

Interactive comment on “Developing system robustness analysis for drought risk management: an application on a water supply reservoir” by M. J. P. Mens et al.

A. Iglesias (Referee)

ana.iglesias@upm.es

Received and published: 28 April 2015

The analytical approach is very interesting, well presented and valuable for further research.

I have two comments:

Comment 1. Equation (4) estimates the cost of supply deficit, with a proportional term and a quadratic term. This equation is based on the elasticity of demand and I guess it is justified by the study referenced, that is Dixon 1996 (a study over 100 pages long). The question is: why a constant elasticity adopted in this expression? My impression

C545

is that the elasticity (eta) should be a function of the deficit. When the deficit is small elasticity is high, but it will become more rigid as the deficit increases.

Comment 2. Figure 4 presents the results and it shows that the "Hedging" (black) option is not well planned because it produces small increments drought impact in relation to the do nothing option (page 217, line 8-9). In that case I would do nothing. I think we should optimize the activation threshold value (25 %) and the value of the restriction (60 %) to minimize the cost. At least make the option progressive, stepwise. I have the impression that in this case "hedging" could be better, as it is an option that, from the point of view of management, it costs much less than the other two.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 3, 203, 2015.