Hydrol. Earth Syst. Sci. Discuss., 7, C5306–C5313, 2011

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Interactive Comment

Interactive comment on "Raising the dead without a Red Sea-Dead Sea canal? Hydro-economics and governance" by D. E. Rosenberg

D. Rosenberg

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General comments

Both reviewers identify the significant and valuable contribution of the work, particularly in regards to current efforts by the World Bank. These strengths provide a strong rationale to respond to and address the reviewers' other suggestions for improvement.

The attached Supplemental Material provides individual responses to each reviewer's comments and points out manuscript revisions that address these comments. Numbered red text quotes original reviewer comments. My responses are indented in black. Further indented black text indicates quotations from the revised manuscript

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which appears below starting on page 8 of the Supplemental Material. The revised figures appear below. Thank you for the opportunity to revise and improve the work.

Please also note the supplement to this comment: http://www.hydrol-earth-syst-sci-discuss.net/7/C5306/2011/hessd-7-C5306-2011-supplement.pdf

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 7, 9661, 2010.

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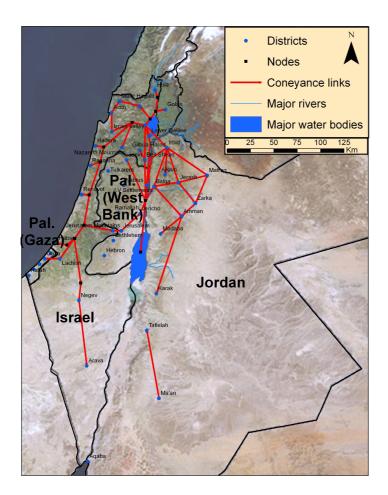


Fig. 1. Schematic of the inter-tied water systems for Israel, Palestine, and Jordan used in the extended Water Allocation System model.

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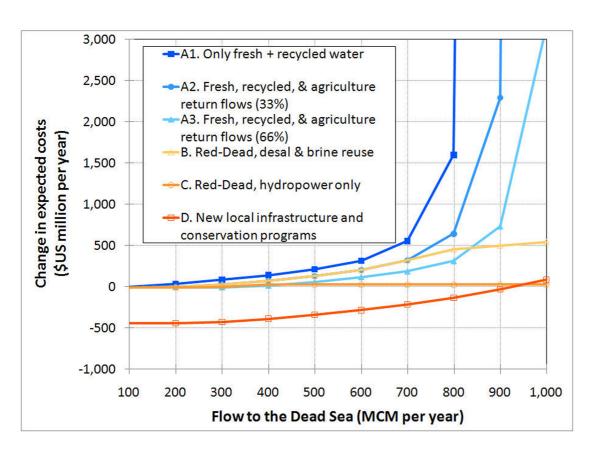


Fig. 2. Economic impacts of six restoration alternatives.

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I. Red-Dead project decision II. Change in expected costs (\$US million/year) (Build or Do not build) 0.66 0.66 0.50 0.5 m3 brine/m3 freshwater 0.50 900 0.33 0.33 Do Not Build Build 0.17 0.17 0.00 0.00 Agricultural Return Flow (%) 0.50 1.0 m³ brine/m³ freshwater 0.50 8 0.33 Build Agricultural Return Flow Do Not Build 0.00 0.66 0.50 1.5 m³ brine/m³ freshwater 0.50 0.33 Do Not Build Build 0.00 0.00 0.50 2.0 m³ brine/m³ freshwater 0.50 0.33 0.33 Do Not Build Build 0.17 0.17 0.00 100 200 300 400 500 600 700 800 300 400 500 600 700 Required flow to the Dead Sea (MCM/year) Required flow to the Dead Sea (MCM/year)

Fig. 3. Sensitivity analysis shows how the decision to build the Red-Dead project (I. left panels) and change in expected costs (II. right panels) are influenced by agricultural return flows (y-axes), the bri

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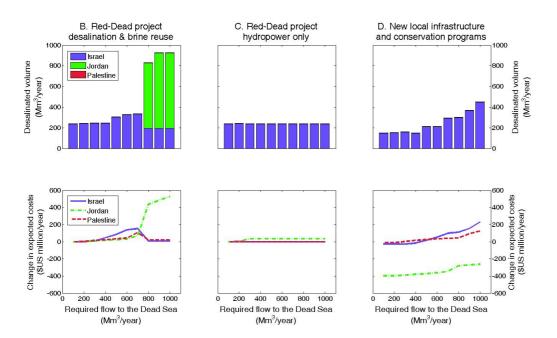


Fig. 4. Country-specific impacts for three more-promising restoration alternatives.

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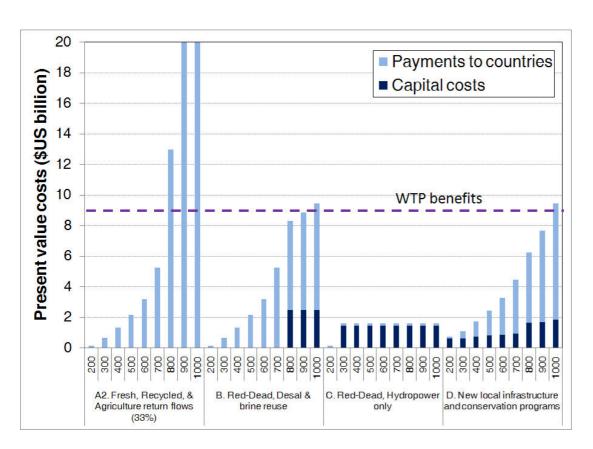


Fig. 5. Present value costs for each alternative including capital costs for new infrastructure and programs and payments to countries to deliver the specified flow to the Dead Sea.

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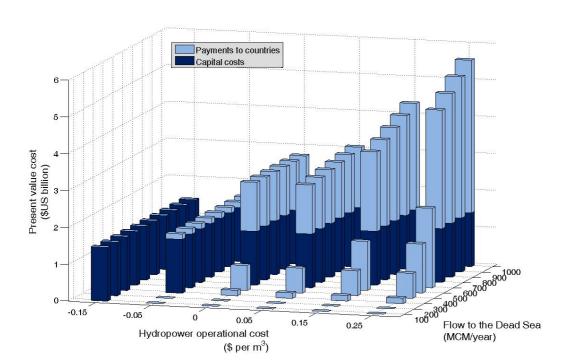


Fig. 6. Present value costs as a function of both the flow delivered to the Dead Sea and the hydropower operational cost for the Red-Dead project.

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