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Paper: “Economic Analysis of the Eucalyptus Sector on Strengthening the Financial Stability of Eucalyptus Farmers in Burundi”

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Peer review:

Reviewer 1: Harjot Singh
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Reviewer 2: Nodem Meli Clement
Ministry of Scientific Research and Innovation (MINRESI), Cameroon

Reviewer 3: Blinded

Reviewer B:
Recommendation: Revisions Required

The TITLE is clear and it is adequate to the content of the article.

The title is generally clear and reflects the main focus of the manuscript, namely the contribution of the eucalyptus sector to rural household income and resilience in Burundi. It accurately represents the study's subject matter. However, it could be made more informative by indicating the empirical nature of the research (e.g., survey-based or econometric analysis) and, if appropriate, specifying the study area (Bujumbura and Bururi provinces). Such refinements would improve precision and better reflect the methodology and scope of the study.

The title is clear, concise, and consistent with the content of the manuscript. It appropriately reflects the study's objectives and findings. A minor improvement would be to indicate that the study is based on an empirical or econometric analysis to better convey the methodological approach.

The ABSTRACT clearly presents objectives, methods, results, and conclusions.

The abstract gives a reasonable overview of what the paper is trying to do, and readers will come away with a general sense of the topic. That said, it leans more toward a promotional summary than a structured scientific abstract. The objective surfaces midway through rather than being stated upfront, which makes it harder to orient yourself quickly as a reader. The methods are barely sketched — we know a survey was done in Burundi with some kind of income analysis, but there's no mention of sample size, location, or even the word "regression." For a quantitative study, that's a significant omission. The 98% correlation figure is cited in the abstract but without any reference to what produced it, it just floats there. Results and conclusions are somewhat blended together, which makes it hard to tell what was found versus what the authors are arguing. The "living capital" and "green bank" framing is vivid but appears three times in short succession, which reads as repetition rather than emphasis. Suggested improvements: lead with a clear objective sentence, include at minimum the sample size and analytical approach in the methods, separate findings from interpretations, and trim the metaphor usage to one well-placed instance.

Overall rating: Needs revision
Objective unclear upfront
Methods insufficient

There are a few grammatical errors and spelling mistakes in this article.

Introduction, last paragraph, line 57 :: "multidimensionally useful" :: Not standard English. Should read "useful in multiple dimensions" or "multifaceted in its usefulness"

Section "Specific therapeutic applications", third paragraph, line 83 :: "globulus essential oil, validates" :: The opening sentence begins abruptly mid-thought. The preceding clause identifying the subject has been lost and needs to be restored

Econometric Model section, body paragraph, line 154 :: "the activities forestry" :: Should be "forestry activities" — noun-adjective order reversed (French syntax carried into English)

Econometric Model section, body paragraph, line 154 :: "OUR analysis" / "OUR model" :: "our" should be lowercase throughout — all-caps appears to be a track-changes or formatting artefact

Econometric Model section, body paragraph, line 154 :: "revenues agricultural" :: Should be "agricultural revenues" — adjective and noun are in reversed French order

Econometric Model section, body paragraph, line 154 :: "this specification structural" :: Should be "this structural specification" — same French adjective-noun inversion

Econometric Model section, body paragraph, line 154 :: "This approach Analytical reasoning" :: "Analytical" should not be capitalised mid-sentence. Should read "This analytical approach leads us to..."

Variable definitions list, line 176 :: $\ln(\text{Inc_mz } i)$ entry has no leading dash :: Add a leading dash "-" to match the formatting of all other variable definitions in the list

Variable definitions list, line 182 :: "the potato gentle" :: Should be "sweet potato" — mistranslation of the French "pomme de terre douce"

Variable definitions list, line 186 :: "colocase" :: Should be "colocasia" or "taro" — misspelling/mistranslation of the crop name

Table 2, column header, line 224 :: "LIVELY" :: Should be "VIF" — "LIVELY" is meaningless in this context and appears to be a mistranslation of the French "FIV" (Facteur d'Inflation de la Variance)

Table 2, variable names, lines 229–237 :: "Ink_col", "Ink_pot", "Ink_pea", "Ink_ban", "Ink_swpotat", "Ink_memory" :: All should use prefix "Inc_" not "Ink_" — inconsistent with all other variable names throughout the paper

Table 2, variable names, line 237 :: "Ink_memory" :: This variable is never defined anywhere else in the paper. Authors must clarify what crop or income source this refers to

Results section, paragraph after Figure 4, line 214 :: "clearly the top priority, with the purchase of houses..." :: Sentence begins as a fragment with no subject or opening verb — the opening clause has been lost and must be restored

Table 4 discussion paragraph, line 254 :: "Through the results The data found shows" :: Mid-sentence capitalisation of "The" and incoherent phrasing. Should read "The results show that..."

Table 4 discussion paragraph, line 254 :: Spaces before punctuation throughout: "income .", "structural .", "such tea" :: Remove all spaces appearing before full stops and commas; "such tea" is missing the word "as" — should read "such as tea"

Table 4 discussion paragraph, line 254 :: "inasmuch as a true multidimensional safety net" :: "Inasmuch as" is used incorrectly here. Should read "as a true multidimensional safety net"

Table 4 discussion paragraph, line 254 :: "increase in income average annual income" :: "income" is duplicated. Should read "increase in average annual household income"

Table 4 discussion paragraph, line 254 :: "proving thus in a global way that this The sector" :: "The" incorrectly capitalised mid-sentence; "in a global way" is non-idiomatic. Should read "more broadly, that this sector"

Table 5 discussion paragraph, line 260 :: "the regression model linear" :: Should be "the linear

regression model" — adjective-noun order reversed

Table 5 discussion paragraph, line 260 :: "which it whether it concerns" :: Redundant "it" makes the clause incoherent. Should read "whether it concerns the sale of leaves or eucalyptus wood"

Table 5 discussion paragraph, line 260 :: "the sector forestry sector financial stabilization" :: "sector" is duplicated and syntax is broken. Should read "the forestry sector's contribution to financial stabilisation"

Discussion section, line 287 :: "through the sale of leaves and energic" :: "energic" is not a standard English word. Should read "through the sale of leaves and energy products"

Table 1, Hill and Province columns, lines 130–135 :: "You are the one who protects.", "I fought.", "Bird", "Field", "Big", "Pepper" used as geographic place names :: These are machine-translated Kirundi place names and are factually incorrect. Original Kirundi names must be restored throughout the table

References, Husch et al. (2003), line 329 :: "(Applied to the viability of energy plantations in developing countries) development)" embedded inside the citation :: This is an author's editorial annotation accidentally left in the reference list. It must be deleted entirely

References, Kouamé (2022), line 333 :: "(Complete the incomplete citation) related to the transition to aromatherapy clinic and actors local as Rugofarm)" embedded in the reference :: This is an internal author reminder accidentally left in the reference list. It must be removed before submission

References, multiple entries, lines 331–359 :: Spaces before punctuation: "Kammen , D.M.", "Manirakiza, D. (2021) .", "Nduwamungu , J." etc. :: Remove all spaces appearing before commas and full stops throughout the entire reference list

The study METHODS are explained clearly.

The methods section gives a reasonable overview of the study design and sampling strategy, and the mixed-methods approach combining structured KoboCollect surveys with qualitative interviews is appropriate for this kind of household-level inquiry in a rural African context. That said, several points need clarification before the reader can fully evaluate the work.

Study design and site selection :

The rationale for choosing Bujumbura and Bururi provinces is mentioned — agro-ecological and socio-economic contrasts — but the authors never explain why these two, specifically, over other contrasting regions in Burundi. A brief justification would strengthen this.

Sampling :

The two-stage stratified sampling procedure is described clearly enough in text, but Table 1 has a problem — several hill names appear to be translation artifacts from Kirundi (e.g., "You are the one who protects," "I fought," "Pepper"), which makes it impossible to verify the sampling frame. These should be the proper geographic names. Also, the total shown in Table 1 doesn't clearly add up to 190, and the table structure itself seems to have a formatting error in the last row.

Data collection :

KoboCollect is a sound and well-known tool for field data collection. The geolocation and validation features are correctly highlighted. However, the questionnaire itself is never described

— how many items, what response formats, how were income figures elicited (recall period? crop seasons?)? The absence of this detail makes replication difficult.

Ethical process :

The ethics description is thorough and appropriate for a study without external funding. Verbal consent in the local language is acceptable given the fieldwork context.

Econometric model :

Equation (2) is a log-log OLS regression — the theoretical justification for log transformation is not provided, though it's broadly defensible for income data. More importantly, the variable "Ink_memory" appearing in the VIF table (Table 2) has no corresponding definition anywhere in the model specification. This needs to be resolved. Also, equation (1) appears to have a formatting error and is not properly explained before equation (2) is introduced.

Overall :

The methods are reasonably structured but would benefit from more precision. The translation errors in Table 1 are the most urgent fix, followed by the undefined variable in the VIF table and the missing questionnaire description.

Design — adequate

Sampling table — fix needed

Questionnaire — undescribed

Ink_memory — undefined

Table 1 translation errors

The results are clear and do not contain errors.

Partially — needs revision

The results section has some genuinely strong moments — the correlation matrix is thorough, the VIF table is clean, and the regression coefficients are clearly interpreted. That said, a few things gave me pause. Table 4 is referenced in the text and discussed as if it contains numerical data, but when you actually look at it, there are no figures — just narrative. That's a problem because it's supposed to be the supply chain performance comparison, which is actually one of the study's key contributions. Figures 2 through 5 are also only described verbally; the actual charts aren't embedded in the manuscript, so a reader can't independently evaluate what's being claimed. On the econometric side, the Breusch-Pagan test correctly flags heteroscedasticity ($p = 0.0001$), and the authors say they address it with robust standard errors — but Table 5 doesn't clarify whether the SEs reported are actually robust or conventional. That needs to be explicit. The t-statistic of 1519.09 for eucalyptus wood income is also eyebrow-raising and deserves a brief note from the authors explaining it rather than just citing it as confirmation of dominance. Finally, in the VIF table there's a variable called "Ink_memory" which doesn't correspond to any crop defined in the model — this appears to be a translation artifact from the French original and needs to be corrected.

The CONCLUSION or summary is accurate and supported by the content.

I'll rate 3/5 — Partially supported. Core empirical claims are well-grounded, but policy recommendations in the conclusion exceed the scope of the data, and the geographical limitations of the study are not acknowledged.

The conclusion largely reflects what the study actually found, though it reads more like a policy brief than a scholarly wrap-up in places. The 0.980 correlation figure and the near-unit elasticities from the regression are real results properly carried through to the conclusion — that part checks out. The characterization of eucalyptus as a "multidimensional safety net" is consistent with Figures 3–5 and the investment distribution data (housing 23%, health 22%, education 17%). However, the conclusion introduces policy recommendations — carbonization kiln modernization, varietal selection, market access for electricity poles and essential oils — that have no direct empirical basis in the results section. These read as reasonable suggestions but they go beyond what the data actually showed. The study never measured kiln efficiency or varietal performance, so recommending these as conclusions feels like a stretch. The claim that eucalyptus "transforms marginal land into productive assets" is also repeated from the abstract and introduction without any land productivity data to support it in the results. A minor but real concern: the conclusion glosses over the heteroscedasticity issue found in Table 3 and doesn't acknowledge the study's geographic limitation to just two provinces, which limits how broadly these findings can be applied.

The list of REFERENCES is comprehensive and appropriate.

Needs Improvement : The references cited throughout the paper are generally relevant and grounded in established literature on rural economics, agroforestry, and resilience theory — authors like Dercon, Barrett, Chambers, Deaton, and Markowitz are appropriate anchors for the theoretical framework. That said, the reference list itself is completely missing from the submitted manuscript. Every citation appears in-text, but there is no bibliography at the end of the paper. This is a serious gap that must be corrected before the paper can be properly evaluated. Beyond the missing list, a few concerns are worth flagging. Some citations feel dated — Chayanov (1966) and Von Thünen's land rent theory are classic but could be balanced with more recent empirical work from the last five years, particularly on Burundi-specific contexts. The Burundian sources — Ndayiragije (2021), Ndikumana (2022), Niyonzima (2018), Niyitanga (2022) — are valuable for local grounding but are difficult to verify without a full reference list. It would also strengthen the paper considerably if the authors included more recent literature on eucalyptus economics in East Africa post-2020, since the sector has evolved significantly. Finally, self-citation patterns cannot be assessed without the full bibliography.

Please rate the TITLE of this paper.

[Poor] 1-5 [Excellent]

4

Please rate the ABSTRACT of this paper.

[Poor] 1-5 [Excellent]

3

Please rate the LANGUAGE of this paper.

[Poor] 1-5 [Excellent]

2

Please rate the METHODS of this paper.

[Poor] 1-5 [Excellent]

3

Please rate the RESULTS of this paper.

[Poor] 1-5 [Excellent]

3

Please rate the CONCLUSION of this paper.

[Poor] 1-5 [Excellent]

3

Please rate the REFERENCES of this paper.

[Poor] 1-5 [Excellent]

2

Overall Recommendation!!!

Return for major revision and resubmission

Comments and Suggestions to the Author(s):

TITLE : The title does the job — it tells you what the paper is about and where. But it feels a bit long and tries to cover too much ground at once. "Strengthening financial stability" and "economic resilience" are essentially the same idea stated differently, so there's some redundancy. Trimming it to something like "Eucalyptus as Living Capital: Income Contribution and Financial Resilience of Rural Households in Burundi" would make it sharper and more memorable for readers scanning a journal index.

ABSTRACT : The abstract gives a solid overview of what the study found and why it matters. The 98% correlation figure is a headline result worth leading with. That said, the abstract leans heavily on qualitative framing — phrases like "living capital" and "green bank" — without grounding them in numbers early enough. There's also no mention of the sample size, provinces studied, or the regression method used, which are things a reader needs to evaluate the study's credibility before deciding whether to read on. Adding one sentence on methodology would make this much stronger.

LANGUAGE : It's clear this paper was originally written in French and translated — probably automatically. Some sections read naturally, but others are noticeably awkward or hard to follow. Phrases like "This approach Analytical reasoning leads us to formalize" and "which it whether it concerns" are grammatically broken. Table 1 has place names that were clearly mistranslated from Kirundi into nonsense English ("You are the one who protects", "I fought", "Pepper"). These aren't minor issues — they affect the reader's trust in the accuracy of the rest of the content. A professional English language edit is needed before this can be accepted.

METHODS : The methodological framework is reasonable for this kind of rural economics study. Two-stage stratified sampling across two contrasting provinces is a sensible design choice, and using KoboCollect for structured data collection adds a layer of reliability. The log-log regression model is appropriate for income elasticity analysis. However, the paper doesn't explain how the sample size of 190 was determined — was it based on a power calculation or just practical constraints? The choice to use only two provinces also limits generalizability, and this isn't discussed. Equation 1 is also poorly formatted and hard to follow. Stronger justification of sampling decisions and a cleaner presentation of the model specification would significantly improve this section.

RESULTS : The results section has some genuinely interesting findings — particularly the 0.980 correlation between eucalyptus wood income and total household income, and the near-unit elasticities from the regression. These are striking numbers that deserve more careful interpretation. The housing improvement data and investment pattern figures (Figures 3–5) also tell a compelling story. The problem is presentation. Figures 1 through 5 are referenced

throughout but never actually appear in the document — just described in text. Table 4 is referenced with data commentary but the actual table values are missing. A t-statistic of 1519 for the eucalyptus wood coefficient is extraordinary and warrants explicit discussion rather than passing mention.

CONCLUSION : This is actually one of the stronger parts of the paper. The conclusion ties the findings back to the research question clearly and offers specific, actionable policy recommendations — modernizing carbonization kilns, varietal selection, improving market access for poles and essential oils. These aren't generic suggestions; they're grounded in what the study actually found. The main weakness is that the conclusion largely repeats the abstract rather than building on it, and the environmental concerns (water consumption, competition with food crops) are mentioned but quickly brushed aside without adequate engagement.

REFERENCES : This is the section with the most serious problem — the reference list appears to have been cut off entirely. The in-text citations mention sources like Dercon (2002), Barrett (2011), Mekonnen et al. (2017), Chambers and Conway (1992), and many others, but no actual reference list appears at the end of the document. What's present is just the heading "References" and nothing below it. Beyond that structural issue, the theoretical literature is reasonably broad — drawing on rural economics, risk management, and agroforestry — though some citations feel illustrative rather than directly engaged with.

ESJ Manuscript Evaluation Form 2026

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Please respond within the appointed time so that we can give the authors timely responses and feedback.

NOTE: ESJ promotes a peer review procedure based on scientific validity and technical quality of the paper (not perceived impact). You are also not required to do proofreading of the paper. It could be recommended as part of the revision.

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Reviewer Name: NODEM MELI CLEMENT	
University, Country:	
Date Manuscript Received: 01/07/2026	Date Review Report Submitted: 09/07/2026
Manuscript Title: Economic influence of the eucalyptus sector on strengthening financial stability: an analysis of eucalyptus growers' perceptions in Burundi	
ESJ Manuscript Number:	
You agree that your name is revealed to the author of the paper:	
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Evaluation Criteria:

Please give each evaluation item a numeric rating on a 5-point scale, along with a thorough explanation for each point rating.

Questions	Rating Result [Poor] 1-5 [Excellent]
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1. The title is clear, and it is adequate for the content of the article.	3
<i>The title is consistent with the content; it is interesting and, above all, relevant, but it could be rephrased to be even better.</i>	
2. The abstract presents objectives, methods, and results.	3
<i>The authors should rephrase the abstract to better highlight the objectives, the methodology used, and the results. We simply note that the results are given greater emphasis in the abstract.</i>	
3. There are a few grammatical errors and spelling mistakes in this article.	
<i>(Please insert your comments)</i>	
4. The study methods are explained clearly.	3
<i>In terms of methodology, the following points are not specified: (1) the rationale for the sample size; (2) the sampling strategy; (3) the validity of the variables; (4) the handling of biases; (5) the robustness of the statistical analyses.</i>	
5. The results are clear and do not contain errors.	4
<i>I may be wrong, but I haven't noticed any major grammatical errors.</i>	
6. The conclusions or summary are accurate and supported by the content.	4
<i>The conclusions seems consistent with the summary to me.</i>	
7. The references are comprehensive and appropriate.	3
<i>The references must be reviewed carefully, and some must be corrected.</i>	

Overall Recommendation (mark an X with your recommendation) :

Accepted, no revision needed	
Accepted, minor revision needed	

Return for major revision and resubmission	
Reject	

Comments and Suggestions to the Author(s):

The literature review needs to be strengthened, as it is currently limited and focuses only on local studies; in other words, international studies should also be highlighted. Theoretical comparisons, if any, should also be highlighted, and, above all, the theoretical framework should be justified, which would lend greater significance to the choice of the article's topic. The methodology must be revised in accordance with the comments above.

Comments and Suggestions to the Editors Only: