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### Peer review history for:

Maluleke M, van Schalkwyk N, de Beer A, Smith H, Blignaut J, Knot J, et al. Comparing the financial benefits of different grain production systems in South Africa's summer rainfall region. *S Afr J Sci.* 2024;120(7/8), Art. #17091. <https://doi.org/10.17159/sajs.2024/17091>

#### HOW TO CITE:

Comparing the financial benefits of different grain production systems in South Africa's summer rainfall region [peer review history]. *S Afr J Sci.* 2024;120(7/8), Art. #17091. <https://doi.org/10.17159/sajs.2024/17091/peerreview>

#### Reviewer A: Round 1

**Date completed:** 18 March 2024

**Recommendation:** **Accept** / Revisions required / Resubmit for review / Decline

**Conflicts of interest:** None

Does the manuscript fall within the scope of SAJS?

**Yes/No**

Is the manuscript written in a style suitable for a non-specialist and is it of wider interest than to specialists alone?

**Yes/No**

Does the manuscript contain sufficient novel and significant information to justify publication?

**Yes/No**

Do the Title and Abstract clearly and accurately reflect the content of the manuscript?

**Yes/No**

Is the research problem significant and concisely stated?

**Yes/No**

Are the methods described comprehensively?

**Yes/No**

Is the statistical treatment appropriate?

**Yes/No/Not applicable/Not qualified to judge**

Are the interpretations and conclusions justified by the research results?

**Yes/Partly/No**

Please rate the manuscript on overall contribution to the field

**Excellent/Good/Average/Below average/Poor**

Please rate the manuscript on language, grammar and tone

**Excellent/Good/Average/Below average/Poor**

Is the manuscript succinct and free of repetition and redundancies?

**Yes/No**

Are the results and discussion confined to relevance to the objective(s)?

**Yes/No**

The number of tables in the manuscript is

**Too few/Adequate/Too many/Not applicable**

The number of figures in the manuscript is

**Too few/Adequate/Too many/Not applicable**

Is the supplementary material relevant and separated appropriately from the main document?

**Yes/No/Not applicable**

Please rate the manuscript on overall quality

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Excellent/**Good**/Average/Below average/Poor

Is appropriate and adequate reference made to other work in the field?

**Yes/No**

Is it stated that ethical approval was granted by an institutional ethics committee for studies involving human subjects and non-human vertebrates?

Yes/**No**/Not applicable

If accepted, would you recommend that the article receives priority publication?

**Yes/No**

Are you willing to review a revision of this manuscript?

**Yes/No**

Select a recommendation:

**Accept / Revisions required / Resubmit for review / Decline**

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**Yes/No**

**Comments to the Author:**

The author(s) base his research questions and objectives on two aspects that remain controversial in the use of the CA/RA, one of which is its relatively high starting expenses and management uncertainties. The approach and assumptions, however, do not take management capabilities into account. Given the complexity of the CARA/RA farming system, management competence is an important aspect in performance comparisons between the CA/RA and other systems.

Please indicate whether the trials were conducted under irrigation. The North West province appears to do well, despite being relatively drier than the studied locations in Mpumalanga and the Eastern Cape.

The interpretation of Figure 6 is insufficient, especially in reference to the NT, which exhibits more diversity than the CT and CA/RA farming systems.

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**Author response to Reviewer A: Round 1**

The author(s) base his research questions and objectives on two aspects that remain controversial in the use of the CA/RA, one of which is its relatively high starting expenses and management uncertainties. The approach and assumptions, however, do not take management capabilities into account. Given the complexity of the CARA/RA farming system, management competence is an important aspect in performance comparisons between the CA/RA and other systems.

AUTHOR: We fully concur with the reviewer's perspective that the management capability is of huge importance. This variable, however, is subject to the management expertise and ability to adopt and adapt by each individual farmer. It is therefore not possible to model for this variation.

Also, the objective of this submission is to consider the different production systems in a "farmer neutral" manner to eliminate the human factor to compare the three systems in a clinical manner.

Please indicate whether the trials were conducted under irrigation.

AUTHOR: All the trials were dryland maize dominated systems.

The North West province appears to do well, despite being relatively drier than the studied locations in Mpumalanga and the Eastern Cape.

AUTHOR: The North West province has deep, well-drained sandy soils with a moderate to high potential. The rainfall is still acceptable, but the sunshine hours (heat units) is high, making it highly suitable for grain crop farming. Additionally, they require less external production inputs and costs (total direct allocated variable cost (TDAVC)) since they have lower yield targets.

The interpretation of Figure 6 is insufficient, especially in reference to the NT, which exhibits more diversity than the CT and CA/RA farming systems.

AUTHOR: NT systems are performing better than CT systems, and in some cases on par with CA

(conservative), but their growth capacity is constraint. The upper end of what it can achieve is limited and below CA.

### Reviewer C: Round 1

**Date completed:** 05 March 2024

**Recommendation:** Accept / **Revisions required** / Resubmit for review / Decline

**Conflicts of interest:** None

Does the manuscript fall within the scope of SAJS?

**Yes/No**

Is the manuscript written in a style suitable for a non-specialist and is it of wider interest than to specialists alone?

**Yes/No**

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**Yes/No**

Do the Title and Abstract clearly and accurately reflect the content of the manuscript?

**Yes/No**

Is the research problem significant and concisely stated?

**Yes/No**

Are the methods described comprehensively?

**Yes/No**

Is the statistical treatment appropriate?

**Yes/No/Not applicable/Not qualified to judge**

Are the interpretations and conclusions justified by the research results?

**Yes/Partly/No**

Please rate the manuscript on overall contribution to the field

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**Comments to the Author:**

The paper provides a thorough analysis of the financial implications of different grain farming systems in South Africa, which is valuable for agricultural practitioners and policymakers. However, the presentation could be improved for better readability and clarity. The manuscript contains repetition and redundancies, particularly in the discussion of the financial trends observed under each farming system. Streamlining the presentation and eliminating unnecessary repetition would enhance the overall quality of the paper.

- The topic focuses on South Africa but the discussion is on three provinces.
- The study does not argue for or against the benefits three tillage methods (CA/CR, CT and NT). This can be included in a tabular form.
- The article does not effectively address the topic of comparing the financial benefits of different grain farming systems in South Africa. While it provides some data on income and expenditure for different farming systems, it does not offer any analysis or comparison of the financial benefits of these systems. This should be addressed in a tabular form by including the CA/CR, CT and NT
- The article could be improved by including a more thorough analysis of the financial benefits of different farming systems, as well as a discussion of the implications of the findings for farmers in South Africa.
- The grammar of the document should be checked. For example line 351..starts should be changed to starts
- Under Table 2, it seems there was human interaction. Did the authors of the study apply for ethical clearance before commencement? unless the data and the prices were collected from secondary materials.

**Author response to Reviewer C: Round 1**

The topic focuses on South Africa but the discussion is on three provinces.

AUTHOR: Thank you, the title has been amended to:

*Comparing the financial benefits of different grain production systems in South Africa's summer rainfall region*

The study does not argue for or against the benefits three tillage methods (CA/CR, CT and NT). This can be included in a tabular form.

AUTHOR: Table 1 included.

The article does not effectively address the topic of comparing the financial benefits of different grain farming systems in South Africa. While it provides some data on income and expenditure for different farming systems, it does not offer any analysis or comparison of the financial benefits of these systems. This should be addressed in a tabular form by including the CA/CR, CT and NT

AUTHOR: Table 5 offers a comparison of the financial benefits in terms of cumulative free cash flows, and we have included Tables 6 and 7 and Figures 5 and

The article could be improved by including a more thorough analysis of the financial benefits of different farming systems, as well as a discussion of the implications of the findings for farmers in South Africa.

AUTHOR: Implications to famers in South Africa has been added in the conclusion.

The grammar of the document should be checked. For example line 351..starts should be changed to starts

AUTHOR: Grammar has been checked

Under Table 2, it seems there was human interaction. Did the authors of the study apply for ethical clearance before commencement? Unless the data and the prices were collected from secondary materials.

AUTHOR: Not required

The paper provides a thorough analysis of the financial implications of different grain farming systems in

South Africa, which is valuable for agricultural practitioners and policymakers. However, the presentation could be improved for better readability and clarity. The manuscript contains repetition and redundancies, particularly in the discussion of the financial trends observed under each farming system. Streamlining the presentation and eliminating unnecessary repetition would enhance the overall quality of the paper.

AUTHOR: Repetition and redundancies have been removed especially in the discussion section.

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**Reviewer E: Round 1**

**Date completed:** 25 March 2024

**Recommendation:** **Accept** / Revisions required / Resubmit for review / Decline

**Conflicts of interest:** None

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**Comments to the Author:**

This is a good study. Sustainable use of natural resources is a topical issue and one of the Sustainable Development Goals of the UN. The study asks a realistic and important research question after a brief background. The research problem is concisely articulated and motivated. The data is great long-term and widely collected in different geographical areas. The analytical tools seem appropriate to address the research question. The results are well and comprehensively presented. Authors also go-further to discuss their results in light of existing- literature. The conclusions are sound and supported by the results. I recommend publication of this paper in its current form or after minor revisions.

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**Author response to Reviewer E: Round 1**

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AUTHOR: Thank you for the feedback, it is appreciated.