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REVIEWER'S REPORT

Manuscript No.: **IJAR-57869**

Title: *Caractérisation des dynamiques de la pression foncière dans la commune de Zè au sud du Bénin.*

Recommendation:

Accept after minor revision.....

Rating	Excel .	Good	Fair	Poor
Originality		✓		
Techn. Quality		✓		
Clarity		✓		
Significance	✓			

Reviewer's Name: Faheem Abdul Muneeb

Detailed Reviewer's Report

Overall Evaluation

The manuscript titled “*Caractérisation des dynamiques de la pression foncière dans la commune de Zè au sud du Bénin*” investigates the drivers, manifestations, and consequences of land pressure in the municipality of Zè, located in southern Benin. The study combines demographic data, household surveys, land-use analysis derived from satellite imagery, and spatial assessment techniques to examine how population growth, urban expansion, land transactions, and changing land-use patterns are reshaping the rural landscape.

The topic is highly relevant to contemporary debates in land governance, rural transformation, urban expansion, territorial planning, and sustainable development in Sub-Saharan Africa. Across many peri-

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urban regions of West Africa, increasing demographic growth and urbanization are generating profound pressures on agricultural land, natural resources, and customary land tenure systems. The municipality of Zè represents an important case study because of its strategic location between major urban centers such as Cotonou, Abomey-Calavi, and Allada, making it particularly vulnerable to rapid land-use change and speculative land acquisition.

One of the manuscript's principal strengths is its attempt to combine multiple indicators of land pressure. Rather than relying exclusively on demographic data or land-cover change analysis, the study incorporates information on land-access mechanisms, land prices, agricultural landholding dynamics, agro-demographic indices, and spatial transformations. This multidimensional approach provides a broader understanding of the phenomenon and allows the author to capture both socioeconomic and spatial dimensions of land pressure.

The inclusion of land-use maps, transition matrices, demographic projections, and household survey data also strengthens the empirical foundation of the study. The analysis demonstrates that urban expansion, increasing land values, and declining agricultural landholdings are becoming important features of territorial transformation in Zè. The identification of spatial variations among arrondissements further adds value to the discussion.

The manuscript is generally well organized and follows a logical progression from contextual background and methodology to results, discussion, and conclusion. The figures and maps contribute positively to the presentation and help readers visualize the observed spatial dynamics. The land-use maps presented in Figure 3 are particularly useful in illustrating the territorial transformations that have occurred between 2005 and 2025.

Nevertheless, several methodological, analytical, and presentation-related issues require attention. Certain calculations and projections need clarification, some interpretations appear stronger than the evidence presented, and several inconsistencies exist in the demographic analysis, statistical presentation, and referencing. While these issues do not undermine the overall value of the study, addressing them would significantly strengthen the manuscript.

Strengths of the Paper

A notable strength of the manuscript is its focus on a highly relevant territorial issue. Land pressure and land-use transformation constitute major challenges across rapidly urbanizing regions of West Africa, and the study contributes useful evidence from a municipality that has experienced significant demographic and spatial changes over recent decades.

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The study also benefits from the integration of diverse data sources. Demographic statistics, satellite imagery, household surveys, land-access information, and land-price trends are combined to provide a relatively comprehensive assessment of land pressure dynamics. This multidimensional approach enhances the overall richness of the analysis.

Another positive aspect is the use of spatial analysis techniques. The comparison of land-use maps across multiple dates and the construction of a transition matrix allow the author to identify specific land-cover conversions and quantify territorial change. The matrix presented in Table I provides useful insight into the conversion of natural formations and agricultural land into other land-use categories.

The discussion of land-access mechanisms is particularly valuable. The finding that a large proportion of respondents access land through non-secured inheritance arrangements and informal transactions highlights the persistence of customary land systems and potential sources of tenure insecurity. This dimension enriches the study beyond a purely spatial analysis.

The analysis of land-price evolution also provides an important contribution. The documented increase in land values, especially in urbanizing arrondissements, offers useful evidence of growing speculative pressures and increasing competition for land resources.

Another commendable aspect is the effort to identify spatial disparities within the municipality. The comparison among arrondissements reveals that land pressure is not uniformly distributed across the territory, thereby providing a more nuanced understanding of local dynamics.

Areas for Improvement

While the study addresses an important topic, the methodology section requires greater precision and transparency. The manuscript states that 297 agricultural households were surveyed using the Schwartz sampling formula, but key information regarding sampling procedures, respondent selection, spatial distribution of surveyed households, and survey implementation remains limited. More detail is necessary to evaluate the representativeness and reliability of the survey data.

The demographic projection methodology also requires clarification. The study projects the agricultural household population from 10,599 in 2013 to 19,142 in 2025 using a growth rate of 5.05%. However, the manuscript simultaneously reports a significant decline in the agricultural population and discusses structural shifts away from agriculture. These arguments appear somewhat contradictory and require clearer explanation.

There are also concerns regarding the interpretation of the agro-demographic index. The reported increase from 0.33 ha/inhabitant in 2002 to 3.70 ha/inhabitant in 2013 is unusually large and suggests

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either substantial methodological changes or potential calculation issues. The manuscript should provide the formula used for calculating this indicator and explain the reasons behind such dramatic variation. The treatment of land-use dynamics could be strengthened further. Although the transition matrix provides useful information, the manuscript does not report classification accuracy measures for the satellite-image analysis. Since the conclusions depend heavily on land-cover classification, information regarding image processing procedures, classification methods, validation techniques, and accuracy assessment should be included.

Some interpretations of the results also require greater caution. For example, the manuscript repeatedly presents urbanization and demographic growth as the principal drivers of land pressure, but other potentially important factors such as public infrastructure projects, institutional reforms, land markets, policy interventions, and the influence of the GDIZ are discussed only briefly. A more balanced interpretation would strengthen the explanatory framework.

The discussion section would benefit from deeper engagement with existing scholarship. While several studies are cited, the discussion remains relatively descriptive and often reiterates the findings rather than critically comparing them with previous research. Stronger analytical integration with broader literature on peri-urbanization, land commodification, and land governance would enhance the academic contribution of the paper.

The manuscript also contains several technical and presentation-related inconsistencies. Some figures lack sufficient explanatory detail, and certain graph presentations could be improved for readability. For example, Figure 2 combines projected and observed demographic data without adequately distinguishing between them, which may lead to interpretative ambiguity.

Several typographical, grammatical, and formatting issues are visible throughout the manuscript. Examples include inconsistent spacing, missing punctuation, variations in abbreviation usage, and formatting irregularities within figures and tables. The terminology used for certain land-use categories is not always consistent between the text and the matrix presentation. Careful proofreading would substantially improve readability and professionalism.

The bibliography also requires attention. Several references are incomplete or inconsistently formatted, and some cited works lack full bibliographic information. For example, a number of references omit journal details, page numbers, publication information, or DOI identifiers where applicable. The reference list should be standardized according to the journal's citation guidelines.

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Finally, the conclusion summarizes the findings effectively but could be strengthened by providing more concrete policy recommendations. While the manuscript mentions land security and territorial planning, it would benefit from more specific proposals concerning land registration, urban growth management, agricultural land protection, and conflict-resolution mechanisms within the municipality.

Final Recommendation

Accept with Minor Revisions

The manuscript addresses an important issue affecting peri-urban territories in southern Benin and presents useful empirical evidence regarding demographic growth, land-use transformation, land-access mechanisms, and land-market dynamics in the municipality of Zè. The integration of spatial analysis, demographic indicators, and survey data represents a valuable contribution to the study of land pressure and territorial change.

Although several methodological clarifications, analytical refinements, and editorial improvements are necessary, the overall study is relevant, empirically grounded, and potentially useful for researchers, planners, and policymakers concerned with land governance and sustainable territorial development. With revisions aimed at strengthening methodological transparency, refining the interpretation of results, improving data presentation, and standardizing references, the manuscript would be suitable for publication.