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Determining the Usefulness of Land Information Management System (LIMS) in Ending Land Disputes in Zimbabwean A1 Farms

Makomo Agnes[1], Masarira T.P[1]
[1]Department of Geomatics Engineering, University of Zimbabwe, Zimbabwe
Corresponding Author: Makomo Agnes; Email: agnesmakomo@gmail.com

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ABSTRACT

This study sought to determine the usefulness of the Land Information Management System (LIMS) for the resolution of Land Disputes in Marondera District A1 resettlement areas. The research was inspired by the continued occurrence of land disputes in Marondera A1 Farms. The main thrust of the research was to determine to assess the usefulness of the LIMS model in ending land disputes in Marondera District A1 farms. The study adopted a mixed research approach hinged on pragmatism research philosophy. A cross-sectional survey research design was used. The research used stratified random sampling for quantitative data whilst purposive sampling was used for the collection of qualitative data. Structured questionnaires and interview guides were the two major instruments that were used. A sample size of 373 participants was drawn from the Department of Lands Marondera, the Zimbabwe Lands Commission, Extension officers, and A1 farmers in areas of Wenimbi, Mushandira, and Ruware in Marondera. The sample size was arrived at using the Raosoft sample size calculator. The sample size for qualitative data was not predetermined but was arrived at using the saturation principle. In the analysis of quantitative data, tables, descriptive statistics, and inferential statistics were produced using Statistical Package for the Social Sciences (SPSS) version 23. The presentation of qualitative data followed a thematic approach in which responses were shown using word cloud analysis. The study revealed that the improved LIMS will enable land registration, land use planning, land dispute resolution, and data analysis and reporting. It was recommended in the study that the government encourage open communication and collaboration among local communities, farmers, and authorities to address grievances and prevent conflicts, fostering a sense of shared responsibility and ownership. Also with LIMS government conducts a thorough audit to identify and resolve issues related to land ownership, boundaries, and usage, helping to prevent future disputes.

INTRODUCTION

Land acquisition and resettlement is an important step in the development of any nation, especially in developing countries where most of the local people rely on agriculture (German, Schoneveld & Mwangi, 2011). Land disputes are a prevalent issue posing significant challenges to sustainable development and economic growth. Zimbabwe is no exception, with a history of resettlement disputes that have hindered progress and stability in the region. These disputes often arise due to conflicting land boundaries, unclear land ownership, and inadequate documentation, leading to prolonged conflicts and social unrest. In response to these challenges, the development of a spatial Land Information Management System (LIMS) tailored for the resolution of land disputes in resettlement areas presents an opportunity to address the scientific problem of inefficient land management systems (Wayumba & Ayugi, 2017). By leveraging engineering principles and technologies, such a system can streamline the collection, storage, and analysis of land-related data, enabling quick and accurate resolution of disputes. The issue of land disputes and the importance of effective land management systems have been widely studied and documented in global literature (Fu & Gillespie, 2014). Muthoni (2018)

emphasizes the significance of land information management systems in addressing land conflicts and promoting sustainable land governance. Similarly, De Soto (2000) highlights the role of secure land rights and accessible land information in driving economic development and poverty reduction in developing countries. These scholars underscore the importance of utilizing technology, such as land information management systems, to improve land administration and resolve land disputes effectively.

In Sweden, the development of a comprehensive LIMS has been instrumental in streamlining land administration processes and ensuring efficient management of land information. According to Hjelm (2013), Sweden's land administration system is characterized by its high level of digitalization, integrated databases, and user-friendly interfaces, allowing for seamless access to land-related information. The implementation of LIMS in Sweden has improved land governance, reduced administrative burdens, and facilitated effective land dispute resolution. In Indonesia, the utilization of LIMS has also been key in addressing land tenure issues, enhancing land rights security, and promoting sustainable land management practices. Susanto (2017) highlights the importance of LIMS in improving land registration processes, reducing land conflicts, and fostering inclusive land governance in Indonesia. The integration of modern technology and geospatial tools in Indonesia's LIMS has enabled efficient land data management and improved decision-making in land administration. Research by Box (2015) in Australia also emphasized the significance of LIMS in providing accurate and up-to-date land information for decision-makers, land professionals, and the general public in Australia.

The development of web-based platforms and interoperable systems in Australia's LIMS has promoted data sharing, collaboration, and transparency in land administration processes. According to Raju (2018), the role of LIMS in digitizing land records is to establish land information portals and enhance land tenure security in India. The integration of spatial technology, satellite imagery, and land survey data in India's LIMS has enabled decentralized land administration, streamlined land registration processes, and facilitated land dispute resolution mechanisms. These experiences of countries such as Sweden, Indonesia, Australia, and India demonstrate the importance of implementing a robust and user-friendly LIMS in enhancing land governance, promoting sustainable land management practices, and resolving land-related disputes effectively. In the African context, land tenure systems and land governance have been a focal point of research and policy discussions. Chinsinga (2011) examines the impact of land tenure reforms on land conflicts in Malawi, emphasizing the need for clear land policies and efficient land administration systems to address disputes. Additionally, Mwangi and Doherty (2016) explore the role of land information systems in land governance and conflict resolution in Kenya, underscoring the importance of integrating traditional and modern land management practices. These studies highlight the relevance of tailored land management solutions for addressing land disputes within the African context.

Reuveny (2007) provides numerous instances of land disputes leading to ecological migration. For instance, famine and drought in Africa caused 600,000 people to relocate from central and northern Ethiopia to the southwest and west, resulting in battles between nomads and farmers over territory. In the early 1990s, 1.7 million Rwandans moved from the country's center regions and rural south to northern Rwanda and Zaire as a result of ethnic conflicts and genocide that were exacerbated by a lack of land and water. The decrease in access to land, or rather the returns from human uses of land, is one of the key elements contributing to the contraction of livelihoods and, subsequently, the chance that people may join armed organizations (De Soysa et al., 1999; Barnett & Adger, 2007).

In Zimbabwe, land issues have been a central focus of research and policy debates, particularly in the context of the country's agrarian land reform program and resettlement policies. Chigara & Sangarwe (2019) have examined the impact of land redistribution on land tenure and dispute resolution in Zimbabwe, emphasizing the need for effective land administration systems to address conflicts. Furthermore, Mabikke (2018) highlights the role of technology in enhancing land governance and resolving land disputes in Zimbabwe, advocating for the adoption of innovative systems such as land

information management systems. These studies underscore the importance of context-specific approaches to land management and dispute resolution in Zimbabwe especially drawing parallel lines with other advanced countries.

This study was hinged on the Agency theory. Ross (1973) is credited by Solomon and Solomon (2004) as being the first to examine the agency problem and acknowledge that he also provided the first thorough theoretical explanation of agency theory. Managers were described as the agents and shareholders as the principal by Jensen and Meckling (1976). Directors, who act as the company's agents, are given daily decision-making authority by the shareholder (owner). The issue that this corporate ownership system presents is that the agents may not always decide what is best for the shareholders. The objectives of the principal and agent conflict are one of the main tenets of agency theory. According to Blair (1996), who was referenced by Mallin (2007), managers should act as the owners' representatives of the company, but they also need to be kept under observation and institutional safeguards need to be in place to ensure that they do not misuse their authority. Agency costs are the expenses incurred when managers abuse their power and when they are watched over and disciplined to stop abuse.

Accordingly, the broad consensus among agency theorists is that agency difficulties will characterize the agency relationship if the agent's (director's) actions are not restricted or controlled, or if the agents' and principals' interests do not align (Van Puyvelde et al., 2013). Agency theory is most applicable in the Lands Ministry case since it deals with the connection between the principal (the government) and agent (the corporate management). The principal's goal is to raise the value of the company to maximize wealth. As the shareholder, the Government mandates that the Lands Office adhere to a particular corporate governance framework. On the other hand, the agents tend to choose how to maximize their reward and keep their position. The land conflicts resulting from corruption cases that involve land officials and parliamentarians (Yuntho, 2019) are indications that the theory forms relevance in the current study on Land information management systems (LIMS).

It is against this background that the research seeks to unpack the effectiveness of the LIMS in the curb of land disputes in Marondera District A1 Farms in Zimbabwe.

METHODS

The study adopted a mixed research approach hinged on pragmatism research philosophy. A cross-sectional survey design was used. The research used stratified random sampling for quantitative data whilst purposive sampling was used for the collection of qualitative data. Structured questionnaires and interview guides were the two major instruments that were used. A sample size of 373 participants was drawn from the Department of Lands Marondera, Zimbabwe Lands Commission, Extension officers, and A1 farmers in areas of Wenimbi, Mushandira, and Ruware in Marondera. The sample size was arrived at using the Raosoft sample size calculator. The sample size for qualitative data was not predetermined but was arrived at using the saturation principle. In the analysis of quantitative data, tables, descriptive statistics, and inferential statistics were produced using Statistical Package for the Social Sciences (SPSS) version 23. The presentation of qualitative data followed a thematic approach in which responses were shown using word cloud analysis.

RESULTS AND DISCUSSION

The Causes of Land Disputes in Marondera A1 Farms

Table 1. Descriptive statistics on the causes of land disputes in Marondera A1 farms

Item Code	Item Description	Mean score	Mean response	SD
CLD1	Corruption	4.90	Strongly Agrée	.791
CLD2	Boundary issues	4.87	Strongly Agrée	.782
CLD3	Inheritance	4.11	Agrée	.750
CLD4	Family conflicts	4.66	Agree	.781
CLD5	Double allocation	4.51	Agree	.770
	Overall	4.21	Agree	.766

Source: Survey 2024

The highest mean in the above table was 4.90 under the descriptor corruption whilst the highest standard deviation was 0.791 for the same descriptor corruption. The lowest mean was 4.11 for descriptor inheritance. In the same vein, the least standard deviation was 0.750 for descriptor inheritance. The high standard deviation implies that respondents had varying views toward the causes of land disputes in Marondera A1 farms. In this instance, the results were overall agreeable as shown with a mean score of 4.21 and a standard deviation of 0.766. Despite the existence of non-zero standard deviations, the overall impression as read from the mean score is that the land disputes in Marondera A1 farms are corruption, boundary issues, inheritance, family conflicts, and double allocation. Previous studies show that programs for redistribution are an answer to the historically unequal allocation of land. The main cause of Africa's uneven distribution is colonialism, and recent liberation efforts have concentrated most of their attention on redistributing land in Namibia, South Africa, and Zimbabwe (Hulak et al., 2022). Because it restricts access to land and negatively impacts the livelihood of small-scale farmers, agricultural laborers, and the landless poor in rural and urban areas, corruption in land management can exacerbate levels of poverty and hunger. Corruption in land tenure and title inhibits small-scale farmers in rural areas from increasing their production and enhancing food security (Chiweshe, 2017).

A 2019 study by Kansanga, Arku, and Luginaah found that unrecorded intercommunity land boundaries and tenure histories, a failing traditional land tenure system, increasing land values and widespread land leasing, and statutory interference are the main causes of ethno-territorial land boundary conflicts. These dynamics have provided rival clans and organizations with areas of maneuvering and incentives to use various interpretations of the “past” and “space” in specific combinations that further their objectives of expanding their sphere of influence. Contesting parties are increasingly turning to the legal system for remedies, even if boundary disputes can be satisfactorily settled through the traditional land dispute resolution process. On the other hand, the lack of a recorded history of tenure introduces uncertainty into the legal system, leaving the courts vulnerable to delays and corruption. Scholars argue that until the existing border disputes are properly resolved, land reform ideas, while widely proposed in most African nations to address the customary land dilemma, would remain ineffectual (Hulak et al., 2022).

The study also sought to assess the usefulness of the LIMs model in ending land disputes in Marondera District A1 farms as such the Table below presents the descriptive results.

Table 2. Descriptive statistics on the usefulness of LIMs model in ending land disputes Marondera District A1 farms

Item Code	Item Description	Mean score	Mean response	SD
ELD1	Easy to retrieve land information	4.71	Strongly Agree	.928
ELD2	Land data management becomes easy	3.81	Agree	.774
ELD3	Transparent land allocation	3.77	Agree	.780
ELD4	Reduces land allocation corruption	4.81	Strongly Agree	.940
	Data quality, security, and privacy	3.81	Agree	.774
	Overall	3.99	Agree	.805

Source: Survey (2024)

In the table above the highest mean was 4.81 with a standard deviation of 0.940 and corresponded to Strongly Agree. The lowest mean of the four descriptors shown above was 3.77 with a standard deviation of .780 and corresponded to Agree. However, a non-zero standard deviation gives the impression that respondents had a varied view as shown by a. This implies that for the descriptors above respondents could either agree or disagree. Overall, the response was Agree with a standard deviation of 0.805. This shows that the results are generally agreeable to the fact that LIMS can be useful as it makes it easy to retrieve land information, land data management is easy, adds transparency, reduces land allocation corruption, and improves land data quality, security, and privacy. The results are in convergence of the study by Rajmohan et al., (2021). To address the various needs of landowners, LIMS provides an all-in-one solution (Torma and Aschemann-Witzel, 2023). The incorporation By enhancing the functionality, LIMS enables customers to examine and visualize their land from many angles. For efficient land management, property borders are simple to establish and observe. Measuring Acreage and Distance Determine distance and acreage with accuracy (Torma and Aschemann-Witzel, 2023).

CONCLUSIONS

The study found that the causes of land disputes in Marondera A1 farms include corruption, boundary issues, inheritance, family conflicts, and double allocation. Previous studies show that programs for redistribution are an answer to the historically unequal allocation of land. The main objective of the study was to assess the usefulness of the LIMs model in ending land disputes in Marondera District A1 farms. From the results, it can be concluded that LIMS can be useful as it makes it easy to retrieve land information, and land data management is made easy, adds to transparency, reduces land allocation corruption, and improves land data quality, security, and privacy. In this view, the government should develop a fair and transparent process for redistributing land, ensuring that all stakeholders, including farmers, communities, and traditional leaders, are involved and consulted.

Also, there is a need for the government to conduct a thorough audit to identify and resolve issues related to land ownership, boundaries, and usage, helping to prevent future disputes. Similarly, authorities should enhance legal frameworks and establish effective dispute resolution mechanisms, such as mediation and arbitration, to address land disputes efficiently and fairly. The research also recommends that the government should offer training, credit, and market access to farmers, enabling them to productively utilize their land and reducing tensions and conflicts.

Authorities should encourage open communication and collaboration among local communities, farmers, and authorities to address grievances and prevent conflicts, fostering a sense of shared responsibility and ownership. By implementing these recommendations, Zimbabwe can work towards resolving land disputes in A1 farms, promoting peace, stability, and sustainable agricultural development. Further researches may be conducted to examine the effectiveness of alternative dispute resolution mechanisms such as mediation in A1 farms' land disputes. The study may also be furthered by using other districts in Zimbabwe to see study replicability.

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