

Interactive comment on “Why a regional approach to postgraduate water education makes sense – the WaterNet experience in Southern Africa” by L. Jonker et al.

Anonymous Referee #2

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General comments: This manuscript promises a substantial contribution to scientific progress within the scope of Hydrology and Earth System Sciences journal. It sets out to argue the case for addressing the hydrology of Southern Africa within a holistic Earth System Science context, to demonstrate a process through which this has been done by an extensive group of scientists, to present the findings ('impact') achieved through this process, and to draw lessons of wider significance. This is certainly likely to be of interest to the international scientific community of hydrologists, earth and life scientists, water engineers and water managers who are the anticipated readership of this journal. Nevertheless, the present draft still reads somewhat more like an admin-

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istrative report with a few conference-style highlights at the end, rather than a scientific publication based on identifiable scientific methods and presenting original research findings, as required for this publication. The work that is still required in order to make the shift to a more substantial and tightly structured scientific paper appears feasible and highly worthwhile. The authors evidently do have sufficient material at their disposal to achieve this, and could draw more deeply on it to fulfil the considerable aspiration and promise in this paper.

Specific comments: 1. At present, the abstract and overview of the paper promise rather more than is delivered. The WaterNet experience is not presented so much as an example that a regional approach can work and has an impact – but more as a statement of this without wider reflection on its potential significance. Objective consideration of what the 'example' might be understood to exemplify beyond its own internal regional scope and perspective is lacking.

2. It appears from the title and presentation of the article that the substantial new concept that the paper is presenting to scientific progress within the scope of Hydrology and Earth System Sciences may be the regional approach to its study. This is borne out by an informative section 2 on regional issues specific to water resources management in Southern and Eastern Africa. However, aside from a few comments in the abstract and introduction on the transboundary dimensions of the water management challenge in this region, the paper does not offer any substantial conceptual description of regional approaches in IWRM, encompassing contributions from other regions that might open up the potential interest of this paper to scientists in other regions. Nor does it offer any more definitive view and contextualization of the regional approach that it sets out to argue for. There is only one conceptual reference included early in the paper to introduce the approach –to an unpublished conference paper by Wright, 2001. This grounding and contextualization of the central idea in this paper could be strengthened through further reference to the relevant literature which must have influenced its development.

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3. Over the more than ten-year period addressed in this paper, thinking about IWRM and the study of hydrology has clearly evolved. This has been reflected in the adjustment of the WaterNet Masters' degree programme structure to include an additional module on GIS and Earth Observation. This is an interesting development, which must have been the result of considerable reflection and discussion by the scientists involved in reviewing the programme and its scope (although little mention is made of these processes and their substantive content) in this paper. Rather than presenting this addition as part of a long narrative, where its repetition appears somewhat redundant (p3588 and p3589), could it be possible to comment on the evolution of the scope of the programme, in the context of both regional discussions of regional needs and also evolving international scientific approaches to IWRM?

4. The structure of the paper is not well balanced between description of the background to the programme (lengthy) and the findings (relatively thin). Nor is there any identifiable methods section to explain what methods were used by the authors to develop the results and analysis that is presented in the paper. More thought about the methods, findings and analysis presented would be useful in the further development of this paper towards scientific publication. It appears that Scopus was used by the authors to assess journal publications by WaterNet participants. What other methods for data collection and analysis have been used by the authors in the development of this paper? Which scientific discipline(s) do they draw on?

5. Looking at the material presented in this paper so far, perhaps the authors are moving towards some kind of institutional or network analysis of the linkages created through the WaterNet programme? If this is the case, a discussion of the approach to analysis adopted, ideally including conceptual references to the relevant analytical literature, would be needed early on, as well as a more focused discussion of the institutional context and challenges addressed in the discussion section. The basis for such an orientation is clearly there in the paper, and is represented in Figure 2. A clearer and more direct explanation of this Figure in the text would also be welcome.

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6. As an alternative to the above suggestion (and most definitely preferable in my own opinion), it could be of far more value and interest to the journal and its readership to retain a disciplinary perspective more directly addressing issues in hydrology in particular and earth system science more generally. The scientific review processes of underpinning the WaterNet programme might have produced comments of very significant interest concerning substantive contributions by WaterNet to studying and managing hydrological processes in the region. The introduction and deeper consideration of such observations could be of considerable value in this paper. However, the scientific review is mentioned only briefly and no substantive findings from it are really mentioned or discussed. No references to any published reports on these processes are included. -Were there none? If they exist, some use could surely be made of them here. Better use of references to published journal articles could also be made.

7. The paper is preparing to argue that the impact of the WaterNet programme has been significant and measurable (this is stated in a section entitled 'Impact'). However, it appears that no attempt has been made to identify any impact on the condition and function of water resources and hydrological systems and their management in the region. Is this the case? – and if so, why not? This choice in the scope and definition of impacts to be considered requires explanation early in the paper. If nothing can really be said about the improved management of hydrological processes, this is a bit disappointing (although not so unusual in the literature on capacity building programme evaluation). Nevertheless, if this issue is not going to be tackled some justification of this choice in the scope of the paper would be required.

8. Of most central concern and interest for this journal, and for its intended readership, must be the contributions made through the programme to the improved understanding and management of hydrological processes in Southern Africa. Could no synthesized analysis of the students' substantive work be included? There is clearly material for this in the form of a body of published journal articles and other work by students. Would it not be possible to present a review of the scope and contributions of these

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articles, rather than just counting the numbers of them? Similarly, many institutional linkages and partnerships are mentioned in this paper. While these will have been of practical significance and use to the scientists involved, of more lasting interest to the international scientific community might be the substance and scientific quality of these linkages and their results. Could any more emphasis be placed on the outcomes of the institutional linkages, rather than simply highlighting their existence? Although it is good to know that the programme became well-connected and achieved political recognition, what did this privileged position enable it to achieve in terms of its scientific contribution, either fundamental or – hopefully in this case - applied?

9. The regional dimensions of the results and analysis, as presented are not explored in any great depth. The most relevant and effective visual presentation of these results consists in a bar chart showing the nationalities of students. Would it not be possible to consider the movement of these students within the region – i.e. through this regional programme, how many students received courses or curricula from outside their home country? Could a figure capturing movements of students or course materials across the region be considered?

10. The findings include a breakdown of students by gender. Although most readers may be able to guess why this is a concern, nothing has actually been said about it in the earlier sections of the paper – making the unanticipated presentation of findings ('/impacts') on this appear illogical and out of place.

11. Following the presentation of the findings, the addition of a section to this paper containing a fully developed discussion, revisiting the concept of the regional approach, and considering its effectiveness in this case in addressing the regional water management challenges (identified in the present section 2) would be very welcome. At present, lessons from this approach simply appear –almost from nowhere- in the conclusion. Some further attention to explaining the connection between these stated lessons and the findings presented, and a wider reflection on their possible significance for scientists in other regions could be useful. It might then be possible to have a more

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concise conclusion capturing the significance of the findings from the Southern African regional experience for scientists in this and other regions.

Technical corrections: Please see p. 3592: "WaterNet as a network developed a winning concept note and proposal for the Limpopo PN17 partnership, and subsequently showed it could successfully manage such a big and complex project, facilitated that its member institutions got access to international research programs." -Please check the sense of long and complex sentences throughout, and here in particular. -Please also check spelling – a 'wining concept note' may be an error - unless intended to reflect the process of symposia etc?

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 9, 3581, 2012.

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