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THE IMPACT OF CADASTRAL DATA ON REDUCTION OF POVERTY IN TANZANIA

A Case Study of Makongo juu

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BSc Geomatics

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THE IMPACT OF CADASTRAL DATA ON REDUCTION OF POVERTY IN TANZANIA

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A Dissertation Submitted to the Department of Geospatial Sciences and Technology in Partially Fulfilment of the Requirements for the Award of Science in Geomatics (BSc. GM) of Ardhi University

CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance by the Ardhi University dissertation titled **"The impact of Cadastral data on Reduction of Poverty in Tanzania"** in partial fulfillment of the requirements for the award of degree of Bachelor of Science in Geomatics at Ardhi University.

……

Mr Method Gwaleba

(Supervisor)

Date ……

DECLARATION AND COPYRIGHT

I, MAKOYE, SHILINDE J hereby declare that, the contents of this dissertation are the results of my own findings through my study and investigation, and to the best of my knowledge they have not been presented anywhere else as a dissertation for diploma, degree or any similar academic award in any institution of higher learning

……..

MAKOYE, SHILINDE J

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DEDICATION

I would like to dedicate this dissertation to my family for their support, endless love, advice, great care that gave me throughout my study.

ABSTRACT

This research aims to evaluate the impact of cadastral data on reduction of poverty in Tanzania lack of awareness and understanding surrounding the importance of cadastral data in poverty reduction. It identifies. Insufficient knowledge and skills among community members and land council members in collecting, managing, and utilizing cadastral data are identified as significant challenges. Additionally, the lack of technical expertise and familiarity with modern tools and technologies further hinders the effective utilization of cadastral data for poverty reduction.

The study conducted at Makongo juu village, where by the number of sample size is 3120 household and 7 land council members of Makongo Ward, the formula which used to obtain the sample size is Yamane Formula, interview method used to obtain Demographic information of Makongo Juu, Questionnaire method used to obtain the finding of the Research.

Method for Data collection employed are three which are Questionnaires, interview, and Literature Review Method. IBM SPSS is the software used in processing and analyzing collect data from the field at Makongo Juu.

The finding indicate that Cadastral data is not linked to poverty reduction due to lack of insufficient data from the field

Keywords: Cadastral data, poverty reduction, Residents, land council members, Makongo juu, IBM SPSS software, Yamane formula,

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CHAPTER ONE

1.0. INTRODUCTION

1.1. Background

Land is a major asset. However, there have been numerous challenges in the management of land in the country, including lack of secure land tenure, inconsistent land registration processes, and disputes over land ownership. In this context, the study will investigate how the improvement of cadastral data through technology and policy interventions can lead to increased economic opportunities, improved land governance, and ultimately a reduction in poverty.

Poverty refers to the lacking enough resources to provide necessities of life- food, clean water, shelter and clothing, but in today's world that can be extended to include access to health care, education and even transportation.in government circles poverty is often further defined as "absolute poverty" and "relative poverty".

Poverty and cadastral data are related, if cadastral data like land title are not used well in land transaction and investment may lead to poverty. land comprises a large share of the asset portfolio of the poor in many developing countries, giving secure property rights to land they already possess can greatly increase the net wealth of poor people. By allowing them to make productive use of their labor, land ownership makes them less reliant on wage labor, thereby reducing their vulnerability to shocks according to (Deininger, 2003).

Cadastral data like land titles will be impediments to individuals to invest through mortgages as stated by (Silayo, 1997) this can reduce poverty in individual level and national level.

The ministry and other council have right to manage and administrate land because land is the major means of production in developed and developing countries like Tanzania as stated by (Deininger, 2003) as ability of local leaders and authorities to control land has traditionally been a major source of political and economic power. Over and above the economic benefits that may be derived from giving.

Among of the strategy of our Nation for poverty reduction is the land property and management as stated by (ministry of finance and economic affairss, 2010) as “This Strategy aims at enhancing efficiency in land and property management and thus making land contribute more to poverty reduction and improved social wellbeing of the people”.

The ability to meet the range of land administration functions in the areas of land tenure, land value and land use requires access to complete and up-to-date land information. A key function of land administration is the management of land and property related data through a land information system with the cadastral data model at its center. For instance, a primary requirement for efficient and effective land valuation is land data that provides an index for compiling and maintaining valuation information (Soltanieh, 2008)

The study area of this research title shall be on the region where their unequal distribution of land ownership, Makongo area will be case study.

1.2. Statement of research problem

There is a lack of comprehensive understanding regarding the actual impact and potential barriers of utilizing cadastral data in Tanzania. This hinders its integration into poverty reduction strategies and limits its impact on targeted interventions. Insufficient knowledge and skills among community members and land council members in collecting, managing, and utilizing cadastral data pose a significant challenge. The lack of technical expertise and familiarity with modern tools and technologies hinder the effective utilization of cadastral data for poverty reduction.

Addressing these problem areas will require concerted efforts from government agencies, non-governmental organizations, academic institutions, and other stakeholders to overcome the barriers and unlock the full potential of cadastral data in poverty reduction in Tanzania.

1.3. Objectives

1.3.1. Main objective of research

To evaluate the impact of cadastral data on the reduction of poverty in Tanzania.

1.3.2. Specific objectives

- To analyze the perception of landowners or user about the use of cadastral data for poverty reduction.
- To analyze the impact of land ownership patterns on poverty reduction efforts in Tanzania.
- To examine the essence of cadastral data for poverty reduction.
- To evaluate the implementation of cadastral data impact poverty reduction programs in Tanzania.

1.4. Research questions

- How does cadastral data impact poverty reduction in Tanzania?
- To what extent does the implementation of cadastral data impact poverty reduction programs in Tanzania?
- How perception of landowners or user about the use of cadastral data on reduction of poverty?

1.5. Significant of this research

- Providing insights into the relationship between cadastral data and poverty reduction in Tanzania, which could inform policy and decision-making for poverty reduction initiatives.
- Evaluating the effectiveness of cadastral data in poverty reduction programs, which could inform future investments in this area.
- Determining the challenges faced in implementing cadastral data for poverty reduction, which could help identify areas for improvement.
- Offering recommendations for the effective utilization of cadastral data in poverty reduction initiatives, which could help guide future efforts in this area.
- Contributing to the body of knowledge on the role of land ownership and distribution in poverty reduction, and the role of cadastral data in addressing these issues.

1.6. Beneficiaries of the research

- The residents of the country who are living in poverty. If the results of the study show that access to accurate and up-to-date cadastral information can have a positive impact on poverty reduction, this could lead to the implementation of better land administration systems and more equitable distribution of resources.
- Policy makers and government officials, who could use the findings to inform the development of more effective and sustainable poverty reduction strategies. Researchers and academics in the field of land administration and poverty reduction could also benefit from the insights and information generated by the study.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter presents the review of cadastral data and poverty (relative and absolute poverty) by using existing information,

2.2 Overview on cadastral data.

Cadastral data refers to the official records that contain information about the ownership, boundary, and value of lands and properties. The availability and accessibility of this information is crucial for the proper functioning of land markets and land governance, which in turn can have significant impacts on poverty reduction.

Cadastral data is the information which contain official, legal documentation concerning the quantity, dimensions, location, value, tenure and ownership of individual parcels of land (founder & Mostak, 2023).

Cadastral data this is information that contains land properties like land value, land ownership, and boundaries of the parcels, (Deininger, 2003) defined cadastral data as Two

main instruments used for land administration are a registry key land administration that handles information on land ownership and transactions and an instruments database, called the cadaster (cadastral data), that contains the boundaries of parcels as defined by surveys and recorded on maps and any additional information about these parcels. The cadastre provides the basis for several other functions, such as land use planning, management and disposal of public lands, land valuation and taxation, provision of other public services, and generation of

maps, also (Yomralioglu & McLaughlin, 2017) define as s “the work of officially mapping and systemically registering the areas, borders and values of all kind of land and property”. Therefore, “cadastre” is an important public inventory documenting the records of ownership, bordering and responsibility regarding the land with “title deed” on the parcel and answering the questions of “whose, where and how much”. That is why “cadastre” has the utmost importance for the development of countries and the future of the individuals in our globalized world, (Zevenbergen, 2004) define as, data concerning properties within a certain country or district, based on a survey of their boundaries. Such properties are systematically identified using some separate designations. The outlines or boundaries of the property and the parcel

identifier are normally shown on large-scale maps which, together with registers, may show for each separate property the nature, size, value and legal rights.

In a market based system it also includes the right to transfer the parcel to another person, to mortgage the property and to lease it. All of these rights may be more or less restricted by legislation. It is common today that the legal rights of the land owner are restricted to using the parcel of land in a manner that is beneficial and appropriate from a community perspective (Soltanieh, 2008).

The usurping of land's position as the primary source of wealth for people began with the Industrial Revolution and the rise of capital. This in turn created a further important function of land administration as a tool to support the growth of land markets and land transfers (Ting & williamson, 1999a) to develop economic interests in land.

As was seen in the case studies, many organizations, government and non-government bodies are involved in the production and utilization of land information. The increasing number of interests in land will not necessarily be retained by a single agency. This means that each agency expects that the maintenance of the associated interest in land is reserved for it. Land information therefore should be organized independently in cadastral and land information systems. Assigning each interest to a legal property object layer will help to maintain interests in land independently from each other (Soltanieh, 2008)

2.3 Overview on poverty

Poverty is the lack of human needs like shelter, clothes and food at the individual level but at the national level lack of social services like water supply, electricity, Transport infrastructure, health service and education. (Deininger, 2003) determine that development practitioners now recognize that lack of secure tenure and the associated threat of eviction and poor access to basic services are important determinants of poverty. Poverty is classified as absolute and Relative poverty.

Absolute poverty

This refers to when a person or household does not have the minimum amount of income needed to meet the minimum living requirements needed over an extended period of time. In other words, they cannot meet their basic needs. When an individual goes below this threshold their survival is threatened. Poverty at the absolute level is life at the very margin of existence. The

absolute poor are severely deprived human beings struggling to survive in a set of squalid and degraded circumstances almost beyond the power of our sophisticated imaginations and privileged circumstances to conceive (Quesada & Sosa, 2005)

Relative poverty

This is the condition in which people lack the minimum amount of income needed in order to maintain the average standard of living in the society in which they live.

Tanzania is a country that has experienced significant challenges with poverty reduction, with an estimated 26.4% of the population living below the poverty line (National Bureau of Statistics, 2020) One potential solution to this issue is the use of cadastral data, which provides information on land ownership and boundaries, as a means to improve access to land and property rights for poor communities

Several studies have highlighted the potential impact of cadastral data on poverty reduction in Tanzania. For example, a study by (Mushi et al., 2018) found that the use of cadastral data in land administration improved the efficiency and transparency of land transactions, which in turn had a positive impact on land tenure security and poverty reduction. Similarly, a study by (Kweka et al, 2017) found that the use of cadastral data in land management improved the accessibility of land to poor communities, which had a positive impact on poverty reduction.

However, other studies have noted that the implementation of cadastral data systems in Tanzania is not without its challenges. For example, a study by (Mwangeni et al, 2019) found that the lack of awareness and education around the use of cadastral data among poor communities in Tanzania was a significant barrier to its adoption, limiting its potential impact on poverty reduction.

Overall, while the use of cadastral data in Tanzania has shown promise as a means to improve access to land and property rights for poor communities, more work is needed to address the challenges associated with its implementation and ensure its potential impact on poverty reduction is fully realized.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Introduction

`In this chapter shows the study area where the data are collected (Makongo juu), also shows the sampling techniques, data collection methods, processing and analysis of collected data.

The study will likely employ a mixed-methods approach, using both quantitative and qualitative data to understand the relationship between cadastral data and poverty reduction in Tanzania.

This chapter presents the research methodology by describing the research design, sample size, sampling techniques, type and source of data, data collection methods, data processing and data analysis.

3.2. Study Area

Kinondoni is a district of Dar-es-salaam, Tanzania. Kinondoni District is divided into 20 administrative wards. Bunju, kawe, kigogo, kijitonyama, kinondoni, makongo, mikocheni, mbezi juu, mbweni, mwananyamala, mzimuni, wazo, Tandale, Ndugumbi, msasani, hananasif, kunduchi, mabwepande, Magomeni, Makumbusho. Makongo is the locality in Tanzania and has about 43,796. residents. One of the village found in Makongo is Makongo juu with approximately 3120 residents as the sample area for this research. My study was conducted at makongo juu in Makongo ward. The study Area illustrated in the Figure 3.1

One of the reason which influence to select as a study area was, makongo area most of the area are surveyed so cadastral data can be found.

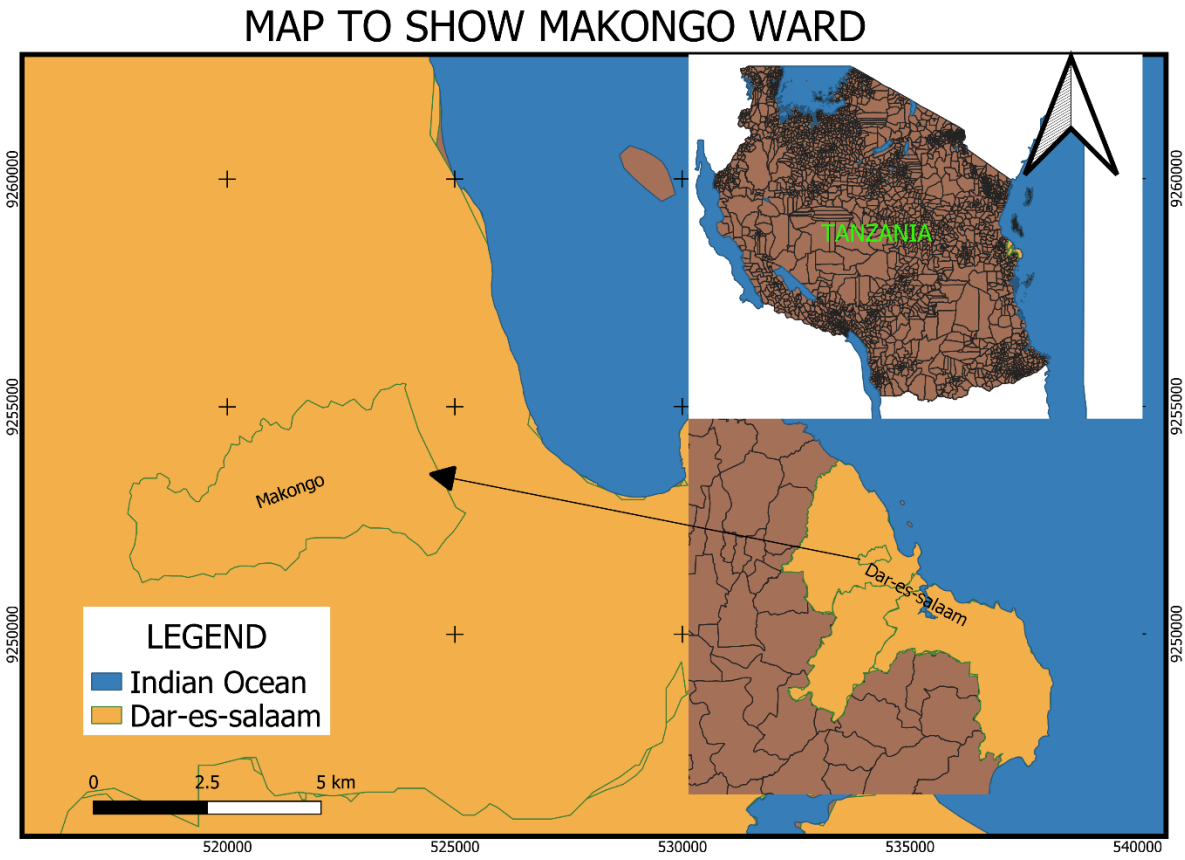

Figure 3. 1 Study Area location

3.3 SAMPLING DESIGN AND SAMPLE SIZE.

3.3.1 Sample size

The sample size is the number of observations used for determining estimations of a given population, the measure of the number of individual samples used in an experiment.

The size of a sample is an important element in determining the statistical precision with which population values can be estimated. In general, increased sample size is associated with decreased sampling error. The larger the sample, the more likely the results are to represent the population. However, the relationship between sampling error and sample size is not simple or proportional. There are diminishing returns associated with adding elements to a sample. (Dattalo, 2008)

The Yamane formula was used to determine the sample size of the research. As shown in equation 3.1.

$n = N/(1 + Ne^2)$ ……..…….……3.1

where; n = sample size

N = population size

e= margin of error,

where at a confidence level of 92%, the margin of error is 0.08.

total residents at Makongo Juu are approximately 3120 the sample size was 150 people,

3.3.2 Sampling design

To design a sampling strategy for research on the impact of cadastral data on poverty reduction in Tanzania, several factors need to be considered, such as the research question, the population of interest, the sampling frame, and the available resources.

First, the research question is focused on the impact of cadastral data on poverty reduction in Tanzania. Therefore, the population of interest is likely to be households or individuals living in Tanzania who are affected by poverty.

Second, a sampling frame needs to be identified, which could be a list of all households or individuals living in Tanzania, or a subset of this population based on certain criteria, such as geographic location, income level, or access to cadastral data.

Third, a sampling method needs to be chosen, which could be either probability or non-probability sampling. Probability sampling methods ensure that every member of the population has an equal chance of being selected, while non-probability sampling methods do not have this property.

Given the limited resources and time constraints, a non-probability sampling method might be more practical for this research. One possible method is purposive sampling, where individuals or households are selected based on their relevance to the research question and their availability for participation in the study.

For example, one could select households living in areas with access to cadastral data and compare their poverty levels with households living in areas without such access. Alternatively, one could select households that have recently accessed cadastral data and measure the change in their poverty level over time.

It is important to note that non-probability sampling methods have limitations in terms of the generalizability of the findings to the larger population.

3.4 RESEARCH DATA COLLECTION METHODS

There techniques that can be used in collection of data, which can be primary method where by data are taken directly from the field, also can be secondary method where by data are taken from other published documents.

3.4.1 Primary method.

- Questionnaire: A Questionnaire could be conducted to collect data from a representative sample of individuals or households in Tanzania. The Questionnaire could include questions about land ownership, property rights, access to land, and poverty status. The Questionnaire could be conducted using close ended Questionnaires (Mushi et al., 2018). 150 residents are Questioned at Makongo juu about the research question, 7 Land council members also asked.
- Interviews: Interviews could be used to gather data on the perceptions and experiences of community members related to land ownership and property rights. This would involve conversation with individuals or households about land ownership, property rights, access to land and poverty status. (Mwangeni et al, 2019), 3120 household according to the interview conducted to village executive officer of Makongo juu during data collection.

3.4.2 Secondary method.

- Literature review: analyze existing data sources such as census data, land administration records, and poverty data to explore the relationship between cadastral data and poverty reduction. (National Bureau of Statistics, 2020)

3.5 Data processing and analysis.

Data processing this are the collection, and translation of data set into valuable and usable information. It includes data collection, data input and processing. The data in this research were collected in both Qualitative data and Quantitative data.

this research, Data processing and analysis follow several steps as follows

i. Data Collection: Gather relevant data on poverty indicators and cadastral information in Tanzania. This may include poverty data from the community, cadastral data from land administration agencies, and other relevant datasets.
ii. Data Preparation: Clean and preprocess the collected data to ensure consistency and compatibility. This involves checking for missing values, removing duplicates, standardizing formats, and structuring the data for analysis.
iii. Define Variables: Identify the key variables that will be used to measure poverty and the impact of cadastral data.
iv. Statistical Analysis: Apply appropriate statistical techniques to analyze the data. This may involve descriptive statistics to summarize the characteristics of the data, inferential statistics to test hypotheses and relationships, and regression analysis to assess the impact of cadastral data on poverty reduction while controlling for other factors.
v. Interpretation and Conclusion: Interpret the results of the data analysis in the context of the research question. Assess the significance of the findings and draw conclusions about the impact of cadastral data on poverty reduction in Tanzania.

The software that used in data processing is IBM SPSS software

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 Introduction

The primary and secondary data are collected during fieldwork, in chapter three there are two kinds of data, qualitative and quantitative data, these data are collected at Makongo juu. In this chapter, results are displayed according to the collected data from the field. Statistical table with frequency and percentage are used to present the results

4.2 Socio-demographic characteristics.

These are the characteristics of respondents (residents and land council members of Makongo) these data are obtained directly from the field Area, it contains Age, Gender and Education level of the respondents as shown in the Table 4.1, Table 4.2, Table 4.3, Table 4.4, Table 4.5 and Table 4.6.

Table 4. 1 Gender for residents

Gender	N	(Percentage)%
Male	74	49.3%
Female	76	50.7%
Total	150	100%

Source, field work

The finding shows that males are 74 equal to 49.3% and Females are76 equal to 50.7%. most of the female are responded because are found during data collection. According to this finding number of males and females are approximately equal.

Table 4. 2 Gender for land council members.

Gender	N	(Percentage)%
Male	4	57.1%
Female	3	42.9%
Total	7	100%

Source, field work

The finding shows that land council have total of 7 members, where by 4 are Male equal to 57.1% and 3 are Female equal to 42.9 %.

Table 4. 3 *Age for residents.*

Age distribution	Frequency	(Percentage)%
<= 30	50	33.3
31 - 40	63	42.0
41+	37	24.7
Total	150	100.0

Source, field work

The finding shows that (31 – 40) the Age population is high compared to the other age group, less than or equal to 30 and greater than 41. Population who have less than or equal to 30 Age are 50 equal to 33.3%, 31 – 40 Age are 63 equal to 42% and greater than 41 Age are 37 equal to 24.7%, according to this research makongo has large group of age of 31 – 40.

Table 4. 4 Age of land council Members.

Age	N	(Percentage)%
30	1	14.3%
36	1	14.3%
39	1	14.3%
40	1	14.3%
41	1	14.3%
45	1	14.3%
50	1	14.3%

Source, field work

The finding shows that the 30 – 38 age group is 2 equal to 28.6%, the 39 – 42 age group is 3 equal to 42.9% and the 43 – 50 Age is 2 equal to 28.6% of the land council members.

Table 4. 5 Education level for residents.

Education level	N	(Percentage)%
no formal education	13	8.7%
primary education	45	30.0%
secondary education	80	53.3%
Post-secondary education	11	7.3%
other .	1	0.7%

Source, field work

The population of makongo juu implies that most are secondary Education level which are 53.3%, No formal education 8.7%, Primary Education level 30%, Post- Secondary education level 7.3% and other level 0.7%.

Table 4. 6 Education level for Land council Members.

Education level	N	(Percentage)%
Secondary Education	6	85.7%
Post-Secondary Education	1	14.3%

Source, field work

The finding shows that land council member is most Secondary Education level which is equal to 85.7% and Post-Secondary Education level is lower equal to 14.3%. in tanzania most of the decision are made by those who acquired secondary education and post-secondary education level.

4.3 The research needs to analyze the perception of landowners or users about the use of cadastral data for poverty reduction

The finding investigates the perception of landowners or users by asking Questions about cadastral data such as Have you ever heard of cadastral data? Cadastral data can be used to address poverty in your community. And Community can be involved in monitoring and

evaluating the impact of poverty reduction programs that use cadastral data? The results obtained are shown in the Table 4.7, Table 4.8, Table 4.9 and Table 4.10.

Table 4. 7 Shows the residents who heard cadastral data

Response	Frequency	(Percentage)%
Yes	134	89.3
No	15	10.0
Total	149	99.3

Source, field work

The finding shows that a large number of communities heard about cadastral data, some of them have own that information about cadastral data, and some heard from their relatives. The community responds yes to imply had heard cadastral data and some respond No to mean had not heard cadastral data, 89.3% of the community hear cadastral data, and 10% of the community does not hear cadastral data. So the Perception of Landowners or users about cadastral data is high.

This finding is required to analyze the impact of cadastral data on the reduction of poverty in Tanzania, due to the data collected at Makongo juu showing that a large of the community are not benefited from the program that uses cadastral data for the reduction of poverty in Tanzania, 74% they said are not benefited from the program, 22.7% of the community said benefited from the program that used cadastral data for poverty reduction in Tanzania. Table 4.8 shows finding statistics.

Table 4. 8 Shows the Residents who benefited from Cadastral data

Response	Frequency	(Percentage)%
Yes	34	22.7
No	111	74.0
Total	145	96.7

Source, field work

According to this finding people are not benefited from Cadastral data because the high number of people on the field are not benefited from cadastral data, due to this number, cadastral data has less impact on the community.

Table 4. 9 Show the residents who respond on cadastral address poverty.

Response	Frequency	(Percentage)%
Yes	110	73.3
No	39	26.0
Total	149	99.3

Source, field work

The community responded to this research that cadastral data can address poverty in the community by saying yes and No to mean cannot address poverty in the community, 73.3% of the community said cadastral data can address poverty in the community, 26% of the community said that cadastral data cannot address poverty in the community. This finding shows that poverty can be addressed by cadastral data, so the perception of Landowners or Users is high about the use of cadastral data on the reduction of poverty in Tanzania.

Table 4. 10 Shows the involvements of the community on the monitoring and evaluating.

Response	Frequency	(Percentage)%
Yes	112	74.7
No	36	24.0
Total	148	98.7

Source, field work

The community should be involved accordingly in the Table 4.10 in monitoring and evaluating the impact of poverty reduction programs that use cadastral data according to this finding 74.7% they said should be involved, and 24.0% they said should not be involved. The perception of the community about the use of cadastral data on the reduction of poverty in Tanzania is high according to the Research.

According to this finding, the perceptions of Landowners or Users about the Cadastral data for poverty reductions are high.

4.4 The research needs to analyze the impact of land ownership patterns on poverty reduction efforts in Tanzania

This finding requires to analyze of the impact of land ownership patterns on reduction efforts by referring to Table 4.7, a large of the community are not benefited from the program that uses cadastral data for the reduction of poverty in Tanzania, 74% said are not benefited from the program, 22.7% of the community said benefited from the program that used cadastral data for poverty reduction in Tanzania. According to this finding land ownership pattern has less impact on the community on poverty reduction efforts in Tanzania.

Also, the Community response to Cadastral data can be used to address poverty in your community that Yes to mean can address and No to mean cannot address poverty. Consider Table 4.9, 73.3% of the community said cadastral data can address poverty in the community, and 26% of the community said that cadastral data cannot address poverty in the community. This finding shows that the land ownership pattern has less impact on the poverty reduction efforts in Tanzania.

4.5 The research needs to examine the essence of cadastral data for poverty reduction.

The finding investigates the essence of cadastral data for poverty reductions in the community by asking some questions, Table 4.11 is the statistical table which shows the data for examining the essence of cadastral data for poverty reductions.

Table 4. 11 supports or resources.

Response	Frequency	(Percentage)%
Technical Assistance and Training	58	38.7
Access to Reliable Cadastral Data	91	60.7
Total	149	99.3

Source, field work

This finding shows that the resources and support needed is Access to reliable cadastral data highly, 60.7% of the community said Access to reliable cadastral data, the government and other organization should provide to ensure the success of poverty reduction program that uses cadastral data, 38.7% of the community said technical assistance and training should be provided by the government and other organization to ensure the success of the poverty reduction program that use cadastral data. due to these findings, Access to reliable cadastral data is the support that should be provided by the government and other organizations to ensure the success of the poverty reduction program, also these are ways to examine the essence of cadastral data for poverty reduction.

Also, there are ways in which the Land Council currently uses cadastral data to support poverty reduction efforts such as land registrations, land use planning and infrastructure development. According to the data collected in the Table 4.12.

Table 4. 12 Ways to supports poverty reductions.

Response	Frequency	(Percentage)%
land registration	2	28.6
land use planning	1	14.3
infrastructure development	4	57.1
Total	7	100.0

Source, field work

This finding shows that 28.6% of the land council members said that land registration is the way the land council currently use cadastral data to support poverty reduction effort, 14.3% of the land council member said that land use planning and 57.1% of the land council members said that infrastructure development is the ways does the land council currently uses cadastral data to support poverty reduction efforts. According to this finding, infrastructure development is the best way the land council currently uses cadastral data to support poverty reduction efforts.

Again there are strategies to ensure the accuracy and reliability of cadastral data like Conducting regular surveys. Implementing quality control measures, Utilizing modern technology. According to the response of Land Council members come up with the strategies as shown in the Table 4.13.

Table 4. 13 Strategies to ensure accuracy and reliability of cadastral data.

Response	Frequency	(Percentage)%
Conducting regular survey	3	42.9
Implementing quality control measures.	3	42.9
Utilizing modern technology	1	14.3
Total	7	100.0

Source, field work

This finding shows that 42.9% of the land council members said that conducting a regular survey, 42.9% of the land council members said implementing Quality control measures and 14.3% of the land council members said that utilizing modern technology, as the strategies to ensure the accuracy and reliability of cadastral data to facilitate poverty reduction programs, according to the responses of land council members, conduct a regular survey and implementing Quality control measures are best strategies.

There are ways in which the Land Council collaborates with other government agencies, organizations, and community members to ensure the success of poverty reduction programs that use cadastral data, consider the Table 4.14.

Table 4. 14 Ways in which land Council collaborate with other.

Response	Frequency	(Percentage)%
Involve identifying key stakeholders and building relationships with them to promote cooperation and collaboration.	5	71.4
Aligning objectives, sharing information, and avoiding duplication of efforts.	2	28.6
Total	7	100.0

Source field work

This finding shows that 71.4% of the land council members said that involves identifying key stakeholders and building relationships with them to promote cooperation and collaboration and 28.6% of the land council members said that aligning objectives, sharing information, and avoiding duplication of efforts, this are how land council collaborate with other government agencies**,** organizations, and community members to ensure the success of poverty reduction programs that use cadastral data. According to these responses, involve identifying key stakeholders and building relationships with them to promote cooperation and collaboration is best collaboration and cooperation.

To examine the essence of cadastral data for poverty reduction by Access to Reliable Cadastral Data, infrastructure development, conducting regular surveys, implementing quality control measures and Involve identifying key stakeholders and building relationships with them to promote cooperation and collaboration.

4.6 The research needs to evaluate the implementation of cadastral data impact poverty reduction programs in Tanzania

The implementation of cadastral data impact poverty reduction programs in Tanzania needs different efforts, suggestions or recommendations for how cadastral data can be used more effectively in poverty reduction efforts. Consider the Table 4.15.

Table 4. 15 Suggestion for implementation of cadastral data impact poverty reduction programs in Tanzania

Response	Frequency	(Percentage)%
Strengthen cadastral data management	38	25.3
Expand the use of cadastral data for land tenure regularization	53	35.3
Promote community participation in the use of cadastral data	58	38.7
Total	149	99.3

Source, field work

The community tried to provide their suggestion or recommendation on how the cadastral data can be used more effectively in poverty reduction efforts in Tanzania, 25.3% of the community said Strengthen cadastral data management, 35.3% of the community said Expand the use of cadastral data for land tenure regularization and 38.7% of the community said Promote community participation in the use of cadastral data. According to this finding the community highly needs promotion of community participation in the use of cadastral data.

The land Council ensures that poverty reduction programs that use cadastral data are inclusive and equitable, and benefit all members of the community, consider the Table 4.16.

Table 4. 16 Ways in which the land Council ensure that poverty reduction programs.

Response	Frequency	(Percentage)%
Providing access to information through public forums, websites, and other means of communication.	2	28.6
Engaging with communities through public meetings, focus groups and other forms of consultation	5	71.4
Total	7	100.0

Source, field work.

This finding shows how land councils ensure that poverty reduction programs that use cadastral data are inclusive and equitable, and benefit all members of the community, 28.6% of the land council members said that Providing access to information through public forums, websites, and other means of communication ensure that poverty reduction programs that use cadastral data are inclusive and equitable, and benefit all members of the community and 71.4% of the land council members said that Engaging with communities through public meetings, focus groups and other forms of consultation this is the best way to ensure that poverty reduction programs that use cadastral data are inclusive and equitable and benefit all members of the community.

The implementation of cadastral data impact poverty reduction programs in Tanzania by Promoting community participation in the use of cadastral data and Engaging with communities through public meetings, focus groups and other forms of consultation.

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATION

5.1 CONCLUSION

Despite the positive perception, it is evident that the impact of poverty reduction programs utilizing cadastral data is limited. A considerable portion of the community does not perceive themselves as benefiting from these initiatives, highlighting the need for improved effectiveness and inclusivity. The patterns of land ownership within the community have had limited influence on poverty reduction efforts.

To enhance the impact of poverty reduction programs, several recommendations emerge. Access to reliable cadastral data and infrastructure development are identified as crucial supports and resources. Regular surveys and quality control measures are necessary to ensure the accuracy and reliability of the cadastral data.

Collaboration and community participation with key stakeholders are vital for the successful implementation of poverty reduction programs. It is important to strengthen cadastral data management, expand its use for land tenure regularization, and promote community engagement in decision-making processes.

The finding indicate that Cadastral data is not linked to poverty reduction due to lack of insufficient data from the field

In conclusion, while the community of Makongo juu acknowledges the potential of cadastral data for poverty reduction, its current implementation has had limited impact. To maximize the benefits, there is a need for improvements in data management, collaboration, community participation, and resource allocation. By prioritizing inclusivity and equity, poverty reduction efforts can be more effective and sustainable in Makongo juu, Tanzania.

5.2 RECOMMENDATION

Based on the findings of this research, the following recommendations are proposed to maximize the effectiveness of cadastral data in poverty reduction efforts in Tanzania:

i. Strengthen Data Management: Improve the quality and accuracy of cadastral data through regular surveys, quality control measures, and data validation processes. This will ensure that the information is reliable and up-to-date for effective decision-making.
ii. Enhance Access to Cadastral Data: Increase the accessibility of cadastral data to community members, government agencies, and other stakeholders. This can be achieved through the establishment of user-friendly platforms, such as online portals or mobile applications, where individuals can access and utilize the data for various purposes.
iii. Promote Community Engagement: Foster active community participation in decision-making processes related to poverty reduction programs. This can be achieved through community forums, workshops, and awareness campaigns that educate and involve residents in the planning and implementation of initiatives utilizing cadastral data.
iv. Gender Mainstreaming: Address gender disparities by promoting gender equality and inclusivity in cadastral data management and poverty reduction efforts. Encourage the active involvement of women in decision-making processes and ensure that their voices and needs are adequately represented.

By implementing these recommendations, stakeholders can harness the potential of cadastral data to drive targeted and sustainable poverty reduction intervention in Tanzania.

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APPENDICES

Appendix 1

i. Questionnaire for residents of Makongo Juu

ii. Questionnaire for land council Member of Makongo

Appendix 2

i. Letter for request for collecting data at Makongo Juu for Research Title from Ardhi University.

ii. Letter for Research Permit from Regional commissioner's Office.

iii. Letter for Research Permit from Kinondoni Municipal council.

QUESTIONS TO RESIDENTS OF MAKONGO JUU

This questions for academic purposes only and is meant to collect information on the impact of cadastral data on reduction of poverty in Tanzania.

A. Respondents characteristics

1. What is your age …….
2. Gender (please circle one)
    a) Male
    b) Female
3. Education level (please circle one)
    a) No formal education
    b) Primary education
    c) Secondary education
    d) Post-secondary education
    e) If other (please specify) …….

B. Cadastral data Knowledge and poverty

1. Have you ever heard of cadastral data? (please circle one)
    a) Yes
    b) No
2. In your opinion, what are the main causes of poverty in your community? (please circle one)
    a) Lack of land
    b) Poor governance
    c) Lack of knowledge about cadastral data
3. Cadastral data can be used to address poverty in your community? (please circle one)
    a) Yes
    b) No
4. Are there any existing poverty reduction programs or initiatives in your community that have used cadastral data? (please circle one)
    a) Yes.
    b) No

5. Have you personally benefited from any poverty reduction programs that have used cadastral data? (please circle one)
    a) Yes.
    b) No
6. What challenges do you think exist in implementing poverty reduction programs that utilize cadastral data? (please circle one)
    a) Lack of knowledge about cadastral data
    b) High population rate
7. What kind of support or resources do you think the government and other organizations should provide to ensure the success of poverty reduction programs that use cadastral data? (please circle one)
    a) Technical Assistance and Training.
    b) Access to Reliable Cadastral Data
8. Do you have any suggestions or recommendations for how cadastral data can be used more effectively in poverty reduction efforts in Tanzania? (please circle one)
    a) Strengthen cadastral data management.
    b) Expand the use of cadastral data for land tenure regularization.
    c) Promote community participation in the use of cadastral data.
9. Community can be involved in monitoring and evaluating the impact of poverty reduction programs that use cadastral data? (please circle one)
    a) Yes
    b) No.

QUESTIONS TO LAND COUNCIL OF MAKONGO

This questions for academic purposes only and is meant to collect information on the impact of cadastral data on reduction of poverty in Tanzania. Land Council of selected street shall be questioned, their contribution, experience and perceptions towards cadastral data.

A. Respondents characteristics

3. What is your age …….
4. Gender (please circle one)
    c) Male
    d) Female

3. Education level (please circle one)

    f) No formal education
    g) Primary education
    h) Secondary education
    i) Post-secondary education
    j) If other (please specify) ……

B. Cadastral data Knowledge and poverty

1. How do you think cadastral data can be used to address poverty in Tanzania? (please circle one)
    a) Cadastral data can be used for obtaining loan
    b) Cadastral data can be used for land transaction.
2. What is the role of the land Council in poverty reduction efforts in Tanzania? (please circle one)
    a) Facilitating land use planning.
    b) Promoting land registration.
    c) Ensuring secure land tenure.
3. In what ways does the land Council currently use cadastral data to support poverty reduction efforts? (please circle one)
    a) Land registration.
    b) Land use planning.
    c) Infrastructure development.

4. Are there any challenges or barriers that you have encountered in using cadastral data to support poverty reduction efforts? (please circle one)
    a) Yes.
    b) No
5. What kind of support or resources does the land Council need to effectively use cadastral data for poverty reduction efforts? (please circle one)
    a) Financial resources
    b) Technical resources
    c) Institutional support
6. How can the land Council collaborate with other government agencies, organizations, and community members to ensure the success of poverty reduction programs that use cadastral data? (please circle one)
    a) Involve identifying key stakeholders and building relationships with them to promote cooperation and collaboration.
    b) Aligning objectives, sharing information, and avoiding duplication of efforts.
7. How can the land Council ensure that poverty reduction programs that use cadastral data are inclusive and equitable, and benefit all members of the community? (please circle one)
    a) Providing access to information through public forums, websites, and other means of communication.
    b) Engaging with communities through public meetings, focus groups and other forms of consultation
8. What strategies does the land Council use to ensure the accuracy and reliability of cadastral data? (please circle one)
    a) Conducting regular survey.
    b) Implementing quality control measures.
    c) Utilizing modern technology.

9. How does the land Council involve the community in the collection and use of cadastral data for poverty reduction efforts? (please circle one)
    a) Disseminate the cadastral data to the community in a format that is accessible and understandable.
    b) Working with community members to create maps of their local area.

c) Engage with the community to understand their needs and priorities, and involve them in the data collection.

10. How does the land Council monitor and evaluate the impact of poverty reduction programs that use cadastral data? (please circle one)

a) The data collected should be analyzed to understand the impact of the poverty reduction programs.

b) The finding of the monitoring and evaluation should be reported and disseminating to relevant stakeholders.