational forecaster's within the EFAS network. We will add more information about the authors in a revised version

[4] It would make the article nicer to read if you would include some examples (from published work or grey literature), rather than a purely conceptual paper (though with survey results). Could you include some examples where existing forecasts fail? Are there examples of the kind of decision-making tools that you would use? It would help make this more tangible.

A: Regarding the success rate of the forecasts we can include material on how EFAS was performing in terms of scores. Regarding the decision/making tools there has already been papers on this (See Pappenberger et al, 2013). There are a lot more you can add to the discussion on different systems and how they are used and when they fail, but we did not want to make a review paper out of this study, rather to present it from a forecaster's point of view. What are their perceptions on what is a good system? However, to get to the bottom of how the forecasters really perceive a good system, a more in-depth analysis with a lot more included field work is necessary.

Pappenberger, F., Stephens, E., Thielen, J., Salamon, P., Demeritt, D., van Andel, S., Wetterhall, F., Alfieri, L., (2013), Visualising probabilistic flood forecast information: expert

preferences and perceptions of best practice in uncertainty communication, DOI: 10.1002/hyp.9253, Hydrological Processes, 27 (1), 132-146.

[5] In how far is this discussion of general interest to hydrology? Are there questions here (or opportunities for advancement) that have a much broader relevance? How do the modelling issues discussed here relate to the general search for flexible modelling structures in hydrology (for example)?

A: The demand for a multi-model framework does for example highlight the importance in the general search for flexible model structure. Opportunities for advancements within the general hydrological sciences community are abundant in particular in the areas of

- **Input and pre-processing** represented through the forecasters priority on “*Improve standardization of hydrological data*” and “*Introduce more NWP ensembles for meteorological input*”
- **Ensemble techniques and process modelling** represented through the forecasters priority on “*Improve physical model representations*” and “*Introduce multi-model approach for hydrological modelling*”
- **Data assimilation and Post-processing** represented for example through the forecasters priority on “*Changing the way probabilities are calculated/presented*”
- **Verification/Evaluation** represented for example through the forecasters priority on “*Report past performance for the hydrological and meteorological forecasts*”
- **Communication and use in decision making** represented for example through the forecasters priority on “*Education and training of how to use and interpret forecasts*” and “*Improve the forecast dissemination*”

There are also a large majority of research which are interested in improving hydrological forecasting and see this as a main goal of the broader community. This discussion does need to be (and will be) added - however, cannot be discussed extensively enough. The reader and reviewers are invited to join the initiative to develop a new Science and Implementation plan for the Hydrological Ensemble Prediction System experiment for the next decade (see <http://hepex.irstea.fr/science-and-implementation-plan/>)

This is a nice start for a discussion. I think by making it more concrete with examples, by stating the scope more clearly and by defining better the group of participants, it will become even more helpful.

A: We will add more details and examples as outlined above - however, we will not represent examples of individual flood events as they are published elsewhere and would distract from the main focus of the paper which is an opinion of forecasters on the continuous development of a probabilistic forecasting system.