Reply to referee #1

Dutra et. el. presented an interesting study on a novel approach to near real time drought monitoring on global scales. They propose to extent (precipitation) monitoring products, that cannot be updated in near real time, with data stemming from probabilistic weather forecasts. In a subsequent analysis they demonstrate the validity of their approach as well as its performance compared to other data products. Overall the paper is well written and the results are presented convincingly. Nevertheless the paper would benefit from some minor clarifications along the following lines:
We thank the reviewer for the supportive comments. A detail reply to each point is presented below.

1. A lot of information is presented in the Supplementary information. While I also prefer concise articles that are not overloaded with figures, I have the impression that the sheer magnitude of the supplementary information makes some sections of the article difficult to read. Therefore I would suggest to move some of the figures in the supplement to the main body of the article. Especially in sections where substantial parts of the text discuss the content of the supplementary Figures (e.g. Section 3.3).
We agree with the reviewer point that we moved important figures to the supplementary information, in particular the discussion of the precipitation monitoring in section 3.3. Figure S12 (with the temporal grid-point correlations of monthly precipitation) will be moved to the manuscript

2. p. 897, ll. 1-9: In Fig. 5 ENS1 and ENS4 are mentioned before they are introduced in the text. This is quite confusing on first reading.
The reference to Figure 5 in the text is moved after ENS1 and ENS4 are defined:
"Factors ranging from 1 to 4 were used, and are henceforth referred to as ENS1 to ENS4 (solid versus dashed red lines in **Error! Reference source not found.**, and first and last bar for each region in **Error! Reference source not found.**)."

3. p. 897. l. 11f: How are the confidence intervals of the mean in Figures 5, S2, S3 constructed?
The 95% confidence intervals of the mean in Figure 5 (S2,S3) account for the temporal variability using the monthly values from 2009 to 2012, and assuming these come from a normal distribution, so that the confidence interval are given by:

$$\left[\bar{x} - y, \bar{x} + y\right]$$

$$y = \Phi^{-1}(0.975)\frac{std(x)}{\sqrt{N}}$$

where, Φ^{-1} is the inverse of the normal cumulative distribution function, "std(x)" is the standard deviation of x, and N is the number of samples.
In the caption of Figure 5 we included that the confidence interval assumed the data comes from a normal distribution.

4. Figure 6 and corresponding figures: Howe is the significance of the correlation determined (i.e. how is the threshold value of 0.3 constructed)?
We computed the statistical significance of the correlation coefficient using the Fisher r-to-z transformation. When plotting, we masked all the points not statistically significant at 95% or grid-points with correlations below 0.3. We use the 0.3 threshold as an empirical indicator for "real" covariance between the two datasets. The statistical significance was also included to mask higher values of correlation but with small samples (e.g. dry regions with undefined SPI values for some calendar months).

5. Figure S3: caption would be "As Figure 5..." (and not "As Figure 4...")
Corrected.

6. Figures S7, S8, S10, S11, S13: Adjust the caption, such that it first describes the upper panel or change the order of the panels.
The caption was changed to:
Figure S1. Fraction of grid-points in each region (top panel) with correlation coefficients significantly different from zero with 95% confidence. The correlation coefficients are calculated as the grid-point temporal correlation (bottom panel) of the GPCC SPI-3 versus ERAI, GPCC_FG, ENS4 (ensemble mean) and TRMM. The error bars in both panels represent 95% confidence intervals of the spatial mean computed from a 1000 bootstrap re-sampling procedure.

7. Figures S14. S15: Please specify units of RMSE of precipitation.
The units are mm/month. Added to the figure caption.