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Interactive comment on “Establishment of a catchment monitoring network through a participatory approach in a small rural catchment in South Africa” by V. M. Kongo et al.

Anonymous Referee #4

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This well written paper summarizes the development of a catchment monitoring network in South Africa. What is novel about the network described by the authors is how it was constructed with local guidance and assistance. The authors describe this process as “participatory”. They describe very well the spirit behind choosing this type of process in section 3.1. Unfortunately, much of the rest of the paper is focused on describing technical aspects of the network. Only occasionally do the nuances and advantages of the participatory process appear in later in the manuscript (i.e., in Section 3.5 the advantages of access to current rainfall data was not lost on local farmers). As many readers of HESS will be well versed in methodologies of hy-

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drological measurements in the field, I would have preferred to have read more of the authors' opinions on how to implement the participatory process of network design and implementation.

It is my observation that many members of the scientific community retain a very colonial and self-serving approach to establishing scientific experiments and monitoring networks in locales such as this one in South Africa, or in circumpolar regions. It has been my experience that applying a participatory process is crucial to the long term success of any monitoring network of this nature. Without local buy-in; at the beginning, the project is doomed. Furthermore, the outreach impact is much greater because there is local participation. Since the vast majority of our research funds can be traced back to public money, we need to make sure that the people who need this information the most receive it. It does society no good if we merely pad our CV's with peer-reviewed articles and don't provide a means with which the public can use that information. That often means different methods of communicating our knowledge and I credit the authors for their effort in communicating the importance of such an approach.

On a related note, I'm not sure the configuration of Figure 1 really encompasses what the authors are advocating. Are not the local community and other stakeholders also end users? Figure 1 should be even more circular than it is currently with a feedback through local community members shown after Retrieval; to Instrumentation;. It could also include a box called Water resource decision making;. The authors could consider editing the figure.

I have two technical comments related to the estimation of evapotranspiration.

1) Since a scintillometer only estimates sensible heat flux, with latent heat flux resolved as the residual of the energy budget, some discussion of how a large scale estimate of both net radiation and ground heat flux would have been helpful. 2) It is a pet peeve of mine that climate towers are considered point measurements. All climate towers

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measure a dynamic pocket of upwind air that moves past the tower. The extent of this air is the footprint of the tower, and depending on the height, wind and surface roughness, can be quite large. I would choose an eddy correlation system mounted on a tall tower over a scintillometer any day.

Lastly, on line 28 of the Conclusion, the authors state “; a local, relatively poorly educated community ; I find that though lacking in formal education, people who live close to the land tend to know far more about their environment than they are often given credit for. It is not uncommon that they have a clearer understanding of how catchments and landscapes respond to perturbation than we do. They also have a better sense of the social and economic impacts of these perturbations. This is why the scientific community must engage them.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 4, 3793, 2007.

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