**Reviewer A**

Review of “*A climate and health partnership to inform the prevention and control of meningoccocal meningitis in sub-Saharan Africa: The MERIT Initiative*” by M. C. Thomsonand co-authors.

1. Scientific and technical quality of the manuscript, including figures

In general, the paper is scientifically and technically sound. Concepts are well-explained and concepts, issues, the research, and the institutional progress are well-referenced. Paradoxically, what is missing are some basic contextual data. One table that shows the countries with reported meningitis cases (morbidity and mortalitaly), the countries of Africa that are part of the Meningitis Belt, the number of people in each country who have received the conjugate A vaccine and the total population of each country would go a long way to making the paper more accessible to readers beyond specialists interested in the details of the MERIT Initiative.

*Suggestions have been well received and we have adjusted the text accordingly, as well as adding 3 figures:*

* *Figure 1: map indicating Meningitis Belt region*
* *Figure 2: time series graph illustraging linkages between epidemic behaviour and certain climatic variables.*
* *Figure 3: Introduction plan for the conjugate A vaccine, showing populations at risk, and hyperendemic countries which are prioritized for the roll-out of the new vaccine.*
1. The relevance and importance of the identified priorities

The authors clearly identify the MERIT Objectives on Page 7 in terms of three goals and three operational areas which can be informed by research. On Page 8, the authors also provide a summary table of the scales of analysis and the research needs. All of this is logical, follows from the substantial impact meningitis has on the region of interest, and the past research. Perhaps, those who have not been part of MERIT might want to debate some of the points in the summary table at future meetings or in the literature but that is as it should be.

*Point noted for discussions at future meetings, no adjustment to text needed.*

1. The clarity of recommendations and priorities to the international climate research community

The recommendations and future priorities of MERIT are articulated on Page 20. I think this is where the authors might also want to consider some revisions. While there is nothing wrong in substance with the four areas of highlights and research results that are described, what is missing is any direct assessment of what has been achieved in terms of the objectives and operational areas on Page 7 or how much has been achieved at the various scales of analysis on Page 8. What would be useful for the international climate community is for the authors to replicate the table on Page 8 with an additional two columns summarizing what has been accomplished in one column and what additional research is required in the last column and for the authors to provide a more direct discussion of where they see the international climate research community contributing to the goals, the operational areas, and scales of analysis in the future.

*We agree with the suggestion to elaborate on the table of objectives and priorities, as a means to identify achievements, accomplishments and gaps. While we feel it is premature for this chapter, we appreciate the suggestion and will consider holding an exercise with all partners during the next MERIT meeting (Nov 2012) to identify in a more comprehensive manner 1) what has been achieved/accomplished and 2) what the gaps requiring further investment of resources, alongside each of the identified priority areas.*

1. The proper attention to required international coordination and integration mechanisms

This is perhaps the greatest strength of the paper in the detail provided on the roles that various international, national organizations, the private sector, foundations, and various research groups have played and continue to play in MERIT.

*Comment appreciated, no adjustment needed*

1. The overall readability and appeal of the article

There is some close editing required and there appears to be some missing information in some of the references provided which should be checked. Without addressing the points I raised under (1) an (3), I think the appeal of the paper will be limited even within the international climate research community. The authors need to be encouraged to make a stronger case that the international climate research community should be more interested in this topic because of the research challenges it poses and because of the implications for the health of a large part of the world’s population. These arguments need to be made more directly and substantially in both the early pages and in the conclusions of the paper.

*The references have been checked, adjustments made and completed.*

*With the inclusion of additional background on the public health problem and link to the climatic factors (figures included in response to comment 1 and reviewers’ suggestions), we feel that the paper sufficiently addresses and promotes the opportunities for the use of climatic and environmental information to strengthen the public health strategies. We have added a note that demonstrates how the approach developed through MERIT has been adopted in relation to other climate-sensitive diseases, such as Leptospirosis through the creation of the GLEAN initiative (p9).*

1. Additional comments and suggestions.

In some respects, the challenge for the authors is to change the tone of the paper from one that right now reads more like an annual report to one that challenges the reader to think about what has been accomplished and what might be accomplished with some fresh thinking. What also strikes me as missing in the latter part of the paper is a discussion section that goes beyond the current limitations of the research and suggests some “out of the box” ideas that might be pursued.

*While we feel that changing the tone of the paper at this stage is beyond the current time/resources capacity of the authors, we appreciate the suggestion to highlight the opportunity for fresh thinking and areas where MERIT could extend beyond current limitations and contribute to other aspects of the public health strategy. We have included a sentence to this effect in the last paragraph on p22.*

**Reviewer B**

General Comments

This paper describes the efforts to control meningococcal meningitis in sub-Saharan Africa through an innovative and largely grass-roots approach that actively brought together disparate research activities into a coherent system to address specific operational questions posed by health practitioners. This is a particularly complex task, especially when it spans not only different disease related specializations, but also the need to bring health and climate practitioners and researchers together.

As the paper articulates, the success to date is in creating an effective community of practice that has mobilized existing resources to tackle a rapidly changing landscape of prevention and control predicated by a change in vaccine strategy. MERIT is to a large extent a "pathfinding" program establishing a methodology for cooperation between disciplines to solve a particular health problem. As the authors point out, this a method that can be adapted to other "climate-sensitive" diseases.

Specific Comments

The paper is rightly upbeat about the successes of MERIT; however, it would also be informative to look at some of the issues that programs like MERIT face. The paper highlights that despite the absence of core funding, much has been achieved; however, it might be useful to consider how much more could have been done by now had sufficient core funding been identified to strengthen the partnerships and whether this would have provided more rapidly access to and promulgation of research findings to colleagues in developing country institutions. The opportunity to train a generation of researchers jointly in climate and health issues is still very limited and perhaps the authors could address this. Funding institutions continue to shy away from multi-disciplinary science and shy even further away from the need to manage this science to achieve specific operational goals.

As climate features more and more prominently in health outcomes, the approach to problem solving must evolve and a more holistic rather than ad hoc approach to supporting efforts such as MERIT will be needed.

Recommendation

My comments may or may not prompt a slight revision of the conclusions of the paper. Given the focus is on scientific and technical merit, I would not insist. I recommend publication.

*The comments seem to be aligned with one of the previous comments in relation to elaborating the achievements/gaps of MERIT alongside the identified priority areas however at this stage, this type of information is not available for inclusion in the chapter. However in consideration of preparing an exercise for engaging all MERIT partners in the review of activities towards achieving the MERIT objectives, this could be an opportunity to investigate what the implications would have been with greater core funding, training needs and opportunities on climate-health issues, etc.*

*Again, the reference we have included to the GLEAN project demonstrates how the MERIT-type model could be seen as marking the early stages of developing a more holistic approach rather than ad-hoc for specific diseases.*

**Reviewer C (attached).**

P5 There are perhaps too many concepts in this important paragraph. Ideally the Con A introduction, it's impact, the future needs of surveillance etc. and why the MERIT approach is still important could be separated and made more powerful.

*We have adjusted the text accordingly to address and simplify the specific ideas being expressed.*

P7 This list of objectives I feel needs commenting on later in the paper. Have they been met? many initiatives follow, but a summary statement relating back to this list could be useful.

*We have adjusted the text on p7, shifting the tone to focus more on achievements that have been made rather than simply reporting on what was set out as objectives at the beginning of the project. This also aligns with the previous reviewers’ comments and we feel warrants further analysis and feedback from all MERIT partners on achievements alongside specific priority areas.*