

Quantifying the trade-offs in re-operating dams for the environment in the Lower Volta River

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Response to reviewers:

The authors thank the editor for their comments on improving the clarity of the abstract and the data availability statement. Below are the changes made in response to the comments.

Location	Comment and Response
Discussion	Comment: Thank you for your revised manuscript. You have addressed the comments and I am happy to accept your manuscript for publication subject to minor revisions (review by editor). I list the corrections as follows.
Line 13	Line 13 Ghana as a whole, has enjoyed vast economic benefits Change to “Ghana has enjoyed vast economic benefits”
Line 24-28:	Line 24-28: It is found that climate change leading to increased annual inflows to the Akosombo Dam reduces the trade-off between hydropower and the environment while climate change resulting in lower inflows provides the opportunity to strategically provide dry season environmental flows, that is, reduce flows sufficiently to meet low flow requirements for key ecosystem services such as the clam fishery. You said ‘leading to increased annual inflows to the Akosombo Dam’, then later stated ‘while climate change resulting in lower inflows’. This is confusing. Please correct. Please also break this sentence down into shorter sentences.
Line 532-534	Line 532-534 Data availability Please update this for the final published version. Please also specify what data will be made available and how the data can be accessed.
	Response: The authors thank the editor for accepting the paper for publication and have made the following changes as requested:

Location	Comment and Response
	<p data-bbox="347 239 1458 352">Line 13: <i>In contrast to the costs borne by those in the vicinity of the river, Ghana has enjoyed vast economic benefits from the affordable hydropower, irrigation schemes and lake tourism that developed after construction of the dams.</i></p> <p data-bbox="347 405 1458 638">Line 24-28: <i>It is found that climate change leading to increased annual inflows to the Akosombo Dam reduces the trade-off between hydropower and the environment as this scenario makes more water available for users. Furthermore, climate change resulting in lower annual inflows provides the opportunity to strategically provide dry season environmental flows, that is, reduce flows sufficiently to meet low flow requirements for key ecosystem services such as the clam fishery.</i></p> <p data-bbox="347 690 1458 884">Line 532-534: The data availability statement now reads: <i>The hydrological and hydraulic data associated with this manuscript, specifically, historical water levels, dam releases, and storage-area equations for the Akosombo and Kpong dams, will be made available upon consultation with the national organisation, Volta River Authority (VRA), that owns the data. Requests for these data may be made to the corresponding author.</i></p> <p data-bbox="347 936 1458 1050"><i>The model code for the running the Evolutionary Multi-Objective Direct Policy Search for the Akosombo and Kpong dams is publicly available on Github at: https://github.com/Afua-O/Vol_Opt.git</i></p>