

***Interactive comment on* “Evaluation of Mekong River Commission operational flood forecasts, 2000–2012” by T. C. Pagano**

Anonymous Referee #1

Received and published: 6 January 2014

This paper shows an interesting insight into the operational run and evaluation approach of streamflow forecasting in the Mekong River. I particularly appreciated the combination of different aspects to consider when evaluating flood forecasts, from technical to very practical issues related to the effects and the dynamics of the floods along the river network. I reckon the article has potential to be accepted, provided that the following general and specific comments are addressed:

General comments The main concern I have with the presented paper is the lack of sufficient details regarding the way forecasts are produced. On page 14436 the author mentions “...extended use of rainfall forecasts, and improved flood forecast model”. Later on “... use of satellite-based precipitation estimates to supplement the sparse ground-based rain gauge network”. How meteorological data are chosen? Which

C7090

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sources are used? Is rainfall/precipitation the only meteorological input? I'd like to see a more specific description on the input data and the subsequent processing to obtain discharge/river stage estimates. This would help a lot the understanding of the forecasting system and how decisions are taken.

Also, the author states, that (p14439) "Total travel time between Chiang Saen and Phnom Penh is about 10 days". That means that the skill of rainfall forecasts might be not as important as that of a good rainfall estimation approach and a good routing model, considering that 5 day is the longest forecast lead time chosen. Also, correlation techniques between stations might be useful. I suggest the author to comment on this.

At page 14447, the error standard deviations are difficult to evaluate as they are now, because they depend a lot on the shape of the riverbed and consequently on the typical ranges of values. I suggest showing them together with the standard deviations of observations (or a ratio between the two values), perhaps in a Table.

Specific comments p14435, l1: "underdeveloped" does not read very well. I'd suggest removing it or finding a politically correct alternative. ,l 16: "respectively" is not needed.

p 14437, l2: "and" should be "is". ,l 20: "..."? Please amend. ,l 9-26: I would put a reference to Fig 1 to facilitate the understanding of the text.

p 14437-38: Please make uniform the way to cite MRC (2005) (later on cited as Mekong River Commission, 2005)

p 14438, l9: "(e.g. 11.8 m)". I suggest specifying where (e.g., at Pakse). , l 23: From Fig 2 it looks July to October. Please clarify.

p 14439, l4: provide a reference for this. , l9: "is fair" should be made more specific ,l 20: "and they are" should be "as they are" (the spreadsheets) or "and is" (the layout).

p 14441, l1: 1) Bulletins, 2) Operational Database, 3) IKMP

p 14442, l 1-4: Please reshape the sentence, now difficult to read (particularly the part

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in brackets). , l 19: “high” should be “highest” or similar.

p 14445, l14: This seems the same as the quality score (Plate, 2008) described at page 14442. Can the author clarify this point? ,l 20: Not the best way to describe it mathematically.

p 14448, l17-19: Are the new benchmarks derived over all available years of forecasts?

p 14451, l1-5: This part doesn't read very well. I suggest clarifying it and make it more specific.

Table 3: Unusual layout. I suggest showing the POD and ETS as additional columns on the right of the FAR.

In Figure 2, circles corresponding to 1 to 5 day forecasts are unreadable. I'd choose 1 lead time or use a 2-column layout with 1 and 5 day lead time.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 10, 14433, 2013.

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