Hydrol. Earth Syst. Sci. Discuss., 10, C4565–C4567, 2013
www.hydrol-earth-syst-sci-discuss.net/10/C4565/2013/

Hydrology and Earth System Sciences
Discussions

Interactive comment on "Hard paths, soft paths or no paths? Cross-cultural perceptions of water solutions" *by* A. Wutich et al.

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Received and published: 31 August 2013

This manuscript presents some original and interesting data on perceptions of water problems and solutions in four disparate settings. It is well written and worthy of publication. But the meaning of its findings is obscure, and the authors would do well to assist readers by drawing out that meaning. As drafted, the article concludes with a call to attempt to verify its findings through a larger sample size/ data set, in future work. But why should a funder of research care? That is not clear.

For example, the paper finds that soft path solutions to water problems are less likely to be perceived as relevant in financially poor or water scarce settings. But does that imply they are less likely to be adopted there? Do the authors think the finding supports a

particular policy approach (i.e., hard path solutions in these settings), or do they believe the finding means that the soft path approach might be equally or even more valuable, but will face strong public perception obstacles in these settings?

If they believe the former, then perhaps the paper is confirming something we might intuitively expect to be true; that is, that in water scarce and financially poorer settings, physical infrastructure is preferred by those who live there because it is essential as a first step. How can one create a water market, or implement water efficient end use technologies, if physical water is barely available in the first place? Of course one soft path approach – matching water quality with the intended purpose (such as untreated river water for irrigation and treated water, or a higher quality source such as a deep well, for drinking) – makes sense in relatively undeveloped settings. But even then, some water must be available, and in various quality levels. People with access only to one poor quality source of water (e.g., trucked or untreated surface water) would naturally feel a need to get more water first, and then think about how to manage it better (which is the essence of the soft path approach).

If the authors believe the paper is confirming an intuition such as this one, they should say so. Science is valuable whether it confirms or rejects our intuitive beliefs. We often don't know if our intuitions are correct or incorrect, and one important role of science is to tell us. So the authors might draw the conclusion from the data and analysis that the soft path/hard path choices make sense only after a basic level of water abundance is established, either by nature or by development. That seems consistent with the data, and suggests that future research not just try to verify these findings with a larger dataset, but also try to find the threshold(s) for how much physical water supply (basic needs met?) comes first, before the hard/soft path choices become relevant.

Finally, I think an important parameter that has not been discussed is the governance capacity in each setting. A financially poor water scarce setting with strong governance capacity (e.g., desert tribes with a long history of social cohesion) might very well be able to implement, and might perceive as attractive, soft path approaches at very low

levels of physical water supply. The soft path often requires effective collective choice and implementation mechanisms, and it is no surprise that in Cochabamba, with a long history of weak governance, the soft path would be perceived as not very relevant, and no path would seem very relevant. Weak governance capacity is very disillusioning; whether in the face of social (e.g., corruption) or natural obstacles (e.g., drought). But when governance capacity is perceived as strong, the full range of soft path solutions might also be perceived as more relevant and likely to succeed, even in the face of poverty and/or water scarcity. Eleanor Ostrom's work (and that of many who 'followed her') demonstrates clearly that many severe environmental and resource challenges have been surmounted by 'less developed societies' when the right cultural conditions exist. Governance capacity is only one of these conditions, but it seems especially relevant to the pattern of data presented in this paper.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 10, 7809, 2013.