Research Article

Determinants of Peri-urban Land Use Management Practices in Case of Assosa City, Western Ethiopia

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Abstract

Peri-urban areas are today's metaphors for several rapidly changing and competing socioeconomic aspects of urban and rural power. Suburban areas are facing the challenge of active, illegal, and unauthorized spatial transformations. The division between the institutional and legal frameworks also exacerbates the issue. Robust and holistic land management are prospects for today's peri-urban areas to become tomorrow's huge cities. This study aims to examine determining factors of peri-urban land management practice in Assosa city peri-urban areas to support the design of effective land management systems. A mixed method study was used to collect primary and secondary data sources. The sample of peri-urban households was selected using simple random sampling techniques. Both descriptive and inferential statistical data analysis methods were utilized. The findings demonstrated that the bifurcated and ineffective legal and institutional frameworks, limited public-private organizational support and participation influence awareness and motivations of peri-urban landholders land management practice in suburban settings. Following this, the majority of peri-urban landholders consequently lack access to the land management practice. The estimated results of the binary logit model show the following variables: awareness, motivation, participation, institutional setup and land disputes were found to be factors determining peri-urban land management practice. The study recommends an all-in-one robust institutional framework to promote sustainable land management.

Keywords

Peri-urban, Land Use Management, Practices, Determinants, Binary Logistic Model

1. Introduction

Land is a scarce resource and a commodity that measures the wealth of citizens. Due to this, land acquisition is a matter of life and death for many. It has become a governmental issue that requires a well-organized institutional and operational setup for land administration systems. The land administra-tion system (LAS) is primarily concerned with administrative organs, legal frameworks, and institutional and operational processes. It addresses land tenure, use, value, and the actual running of land information, which is supported by a cadastral component that determines land-people relationships [1]. In

fact, land administration systems are the foundation for obtaining a complex range of information about people and land [2]. Therefore, responsible and robust land strategies and institutional frameworks consistent with the functioning of land administration are a prerequisite for the effective implementation and enforcement of legal frameworks in all jurisdictions [3]. Nevertheless, ensuring equitable access and use of land for rural-urban and peri-urban areas development has always been a challenge for many governments.

Peri-urban areas can be defined as an urban-rural interface; fringe, periphery, outskirts, hinterland, and edge land [4, 5]. It is a significant transition zone that enables urbanization and sprawl within rural settings. The process of suburbanization is not yet fully urban-rural and can't be approached with the typical rural-urban dichotomy [6]. Peri-urban areas surrounding urban areas have been identified as one of the most geographically vulnerable areas to the risk of agricultural land loss due to increasing urbanization [7]. According to [8], the research of urbanization, particularly per-urbanization, is one of the most prevalent phenomena that play a variety of roles in the processes of land-use change that have a significant bearing on sustainable urban development: development that meets the needs of the present without jeopardizing future generations' ability to meet their own. After industrialization and economic progress, an estimated 68 percent of the world's population will live in urban areas by 2050 [9].

Therefore, by 2050, above 90% of urbanization will be concentrated in Asia and Africa, mainly in sub-Saharan Africa [10, 11]. In Africa, it was expected to increase from 11.3 percent in 2010 to 20.5 percent by 2050 [12]. Therefore, it was been predicted that 70% and above of the urban residents would live in irregular colonies. Furthermore, by 2030, more than 50 percent of Africa's population is anticipated to live in peri-urban areas [13]. Similarly, a 1 percent boost in metropolitan inhabitants leads to a 2.3 percent and 5.3 percent increase in informal settlements and slums in African and Asian countries, respectively. To this end, peri-urbanization presented challenges that affect social interactions, the environment, and biological functions and strategy choices that support rational urban development. To improve existing monetary, social, and environmental links, it was, therefore, necessary to adopt strategies to strengthen links between urban and rural areas and livelihoods [14].

Ethiopia is one of the least urbanized nations from East Africa by sub-Saharan standards. Nonetheless, its annual and population growth rate was expected to be 4.63% and 52%, respectively, over the next 37 years, in 2050 [15, 10]. As a result, an increase in populace growth directed the conversion of the urban fringe's cultivated land to large-scale illegal settings. Of about 11.3 million urban residents, over 75-80% lives in slums and informal settlements [16]. Peri-urban land-use identities were understood as radically altered and erratically managed because of bifurcated land administration guidelines and ambiguous legislation in the implementation and oversight of land-use

management [17, 18]. The problem of fragmented legal frameworks and institutional structures provokes a weak response from land administrations. It headed to delay responses to land provision, system transparency issues, high demand for housing, informal land markets and access to informal land, inappropriate land use, and intervention mechanisms in suburban areas [19-21].

Thus, this outlines the consequences of conflict over precarious property rights, and the depletion of natural resources and ecosystem services. This figure puts enormous stress on sustainable development and livelihoods poverty. That means that the dual urban-rural land administration continues to be a determinant of efficient land use management [22, 23]. Flexible policies that reconcile dichotomous governance and regulatory tool were more inevitable than widening the boundary between rural and urban landscapes to protect peri-urban land [24].

This study was conducted in the suburban area of the city of Assosa, where a host of land management was influenced by urban-rural land administration system. There have been a few recent studies on peri-urban management issues [25, 21, 22]. However, little is said about the implications and how the bifurcated LAS affects the peri-urban land managements. Therefore, the main purpose of the study was to examine the implications of bifurcated LAS on peri-urban land management to support sustainable development. To develop the complete intent of the study and comprehend research problems, a mixed research method was used.

1.1. Statement of the Problem

In Ethiopian land administration strategies, managing rural-urban land is been used to conceal peri-urban land and leave it vacant. The interpretation of land jurisdictions is not convincing, and it places peri-urban land neither independently nor specifically managed under the rural-urban dichotomy [1, 25, 22]. As a result, unresponsive and weak institutions related to the land administration process were noticed [26]. Accordingly, tenure insecurity, socioeconomic inequality among smallholder farmers and low-income groups, land use conflicts and disputes pose significant risks in most suburban areas [27, 28]. Thus, the productive arable land near urban areas is subject to the prevalence of unregulated land use in peri-urban areas was obvious [29, 30]. The biodiversity loss and local climate change, and formalizations of it and other land use-land tenure-related issues lead to excessive values. Therefore, speedy system resolution for unlocking peri-urban land development from ubiquitous wrangling is a strongly expressed concern.

Evidence suggests that the bifurcated system of land administration does not handle peri-urban areas in particular and sustainable development in general [25, 31, 22, 21]. According [21], the institutional separation has been made difficult implementing land management legislation, and improving suburban land use and governance. Therefore, determining

peri-urban zones was complicated by a divided system of land administration, inefficient institutional and regulatory structures, and professional limitations [32]. The majority of academics today favor the creation of overarching ideologies for land administration to address the peri-urban challenges and paradox of failing to meet goals [1, 22, 33].

The study was carried out in the Assosa city peri-urban areas where the bifurcated and non-responsive nature of legislative, land use management frameworks interventions defects in informal settlement and squatting; tenure insecurity; land disputes and use conflicts. This identifies the socioeconomic inequality and unemployment problems, unregulated and unauthorized land use dynamics, and ineffective land use allocation inhibit maintainable land development in the study area. Therefore, the state of existing knowledge indicates that the determinants of pre-urban land management practice are not adequately studied in the study area.

1.2. Objectives

The general objective of the study is to examine the determinants of land use management in Assosa city peri-urban areas.

The specific objectives of the study are;
1) To examine the implication of bifurcated institutional setup on peri-urban land use management practice in Assosa City peri-urban areas.
2) To determine peri-urban landholders land use management practices in study areas.

1.3. Research Questions

1) How does the bifurcated institutional setup affect peri-urban land management practice in the study area?
2) What look like the peri-urban landholders land use management practices in Assosa City peri-urban areas?

1.4. Significance of the Study

The finding from this study was used as considerable input in the effort to respond to the challenges faced in the administration of peri-urban land use management in the study area and beyond. It is hoped that the findings were relevant in generating new knowledge and can be used by academicians, policymakers, researchers, students, and other stakeholders. The expectation is that government officials and other stakeholders will get the findings important to better appreciate the issues the study reveals and strive for solutions. Ultimately, it will have a contribution to initiate legal and judicial reforms.

2. Materials and Methods

2.1. Description of the Study Area

The Benishangul Gumuz Regional National State (BGRS) with an approximate surface of 51000 km[1] is situated in the northwest of Ethiopia and share equal frontiers with the States of Oromia in the south, the Sudan in the northeast, and the State of Amhara in the east[2]. Similar to other states in the region, it is home to a diversity of ethnicities. Region is divided into 3 administrative zones, 19 Weredas (two of them special Weredas), and 33 Kebeles (the smallest administrative units). Metekel is the largest zone with an area of 26,272 square kilometers followed by Assosa (14,166 sq. km), and Kamashi (8,850 sq. km).

The capital city of the region is Assosa, found in the Assosa zone, Assosa woreda. It is located at a distance of 659 km west of Addis Ababa and 914 km in the south of the Grand Ethiopian Renaissance Dam (GERD) by road[3]. The region is located at a global position between 34°10'N and 37°40'E; and in the latitude 09°17'N and 12°06' N, with altitude ranging from 580 to 2731 meters above sea level.

The Assosa Town has located within a latitude and longitude of 10°04′N 34°31′E, with an elevation of 1,570 meters[4]. According to [34], studies implied that the highest percentage (6.4%) of urbanization change in towns in the Benishangul Gumuz Regional National State. Likewise, the projected Ethiopia demographics estimation puts the population size for Benishangul-Gumuz around 106,600 and 680,600 to 639,657 and 1,067,283 who live in urban and rural areas from 2007 to 2037 respectively [35]. Indicating an increasing level of population and urbanizations, the urban population in Assosa woreda increased from 171,985 to 177,292 implying a 53.07 percent increment per year from 2021 to 2022. Assosa city has a higher population rate of over 36.67 percent per year, an average of 348.71 and 330.2 male and female respectively [36].

2.2. Research Approach

In this study, a mixed research design was employed to investigate the implications of bifurcated land administration system on peri-urban land use management. According to [37, 38], in order to achieve the study's goals, both types of data sets were simultaneously collected at one moment in time with diverse instances using a concurrent mixed research design. Concurrent mixed-methods research was therefore preferred to maintain triangulation among those data sources [39]. Both random and nonprobability sampling methods were used in the investigation. The data are analyzed through appropriate statistical and elaborative forms. The study em-

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1 https://epo.acleddata.com/benshangul-gumuz/
2 http://www.ethiodemographyandhealth.org/benishangul.html
3 https://www.latlong.net/place/grand-ethiopian-renaissance-dam-ethiopia-31753.html
4 https://en.wikipedia.org/wiki/Asosa

ployed mixed research method to collect both qualitative and quantitative data from primary and secondary data sources. The primary data sources were mostly gathered from peri-urban households and land administration officials by using different data collection instruments. Equally, the secondary data was also gathered from the selected woreda offices and kebele, Town administration administrations, kebeles, and urban land development and management office using different data collection instruments.

2.3. Sampling Techniques

According to [40], a sampling technique is a definite plan for obtaining a sample from a given population. It was a tool for choosing the correct sample of respondents for attaining research objectives. The study used both Random probability sampling and purposive-non probability sampling techniques to determine proportionate samples from peri-urban landholders and land administration officials respectively.

2.4. Sample Size

The researcher chose three peri-urban kebeles (Amba-12 and Enzi_shederiya) near to Assosa city where much rural agricultural land has already been converting to different land use and there is a high demand for land for urban development purposes. The sample size of randomly selected population is determined by using Yamane's formula [41].

Thus,

$$n = \frac{N}{1+N(e^2)}$$

n = the number of sample size of the households selected

N= number of the households from purposively selected Kebeles

e = 0.05 is the percentage of the impressions of sampling error that can be tolerated.

Therefore, in the case of the household survey done on the randomly selected landholder households from purposefully selected three Kebeles, the 140 samples of households from 216 households of Amba_12 and 122 sample households size from 176 households of Enzishederiya Kebeles. Thus, the total number of 262 sample sizes from landholder households in each kebeles and 22 land administration officials was determined (Appendix-A). In the latter, the purposive sampling technique was employed to select samples from urban and rural land administration offices for the study.

2.5. Data Sources and Instrumentations

Primary data was collected from purposefully selected Assosa woreda environmental protection land administration and investment (EPLAI) offices, Assosa Town Administration, woreda land development and management offices, kebele land administration experts, kebele administration, kebele land administration and use committee (KLAUC), and peri-urban landholders through interviews, focus group discussions (FGDs), observations, and questionnaires by distributing the open- and close-ended questionnaires.

Secondary data was also gathered through observations and content analysis from different sources. The content analysis mostly used annual reports and statistical statements of the selected woreda and municipality offices, land policies and proclamations, manuals, directives, and other written materials. In addition, land use plans and satellite images, bureau bulletins (institutional arrangements), published and unpublished reports, and study-related websites were used.

2.6. Data Analysis

The questionnaire survey was analyzed quantitatively by the statistical analysis software Statistical Data (STATA) version 14.1. The quantitative analysis aimed at testing theories, determining facts to demonstrating relationships between variables, and predicting outcomes. Further, the quantitative analysis used a binary logistic regression model to consider how two or more independent variables affect changes in the outcome variable. Indeed, the regression assumptions, as well as the categorical explanatory variable multicollinearities, were tested using the variation influence factor (VIF). If the VIF is equal to 1, there is no multicollinearity among variables, but if the VIF is greater than 1, there is a moderate correlation. The VIF is between 5 and 10, indicating high multicollinearity and problems [42]. Likewise, the chi-square test was also employed to determine the level of significance for categorical variables. The descriptive analysis used frequency for distribution and contingency tabulation to measure variability among variables. To that end, content analysis was used to analyze the data from different sources. Additionally, thematic analysis was used to combine and analyze different sources of qualitative data, especially from the interviews, open-ended questionnaires, and focused group discussions. Data was also presented in both textual and visual formats, such as statistical diagrams and tables, and graphs, according to the characteristics of the information.

3. Result and Discussion

3.1. Socioeconomic and Demographic Status of Households

The article assessed the associations between peri-urban land management and the demographic and socio-economic status of the sampled households. Regarding gender status, approximately 56.1 percent of the sampled households were male, while the rest of the respondents were male (Table 1). Nearly three-fourths (66.8%) of the respondents were ranging 19-34 years old, and about 24.8 percent were 35-49 years old. Likewise, around 7.3 and 1.1 percent of respondents' ranges

from 50-65 and 66 and above years old, respectively.

Regarding the jurisdictions where respondents were from, approximately 85% of the sampled households were from urban or rural areas within the period of 2000 to 2023, while around 26.7% of the respondents were residents of peri-urban areas. In terms of education, about 73.3% of respondents were able to read and write, whereas the remaining can't read and write. Concerning employment status, 27.1% of households were employed by the government, while nearly 17.9% were self-employed. Unemployed/job-seeking respondents constituted approximately 10.3%, with the remaining 44.7% being farmers. The descriptive statistics offer valuable insights into the characteristics and attributes of the sampled households, shedding light on the potential factors influencing peri-urban land use management in the context of Assosa City.

Table 1. Socioeconomic and demographic descriptions.

Variables	Description of variables	Measurement	
		Frequency	Percent
Sex	Female	115	43.9
	Male	147	56.1
Age	19-34	175	66.8
	35-49	65	24.8
	50-65	19	7.3
	66 and above	3	1.1
Wherefrom	otherwise	41	15.6
	rural/urban	221	84.4
Education	otherwise	70	26.7
	read/write	192	73.3
Employment type	Farmer	117	44.7
	governmental	71	27.1
	private	47	17.9
	Job seeking	27	10.3

Source: survey result, 2024

3.2. Determinants of Peri-urban Landholders Land Management Practices

3.2.1. Awareness and Motivation to Land Use Management

In terms of the motivation of landholders on land management, the quantitative survey result pertained to an average of 78.63% of sample households have low motives to land management in peri-urban areas. Amongst, about 73.66% of respondents had no land use management practice (Table 2). The statistical association indicates the significant relation between motivation and peri-urban land use management practices at a zero percent level of significance ($X^2 = 140.05$ and P = 0.000). Based on the aforementioned evidence, it is logical to think that empowering households and improving the motivations of land use management has been the privilege to improve productivity and strategic prerequisites for sustainable land management in peri-urban areas.

3.2.2. Implications of Tenure Insecurity on Land Management

In terms of land tenure security, the survey results shown in Table 2 show that out of the total sampled respondents, approximately 24.9% of the sampled respondents felt tenure secure, and about 15% of them have land use management practice. On the contrary, about 75% of total respondents were tenure insecure, and 67.8% of them did not have land use management practices. Likewise, the statistical significance level proved that there is a statistical difference between household tenure security and peri-urban land management practices at a zero percent level of significance ($X^2 = 71.89$ and p = 0.000). Based on the aforementioned evidence, dual and inefficient tenure system signals tenure insecurity in peri-urban areas, and it significantly affects land use and management practices.

The majority of peri-urban households perceived their tenure to be unstable, according to a qualitative study based on discussions in household groups and interviews with specialists in rural and urban land management. This is why most of the peri-urban households deliver the land outside of formal land administration. Simultaneously, most household discussants and key informants stated expectations that even certified peri-urban landholders were not confident because of the government's non-participatory land-taking process. As a result, they actively participate in the informal land market and development.

3.2.3. Access to Land Use Management Information (Extension Service)

According to the access to information as depicted in Table 2, of the total sampled households, about 36.95% access land use management information and related extension services. Among them, almost 11% of respondent's practices land use management, while nearly 63.05% of total sampled households didn't get any extension services or land management information. In terms of the statistical significance level, there is an association between land management practices and access to information and other extension services among sampled households that is statistically significant at the 3.7 percent level ($X^2 = 4.3434$ and P = 0.037).

Based on conversations with a rural land administration team leader and expertise, enabling households to have access to information about land facts and be able to make decisions

on their land. The approaches for registration and certification, as well as their commitments to computerizing land information to access, were appreciated. However, it was difficult to find reliable and easily accessible land use and management information in peri-urban areas. Because of a lack of responsible institutions and legislation to enforce as of juncture in nature pertained to professional qualifications and financial constraints. In contrast, interviews with urban LAS team leaders and experts revealed that there are no common

themes in LAS modernization and automation. It already relies on manual, gray-based processes for managing and delivering official land information that is time-consuming and inefficient, leading to expensive access to land information. The empirical data analysis evidenced that the dual administrative system, parallel to inadequate institutional and technical gaps, significantly impacts access to information and extension services, which affects the land use and management practices in the peri-urban areas.

Table 2. Descriptive statistics of variables determining land management practices.

Variables	Descriptions	Peri-urban land use management practices			
		Yes (%)	No (%)	Total (%)	X^2 (P-value)
Awareness	yes	10.3	16.45	26.75	14.966(0.000)
	no	11.8	61.45	73.25	
Tenure insecurity	yes	7.3	67.8	75.1	71.89(0.000)
	no	15	9.9	24.9	
Access to information	yes	11	25.95	36.95	4.3434(0.037)
	no	11.15	51.9	63.05	
Frequent disputes	yes	8.02	75.57	83.59	121.89(0.000)
	no	14.12	2.29	16.14	
Organizational support	yes	8.77	6.48	15.25	34.24(0.000)
	no	13.35	71.4	84.75	
Households participation	yes	11.83	2.67	14.5	91.1(0.000)
	no	10.3	75.2	85.5	
Institutional Integrations	weak	6.87	69.08	75.95	82.29(0.000)
	strong	15.28	8.77	24.05	
Land Management motivations	low	4.97	73.66	78.63	140.05(0.000)
	high	17.175	4.198	21.37	

Source: survey result, 2024

3.2.4. Prospects of land Use Conflicts and Disputes on Land Management

The analysis identified frequent existence of land disputes involving peri-urban areas (in Table 2). Accordingly, around 83.59% of the sampled households stated the existence of peri-urban land dispute issues. They stated the informal holding and boundary disputes were frequent dispute causes. Out of total, ranging from 75.57% of respondents, there were no practices of land management. In line with the FGDs with households and the KLAUC on land-related disputes, they indicated that boundary conflicts, inheritance or donations, and informal land holding land disputes were widely recog-

nized and were becoming more prevalent at urban-rural junctures. There is a statistical difference between common land disputes and peri-urban land development, as shown by the statistical significance level of $X^2 = 121.89$ and p = 0.000.

The majority of the peri-urban agriculturally farmed land was seen to have been turned into built-up and non-agricultural uses, leading to socio-economic and environmental changes. To comprehend the agricultural or non-agricultural land use land cover change tendencies, the survey results evidenced that about 77.5% of the peri-urban landholders perceive their opinions on trends of non-agricultural land use changes (built-up). The remaining about 22.5% of respondents perceived agricultural peri-urban land use change as shown (Figure 1).
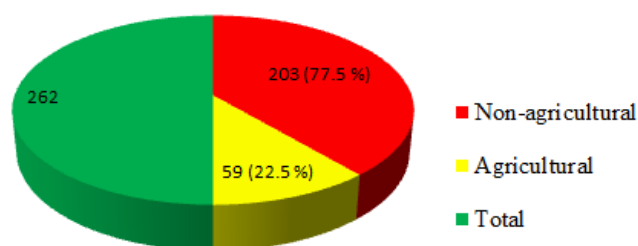
Figure 1. Tendencies of land use land cover change across peri-urban landholders.

Concurrently, key informants and interviewees mentioned that the ambiguous administrative boundary in the bifurcated LAS was the major cause of land use conflicts and land disputes among households. It is also within the jurisdiction of urban and rural land administrations in cases of urban expansion and expropriation for public purposes. The findings of the above-mentioned empirical and key informant analyses emphasized that the fragmented LAS having ambiguous boundaries discourages institutional and legal framework interventions to manage and resolve land disputes in peri-urban areas.

3.3. Bifurcated Institutional Integration and Communication

The result describes how urban-rural land administration and urban periphery land management are institutionally integrated and communicated. As a result, according to the survey's results, about 75.95% of the sampled respondents believed weak institutional integrations. Conversely, about 8.77% of surveyed respondents thought integration was strong. As a result, about 69.08% of peri-urban households assert that they have no land management practices. Weak institutional integration between urban and rural land administrations frequently negatively affects peri-urban land use and management practices, as demonstrated in Table 3. As a result, peri-urban land management practice and institutional integration are statistically significant at the zero-significance level ($X^2 = 82.29$ and p = 0.000).

The institutional integration and communication also have their degree of implications for peri-urban landholder involvement to support efficient land use management and land-related decision-making. 85.5% of respondents did not participate, according to the results. To encourage peri-urban landholder households to take an active position in land use and management activities, public-private sector cooperation and support are also essential. In terms of the private sector's or governmental organizations' support, almost 84.75% of

peri-urban households didn't get any support. Less public-private participation implies a low level of peri-urban landholders' participation and support in peri-urban land management. Thus, it was evidenced that weak public-private partnerships and landholder involvement mainly influence land management practices in the peri-urban area (Table 2). As a result, land management practices and organizational support and participation are statistically significant at the zero-significance level ($X^2 = 34.24$) and ($X^2 = 91.1$), respectively.

Results from key informants, discussants, rural-urban expertise, and team leaders demonstrate that an isolated land administration system was to blame for adverse land use and management practices in urban peripheral areas. In addition, the majority of the key interviewees noted that hinterland development was not supported in the study areas by rural and urban land use and management regulations. They underlined that the fragmented land use and development regulations in the LAS made it very difficult to implement and practice land management and in the urban periphery. Thus, it suggested that there was a low level of peri-urban landholder participation in land use management and other land-related decisions. Additionally, they said that the bifurcated LAS now in place prohibit the private sector from emphasizing peri-urban landholders and per-urban land-related issues. Thus, bifurcated and weak institutions signified weak public and private partnerships (PPP). This hole offers a platform for peri-urban and urban-rural residents to immediately access land without securing plans and specific land use approval. Indeed, using apart and uncoordinated land use management approaches in the contemporary LAS will not produce the desired effects of sustainable land development.

3.4. Determinants of Land Management Practices Across Peri-urban Landholders

In this part, the factors influencing peri-urban land management practices were examined using a logistic regression model that was estimated using 13 explanatory categorical variables that were chosen. This was done to ascertain the influences and magnitudes of the explanatory variables on peri-urban land management practices. Awareness, participation, motivation, and institutional integration were among those that were discovered to have a favorable and significant (p < 0.05) effect on peri-urban land management practices. Contrarily, it was discovered that peri-urban land disputes had a negative and significant impact on the likelihood of peri-urban land use management, as shown below (Table 3).

Table 3. Determinants of land management practices.

Land management Practice	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
Education	.0407699	.4001538	0.10	0.919	-.7435172	.825057
Awareness	.8349405	.3625734	2.30	0.021	.1243097	1.545571
Tenure insecurity	-.3538957	.3698137	-0.96	0.339	-1.078717	.3709258
Access to service	.3128039	.3325344	0.94	0.347	-.3389515	.9645594
Organizational Support	-.5571433	.5263921	-1.06	0.290	-1.588853	.4745663
Frequent Disputes	-1.715826	.431608	-3.98	0.000	-2.561762	-.8698894
participation	1.134881	.5282373	2.15	0.032	.0995549	2.170207
Institutional Integration	1.554287	.3362175	4.62	0.000	.895313	2.213261
Land Holders Motivations	1.781622	.3856624	4.62	0.000	1.025737	2.537506
_cons	-.8629395	.5923199	-1.46	0.145	-2.023865	.2979862

Source: own survey, 2024

3.5. Interpretation of Significant Variables

Awareness on land use management: The model's conclusions about the perception and awareness of land management across peri-urban households. It is found to have a positive and significant effect on households in peri-urban land management activities at a significance level of 2%. This implied that as the peri-urban landholder's awareness increased, the likelihood of peri-urban land management practice increased by 0.83-unit probability levels, assuming all other parameters remained unchanged.

Existence of land-related disputes: The result of the model is completely in agreement with the expectation. It was found to be significant at a considerable level of zero percent, having a negative effect on peri-urban households' land management practices. Keeping other factors constant, the binary logistic model indicated that the existence of land disputes in peri-urban areas had a negative and significant probability on the likelihood of in peri-urban land management practice across households at the 1.7 probability level.

Landholder participation: The peri-urban landholder involvement supports efficient land use management and land-related decision-making. It is found to have a positive and significant impact on households in peri-urban land management practice at a 3% level. The participation coefficient for land management practice has a positive sign, indicating that involvement of households is more likely to result in positive land use and management. The likelihood of peri-urban land management practice increases by 1.13 levels when peri-urban landholders are involved in land use management and land-related decision-making.

Institutional integration: The model's output perfectly matched the prospect for institutional collaborations in the peri-urban areas. The result further indicates that the integration of rural and urban institutions has a positive and significant influence on peri-urban land management practice across households at a zero percent level. The positive sign signals that institutional integration and communication were encouraged and were significant determinants of peri-urban land management issues around peri-urban regions. This suggests that in the peri-urban area, environmentally friendly land management practice is more likely by a 1.55 probability level when there is strong institutional integration and communication.

Land management motivations: The model's conclusions are the inspiration of landholders on land management across peri-urban households. It has a positive and significant effect on peri-urban land management practices among peri-urban households at a significant zero percent level. Accordingly, the model results suggest that, when there was an increase in encouragement and motivations to land management, the likelihood of land management activities and practices in peri-urban areas increased by 1.78 levels, holding other factors constant.

4. Conclusion

This study aimed to look at determinates of peri-urban land management practice. Like other developing countries, Ethiopia has adopted its land administration and management based on socio-economic, environmental, and administrative circumstances to use and manage the land. However, the two ineffective lines of urban and rural land management guidelines and legal frameworks play a surprising strategic role in managing and land development in peri-urban areas. The suburban areas are depressing places where conflicting rural and urban land administrations coexist side by side. The in-

adequate structure of land administration makes it difficult to accommodate land-to-people relations in an acceptable way. As a result, unregulated land use patterns begin to develop, which may directly or indirectly obstruct efforts to enhance environmentally friendly suburban land management. To undertake the investigation, data was gathered and analyzed using a mixed-methods study. Thus, primary and secondary data sets were purposefully collected from selected peri-urban households and urban-rural officials and analyzed via both statistical analysis techniques.

The study revealed that the determining factors had an influence on peri-urban land management practice. As the findings of the study pointed out, the inefficient and bifurcated institutional structure and legal frameworks that made up the current land management system were a major factor in peri-urban land use and management practice. The urban-rural land use management regulations were inherently undesirable influences on the ability to implement and manage peri-urban land. The findings of this study also indicated that the fragmented institutional structure with undefined responsibilities in the management of land records and governance was a factor affecting peri-urban land management practice. In the same manner, the ineffective and unclear urban-rural institutional setup ended up with a lack of professional capacity and financial and related technical limitations that constrained peri-urban land managements. Consequently, the study indicated weak public-private organizational partnership and support for peri-urban landholders in land management activities, which is a significant concern on the awareness and motivations of landholders to facilitate land management practice in the study area.

According to the results of a binary logistic model, peri-urban land management practice was positively and significantly influenced by the variables awareness, motivation, participation, and institutional integration. Conversely, it was discovered that frequent urban fringe land disputes had a negative and considerable effect on the likelihood of suburban land management practice. The remaining variables did not influence peri-urban land management practice. As the study has demonstrated, the ineffective and bifurcated land administration system and related factors were prompting illegal land use and weak land management practices in peri-urban areas. More studies and innovations are needed to maintain per-urban land management practices and strategies that support sustainable development.

All these highlight the need for a comprehensive reform in the land management system, addressing the bifurcation and inefficiencies of institutions that hinder peri-urban land management practice. Strengthening institutional structures, clarifying roles and responsibilities, and promoting collaboration between the public and private sectors are essential steps towards achieving sustainable and well-planned peri-urban land development. Besides, policymakers should develop holistic land management systems to reduce peri-urban land use conflicts that could obstruct sustainable development.

Abbreviations

BGRS	Benishangul Gumuz Regional National State
EPLAI	Environmental Protection Land Administration and Investment
FGD	Focus Group Discussion
GERD	Grand Ethiopian Renaissance Dam
KA	Kebele Administratration
KLAUC	Kebele Land Administration and Use Committee
LAS	Land Administration System
PPP	Public and Private Partnerships
STATA	Statistical Data
VIF	Variation Influence Factor

Author Contributions

Mihret Fentahun Yeneneh: Conceptualization, Resources, Project administration, Data curation, Formal Analysis, Funding acquisition, Investigation, Methodology, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing

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Data Availability Statement

The data is available from the corresponding author upon reasonable request.

Conflicts of Interest

The authors declare no conflicts of interest.

Appendix

Table A1. Target Population and Sample Size Determination Table.

No.	Respondents	Target Groups	Target Population	Sample size
	Enzishederiya, Amba_12	Peri-urban landholders	392	262
		Head	1	1
2.	Environmental protection land administration and investment office	Team leaders	2	2
		Experts	3	3
		KLAUC	2	2
		Municipality Head	1	1
	Assosa Town Administration	Team leader	2	2
3.	land development and management department	Experts	3	3
		Head	1	1
	Woreda land development and management office	Team leaders	2	2
		Experts	3	3
		KLAUC /KA	2	2
		Total	284	

Source: survey, 2024

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