

Review comments on paper entitled, "Long-term precipitation forecast for drought relief using atmospheric circulation factors: a study on the Maharloo Basin in Iran" by Sigaroodi et al., *Hydrol. Earth Syst. Sci. Discuss.*, 10, 13333–13361, 2013.

The paper attempts to conduct precipitation forecast at monthly time scale and for categories of normal below and above normal (with focus on droughts). Step wise regression and ANN methods are used to develop relationships between precipitation and 40 global indices. The methodology is sound and rigorous and concisely mentioned. Some of the findings are very useful confirming the relationship of some of the global indices to local precipitation in Southern Iran.

However a critical explanation and discussion of the results is lacking. Some of the conclusions and recommendations drawn from the paper do not reflect the results. For instance, authors state in abstract, "*Based on this research, the monthly precipitation anomalies in the Maharloo Basin in north of Persian Gulf can be forecast about ten months earlier using NOAA (National Oceanic and Atmospheric Administration) climate indices such as NAO (North Atlantic Oscillation), PNA (Pacific North America) and Nino, which will support drought-risk alleviation in the region.*" This statement does not reflect the presented results and could be misleading. The results clearly show that the forecast performance is very low in case of all studied indicators (e.g. R^2 , Heidke skill score given in Table 9). It seems that the given scores are very low and thus may not deliver reasonable forecasts in most instances. The authors should have indicated a threshold level of acceptance where the results could be used for water management and drought mitigation. Thus, a critical description of the achieved results is lacking and conclusions and recommendation needs revision according to the given results.

The performance in dry months (May to September) is comparatively better than wet months (October to March), although in all cases remain lower than the expected values to confidently guide water management and drought mitigation decision making. Authors should discuss the value of forecast in these months when precipitation is already too low. Most of the precipitation occurs in October to April in the study region when forecast was very poor both by regression and ANN methods. It is suggested to give monthly averages of precipitation to give the readers a quantitative oversight on the intra-annual variability of the precipitation. This is important to compare the performance of different months and judge forecast value and usefulness in water management and drought mitigation in the study region.

Considering these points, a major revision is recommended. The indicated comments should be addressed before the publication may be considered in the HESS journal.