Hydrol. Earth Syst. Sci. Discuss., 6, C207–C209, 2009
www.hydrol-earth-syst-sci-discuss.net/6/C207/2009/
© Author(s) 2009. This work is distributed under
the Creative Commons Attribute 3.0 License.

Hydrology and Earth System Sciences Discussions

Interactive comment on "HESS Opinions "Urgent water challenges are not sufficiently researched"" *by* P. van der Zaag et al.

M. Sivapalan (Referee)

sivapala@uiuc.edu

Received and published: 5 April 2009

I enjoyed reading this opinion paper. It addresses an issues I have been thinking about in recent times, and have discussed with colleagues. In spite of this being an opinion paper that authors backed up their opinion using a survey of the relevant literature from the ISI database.

A number of questions arise from the issues raised in this paper: 1) if some key issues that the authors mention are not sufficiently well researched, then what are the many thousands of scientists around the world who call themselves water scientists researching? 2) why are they not researching these issues that authors highlight? What is preventing or discouraging them? Is it lack of funds, lack of relevance to their own research agendas? 3) what do we have to do collectively to encourage and support

more research in these areas?

Water scientists come in many shapes, colors and sizes. There is an increasing perception that the field is highly fragmented. I myself am a hydrologist, and only recently (to my regret) that I am even becoming aware that perhaps my research is not helping to address some of the great water challenges that face humanity. Is it the lack of appreciation in the various areas of specialization that we get into that is preventing at the water issues in a holistic manner? It is only in recent years that the appreciation of the global dimensions of the water crisis is becoming appreciated, and the impact of and on humans on water issues.

Apart of the fragmentation of water sciences, there is the serious issue that much of the water research is carried out in the developed world, whereas much of the water problems occur in the developing world. I do not need to educate anyone in this medium that the funding for research, even for appropriate solutions, is almost negligible in most developing countries. How then do we encourage scientists in developing countries to appreciate the global significance of water research and tackle issues that go beyond the borders of developing countries? In this era of dwindling research funding how do we overcome barriers to research on topics that go beyond national significance?

Part of the problem is the lack of education, i.e. holistic training of our young researchers to address broader issues that affect humanity as a whole. Again we are up against the general trend of increasing specialization, and fragmentation of scientific disciplines. It appears that if we want positive change, there must be a concerted effort to bring many disciplines and many national and international associations dealing with water sciences. Who will do this? We do have regular forums such as the World Water Forum, which meets every four years, and through such gatherings make a positive change to address the (1) institutional, (2) financial, (3) educational, and (4) scientific issues that stand in the way of a unified front to address all water related problems in a unified manner.

I do agree with the authors that with the impending global water crisis, there is considerable urgency to address the underlying causes of the problem. I support publication of the opinion paper - perhaps the authors can indeed express their opinions about these causes and how they can be rectified in the future.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 6, 1411, 2009.