



SDI Review Form 1.6

PART 1:

Journal Name:	British Journal of Applied Science & Technology
Manuscript Number:	2013_BJAST_3625
Title of the Manuscript:	Assessing the Efficiency of Grey-Water Reuse at Household Level and its Suitability for Sustainable Rural and Human Development

General guideline for Peer Review process is available in this link:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)

- This form has total 7 parts. Kindly note that you should use all the parts of this review form.



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PART 2: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	Overall, an interesting study and paper with much potential to improve the lives of people living in water scarce conditions like those in Jordan. The contribution and significance of the work needs to be developed further. The work seems to be focused on the suitability of the grey water and the treatment effectiveness of the installed systems, but the standards for suitability are not clearly explained and thus the objective of the work is unclear. Abstract needs to better summarize the purpose and content of the work. The suitability of the grey water was of primary interest to the study, but the abstract mainly states the need for alternate sources of water then provides a summary of results from water quality sampling with no explanation of the significance. Line 50, which countries does Jordan lag behind in per capita fresh water? Line 17, 55 have different statistics regarding critical water scarcity, provide sources for the value given in line 17 or only include the value with the references. Introduction would benefit from more background on current water practices in project communities at the household level, as well as Jordan's standards for permissible grey water quality for irrigation use.	- The document has been deeply reviewed. Paragraphs and references added in the abstract, introduction and the body of the article to clarify the objective and the main research outputs of the work. - Abstract reviewed and the suitability has been mentioned in it and in the article (especially in the participatory approach). - 2 paragraphs added with references to talk more about the poorest countries in water supply and the point of concern for water scarcity. - Introduction reviewed and referenced: paragraphs added about water practices at the household level, as well as Jordan's standards for permissible grey water quality for irrigation use.



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	Line 79-80, “...according to different indicators established in a multi-criteria participatory approach” - confusing word choice. Were the indicators the result of a participatory process? Line 81-88, the criteria for selection are presented here, and it would be helpful to include the preferred status of each criteria. What was the team looking for in suitable pilot houses? Line 92, and line 127, multiple uses of the term “pilot sites”. Distinguish the 13 implemented systems from the 6 monitored systems. How and why were the six chosen? Line 100, revision: “A contract between the project and each pilot household was signed.” Line 105-110, this section describes meetings that seem to have taken place prior to site selection. Rearrange and put information in section 2.1 (not 2.2) Line 111, Include description of Figure and reference the figure in the body of the paper. Line 118-121, break into two sentences instead of	- Multi-criteria approach is a common process to select sites in water projects. I explained the criteria prioritised from the available information with the participation of all the partners (2.1). - added - I reviewed and just mentioned 13 grey-water treatment units were installed (2.1 site selection), and six locations for the monitoring plan (2.3) with the procedure of selection. Additional information added in table 1 (3. Data collected). - Not mentioned in the new version of the article. - Reviewed and the information was put in 2.1 (new version) which contains 2.1 and 2.2 from the original proposal (site selection and implementation merged). - Added in the body of the paper and in references - Done
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	one. Line 122-123, why were women targeted? Explain their importance and role in behaviour change. Also, it is unclear as to the connection between the women and organizations' respective involvement and the prevention of odour and health problems. Line 132, what was the end goal of the data collection? Here it would benefit your reader to explain the value in monitoring the quality of water, soil, and plants. What are you trying to achieve? Also, this may be better if included in the Data section, section 3. Line 145-146, the span and frequency of testing is unclear. 18 samples in total from all 6 sites, or at each site individually? Monthly sampling for two years would result in 24 samples in total from each household. Clarify. Line 147, and Line 235 contain conflicting information. Which of the parameters tested in the soil was also tested in the water? Provide detailed information about which parameters were tested from each material (water, soil, and plant). Line 151-154, Sampling locations and time between sampling is unclear. Also, do all homes have olive trees? Was this a basis for selection (see comments for lines 81-88)? Do the homes have drip irrigation systems (see comments for the introduction)? 54 samples from all households or at each household? Line 162, correct "soil samples" to read "plant	- Reviewed and explanations were given to clarify the process (2.2): approach selection and results (paragraphs in yellow). - Clarified with additional information about the monitoring process and table1 added. - This aspect has been clarified in section 2.3 (totally reviewed according to the comments) and data collection section (section 3). - Same comment as above. - Same comment as above. - Same comment as above.
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	samples”. Line 164, states three years between testing, but all other references in the text state two years for the study. Line 250 states the testing was two years apart. Line 173, “media-sized”, did the authors mean “medium-sized”? Line 175, what are the permissible standards? Reference Table 1, or consider making a separate table. Line 177-181, the relevance of the septic tank system is unclear. Was this considered a successful system? Also, consider breaking into two sentences instead of one. Line 182, was there an increase in TSS in the present study? The study mentioned in line 177 reported a decrease. Explain differences. Tables 1, 2, and 3, If the values represent averages, provide sample sizes and standard deviations. Line 198-204, explain the significance of results discussed. Do these parameters influence plant growth? Lines 239, The results from Australia do not seem consistent with the project’s results. The current	- Reviewed : Same comment as above. - Yes this what was meant, size mentioned in the last paragraph in section 2.3 (follow-up and monitoring plan). - Mentioned in table 2 (new version). - This is an applied research activity and we tried to compare results. Additional information about the system added. - corrected in the text : TSS decreases in both treatments (section 4.1 and table2) - Work done in average values. - Cleared by introducing small paragraph saying that both media produced acceptable greywater quality for irrigation purpose. - Authors agreed with comment and comparison avoided.
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	study saw almost a 50% reduction in phosphorous (according to table 2). Line 243, how was the study in Al-Amer similar? This is unclear. Many of the statements made in the conclusion section are not based on results presented in the paper. See below for specifics. Line 288, The growth of the olive trees was not mentioned prior to this statement. Was there an observation of growth of the olive trees, and was there an increase? Line 296, the practices of the households were not discussed in the paper, nor were the variations in grey water quality due to varying practices. Line 299-301, The knowledge of the local people was not discussed in the paper, or how it may have impacted the project. Line 302, this statement implies that constructed wetlands were incorporated in the grey water system, but wetlands were not mentioned elsewhere in the paper. Provide a better description of the treatment system.	- Authors agreed with comment and comparison avoided. - The information has just been collected by interviews and in the meetings. There were no measures (Qualitative information) - added in table1. - This aspect has been discussed in depth in the new version (2.2) - We kept the greywater unit in all the body of the paper
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Minor REVISION comments	Line 32 states that volcanic media was more effective than gravel but it would be helpful to state what it was more effective at removing. Line 186-187, providing % removal of fecal coliform may be easier for the reader to understand as opposed to counts in the hundreds of thousands.	- Abstract reviewed. - Done and changed in %.
Optional/General comments	Providing a more detail schematic of the treatment system would be beneficial. Perhaps including the typical irrigation area, and/or household in the schematic would make it clearer.	We thought about putting some photos (such the one attached below), if needed, we can do it.

