



**SDI Review Form 1.6**

|                          |                                                                                                       |
|--------------------------|-------------------------------------------------------------------------------------------------------|
| Journal Name:            | <a href="#">British Journal of Applied Science &amp; Technology</a>                                   |
| Manuscript Number:       | <b>MS: 2013_BJAST_5725</b>                                                                            |
| Title of the Manuscript: | <b>Adaptation strategies to climate change among smallholder farmers in the Volta Region of Ghana</b> |
| Type of the Article      | <b>Research Paper</b>                                                                                 |

**General guideline for Peer Review process:**

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

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



**SDI Review Form 1.6**

**PART 1: 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)                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b><u>Compulsory</u></b> REVISION comments | <p>The abstract section needs review especially the results component. In the result component of the abstract you tended to concentrate on other aspects of the study to the exclusion of the strategies which is the main focus of the work as contained in the title. Lines 24-29 should be the presentation in the abstract. Remove all those headings in the abstract and let the presentation flow without paragraphs. I also suggest the specific objectives and the problem of the study in the abstract. It is worrisome that in your abstract, the phrase "adaption strategies" which occurs in your title does not occur in the conclusion. I suggest that you include in the introduction, specific accounts of climate change scenarios in the study area. In your lines 117-118, confirm that you are studying adaptation strategies and not climate change effects on cropping systems. Revise the methodology and specify how you identified the smallholder farmer including how you identified those that grow different crops. As I had referred to elsewhere, this work has no clearly spelt out general and specific objectives. If your headings under section 3 are your specific objectives please formally state so. I am at a loss at what you mean by 3.8 suggested adaptations. Why suggested? If actually you are suggesting that, what did you find on the ground? Your title is on adaptation strategies but you did not richly dwell on that in both the results and the</p> | <p>Abstract was revised to remove sub-headings, objectives were made clearer and the thrust of the study i.e., adaptation strategies was highlighted. In addition the term climate extremes was used in line with the IPCC 2013 definitions.</p> <p>Abstract and conclusions were corrected accordingly.</p> <p>Confirmed the study is on adaptation strategies.</p> <p>Section three heading have been rephrased in the merged result and discussion section. The subheadings were linked to the objectives of the study.</p> |



**SDI Review Form 1.6**

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><b>discussion sections. Consider merging the results and the discussion for clearer presentation if it is allowed by your publishers. The outline of the abstract is not known to me. Abstracts do not have paragraphs and headings. I suggest that you set out a section for the research problem for the sake of clarity. Lines 87-90 appear to be your general and specific objectives. If so please present this in a separate heading and clear heading. In line 99, write that abbreviation in full. You need citation for the entry in line 100. You should be consistent in the way you cite references; here you mix numbers and dates! In line 107, cut and paste “pause” and “pose” respectively. In lines 124-125 you stated that SPSS was used in the analysis; please clearly state which analytical tool was used for which objective. The sentence in line 139 contains the phrase “a few”; I think that this has no place in scientific reporting. Be specific. I can see that you have different sections for both results and discussion. However, you still mixed discussion in the results section. Be consistent. State the sources of your tables; in Table1 state the unit of measure of the labour. In line 161, state the units of those figures! Support the sentence in lines 176- 177 with relevant citation. In section 3.6 I expect to be shown what constitutes “change”, “reduction” by way of clear quantification. In line 211, use respondents instead of interviewees. In line 223, do you mean act of God? In Table4 how about multiple responses? In line 228, you stated that the respondents also had direct experience. That is good; include that in the abstract also. In Table6 and relevant discussion, what increased from what? What was the base period? Show me. Please present your suggestions and leave out for now the limitations. These suggestions are</b></p> | <p>Result and Discussion now a combined section of the manuscript.</p> <p>References in line 110 to 112; Duncan and Brants (2004), World Bank (2009) and FAO (2005) were replaced by numbers as in the reference list.</p> <p>Analysis procedures now described under methods and materials section.</p> <p>A few replaced by the minority</p> <p>Labour units – man hours added to the table and text</p> <p>Corrected</p> |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



**SDI Review Form 1.6**

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>borne out of what they the respondents were told or out of what they practised within the “3-5 years” earlier mentioned. In lines 277-278, you refer to lack of attention to management, was this a part of your findings and results; have you presented it before now? The sentence in lines 282-285 is both misleading and confusing. Do you honestly think that lack of fertilizer use can be sufficiently be remedied by biologically fixed nitrogen from legumes? What do you mean by nutrient budget? Do you mean fertilizer budget? In line 288, what do you mean by the word “intern” Do you mean “in turn”? Lines 286-296 contain forced comparisons and wild statements. Please revisit. In line 296, delete the word “can”. Your argument in lines 301-303 is questionable. Specialisation on a cash crop does not preclude rotation or does it? Is the information in lines 306-307 from primary or secondary source? If from primary, did you present it in the findings/results section? If from secondary, then present citation. In the sentence in line 308 what do you mean by “frequently”? Do you mean “frequency”? If you mean frequency, quantify the frequency. In line 315, add “ly” to the entry “significant”. I struggle with your presentation and discussion regarding the source of awareness of the climate change by the respondents. If the respondents do not have a first hand experience which is amplified by other source, then something does not add up. In line 327, is it availability or lack of it that constitutes a drawback? Lines 334-339 are not clear to me; please make that portion clear. The sentence in lines 345-347 should be split to make it clearer. In your adaptation options, you refer to financial investment. Actually, none of the options is without financial investment. If</p> | <p>Attention to management removed from the sentence.</p> <p>Nutrient budgets refer to nutrient inputs and out puts at farm level.</p> <p>Legumes can be used to contribute significant amounts of nitrogen on the farm and this can reduce the need for purchasing fertilizer inputs. However it is the balance between losses from and additions to the soil systems which will make the systems sustainable. So applying less nutrients than are taken out of the soil causes land degradation and loss in potential productivity.</p> <p>In turn corrected in line 278</p> <p>Can deleted line 286</p> <p>It’s the unavailability which is undesirable.</p> <p>Corrected</p> |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



**SDI Review Form 1.6**

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><b>you are talking about degree, then you should let us the different degrees of investment. After reading through the section on Challenges to adoption I still ask: What then are the challenges? So please discuss them and clearly bring out the present challenges. The section on relevance appears confusing as, in the first place, relevance of the study should have been placed close to where the objectives were presented. In effect, the entries in the sentence in lines 402-404 is qualified for relevance of the study. All others are qualified for recommendations which are not highlighted as such. In line 409 you mentioned sustainability which you did not directly measure. In line 414, you made reference to local experts; who are they? Did you make reference to them in the body of the presentation? By the way, you did not refer to the finding that the respondents had direct experience of the climate change phenomena in addition to the other information sources. Lines 416-419 constitute a sentence. Please break it to make clearer meaning. Lines 413-415 also need such a revision. Talking about low cost management techniques, did you make any cost comparison in the work? I do not think you did. In your references, I imagine that you adhered to the guidelines of the journal to which this work is submitted; otherwise revise and conform to known standards for instance by italicizing journals and textbooks.</b></p> | <p>We have revised to improve clarity on the challenges farmers face in trying to adapt to climate extremes mostly to do with reliance on local knowledge, limited technical appreciation of modern methods of farming and low household income related to poverty.</p> <p>Corrected</p> <p>Corrected</p> <p>The study did not collect extensive data on the costs and hence the analysis was limited hence the manuscript cannot answer this interesting question.</p> |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



**SDI Review Form 1.6**

|                                         |                                                                                                                                                                                                                                                                                   |                                                                                                                                                        |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b><u>Minor</u></b> REVISION comments   | The layout of the work is slightly different from what I am used to. For instance the layout of the abstract should have been without those highlights and paragraphs. The author should also maintain a single system of citation: do not mix use of dates with that of numbers. | Abstract was improved<br><br>Results and discussion sections were merged under one subheading<br><br>References were checked and numbered accordingly. |
| <b><u>Optional/General</u></b> comments | The script can be given to an English Language major for grammatical clarity.                                                                                                                                                                                                     | English editor was consulted                                                                                                                           |