

INFLUENCE OF LAND CONSOLIDATION ON SOCIAL JUSTICE IN GASABO DISTRICT, RWANDA

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Abstract

The purpose of this study was to establish influence of land consolidation on social justice in Gasabo district, Rwanda. Despite of efforts for land policy implementation in Gasabo District, land related challenges and social disputes persists related to unconsolidated land fragmentation due to unfair distribution of land, which required the conduct of a comprehensive research study in addressing the existing issue. The study adopted mixed methodology and concurrent triangulation design. The study population comprised 530,907 residents of Gasabo District and 31 land administration professionals. The planned sample included 384 residents and all 31 professionals, for a total of 415 participants. Of the responses collected, 382 were validated and included in the quantitative regression analysis. The Cronbach Alpha of 0.934 and higher as an ideal value was applied to test instruments' reliability. The collected data was analysed using SPSS software version 25.0. Descriptive statistics analysed the quantitative data obtained, while qualitative data obtained was analysed and discussed thematically. The study findings concluded that land consolidation had a positive and significant influence on social justice in Gasabo District, Rwanda. The study recommended the need to strengthen land policy components, suggests further research studies on the influence of courts decisions towards land owners' complaints using current land laws, effective use of Information and technology on land related service by local residents, as solutions to the existing land issues experienced by other districts other than Gasabo District, Rwanda.

Keywords: land consolidation, land policy, land administration, land-use planning, social justice, Rwanda.

1. Introduction

Land consolidation is a systematic land management approach that combines fragmented and dispersed land parcels into larger, more regular, and contiguous holdings. This process enhances agricultural efficiency by facilitating the use of modern farming machinery, lowering production costs, improving rural infrastructure such as roads and irrigation systems, and contributing to environmentally sustainable land management. According to Guo and Wang (2023), land consolidation serves as an essential strategy for optimizing land-use patterns, promoting the intensive and efficient use of land resources, coordinating economic and social development, and strengthening cultivated land protection.

The primary objective of land consolidation is to achieve sustainable land use by increasing the size and productivity of agricultural plots while fostering rural development (Malashevskyi, Kishchak, Malashevskya, & Kishchak, 2025). It involves reorganizing numerous small and fragmented landholdings into fewer, larger parcels, often accompanied by adjustments in land ownership. This restructuring creates a more suitable land ownership pattern that supports the adoption of modern agricultural technologies. Enlarging individual land parcels while reducing their overall number is a key goal of land consolidation policies because it enhances agricultural productivity and operational efficiency.

Globally, Land consolidation is a key instrument in land management focused in land parcels and land rights arrangements in strengthening the existing land laws, land use and de-fragmentize land rights (Vries, 2022). The research made by, Cocco Valentin, Chakir Raja, and Mouysset Lauriane (2025), indicated that land consolidation is a standard policy tool to reduce land fragmentation through the spatial redistribution of property rights. Land consolidation is a policy and a technical tool for resolving spatial problems. It plays a central role for land policy implementation and enhances policy-public relations for sustainable development. It has been implemented globally since 1990s in Latin American countries of Mexico, Nicaragua, Honduras, Ecuador, Brazil and Peru, adopted innovative land policy reforms aimed to promote gender equity, regularize communal lands of indigenous peoples' titles, institutional reforms, resettlement and established local initiatives to capacitate a sustainable communities' land management. Various developed countries established effective and well-organized land use planning processes for undertaking land management (Enemark, McLaren, and Lemmen, 2021).

Its core purpose is the management of land fragmentation and land segmentation to improve agricultural productivity; to promote the intensive, efficient and sustainable use of land and it progressively developed into a land policy that comprehensively deals with idle and inefficient land use and damaged or degraded land. The early implementation of land consolidation in some parts of Asia and African countries aimed to increase arable land and improve agricultural productivity and sustainable agricultural development to ensure food security and ease strained human-land relationships (Ma, Li, Wang, Jiang, and Luo, 2024). In Europe, land consolidation strategies have been considered as good approaches which have shown that responsible approaches persistently change the implementation of local factors and deal with problems affected by land fragmentation in most part of the European countries. In 1980s, many European countries successfully practiced land consolidation in agriculture transformation strategy to privatization and market development (Muyombano, 2021). In developing countries, land has been inappropriately managed and administered with little expectations to delivery in terms of its occupancy, manageable price and wide coverage for land holders and governments, where changes in land use around cities and the divide between rural and urban is decreasing (Williamson, 2015). On African continent, there has been a great improvement of land governance due to the existence of political will in most African countries. However, among the established land policies and enacted laws are not well implemented and issues of customary laws that discriminate against women still exist. The state of land administration systems and institutional land governance plays a development role and highlights land issues in Africa (Mwathane, 2018). In African countries of central and southern regions, over two-thirds of land is neither registered nor administered in the formal land systems. And this shows that the current formal land systems do not avail a genuine land tenure service to the population (Enemark, 2014). With social justice aspect, refers to the principle of creating a fair and equal society in which all individuals enjoy equal rights, opportunities, and access

to resources regardless of their caste, class, gender, religion, race, or economic status. It refers to making life better with equality in land distribution, land rights and equitable access to land. Land is key and a competing resource in third world nations, though there are gender parity actions in land possession as men are less affected than women. Land consolidation policy has a close relationship with social justice as both accelerate economic growth and stability. The rights of the citizens, equity and the promotion of inclusive allocation of its resources are respected to minimize economic and social discrepancies for all people within a society (Pachamama, 2018). Within the framework of social justice on land management, the citizens have opportunities and rights to own or use land resources thereby increasing the tenure security (Uwayezu and Walter, 2018).

In Rwanda, the National Land Policy was established to maintain and safeguard land management systems after the 1994 Genocide against the Tutsi, where the nation was totally devastated and the majority of Rwandans were internally displaced, homeless with influx of Rwandese refugees returning back to their motherland to start and reshape their future life from scratch (National Land Policy, 2019). In addition, Rwanda's land tenure security in the post-colonial era illustrates that the policy and laws supported informal land fragmentations and transfers that imperfectly affected land tenure security (Hughes, 2022). Also, the study conducted in all thirty districts in Rwanda indicated that there are some factors that significantly contribute to understanding the drivers of land consolidation in Rwanda such as socio-economic factors, institutional frameworks, and location variables critically influence household participation, which remains limited in spite of its agricultural reform importance, thus informing targeted policy interventions (Ndagijimana, Maniriho, & Mukamana, 2025).

In Gasabo District, according to the study conducted by Manirakiza, Zevenbergen, Boerboom (2018). (2014), joint research done by the National Public Prosecution Authority and Rwanda National Police (2016), some authors highlighted land as a predisposing factor for existing disputes in Rwanda due to the land shortage. However, several research studies were conducted on the above subject matter, but none of them explained the influence of land consolidation on social justice in Gasabo district, Rwanda, hence the conduct of the study.

1.2 Statement of the Problem

The establishment of National Land Policy in February 2004 as amended in 2019, was acknowledged for having a crucial role in maintenance and safeguarding a well-organized land consolidation management system. However, according to the Office of the Auditor General of State Finances (2020), shows that some land related challenges and social disputes in the public persist. This is due to lack of effective land consolidation practices, as observed 249 cases of Government land registered to individuals who are not land holders and 30 cases of land services that were denied by the districts for the same issue. Also the issue of inefficiency in land administration, whereby 424 recorded cases of incomplete and inaccurate land records of land expropriated by Government in public interests without land rights being transferred to the Government or institutions that expropriated the land were observed in Land Administration and Information System (LAIS) of National Land Registry; and also observed Rwanda Development Board (RDB) 11 plots of land registered as mortgaged in Electronic Mortgage Registration (eMRS) but not found in National Land Registry as well as 65 plots were mortgaged by individuals but found in the Land Registry.

According to the National Institute of Statistics of Rwanda (2012) in Gasabo District, the compliance to implementation of land use and master plan and zoning regulations, only 532 land permits were issued out of 2,579 applications received, equivalent to eighty per cent of applications that were not treated as a result of inexistence of land subdivision plan, which has affected the implementation of land consolidation practices. According to residents without land ownership, the district accounts 23.8 per cent. Also, looking on the problem of land, the district accounts 86.3 per cent of those with land that is a half hectare and less (Dusabe and Mbabazi, 2015). On social Justice aspect in Rwanda, land consolidation affect social justice as the reports indicates gender differences in land ownership. Seventeen per cent Men households live in agricultural land than eleven per cent Women counterparts. Also, thirty-two per cent of women and thirty-eight per cent of Men landowners do not have a title or a deed for their land, which is crucial in establishing legal rights to property (Rwanda Demographic Health Survey, 2020). Therefore, to correct the existing issue, the study established the influence of land consolidation on social justice in Gasabo district, Rwanda.

1.3 Significance of the Study

The significance of the study was to establish influence of land consolidation on social justice in Gasabo district, Rwanda. It sought to enhance information sharing about the implementation of land consolidation and social justice in Gasabo district, Rwanda. The research findings are of great importance to the Government of Rwanda through the relevant line Ministries and institutions in provision of the required recommendations and facilitate in understanding the influence of the land consolidation on social justice in Gasabo district. It elaborates whether the set strategies in implementing the land consolidation policy in Gasabo district is inclined in promoting social justice or not. It enables the policy makers and implementing bodies of National Land Policy on how the decisions and actions taken may be enhanced towards social justice in Gasabo District, Rwanda. As the study findings brought in-depth understanding of land consolidation, the policy makers and implementers may mutually collaborate with Rwanda National Police as a law enforcement agency to attend to land policy dynamics on social justice in Gasabo District, Rwanda.

The general population of Gasabo district may benefit from this study and knowledgeable on how their involvement and working closely with the local government land policy implementers address the existing land consolidation issues on social justice. It also contributes to the body of knowledge and add to the existing literature on land policy dynamics and social justice. Also, the study adds academic resourceful information to other researchers who may be interested in the same field of study, therefore might lead to underline the major issues regarding to social justice in relation to the influence of land consolidation.

1.4 Specific Objective

To analyse the influence of land consolidation on social justice in Gasabo district, Rwanda.

The manuscript covers the introduction, literature review and theoretical framework, materials and methods, study design and context, data, variables and sampling, analytical methods, results, discussions, acknowledgements and references.

2. Literature Review and Theoretical Framework

2.1 Empirical Literature Review

Land consolidation policy is a key instrument in land management, and it is an important aspect of territorial spatial planning and provides the necessary support for the optimization of territorial spatial layouts. A holistic approach to land consolidation provides a novel way to realize the multi-objective coupled optimization of land space, such as ecological civilization construction and rural revitalization strategies. In addition, owing to the regular existence of sustainable development issues, such as rural decline whereby, most countries have adopted national policies to revitalize rural areas by promoting rural and agricultural development, and rural land consolidation is beneficial for rural revitalization to a certain extent. (Ma, Li, Wang, Jiang, & Luo, 2024).

Land consolidation is a prevalent form of rural planning and is sometimes regarded as an important tool for mitigating land degradation. The purpose and one of the fundamental goals of land consolidation is to limit land tenure fragmentation between landowners and users which is usually achieved by exchanging plots of land to create larger land holdings that are more viable for efficient farming as well as accomplishing other public goals including infrastructure development and environment restoration. Land consolidation is a key instrument of rural planning which was practiced back to the 18th century. During the 20th century, land consolidation became widespread across most European and in some Asian countries, notably in India, Thailand and Japan. In the Central and Eastern European countries, this form of planning became widely used during the post-communist era, beginning in the early 1990s (Janečková, 2023).

The research study conducted on land consolidation in Ukraine suggested that land consolidation practices facilitate the transfer of afforested private land plots to the forest fund for a sustainable agricultural development and requires to be stipulated by the Ukrainian legislation (Malashevskiy, 2025). In Iran, the study findings showed that even despite of the efforts made the Iranian government, there is still a visible gap related to technological advancement in agriculture sector and well as the issue of small and fragmented agricultural lands which do not allow the use of modern land machinery that requires the government's promotion of agriculture through land consolidation initiatives (Ghadermazi, 2025).

A study conducted in Chengdu, China indicated that land consolidation practices contribute significantly to farmers' socio-economic livelihood capital and strategies under various terrain gradients, where traditional types of agriculture have drastically shifted and transitioning to modern agricultural types (Wan, 2025). The results of the study findings conducted in Turkey show that land consolidation increase parcel land size and contribute the stronger utilization of modern machinery and need to align its policies with mechanization strategies to promote well organised and sustainable agricultural systems (Alkan & Ertuğrul, 2025).

In Poland, land consolidation is currently bound by the Act of 1982 on land consolidation and exchange as a legal document. In addition, it is performed based on the compliance with the guidelines of the European Parliament and the European Commission. Land consolidation works focuses on the unexplored area of Poland, located in the cadastral districts of the Bałtów commune. It is also aimed at changing land properties characterized by substantial fragmentation of plots, their defective shape or unfavourable location, into properties providing specific landowners with more conducive conditions

for their management. In addition, land consolidation facilitates the restoration and fertilization of usable agricultural land and upgrading of the existing agricultural transport roads networks and related technical infrastructure and the construction of a new facilities which in turn mitigates the phenomenon of soil erosion. The majority of all the above-mentioned management and agricultural planned activities are carried out during the land consolidation and exchange process. Hence, land consolidation in some parts in Poland is thus considered as a measure intended at improving the land layout in a particular agricultural holding by creating better management conditions in both agriculture and forestry, which is achieved through improving the spatial structure of agricultural and forestry holdings, especially in addressing such problems such as land fragmentation and dispersion of the plots (Krzemieniecki & Mika, 2025).

In France, the study findings show that the French land consolidation program was implemented during the second half of the 20th century purposely to enhance the modernization of agriculture. The program was initiated following the end of World War II, which sought France economic recovery. In 1941, the Government enacted the law to promote the modernization of French agriculture and laid the foundations for a modern and large-scale consolidation, followed by a decree in 1954 specifying the modalities to achieve a rational use of land. The proposal was meant to allocate land so that each owner received a land surface equal to their provision, accounting for the differences in the productive potential of each land type. However, the implementation of land consolidation in France was slow from the late 1940s to the 1960s, focused on open-field areas with high potential for specialized field-crop production, such as the Beauce and Picardy. Over time, land consolidation extended to the rest of northern France, where agronomic conditions favoured large, intensive farms specializing in either field crops or cattle breeding. Thereafter, the final implementation phase occurred in the year 2000s. The French Government emphasized on its agricultural sector transformation in striving to meet its citizens' demand for food and the mitigation of the negative trade balance. And this was attributed by strong political will and support by French Government to move from traditional small-scale agriculture to mechanized, intensive, and market-integrated agriculture. However, there were existing issues related to farmland fragmentation that had a negative impact on land loss with shortage of labour, affecting the adoption of machinery and investment in infrastructure. Thus, the State continued to check legality and to advise local stakeholders (Cocco, Chakir, & Mouysset, 2025).

In North Macedonia, the study findings shows that land consolidation is considered as a well proven land management tool that is practiced for the restructuring of farms. It depends largely on the landowners and communities' interests and willingness to participate in the project. The landowners actively participate in the project and are supported and motivated by the local governments, stakeholders and relevant agencies aimed at achieving numerous non-agricultural and agricultural objectives even in one process, such as re-allotment of parcels in part of the project and restoration of a wetland or afforestation in other parts of the project. The agricultural development has evolved into a powerful multi-purpose land management instrument in Macedonia. The general population together with effective governance system played a vital role for the implementation of land consolidation through public participation, interactions, dialogue, and it created a more participatory and human-centred development approaches as well as the stakeholders' participation. The involvement of the stakeholders in land consolidation is in two ways, on one hand, they actively participate in developing an all-acceptable land consolidation plan. On the other hand, it better guarantees in advocacy that all

relevant voices are heard and rights considered, thereby minimizing cases of eventual judicial appeal (Gorgan & Bavorova, 2022).

In Central China, the results of the study indicated that the area has been considered as the major crop production areas, where rural land consolidation (RLC), an effective means of restructuring rural production, life and ecological spaces, is widely practiced and has intensely changed the pattern of land use in rural areas and shaped farmers' decision-making behaviours and eco-environmental behaviours. The exploration of the rural land consolidation has been known as a potential means for better guiding the practice of sustainable land use (Xie, Yang, Wang, Song, & Yang, 2021).

The study findings indicate that, in some Asian and African regions, there has been an increase in the adoption of land consolidation in response to pressure to feed increasing populations and in some cases, to mitigate environmental degradation. Various studies from some parts of the South-east Asia, Africa indicated that land consolidation facilitates land management. In Europe and China describes land consolidation facilitates in planning measures of various types of land management, which promotes village vitality that generate a pattern numerous elements of rural development of the population, land and industry. Land resources as one of essential requirement need to be allocated through land consolidation. As a result, land consolidation makes an important contribution to resource support, industrial development, and population growth. The approach to land consolidation in individual countries and regions is also widely variable, due to differences in their physical environment and in socio-economic context, in land management intensity, in legislation, and in national traditions. Individual countries and regions also vary widely in the level of adoption of measures which are not directly connected to the exchange and enlargement of agricultural plots within land consolidation projects. Countries with a high level of focus on these functions of land consolidation projects generally aim at implementing rural and regional development policies (Janečková, 2023).

In Sub-Saharan Africa, the practice was viewed as an effective response to land fragmentation, but its application has been adversely affected by customary land tenure arrangements (Asiama, 2017). Land consolidation as part of rural agricultural planning and increase in production and socio-economic development, helped in implementation of villagization programmes in some African countries such as Ethiopia, Tanzania, Mozambique, Zimbabwe, and South Africa (Muyombano, 2021). In Kenya, much effort was put in land consolidation to avoid more fragmentation in Kiambu, Maranga and Kikuyu Districts (Mbonigaba & Dusengemungu, 2013).

In Rwanda, the study findings shows that Government adopted a sustainable intensification practice in response of the growing land constraints and an increased market orientation for farmers and rapid rural population growth linked to the decline of farm sizes and reduced uncultivated land continue to dominate. Also, due to rapid urbanization and economic growth provide new market opportunities for the rural farm sector, urban food needs are increasingly met through imports, and this is considered as a lost opportunity for rural farm sector to modernize and expand (Del Prete, 2019). In 2008, the introduction of Land Use Consolidation (LUC) policy was implemented through the Crop Intensification Program (CIP) by the Government of Rwanda, to promote economies of scale through crop specialization and directs the agricultural industry toward the commercial market. However, the findings show some limitations in coordinating the planned activities amongst implementers, variation in micro climatic conditions, which led to serious new challenges in achieving land use consolidation objectives (Nsabimana, Niyitanga, Weatherspoon & Naseem, 2021).

Additionally, farmers in the same farming regions are permitted to grow a single crop while continuing to own their original smallholder farms. Regardless of the implementation of the policy, majority of farmers continue to uphold small holdings. Also, the implementation programs need to be significantly improved, with an emphasis on the large expansion of key food crops, strengthening the value chain is also necessary to ensure the ecological and financial viability of land use consolidation. Also, various study findings also indicated that, land use consolidation was implemented owing to increasing land fragmentation and population pressure. The farmers voluntarily practiced this in the framework of the Crop Intensification Programme (CIP) by the farmers consolidating their land parcels and cultivating one selected crop while keeping ownership of their land intact, thus expansion of the land areas under cultivation of priority crops. This resulted in a reduction in transaction costs of transportation inputs, agriculture inputs such as fertilizers and improved seeds and outputs across plots and other operational difficulties with a view to increasing labour productivity and efficient use of the land (Pia, 2019).

Despite a substantial physical growth of 13 per cent of the nation's total cultivable land, the strain on land that was consolidated for non-priority crops decreased from 52.6 per cent in 2004 to 42.4 per cent in 2011. Additionally, without farmers' choice to cultivate crops in regions with inadequate resources, the utilization of enhanced varieties, mechanization, and natural resource management remain unexplored. Some farmers believe that mono farming in an area and synchronized cropping of the same crop can increase the possibility of natural risks such as pests, diseases, and drought (Kathiresan, 2012).

The study also indicated that one out of five households is engaged in land consolidation, highlighting its limited adoption despite its importance in agricultural reforms of the country. Additionally, socio-economic and institutional factors and location had a substantial impact on households' participation in land consolidation. Moreover, factors such as household size, livestock ownership and agricultural input use, including fertilizer, irrigation, and improved seeds showed strong positive and statistically significant effects on land consolidation participation (Ndagijimana, Maniriho, & Mukamana, 2025).

2.2 Theoretical Framework

The social justice theory was formulated by John Rawls in 1971 that addresses the problem of fair allocation of goods in a society (distributive justice) and it postulates the essential social and justice factors contributing to equality in relation to public policy on land such as the need, desert and equality. Social justice focuses on resources and properties sharing towards advancing a conducive condition of the underprivileged persons as a matter of their rights other than a matter of compassion or national interest (Carl, 2010).

The Social Justice Theory forms the following objectives; the influence of land distribution on social justice in Gasabo District, Rwanda and the influence of land consolidation on social justice in Gasabo District, Rwanda. The best way of promoting social justice is through effective land tenure management among the owners as well as the public. Once there was an established land information management system, then the general population benefits because of a well streamlined institutional framework that brings out land tenure security and transfer of legal rights exercised among landowners. The theory recognizes the role of the public in solving issues of competing interests due to the effective land tenure systems. The theory promotes good land consolidation practices among the community and this results into a more resilient, participatory and consultative community that share land related information acquired from established good land consolidation systems which enables transparency and

sustainable community that is accountable and that inform land policy dynamics on social justice in Gasabo District, Rwanda. This research study is based on the social justice theory since it supports and integrates community land consolidation initiatives especially in areas of Social and economic, agricultural and water use effectiveness. The researcher used the mentioned theory to analyse the influence of land consolidation on social justice in Gasabo District, Rwanda.

3. Materials and Methods

The study entailed mixed methodology, with both quantitative and qualitative methods. Data from closed ended questionnaire was quantitatively analysed using descriptive and inferential statistics. Also, qualitative method used to analyse collected data from the interview schedules and from open-ended questions, with themes developed from the research objective. Multiple data sources can be integrated and combined in a mixed-methods sources to help examine complicated issues and analysing data to understand well the research problem (Poth & Munce, 2020). The application of mixed methods enables to observe a phenomenon in a broad picture of the study (Shorten & Smith, 2017). And it facilitates to attain strong conclusions in a such way that the strength of the qualitative methods counterbalances the weaknesses of the quantitative methods and vice-versa (Plano Clark & Ivankova, 2016).

3.1. Study design and context

The research study used concurrent triangulation model with descriptive survey design. The quantitative and qualitative methods are applied with equal weight at same time. The Triangulation Design is a one-phase design where researchers use both quantitative and qualitative methodologies equally and concurrently and at the same timeframe to fully comprehend the study problem and analyse both quantitative and qualitative data (Creswell & Clark, 2018). The goal of employing this approach was to combine the distinct advantages and unique disadvantages of qualitative and quantitative methods, to compare, validate or expand quantitative statistical results with qualitative data findings (Asenahabi, 2019).

The study used descriptive survey designs, which yield information on big groups of individuals, with very little effort, and in a cost-effective manner, through a critical observation of phenomena such as events, objects, subjects, and ideas without making any attempt to influence them. It needs direct contact with people whose traits, behaviours, and attitudes are pertinent to the research and describes a specific situation that exists at a specific time. Researchers suggested that both methods have various strengths and bias thus combining results and strength reduce the weak sides of both methods (Creswell, 2003). This research design was used for data collection from numerous categories of respondents in Gasabo District and involved use of questionnaires and interviews. The qualitative data for the study was gathered through interviews and open-ended questions. The quantitative data was gathered in preparation for statistical analysis. Closed-ended questionnaires were used to collect the quantitative data.

The study targeted District Land officers, Urban planners, Sector land officers working in all 15 sectors of Gasabo district, Land Registration officers from National Land Authority. The research study was conducted in Gasabo District, Rwanda and the total target population was 530,938 residents. The data collection for the research study was conducted in 2025 for a period of Six Months for administration and analysis. The research covered all the fifteen sectors that constitute Gasabo District, namely;

Remera, Ndera, Kacyiru, Jali, Nduba, Gisozi, Gatsata, Jabana, Gikomero, Bumbogo, Rusororo, Rutunga, Kinyinya, Kimironko and Kimihurura. According to the census conducted by the National Institute of Statistics of Rwanda (2012), Gasabo district is among the three districts that comprises the City of Kigali, and it was selected as the study area because of its huge rural area and it is characterized by urban-rural migration, seasonal labour movements, socio-economic and political context for a range of developmental processes which makes it a potential environmental stress areas, and all these promotes to land related social justice issues with regard to equality in land use planning, land rights and equitable land accessibility in spite of establishment of national land policy in Rwanda.

Table 7 Participants of the study

Participants	Target population	Approach
Land Registration officers	5	Qualitative
District Land Officers	8	Qualitative
Urban planners	3	Qualitative
Residents of Gasabo District	530,907	Quantitative
Sector Land Officers	15	Qualitative
TOTAL	530,938	

Source: Author's calculations based on field research (2025)

3.2. Data, variables, and sampling

The Questionnaire and Interview guide were used to capture both quantitative and qualitative data as the research study instruments. The study sample size was 415 respondents from the 530,938 targeted population which was determined based on the Krejcie and Morgan's sample size calculation equation (Krejcie & Morgan, 1970). The study used probability sampling technique to select land officers and urban planners and stratified random sampling for the households of Gasabo District. The study sample comprised 415 participants, including 384 residents and 31 land administration professionals. Of the responses collected, 382 were validated and included in the quantitative regression analysis. All 31 land administration professionals in the identified groups were invited to participate. Residents were selected using stratified random sampling.

Table 8. Sampling Grid

Category of population	Total population	Sampling procedure	Sample size
Land Registration Officers	5	Total population sampling	5
District Land Officers	8	Total population sampling	8
Urban Planners	3	Total population sampling	3
Sector Land Officers	15	Total population sampling	15
Households of Gasabo District	530,907a	Stratified random sampling	384
Total	530,938		415

Source: Author's calculations based on field research (2025)

The researcher collected the data with help of the trained research assistants. They were trained on how to administer the tools meant for the target respondents, as well as handling any evolving challenges at the study field. The use of interview guide and questionnaires enabled a researcher to collect the required data related to the study objective. Questionnaires were structured in both English

and Kinyarwanda and distributed to the residents of Gasabo District who can read and write. This took three weeks to administer and collect the questionnaires from the respondents of Gasabo District. The collected data covered; Biodata, characteristics of respondents, information on influence of land use planning on social justice in Gasabo District.

3.3. Analytical methods

The descriptive statistics, simple linear regression model as well as thematic analysis were used to analyse data. The Cronbach Alpha 0.934 and higher as an ideal value was applied to test instruments' reliability while validity and credibility of the instruments was established under the supervisors' direction. Field data was cleaned and checked and entered in a computer, coded and analysed quantitatively using Statistical Package for Social Sciences (SPSS) version 25.0 as it manages large data quantity for social sciences. The obtained quantitative data was analysed in form of descriptive statistics, that include percentages, frequency counts and inferences such as simple linear regression analysis to test the relationship between the independent and the dependent variables. The regression results included; R squared, F statistic, P value and beta coefficient (β). The R squared described the explanatory of the joint independent variables in explaining variations in the dependent variable. The beta coefficients showed the unit change in the dependent variable due to changes in the independent variable. The F statistics described the model fitness while the P value illustrated the statistical significance of the model. The beta coefficients were used to make predictions. Tables were used for illustration of results. Qualitative data obtained from the interview schedules was analysed and discussed thematically. This was employed where responses from the interviews were discussed in themes using narratives that relate to the study objectives. The qualitative data analysis processes were followed and includes, reading, interpreting, coding, reducing, and displaying. The findings were presented in bar graphs, tables and pie charts. To prevent harm from occurring because of releasing the research study's findings, ethical norms was followed. Integrity was emphasized in research since the aim of ethics in research is to ensure that no one experiences negative effects from study activities. The researcher acquired an introductory letter from the School of Post Graduate Studies and a clearance from the Ethical Review Committee of Mount Kenya University to get right to collect data from the target respondents. He also requested a research permit from National Council for Science, Technology for Rwanda, as the research was conducted in Rwanda. The researcher also sought an authorization from the City of Kigali and Gasabo District where the research was conducted. The researcher made an application of an informed consent form and was addressed to the respondents as per the consenting process, clarified the purpose and grounds of the research and course of action throughout the data compilation to participate voluntarily and assured their safety, welfare, confidentiality and data protection.

4. Results

The findings and discussions focused on the study objective was analysed and presented here on the influence of land consolidation on social justice in Gasabo district, Rwanda. The data was analysed and presented in three levels of analysis namely: descriptive statistics, Pearson correlation such as simple linear regression model and thematic analysis; and the interpretation of the mixed data. Table 3 shows the statistical analysis in relation to the influence of land consolidation on social justice in Gasabo District, Rwanda.

Table 3. Descriptive statistics on land consolidation

Statements	Strongly Agree	Agree	Fairly Agree	Disagree	Strongly Disagree	Mean	Standard deviation
The implementation of land use consolidation strategy promotes social and economic effectiveness in Gasabo District	136 35.6%	164 42.9%	64 16.8%	15 3.9%	3 0.8%	1.91	.864
Land use consolidation boosts agricultural effectiveness and productivity significantly in Gasabo District	137 35.9%	155 40.6%	63 16.5%	24 6.3%	3 0.8%	1.96	.920
The land use consolidation practice in Gasabo District helped water use effectiveness for both domestic and agricultural purposes	128 33.5%	145 38.0%	68 17.8%	35 9.2%	6 1.6%	2.07	1.009
Consultations and awareness raising meetings were conducted and views from residents of Gasabo District were considered during the implementation of land used consolidation	117 30.6%	139 36.4%	79 20.7%	32 8.4%	15 3.9%	2.19	1.082

Source: Author's field research based on SPSS output (2025)

5. Discussion

From the table 3 above, show that the respondents 300 (78.5%) with mean value of 1.91 agreed that the implementation of land use consolidation strategy promotes social and economic effectiveness in Gasabo District. This means that effective use of land consolidation is a source of production, social cohesion and economic development. However, 18 (4.7%) of respondents disagreed that land consolidation strategy did not promotes social and economic effectiveness. This implies that some of the residents of Gasabo District did not consider land consolidation strategy applicable and effective enough towards income generation and development of the family households. The research findings also noted that the respondents 292 (76.5%) with mean value of 1.96 agreed that land use consolidation boosts agricultural effectiveness and productivity significantly in Gasabo District. This means that if the land properly consolidated, also agricultural production increases. On the other hand, some respondents 27 (7.2%) disagreed with the same statement saying that land consolidation did not boost agricultural productivity. This implies that land consolidation practice did not benefit individual family households. Also, the results indicated that the respondents 273 (71.5%) with mean value of 2.07 agreed that land use consolidation practice in Gasabo District helped water use effectiveness for both domestic and agricultural purposes. This shows that land consolidation practices increase access to social services such as water for domestics use and agricultural activities. However, some of the respondents 41 (10.8%) disagreed with that there was no connection related to land consolidation practices supporting water use effectiveness. This shows that there was less sensitization campaigns of Gasabo District residents in relation to the benefits and importance of practicing land consolidation by the residents of Gasabo District. The findings also noted that, 256 (67%) with mean value of 2.19 agreed

that consultations and awareness raising meetings were conducted and views from residents of Gasabo District were considered during the implementation of land used consolidation. This implies that joint consultations with the residents as end-users was beneficial for both parties. However, some of respondent 47 (12.3%) disagreed with the statement that they were not consulted nor awareness raising meetings were conducted during the implementation of land consolidation.

This shows that there was a need for intensive consultations between Gasabo District relevant authorities with residents that would have been beneficial for both parties towards the implementation of land consolidation.

Thematic analysis on land consolidation and Social Justice

Based on thematic analysis of the research findings from interview schedule, numerous views from residents of Gasabo District emerged. When asked if land tax is favourable in accordance to the land owner's financial capacity, and if not, to suggest ways on how land tax can be regulated, the respondents replied as follows;

Participant ROG 374, responded that.... *"Yes, I can pay for tax. However, the taxes should base on the values and what that land can generate to me not on my ability to pay it. Land for family where they live should not be taxed at all, unless there are other activities on that particular land such as rentals"*.

Respondent ROG 341 advice was that..... *"Land tax should be omitted to residential houses and consider taxpayers with commercial houses"*.

Also, ROG 254 advice was that...., *"Land tax should be revised based on the revenue and income generating activities on a specified land."*

Participant ROG 272 response was that..... *"It's so challenging in such way that you pay land tax yet you are not allowed to use it. It is imperative for tax payment of an exploited and productive land with income generation"*.

Furthermore, participant ROG 276 responded that..... *"Gasabo District land authorities are required to conduct awareness meetings on the importance of land tax especially in sectors situated in rural areas"*.

Respondent ROG 205 stated that..... *"Land taxes do not correspond to what land is meant for". There is a need to compare both land which is used for income generating activities to that one without anything."*

Respondent ROG 214 said that..... *"Land tax payers of Gasabo District need to be facilitated and allowed to pay in instalments"*.

Participant ROG 106 advised that..... *"In Rwanda, land tax rates are structured progressively, meaning they consider the size and use of the land which can make them favourable and affordable based on one's financial capacity."*

Participant ROG 39 response was that..... *"There is a need for relevant authorities to conduct a general land survey in Gasabo district to enable land owner pay land tax based on the current information (rate/m²) related to individual land"*.

Also, respondent ROG 51 stated that..... *"Gasabo District land authorities need to enhance the use of information and technology where residents are communicated and access information related to land taxes"*.

Also, the researcher wanted to know if the set procedures for land transfer are favourable to the land-owner and the required measures.

And, the participant ROG 242, responded that..... *"Even though I am considered currently as land owner, it is not fair due to the fact that I am leasing for the period of 99 years. After that, I do not know what will happen"*.

Also, the ROG 71, said that..... *"There is a need for recruitment of enough and required skilled employees as land staff in Gasabo district."*

When residents asked if land is insufficient for what it is meant for, and suggested solutions to the existing problems. Respondents replied as follows;

Respondent ROG 326 replied that.... *"Land related authorities need to revisit the existing procedure during the course of land consolidation. "*

Participant ROG 240, advised that..... *"Enhance the required service delivery especially during demarcation of land."*

Respondent ROG 231 advice was that..... *"The Government of Rwanda is required to enhance consolidation of small parcels of land and construct Two-in-one model village for poor families in Gasabo District which will promote social justice."*

Respondent ROG 328 advised that..... *"Land committee need to conduct field visits and work closely with the local residents and acquire real information"*.

In addition, participant ROG 241 suggestion was that..... *"There is a need to enhance land service delivery and resolve the issue of overpopulation in some areas of Gasabo District"*.

Respondent ROG 247 advised that.... *"In future, there is a need to consolidate land and enhance villagization schemes whereby, three families could live together in apartments and make use of vacated land for commercial and socio-economic developments."*

Participant ROG 374, responded that..... *"The problem starts when you request for permits to use the land and the requirement on the standard does not give you to efficiently use the land or construction, which changes when you have already used off your land"*.

Respondent ROG 237 suggestion to the question was that..... *"To maximize land use through consolidation, vertical development, land leasing, zoning adjustment and advocating for improved information and governance support."*

However, when the respondents were asked if the national land policy is not favourably implemented in accordance to what the landowners wish to do on their land, and to give out their views on how it can be enhanced so as it can respond to the needs of residents of Gasabo District, below are their responses;

Participant ROG 326 responded that..... *"Requires to conduct deep assessment regarding the competencies of the related authorities during the policy implementation".*

Respondent ROG 339 advise was that.... *"Basing on the views and opinions of residents from each Sector, the Policy implementation would be effectively achieved."*

Respondent ROG 243 advised that..... *"The government need to revisit the National Land Policy to suit with current situational demands and facilitate its implementation".*

Also, respondent ROG 244 gave out an opinion that..... *"Initially, there is a need for land use planning which need to be advocated for to the residents by the Gasabo land authorities and create a sense of ownership, prior the establishment of the National Land Policy".*

Participant ROG 247 advised that..... *"In future there is a need to consolidate land and enhance villagization schemes whereby, three families could live together in apartments and make use of vacated land for commercial and socio-economic developments."*

Respondent ROG 254 opinion was that..... *"There is a need for Gasabo land related authorities to sensitize local resident on the importance of land consolidation and villagization of maximum 10 families in each model village. This is a future life-saving scheme for the entire Rwandan population".*

Participant ROG 260 advice was that.... *"There a need for intensive awareness raising meetings for the residents of Gasabo District regarding the Gasabo District Master Plan and need to reflect the capacities of the residents of a particular area".*

Participant ROG 264 advice was that.... *"There is a need to enhance consultations between residents of Gasabo District. and land authorities with a view to sharing of opinions."*

Nevertheless, respondent ROG 267 advice was that..., *"Gasabo District land authorities need to decentralize its services delivery from District level, sector level up to Village level".*

Participant ROG 276 responded that..., *"Gasabo District relevant land authorities are required to conduct field visits regularly, make interactions on land policy implementation and seek opinions from local residents".*

Participant ROG 284 advice was that..... *"The conduct of numerous research from different fields can be a solution to the existing land issues the residents of Gasabo District are experiencing".*

Participant ROG 353 responded that..... *"The National Land policy is good but the problem lies on its implementation. So, there is a need to seek new strategies related to policy implementors".*

Participant ROG 374, responded that..... *"People should be allowed to use their land for residential but not for resell, then this will remain the main issue of construction without permits which in the end both sides make loses that is to say, for both Government and the land owners".*

Respondent ROG 384 advice was that.... *"There a need to conduct deep assessment and re-adjust the planned activities on Gasabo Master Plan, as some places reflects some planned activities which are not suitable to that place based on the master plan".*

Respondent ROG 387 advised that..... *“Based on the development of the City of Kigali, there is a need to review Gasabo District Master Plan and change a huge rural area meant for Farming and agriculture into a residential area with a view to enhance socio-economic development of the district.”*

Respondent ROG 193 advice was that.... *“A local resident’s rights are essential to decide the appropriate work for/her land”.*

Respondent ROG 204 stated that, *“The relevant authorities are required to plan early enough for land reserved for habitation, as this is real need due to population increase”.*

Participant ROG 225 advised that..... *“The law must be renewed where the land which is highly used and productive, that is to say, Farming and agricultural land, and the land which is used for commercial purposes are required to be taxed, not the land meant for residential purposes”.*

Respondent ROG 106 advised that.... *“To better align the national land policy with residents’ need in Gasabo district. Community participation in policy reviews should be strengthened and flexibility in land use regulation should be increased. Additionally, awareness campaigns and support services can help residents navigate and benefit from the policy more effectively”.*

Respondent ROG 57 advised that.... *“There is a strong need for advocacy to the local residents on land policy, enhance land consolidation with agricultural activities and the development, sensitize residents on use of information and technology, consultations at village level on land use planning and the master plan of the respective areas, conduct of initial orientation training of new employees at Gasabo District responsible for land management”.*

Participant ROG 67 advised that..... *“There is a need for Gasabo district land authorities to conduct field assessment on land site management and its developmental activities”.*

Respondent ROG 01 advised that..... *“In order for national land policy to be fully implemented, requires to reflect and consider financial capacities of local residents of Gasabo district”.*

Respondent ROG 14 advised that..... *“To fully implement national land policy, there is a need for establishment of a joint team comprised of Security and law enforcement organs and observers from relevant institutions responsible to monitor the policy implementation status.”*

Participant ROG 41 responded that..... *“It would be genuine for the land authorities to revise a master Plan annually or after two years to depict the real land related situation in Gasabo district”.*

And, the respondent ROG 335 advised that..... *“There is a need for the conduct of meetings with local residents in order to acquire the required information from shared opinions”.*

Table 4. Model Summary of land consolidation and social justice

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.647 ^a	.418	.417	4.30176	.418	273.194	1	380	<.001

a. Predictors: (Constant), Land Consolidation

Source: Author’s field research based on SPSS output (2025)

Table 4 shows a positive association between land consolidation and the measured social justice score ($R = .647$). The model explains 41.8% of the variation in the social justice score ($R^2 = .418$). The remaining variation is not explained by this model.

The R-square value of 41.8% is contributed by land consolidation, and the remaining 58.2% can be affected by other additional factors. This shows that if land consolidation is well implemented, it influences social justice for the residents of Gasabo District, Rwanda.

Table 5. ANOVA test for land consolidation and social justice

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	5055.486	1	5055.486	273.194	<.001 ^b
Residual	7031.951	380	18.505		
Total	12087.437	381			

a. Dependent Variable: Social Justice

b. Predictors: (Constant), Land Consolidation

Source: Author's field research based on SPSS output (2025)

The ANOVA results show that the simple linear regression model is statistically significant, $F(1, 380) = 273.194$, $p < .001$. This indicates that land consolidation is significantly associated with the measured social justice score. This confirms that land consolidation significantly affects social justice for the residents of Gasabo District, Rwanda. Hence the model was considered statistically significant.

Table 6. Simple linear regression coefficients of land consolidation and social justice

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
Constant	7.322	.606		12.074	<.001	6.130	8.515		
Land Consolidation	1.149	.070	.647	16.529	<.001	1.012	1.286	1.000	1.000

a. Dependent Variable: Social Justice

Source: Author's field research based on SPSS output (2025)

Land consolidation was positively associated with the measured social justice score ($B = 1.149$, $\beta = .647$, $t = 16.529$, $p < .001$). A one-unit increase in the land consolidation score was associated with an estimated 1.149-unit increase in the social justice score. Hence land consolidation influences significantly social justice for the residents of Gasabo District, Rwanda.

The linear regression model equation is presented as formula 1:

$$Y = 7.322 + 1.149X_2 \quad (1)$$

Where:

Y = Social justice

X_2 = Land consolidation

From this equation, the regression model indicates that when land consolidation is constant, the social justice in Gasabo District, Rwanda is 7.322. It also reveals that a one unit of land consolidation will lead to an increase in social justice by a factor of 1.149 units holding the other predictors fixed. The study findings agreed with those of Kagame (2023) who observed significant advantages of connecting communities with the police on security enhancement.

The findings and discussions focused on the study objective was analysed and presented here on the influence of land consolidation on social justice in Gasabo district, Rwanda. The data was analysed and presented in three levels of analysis namely: descriptive statistics, Pearson correlation such as simple linear regression model and thematic analysis; and the interpretation of the mixed data. Table 3 shows the statistical analysis in relation to the influence of land consolidation on social justice in Gasabo District, Rwanda.

6. Conclusions

From the study findings, it was concluded that land consolidation had a positive and significant influence on social justice in Gasabo District, Rwanda. This has the implication that effective use of land consolidation is a source of production, social cohesion and economic development. The key aspects of focus of land use planning where the implementation of land use consolidation strategy promotes social and economic effectiveness, land use consolidation boosts agricultural effectiveness and productivity, land use consolidation practice in Gasabo District helped water use effectiveness for both domestic and agricultural purposes, consideration of consultations and awareness raising meetings during the implementation of land use consolidation.

6.1. Practical and policy implications

This section provides recommendations for the study findings, practice, implications on policy and for further study.

6.1.1. Recommendations for Practice

The study recommended:

- i. The study recommended the need for Gasabo District to enhance legal frameworks and literacy, conflict resolution mechanism through mediation committees “Abunzi” and community participation through community meetings “Inteko z’Abaturage” and Community work “Umuganda” to overcome land disputes.
- ii. The study recommended the need for Gasabo District to establish a long-term early warning or mitigation plan on issues related to overpopulated areas through enhancing land consolidation and villagization as future life-saving schemes and make use of unexploited land for agricultural/farming and related socio-economic developmental activities.
- iii. The need for National land authority to sensitize the local residents on the use of information and technology with free digital access to online land related services through “Irembo” platform and other related platforms so as to prevents bureaucracies and enhances transparency and accountability,
- iv. The need to review the use of orthopaedic cards that cause land precisions errors of land boundary.

- v. The study recommended the need for consistent improvement of National land authority and Gasabo District to enhance consultations and awareness meetings meant for community empowerment of local residents of Gasabo District located in rural areas on land use planning and zoning regulations prior its implementation phase.

6.1.2. Recommendations for Policy

The study recommended:

- i. The study recommended the need for National land authority to review the National Land Policy to suit with current situational demands and facilitate its implementation.
- ii. The study recommended the need for National land authority to review the law related to inheritance of land after the deceased of parents in order to overcome issues of courts decisions that do not match with land owners' complaints, a source of disputes among family members.
- iii. The study recommended the need for Gasabo district to set policies that are adaptive to land use and rapid urbanization while safeguarding agricultural, commercial and residential needs.
- iv. The study recommended the need for establishment of a joint team comprised of Security and law enforcement organs as well as the relevant civil society organizations responsible to monitor the status of national land policy implementation hence promote peaceful coexistence and rule of law, contributing to national post-genocide reconciliation among residents of Gasabo District.
- v. The need for National Land Authority to better align the national land consolidation policy with residents' need in Gasabo district through strengthening community participation in policy reviews and awareness campaigns on land use regulation.

6.2. Limitations and future research

This section provides limitations and suggested future research.

6.2.1 Limitations

The following limitations were met during the study;

- i. Respondents' inadequate information on land policy implementation on social justice may affect data collection. The researcher alleviated this issue by posing questions to key informants from district and sectors levels.
- ii. The research study focused to Gasabo District due to fiscal and time limitations. However, the study findings were generalized to other districts as they face same social justice issues related to land consolidation policy in Rwanda.
- iii. There was a possibility of not revealing the required information due to some respondents' characteristics. The researcher mitigated this by avoiding personal questions.

6.2.2. Specific directions for future research

The researcher suggests that further research studies need to focus on;

- The impact of land consolidation practices in promoting agricultural productivity to the local community in Gasabo district, Rwanda.

- The influence of courts decisions towards land owners' complaints based on the current land laws in Gasabo District, Rwanda.

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