

**URBAN LAND USE PLANNING AND ITS IMPLEMENTATION WITH
RESPECT TO ENVIRONMENTAL DIMENSION, THE CASE OF GELAN
SUB CITY, SHEGER CITY, OROMIA NATIONAL REGIONAL STATE**



LEMLEM SHIMELIS

**A THESIS SUBMITTED TO THE DEPARTMENT OF ARCHITECTURE AND
URBAN PLANNING**

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July, 2023

Adama, Ethiopia

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DR.DANIEL LIREBO

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Declaration

I hereby declare that this thesis entitled “**Urban land use planning and its implementation with respect to environmental dimension, the case of Gelan Sub City, Sheger city, Oromia national regional state**” is my original work. That is, it has not been submitted for the award of any academic degree, diploma or certificate in any other university. All sources of materials that are used for this thesis have been duly acknowledged through citation.

Name of student

Signature

Date

Recommendation

I, the major advisor of this thesis, hereby certify that I have read the revised version of the thesis entitled “**Urban land use planning and its implementation with respect to environmental dimension, the case of Gelan Sub City, Sheger city, Oromia national regional state**” prepared under my guidance by Lemlem Shimelis Kebede. Submitted in partial fulfillment of the requirements for the degree of masters of science in urban planning and design. Therefore, I recommend the revised version of the thesis to the thesis to the department following the applicable procedures.

Daniel Lirebo Sokido



07/06/2023

Major Advisor/Supervisor

Signature

Date

Co-advisor/Co-supervisor

Signature

Date

Approval Page Thesis

I, the advisories of the thesis Entitled “Urban land use planning and its implementation with respect to environmental dimension, the case of Gelan Sub City, Sheger city, Oromia national regional state” And developed by Lemlem Shimelis hereby certify that the recommendation and suggestions made by the board of examiners are appropriately incorporated into the final version of the thesis.

Daniel Lirebo Sokido (PhD)



07/06/2023

Major Advisor/Supervisor

Signature

Date

Co-advisor/ Co-supervisor

Signature

Date

We, the undersigned, members of the Board of Examiners of the thesis by Lemlem Shimelis have read and evaluated the thesis entitled “Urban land use planning and its implementation with respect to environmental dimension, the case of Gelan Sub City, Sheger city, Oromia national regional state” and examined the candidate during open defense .This is , therefore ,to certify that the thesis is accepted for partial fulfillment of the requirement of degree of master of science in urban planning and design.

Roba Gemechu (PhD)

Chairperson

Signature

Date

Prof. Dr. Ambuj Kumar

Internal Examiner

Signature

Date

Degu Bekele (PhD)



External Examiner

Signature

Date

Finally, approval and acceptance of the thesis is contingent upon submission of its final copy to the Office of Postgraduate Studies (OPGS) through the Department Graduate Council (DGC) and School Graduate Committee (SGC).

Department Head

Signature

Date

School Dean

Signature

Date

Office of Postgraduate Studies, Dean

Signature

Date

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ACRONYMS

SPSS	Statistical Package for Social Science
GIS	Geographic Information Systems
RS	Remote Sensing
SEA	Strategic Environmental Assessment
ORGT	Oromia Region Gelan sub city
LULC	Land Use Land Cover
SZSFORS	Special Zone Surrounding Finfinnee of Oromia Regional State

ABSTRACT

For the last two or three decades, people are becoming more aware of the variety of environmental issues. The Environmental problems include issues arising from and associated with poverty and underdevelopment, issues arising as negative consequences of the development process itself, and issues relating to man-made pollution. Land use planning strategy, which is a deliberate process of defining land for various uses to balance social, economic, and environmental goals, is an approach for improving urban and environmental sustainability. In order to overcome environmental problems into consideration, this study examines urban land use planning and its implementation with respect to the environmental dimension, the case of Gelan sub-city, Sheger city, Oromia national regional state. The specific objectives of the study are to identify environmental issues consider during the land use plan preparation, to identify at what rate environmental issues were implemented concerning the urban land use planning in the sub-city, to identify factors influencing the implementation of environmental issues and examine the contribution of stockholders and community on urban land use planning implementation to environmental issues. This study used both qualitative and quantitative data. For the purpose of this work both primary and secondary data were used. The sampling and techniques would be applied to study Gelan sub-city urban land use planning stuff, management staff, and community household selection. In this study, descriptive and inferential statistics were applied for data interpretation and the analysis was conducted with SPSS version 24 and the data were presented in tables and graphs. Based on paired sample p-test the study found that a statistical significant less than 0.005 for all specific objectives. The result of the study also found that Afforestation and public sanitary are excluded in urban land use planning while the industrial wastage disposal, greenhouse and sewage and wastewater design are included. The procedures used in the implementation of environmental issues are concluded to agree on the ranking level with rules and regulations. In other hand, there are many factors which influence or affect the implementation of environmental issues. To overcome those problems the community and governmental stockholders must pay their appropriate fees. To those issues, the study suggests some recommendations like: Incorporating concreted rules and regulations regarding urban land use planning, Environmental issues are essential things in human beings life the stockholder should take their parts and responsibility and etc.

Keywords: Urban, Land use, Community household, Implementation, Planning, Environment.

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

For the last two or three decades, people are becoming more aware of the variety of environmental issues. Environmental problems can be divided into three categories. These include issues arising from and associated with poverty and underdevelopment, issues arising as negative consequences of the development process itself, and issues relating to man-made pollution (ORAAMP, 2010).

Land use planning strategy, which is a deliberate process of defining land for various uses to balance social, economic, and environmental goals, is an approach for improving urban and environmental sustainability. In this context, environmental sustainability is a condition for meeting the needs of current and future generations without jeopardizing the current and future health of natural ecosystems. The urban land use planning process varies widely at various scales, but the general process includes defining the goal and objectives, data collection and analysis, plan formulation, negotiation and decision-making, implementation, and monitoring and updating (Enoguanbhor et al., 2021)

Land use planning strategies have not been able to effectively address environmental sustainability problems (e.g., degradation of environmentally sensitive areas caused by urban expansion patterns) in the Global South, particularly in Sub-Saharan Africa (Enoguanbhor et al., 2021).

It is obvious that human activities have a profound effect up on the natural environment. People are becoming the main agent of environmental degradation as they depend on the natural environment for their survival. Moreover, poor waste management, incompatible and unsuitable land use allocation and implementation, low level of awareness of private investors regarding waste management, limited knowledge and skill of municipal decision makers to implement the plan and to carry urban law and regulation accordingly, and the abundant distribution of quarrying areas have contributed a lot for urban environmental degradation. As a result areas supposed to be allocated for urban green were qualitatively and quantitatively reduced.

Most of them are found at urban periphery and are not furnished and even difficult to reach and use (Mekonnen, June, 2012).

Many reports and literature show that urban expansion is increasing at an alarming rate in developing countries comparing developed countries. According to Marshall et.al., (2009) this rapid urban growth in developing nations is encouraged by different factors including rural urban migration, social, cultural, economic and technological change and rapid population growth. Such rapid urban growth and consequential change has its own positive as well as negative consequences. This worldwide population growth increases the conversion pace of agricultural land in to urban land uses (Sisay, November, 2020).

Like other African countries, the urban land management processes across Ethiopia things to see distressing signs and an indications of serious urban land management problems. The organizational structure of the city and federal governments has some overlapping duties, which can cause implementation delays while also failing to provide proper monitoring and evaluation. The master plan is not being properly implemented, and there is a shortage of communication among various sectoral organizations in planning and implementation (Eshetu et al., 2021).

Gelan and Lega Tafo Lega Dadi sub-cities are no exception (Fraol Udessa et al., 2021), Among all other sub-cities in Ethiopia. Gelan sub city has experienced the highest level of LC for industrialization following its designation as an industrial hub of the country in 2004/2005. Gelan is located in Oromia National Regional State, Oromia Special Zone Surrounding Addis Ababa at a Distance of 25 km South East from Addis Ababa. The former rural area and now changed to industry centers.

If these problems are not well considered at urban plan preparation and implementation, it may be farther intensified even beyond their immediate vicinity. So that the urban land-use plan is considered as a useful tool to accomplish urban sustainable development (Bulti et al., 2017). Thus, bearing these environmental problems into consideration the study focuses on approaches of existing land use plan and its implementation in the study town (Mekonnen, June, 2012). Taking such environmental problems in to consideration, the main objective of the study is to evaluate the major causes of the implementation of environmental practice, impacts of problems on integrated and sustainable developments in the town.

1.2. Statement of the Problem

Human activities obviously have a significant impact on the natural environment. People are becoming the primary cause of environmental degradation because they rely on nature for survival. In this regard, Gelan sub city has been subjected to such environmental degradation. This is due to the rapid rates of population growth, urbanization, and industrialization. Furthermore, poor waste management, incompatible and unsuitable land use allocation and implementation, a lack of awareness among private investors about waste management, a lack of knowledge and skill among municipal decision makers to implement the plan and carry out urban law and regulation, and the abundance of quarrying areas have all contributed significantly to urban environmental degradation. As a result, areas designated for urban green were reduced both qualitatively and quantitatively (Mekonnen, June, 2012).

The majority of them are located on the urban periphery of cities, are unfurnished, and are difficult to access and use. Similarly, some wetland areas have been occupied by developments such as road networks and settlements, while others are in the process of being converted. As a result, the situation limits the benefits that a wetland could provide to the local community. Furthermore, the town's economic, social, aesthetic, recreational, and ecological values are reduced (UN-Habitat, 2004).

In Ethiopia, experiencing massive land-use change that is often characterized by an expansion of the area cultivated with industrialization at the expense of agricultural land use. Several studies have been done on the impact of industrialization on land use planning and implementation with respect to environmental issues by (Mekonnen, June, 2012), (firaol Udessa, April 2021) and (Enoguanbhor et al., 2021). However, the main concern of the researcher is thus; to assess the current land use planning and implementation system of Gelan sub city against environmental issues and to identify the challenges related to land use and government management status in the town. The best of my knowledge none of the empirical works have been carried on particularly in Gelan sub city. Therefore, this study intended to fill this research gap.

1.3 Objective of the study

1.3.1. General Objective

The overall objective of this study is to examine urban land use planning and its implementation with respect to environmental dimension, the case of Gelan sub city, Sheger city, Oromia national regional state.

1.3.2. Specific Objectives

The specific objectives of the study are:-

- ✚ To identify environmental dimensions that need to be considered during the land use plan preparation.
- ✚ To evaluate procedures to implement environmental dimension with respect to the urban land use planning in the sub city.
- ✚ To identify factors influencing the implementation of environmental issues in Land use planning.
- ✚ To examine the contributions of stockholders including the community on urban land use planning implementation to environmental issues.

1.4. The Research Questions

- What are environmental dimensions considered during the land use plan preparation?
- What are the procedures to implement environmental issues with respect to urban land use planning in the sub city?
- What are factors influencing implementation of environmental conservation in Gelan sub city respect to urban land use planning?
- Who are contributing to urban land use planning implementation to environmental issues and what are stockholders and community contributions?

1.5. Significance of the Research

The study generally gives due attention on land use plan and implementation in relation to environmental issues in Gelan sub city. It furnishes the most important and first-hand information regarding issues of environment resulted by land use planning and implementation in the study area.

The finding of the study would of great importance to executives of Oromia Region Gelan sub city (ORGS) as they understood the issues of urban land use planning as well as its environmental impacts. This assisted executive of ORGS in decision making on improving urban land use planning together with the associated environmental issues as well. These led to achieving targeted level of urban health and enlighten the policy makers in general to increase the effectiveness of urban land use planning practices in the study area. Furthermore, the study would of great importance to future scholars and academicians, as it would form basis for future research as well as provide literature for future studies on the topic under study.

1.6. Scope of the Research

The scope of the study is spatially determined to Gelan sub city among the Sheger city, Oromia national regional state. Thematically, the study focused on the evaluation of practiced land use plan and implementation of Gelan sub city structure plan in relation to environmental issues. In addition, the study would figured out sustainable ways of urban land use planning and its implementation with respect to environmental dimension in the study area. The duration of this research was beginning from November 01, 2023 up to June 01, 2023.

1.7. Operational Definitions

The integrated land use planning is research and analyzes the land use, enable land use to meet the development needs for the future, coordinate the relation between human and land, and achieve the sustainable development of resources within a certain space-time. In urban planning, land use planning seeks to order and regulate land use in an efficient and ethical way, thus preventing land use conflicts. Governments use land use planning to manage the development of land within their jurisdictions.

1.8 Limitations of the Study

The presence of research limitations helps one to reflect upon the choices made during the preparation phase and the actual fieldwork and helps to identify possible unanswered or unaddressed questions that could be considered in the future research. Since it focuses on the Urban land use planning and its implementation with respect to environmental dimension, the case of Gelan sub city, Sheger city, Oromia national regional state, some of the most important limitations are, lack of obtaining accurate information and complete data on the total size of community households because recent land zoning of the sub city. The other problem is the commitment and attention of the respondent to the questionnaire. Those lead the paper to low quality of the research and unrealistic the finding. Further unanswered limitation will be considered in the future research and the gap will filled.

1.9 Outline of the thesis

This thesis paper would organize into different components or categories and contains five basic chapters.

Chapter One

- Contains background of the study, statement of the problem, basic research questions and objectives of the study, definition of terms, and significance of the study and delimitation/scope of the study.

Chapter Two

- The review of related literature deals with previous studies and literatures relevant to the study and it also includes theoretical and the conceptual framework adapted from previous studies.

Chapter Three

- Are methods of the study containing, the type and design of the research paper, analysis of participants of the study, the sources of the data, the data collection tools or instruments employed, the procedures of data collection and the methods of data analysis would be.

Chapter Four

- The analysis and presentation section summarizes the results or findings of the study and it also interprets and discusses the findings by extensive use of the literature review and result.

Chapter Five

- In this chapter, the summary of findings, conclusions, and possible recommendations would be described precisely.

CHAPTER TWO

REVIEW OF LITERATURE

2.1. Concepts and definition of Terms

Urban land use planning is the process of regulating and directing the use of land within a city or town. It is a complex process that involves many different stakeholders, including government agencies, businesses, residents, and environmental groups. The goal of urban land use planning is to create a sustainable and livable city. This means that the city should be designed in a way that minimizes environmental impacts, promotes economic development, and enhances the quality of life for its residents. One of the most important aspects of urban land use planning is the development of a structural plan. A structural plan is a long-range document that outlines the overall vision for the city's development. It includes a map of the city's land use, as well as policies and regulations that will guide future development (Mouratidis, 2021).

The structural plan is an important tool for managing urban growth. It can help to prevent sprawl, promote mixed-use development, and protect sensitive environmental areas. The structural plan can also help to ensure that the city's infrastructure is able to support its growing population. In addition to the structural plan, there are a number of other tools that can be used to implement urban land use planning. These include zoning ordinances, subdivision regulations, and development permits. These tools can be used to regulate the type, size, and location of development. The implementation of urban land use planning is often a challenging process. There are a number of factors that can complicate the process, including political opposition, economic constraints, and public apathy. However, successful urban land use planning can have a positive impact on the environment, the economy, and the quality of life for a city's residents (Solesbury, 2013) (Mouratidis, 2021).

The key concepts related to urban land use planning and its environmental dimension:

Structural plan: A structural plan is a long-range document that outlines the overall vision for a city's development. It includes a map of the city's land use, as well as policies and regulations that will guide future development.

Land use: Land use refers to the way that land is used, such as for residential, commercial, industrial, or agricultural purposes.

Land use planning: Land use planning is the process of regulating and directing the use of land. It is a complex process that involves many different stakeholders, including government agencies, businesses, residents, and environmental groups.

Environmental dimension: The environmental dimension of urban land use planning refers to the impact of land use decisions on the environment. This includes issues such as air quality, water quality, climate change, and biodiversity.

Structural plans are long-range documents that outline the overall vision for a city's development. They include a map of the city's land use, as well as policies and regulations that will guide future development. Structural plans are important tools for managing urban growth and protecting the environment. The environmental dimension of urban land use planning refers to the impact of land use decisions on the environment. This includes issues such as air quality, water quality, climate change, and biodiversity. Land use planning can have a significant impact on the environment, both positive and negative.

Positive impacts of land use planning on the environment include:

Reduced greenhouse gas emissions: Compact development can reduce greenhouse gas emissions by up to 30%. This is because compact development reduces the need for transportation, which is a major source of greenhouse gas emissions.

Improved air quality: Compact development can improve air quality by reducing traffic congestion. Traffic congestion is a major source of air pollution.

Improved water quality: Compact development can improve water quality by reducing storm water runoff. Storm water runoff is a major source of pollution in rivers and streams.

Protected biodiversity: Compact development can protect biodiversity by reducing the amount of land that is developed. This is important because development can destroy habitats and fragment wildlife populations.

Negative impacts of land use planning on the environment include:

Loss of open space: Land use planning can lead to the loss of open space, such as parks, forests, and wetlands. Open space is important for a number of reasons, including providing recreation opportunities, reducing flooding, and improving air quality.

Increased traffic congestion: Land use planning can lead to increased traffic congestion, particularly if it promotes sprawl. Traffic congestion is a major source of air pollution and can also lead to health problems such as heart disease and asthma.

Increased noise pollution: Land use planning can lead to increased noise pollution, particularly if it promotes development near airports, highways, or other noisy areas. Noise pollution can have a number of negative impacts on human health, including sleep disturbance, stress, and hearing loss.

The implementation of structural plans is often a challenging process. There are a number of factors that can complicate the process, including political opposition, economic constraints, and public apathy. However, successful structural planning can have a positive impact on the environment, the economy, and the quality of life for a city's residents.

Urban land use planning and its environmental dimension:

Sustainable development: Sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs. This includes economic development, social development, and environmental protection.

Compact development: Compact development is a type of development that is characterized by high-density, mixed-use neighborhoods. This type of development can help to reduce greenhouse gas emissions, improve air quality, and promote walking and biking.

Mixed-use development: Mixed-use development is a type of development that includes a mix of residential, commercial, and industrial uses. This type of development can help to create a more vibrant community.

Green infrastructure: Green infrastructure is a type of infrastructure that uses natural systems to provide services such as storm water management, air quality improvement, and biodiversity.

conservation. This type of infrastructure can help to reduce the environmental impacts of urban development.

Urban land use planning is an important tool for promoting sustainable development. By using tools such as structural plans, zoning ordinances, and development permits, planners can help to create cities that are environmentally friendly, economically prosperous, and socially vibrant.

Some examples of how urban land use planning can be used to address environmental challenges:

Climate change: Urban land use planning can help to reduce greenhouse gas emissions by promoting compact development, mixed-use development, and the use of green infrastructure.

Air quality: Urban land use planning can help to improve air quality by promoting compact development, mixed-use development, and the use of public transportation.

Water quality: Urban land use planning can help to improve water quality by promoting compact development, mixed-use development, and the use of green infrastructure.

Biodiversity: Urban land use planning can help to promote biodiversity by protecting sensitive environmental areas, such as wetlands and forests.

Urban land use planning is a complex and challenging process, but it is essential for protecting the environment and creating sustainable and livable cities.

2.2. Theoretical Literature Review

Land use planning strategies have not been able to effectively address environmental sustainability problems (e.g., degradation of environmentally sensitive areas caused by urban expansion patterns) in the Global South, particularly in Sub-Saharan Africa. To improve achieving the environmental goals of land use planning strategies, environmental assessments can be conducted using the Strategic Environmental Assessment (SEA) or para-SEA. The SEA is an environmental planning and management instrument used for determining and mitigating the potential environmental impacts of policies, plans, and programs at both regional and urban/local scales. The para-SEA is an informal process of conducting the environmental assessment of strategic actions, whereby the administrative framework is not defined or considered and the

process does not meet the formal specifications of SEA but has some of their characteristics. The SEA process aims to protect environments from strategic actions and promote environmental sustainability. Applied SEA varies widely, but the general process includes screening, consideration of alternatives, description of the action, impact identification and scoping, prediction of impact magnitude and significance, identification of mitigation measures, preparing the documentation of the assessment, review, consultation, and public participation, decision-making, and monitoring implementation (Enoguanbhor et al., 2021).

Theoretically, the relationship between land use planning and environmental assessments can be depicted using the socio-ecological idealism of spatial planning theory and the SEA framework for strategic decision-making. Socio-ecological idealism, which is a vision to reintegrate social and environmental problems into the planning process, has been used to broadly address the relationships among the human, built, and natural environments. In recent years, socio-ecological idealism in planning will partially drawn under the sustainability umbrella, where the economic aspect of spatial planning will integrated into the theory, thus planning at e.g., urban and regional scales adopt the principles of neighborhood, community, urban, and regional sustainability. Environmental assessment, which focuses majorly on the environmental aspect of sustainability, also considers both social and economic aspects and may foster the actualization of the socio-ecological idealism vision in land use planning. Socio-ecological idealism indicates to environmental assessment the holistic value and socio-environmental visions for the desired future in the evaluation of options in strategic planning. Therefore, environmental assessment and land use planning can be used to improve urban and regional environmental sustainability.

While land use planning focuses on the spatial arrangement of land use, environmental assessment can be used to: reduce the environmental risk of the plan; streamline the project action of the plan; faster plan approval; and better plan implementation that reflects socio-ecological idealism in land use planning. The SEA framework for strategic decision-making, including land use planning strategy is used to describe: environmental baseline and identify alternatives land use plans; prepare scoping reports, predict and evaluate impacts of the alternative land use plans; mitigate the impacts of the chosen alternative land use plan; prepare the SEA report for formal decision, and; monitor the implementation of the chosen alternative land use plan.

Land use planning strategies and environmental assessments are faced with various challenges in the Global South, including Sub-Saharan Africa. Lack of financial capacities challenges land use planning in Lagos, Nigeria, and the Takoradi and Bolgatanga regions of Ghana. Political interference is a key challenge facing land use planning in Kampala in Uganda and Kigali in Rwanda. (Enoguanbhor et al., 2021).

Factors influents implementation of land use planning

The land use planning and its implementation were ineffective as a result of internal and external contributing factors. In the preparation of the structure plan of the town, there are internal and external factors that contributed to the infectiveness of the plan. The external factors affecting the quality of the plan specifically the environmental plan are lack of public participation as well as shortage of the commitment of officials. Moreover, the internal factors that cast a shadow image on the quality of the Structure plan were the experience and disciplinary gap of the plan preparation team.

In addition the effectiveness of the plan implementation were also affected by factors like lack of policy and commitment of officials, shortage of implementation tools, skilled man power, and community awareness. In general, the infective land use planning and implementation resulted by the factors that in turn results unhealthy natural environment in the town via various development activities such abattoirs, industries, housing, quarrying activities, etc. Moreover, insufficient urban greenery, land and soil degradation, poor solid and liquid waste management, noise and poor air quality, poor sanitation infrastructures and poor environmental management has led to several social and health problems, environmental pollution, and poor urban image (Mekonnen, June, 2012).

Global benefits of integrating the environment in urban planning and management

In addition to improving local environmental conditions, the benefits that can be achieved from integrating the environment in urban planning and management can be seen as working in two directions. Addressing environmental issues in urban areas is not only good for these towns and cities, but also good for the global environment: “although cities, particularly high-income cities, have large eco-footprints, they also provide many opportunities to lighten the human load on Earth’s ecosystems.” With the growing proportion of the world’s population living in urban areas, decisions made about the environment in towns and cities will have increasing

consequences for planetary environments and ecosystems, as urban residents draw on food supplies and raw materials from ever-widening geographical areas. In addition, this process can also generate a wide range of co-benefits (both economic and social), including poverty reduction, in particular locations. Indeed, the Towards a Green Economy report emphasizes that measures to green cities can increase social equity and the quality of life in several ways:

- Enhancing public transport can reduce inequality by improving access to public services;
- Using cleaner fuel for transport and power generation can reduce both local pollution and health inequality;
- Reducing traffic and improving conditions for pedestrians and cyclists can help foster community cohesion and health;
- Improving access to green spaces can make children more resistant to stress and can lower the incidence of behavioral disorders.

Governance in Urban Land Management and its objectives

Governance can be defined in a variety of theoretical dimensions. Governance in the urban land executive is very important in many areas, as land management, especially in developing countries, grows increasingly vulnerable to maladministration. Whether pit or grand Corruption is linked to weak governance in developing countries where having power over land is considered as a means of controlling political and economic power and privilege through fraud (FAO, 2007). Weak urban land governance is also linked to increasing insecurity in property rights and a soaring level of bribery and corruption in urban land management activities, particularly in the developing world. Studies conducted by Burns, T, and Dalrymple, K(2008) in developing countries have witnessed that cities are unable to provide affordable urban land in sufficient quantities, particularly for the urban poor, because of the inefficiency and ineffectiveness of land management. Regarding this, they pointed out that Weak urban land use planning, management, will affect the poor in particular and may leave them marginalized and outside the law.

The focus of this study is developing a set of statements that set out a consistent framework of objectives for good governance in urban land management. The indicators are used as an accepted set of objectives that can be again investigated at the grassroots level. Therefore two objectives for good governance in Urban land use planning, management, and taxation have been

used. The role of good governance will also developed from a considerate of the implications of ineffective, inequitable, and poorly functioning urban land management systems. Weak governance in urban land management is a key contributor to issues of informal modes of service delivery, corruption, limited land markets, tenure insecurity, informal settlements, unrealized investment potential in property, land speculation and encroachment, idle and unproductive use of land, inequitable land distribution, and inadequate provisions of infrastructure Burns, T, and Dalrymple, K(2008).

The urban land management systems become the foundation for the hierarchy of other instruments that support a wide range of natural resource use rights for activities associated with land, air, and water. These include land-use zoning, site development, allocation and use of air space, the allocation and use of water resources, and other natural resources. All level of rights in the chain of command is accompanied by more a specialized urban land management governance system because they stand for value-adding in different land markets and economic systems. Land management is keeping pace by imposing land-use planning and connected development restrictions. Sustainable land-use planning must be lined up with society's needs and undertaken in a participatory way. The effect of poor land-use planning is indirect as people will find informal means to cope with their needs, mainly when planning designs improperly predict or supply the necessary infrastructure issues distressing land-use arrangements, which often directly affect people's livelihoods, and results in high levels of social unrest. There are also frequent problems enforcing master plans as they are either developed without due consideration of implementation preparations and capacity a non-participatory approach that meets strong community resistance. Similarly, zoning constraints should be reasonable by external effects, and firm in a clear and participatory way. Regulations and restrictions should be made through the ability to enforce them. However, in many, managing urban land without proper governance arrangements has given rise to significant building maintenance and redevelopment problems associated with old and unsafe land use planning.

On the other hand Property valuation and taxation has important implications for governance in land management. Land resources in all societies are finite and a fundamental basis for social and economic development Burns, T and Dalrymple, K (2008). An unbiased and clear taxation process is more likely to have eager participants, than an unfair and non-transparent system. Poor systems for property valuation and taxation can be an indication of poor governance in urban

land management. These direct to vagueness in market prices, difficulties in valuing property, constrain urban land markets, increased urban land disputes and appeals, loss of revenue, and unfair property tax burdens. The valuation process provides the framework for statutory valuation purposes and should be transparent and fair. Valuation information values should be made openly available to improve transparency in the urban land market. These principles are necessary to remove the common practice of under-declared values associated with high property transfer fees and taxation rates (firaol Udessa, April 2021).

Land Management for Housing

Managing land in the housing development process is one of the many key elements for promoting sustainable, resilient cities. Urban sprawl is the classic example of mismanagement of land and is unsustainable. There are two components to land management: physical and institutional. Figure 1.1 illustrated key elements under both components. An integrated and holistic approach to land management, including both components and elements, must take place to promote housing.

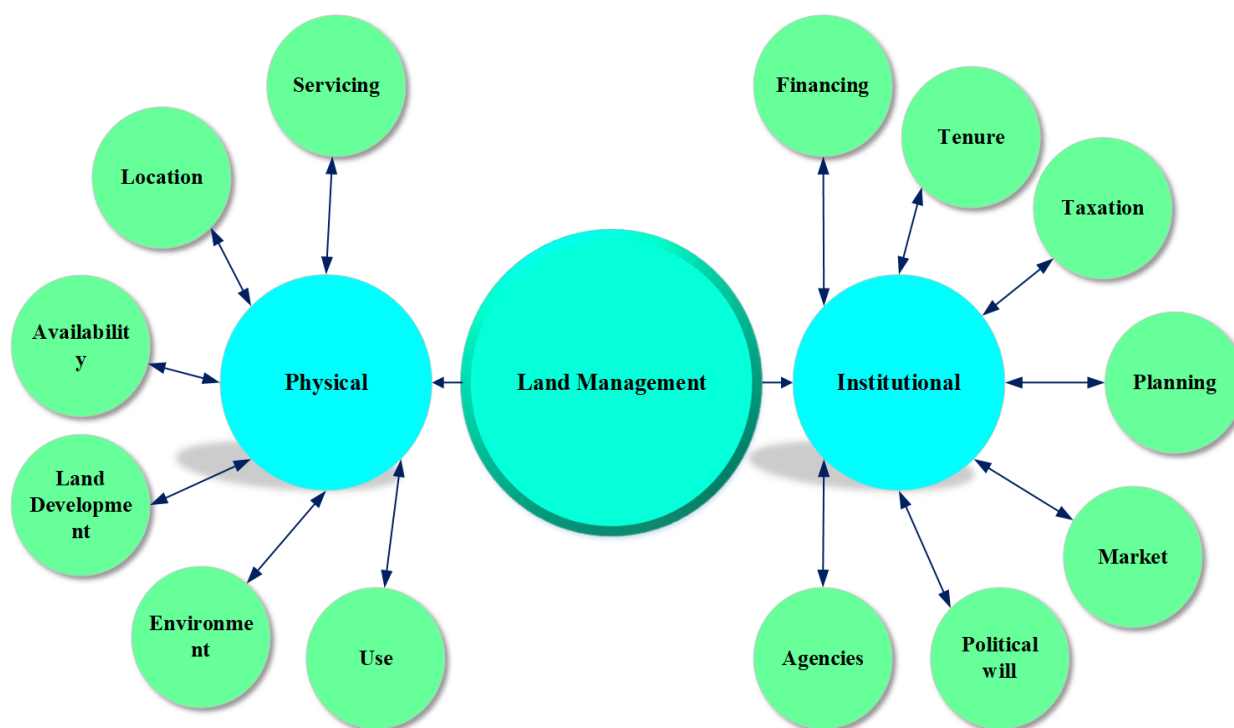


Figure 2. 1: Key Elements under both Physical and Institutional Component.

Source: (Beltrão, February 2013).

The physical aspects of land are largely related to planning, vulnerability, land development potential, environmental considerations, availability and selection, and servicing. The institutional aspects are related to provision of tenure, registration of land parcels and related cadastral information, financing of land purchase and servicing, establishing and enforcing development controls, identifying environmentally sensitive areas and taxation, and the political will and institutional capacities required to carry out all of these tasks. For any housing approach (Government housing programme, Sites and Services, Illegal Settlement Regularization and Upgrade, Public-Private Partnership, etc.) the physical and institutional components together set the framework for effective land management and city growth.

Africa is one of the world's fastest urbanizing regions, with 56% projected urban residents by (ECA 2017; UNDESA 2014; UNDESA 2019), (Admasu et al., 2020). In terms of form, Ethiopia adopted the urban land lease policy in 1993, which is very similar to that of China. The functionality of institutions is more important than the form or shape they take (Koroso et al., 2020).

Land management is indeed complex and requires bringing all elements to function in a coordinated manner. Land management specifically requires <physical> information of vulnerable land and identifying available land; protecting watershed, vegetation, topography, drainage courses; guiding land development through mechanisms (land pooling, land banking, etc.) and incentives; locating accessible lots in close proximity to socio-economic opportunities; and allowing land servicing (access, water, sanitation, power, solid waste management). Moreover, <institutional> allowing forms of ownership (government, private, communal) and security (freehold, leasehold); surveying and registration; planning growth needs and expansion; defining instruments and incentives (FAR, etc.) to engage individuals and private developers; and considering the supply-demand dynamics (speculation and mechanisms to address it: punitive taxation, development controls, etc.; land acquisition) (Beltrão, February 2013).

The existence of environmental and land use policies, the low level of participation in community-based participatory watershed development initiatives, the wealth of experience in land evaluation practice, and the existence of education and training institutes in agriculture and land administration have all been identified as opportunities to improve land evaluation and land use planning in Ethiopia (Gessesse, Berhan and Ali, 2023).

The impacts of climate change on cities

Towns and cities are exposed to a range of climate-related hazards; and many urban residents (particularly, although not exclusively, in low- and middle-income countries) are highly vulnerable to climate change. The main impacts of climate change are expected in several specific sectors: water, ecosystems, food, coasts, health, and singular events 35 and all of these will have effects on urban areas. In particular, urban areas are highly exposed to events occurring at or near coasts, including cyclones and sea-level rise, with a disproportionately high number of urban settlements being located in the Low Elevation Coastal Zone 36. Cities will also be affected indirectly by climate change: for example, changes in rainfall patterns could reduce freshwater availability. There will be a broader set of economic and social challenges as well – including energy shortages, damaged infrastructure, increasing losses to industry, heat-related mortality and illness production, which will have knock-on effects for urban residents.

However, the effects of these impacts will vary greatly between and within cities – and will also be shaped by a range of other challenges that these urban areas face. The vulnerability of cities and their residents to climate change is shaped not only by their exposure to particular hazards, but also by the sensitivity of social, economic and environmental systems, and by the capacity of these systems (including urban households and communities) to adapt. Understanding the vulnerability of a city requires looking at all of these different elements – Figure 2.2 shows one possible conceptual model for doing so.

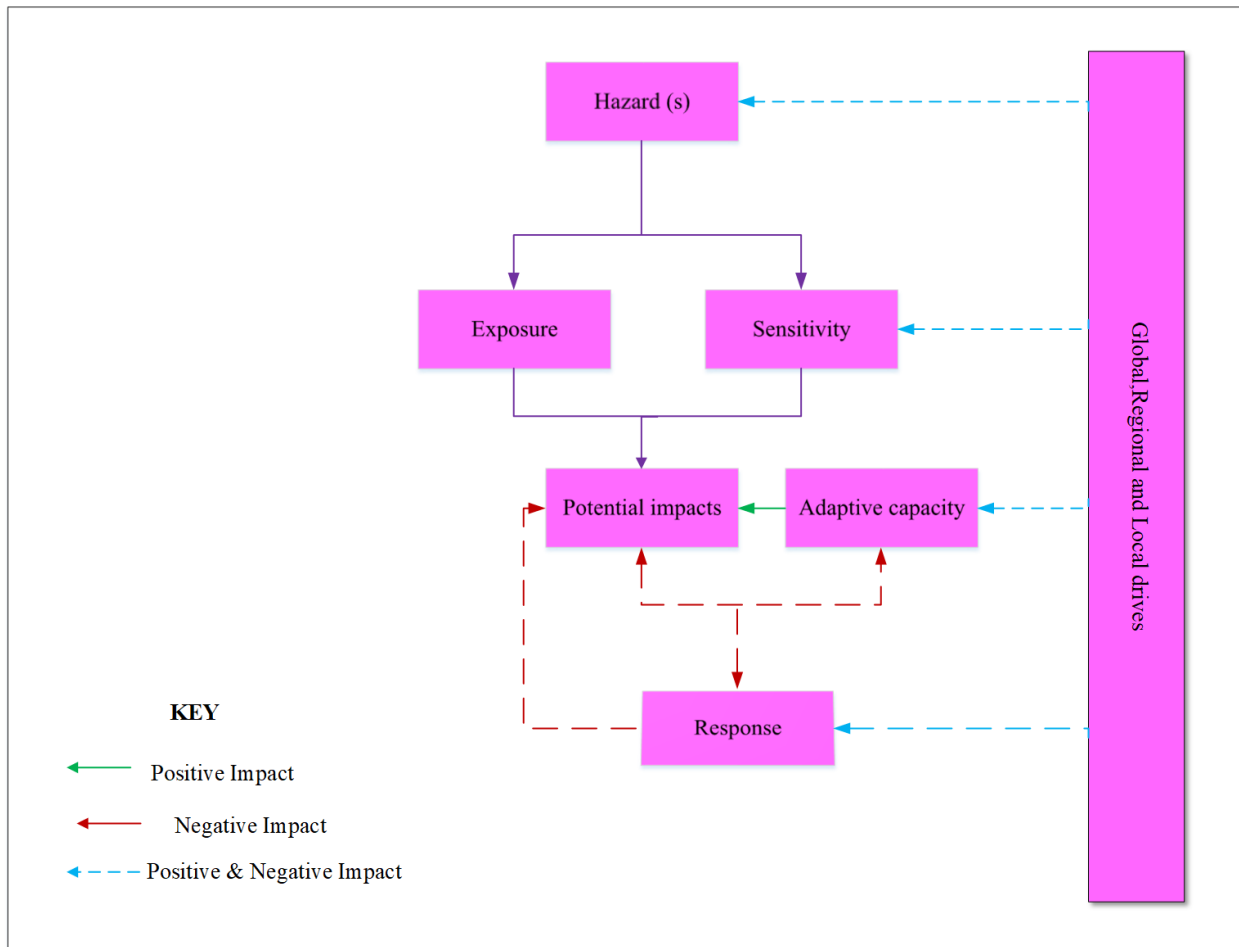


Figure 2. 2: A Framework for Understanding Urban Vulnerability to Climate Change.

Source: (DAVID DODMAN, 2013).

Global benefits of integrating the environment in urban planning and management

In addition to improving local environmental conditions, the benefits that can be achieved from integrating the environment in urban planning and management can be seen as working in two directions. Addressing environmental issues in urban areas is not only good for these towns and cities, but also good for the global environment: “although cities, particularly high-income cities, have large eco-footprints, they also provide many opportunities to lighten the human load on Earth’s ecosystems.” With the growing proportion of the world’s population living in urban areas, decisions made about the environment in towns and cities will have increasing consequences for planetary environments and ecosystems, as urban residents draw on food supplies and raw materials from ever-widening geographical areas.

Local land managers should place a premium on mitigating the informal land market, its actors, and the associated problems through appropriate policy interventions such as developing land information systems, raising awareness among land use actors (farmers, speculators, brokers, and the general public), promoting urban good governance, and encouraging community participation at the local level (Admasu & Tesfaye Gebeyehu, 2015).

In addition, this process can also generate a wide range of co-benefits (both economic and social), including poverty reduction, in particular locations. Indeed, the Towards a Green Economy report emphasizes that measures for green cities can increase social equity and the quality of life in several ways:

- ✓ Enhancing public transport can reduce inequality by improving access to public services;
- ✓ Using cleaner fuel for transport and power generation can reduce both local pollution and health inequality;
- ✓ Reducing traffic and improving conditions for pedestrians and cyclists can help foster community cohesion and health;
- ✓ Improving access to green spaces can make children more resistant to stress and can lower the incidence of behavioral disorders (David Dodman, 2013).

Environmental Planning

As shown in Figure 2.3, environmental planning of local governmental level has been established such planning system as 'National Environmental Plan - Province and City Environmental Plan -Country and Town Environmental Plan'. National environmental plan is established every 10-year period and provincial environmental plan also follows the national system. However, as described in the introduction, environmental conservation plan does not equip with any management plan, a working plan, which means that the plan contains only declaratory meaning.

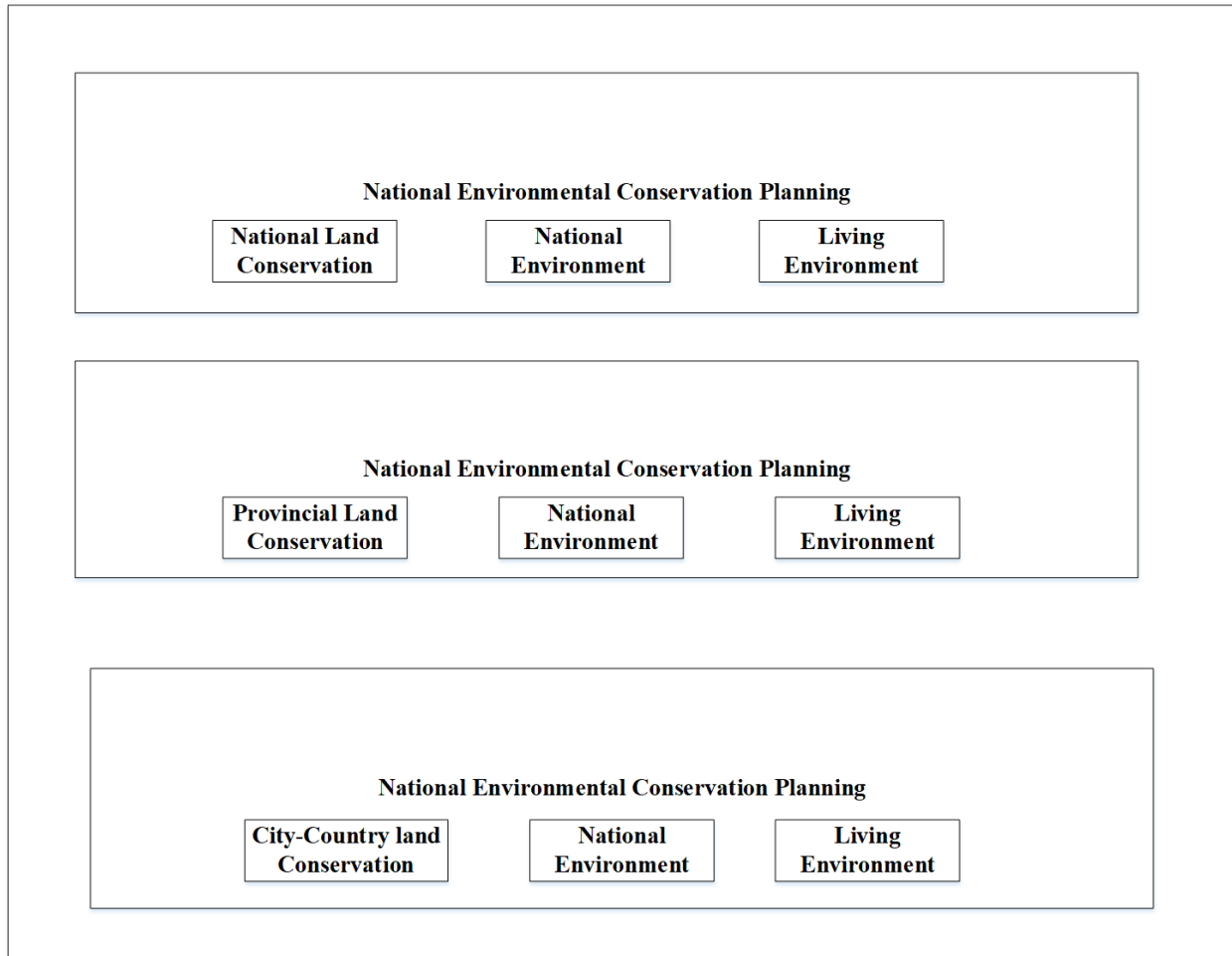


Figure 2. 3: Environmental Planning Framework.

Source: (Ban, 2006).

Alternatives to Connect Urban Basic Plan and Environmental Plan

To connect urban basic plan and environmental conservation plan, it is necessary to perform system improvement under national frame. Thus, it is desirable to connect national planning and environmental planning according to spatial units under national level, to build connections between urban basic plan and environmental plan within the frame of the revised plan under local level (Ban, 2006).

Urban Planning policies and Policy issues

Urban land use planning is crucial for ensuring the sustainable development of cities, and Gelan sub city in Sheger City, Oromia National Regional State is no exception. In terms of planning policies, there are three primary levels that govern urban planning: national, regional, and local.

At the national level, the federal government sets the overall framework for urban planning policies, while regional and local governments are responsible for implementing these policies and adapting them to their specific contexts. Some of the key policy issues that need to be considered in urban planning include environmental sustainability, economic development, social equity, and cultural preservation. In Gelan sub city, it would be important to prioritize the environmental dimension of planning to ensure that the town's growth and development do not harm the natural environment. This might involve policies promoting green infrastructure, renewable energy, and sustainable transportation systems. At the regional and local levels, policies could focus on improving the quality of life for residents, promoting economic growth, and ensuring that development is inclusive of all members of the community. For example, policies might be put in place to promote affordable housing, public amenities such as parks and community centers, and transportation networks that are accessible to all. Overall, effective urban land use planning is essential for creating livable, sustainable cities. By prioritizing the environmental dimension, as well as social equity and economic development, Gelan sub city can become a thriving community that is both vibrant and sustainable (Mouratidis, 2021).

2.3. Empirical Literature Review

Many studies have been conducted relating to urban land use planning and its implementation respect to environmental issues in different settings. Hence, some of the most selected and related empirical studies were presented below.

According to (Mohamed, Asfaw and Worku, Hailu, 2019) review, the dynamic LULC change index identified the built-up area as the most dynamic land cover type and the intensity index depicted that a large part of the area will on the high-speed urban expansion level. In addition, the previous study approved that the effects of the sprawling pattern have strong momentum to push the region's built-up dynamics than the population increase and it also confirmed that a prevalence of high built-up sprawling and bad urban growth conditions. Therefore, the previous study lay emphasis on an integrated urban-regional planning and management approach and quantifying the built-up intensity, sprawling and the degree of urban growth goodness as a tool to control the LULC dynamics and enhancement of a rational decision on sustainable urban growth planning and management.

To establish urban design as a legitimate area of intellectual endeavor and practice, it must be defined (Foroughmand Araabi & Hooman, 2022). The principles and practices of urban and regional planning in the context of environmental sustainability are introduced in Sustainable Urban Planning (Riddell, 2008).

According to (Ban & Yong Un, 2007) review, it is necessary to find strategies to integrate both planning practices through focusing on 'sustainable urban development. Urban basic plan deals with such categories as characteristics of the city, plan objectives and setting indices, setting urban spatial structure, population distribution and living zone setting plan, land use plan, transportation and logistics plan, information and communication plan, public facilities plan, industrial development plan, housing environmental plan, environmental conservation plan, scenic and aesthetic plan, leisure and open space plan, social development plan, disaster prevention plan, and financial plan.

To integrate urban planning and environmental planning, it is necessary to establish a sustainable urban basic plan which deals with both urban planning and environmental planning with institutional enhancement. Thus in terms of institutional enhancement under national level, to integrate comprehensive national land plan and comprehensive national environmental conservation plan it is necessary to establish a law regarding sustainable urban development on which national sustainable development plan can be based. Also under local level, to integrate urban basic plan and environmental conservation plan it is necessary to establish an ordinance regarding sustainable urban development on which sustainable urban development plan can be based.

While there have been numerous global discussions on how to promote city inclusiveness, a lot remains to be done and serious obstacles remain to be overcome. A series of fundamental urban planning and land management principles and concepts as the foundation for a comprehensive India National Housing Development Framework (NHDF) (Beltrao et al., 2013).

The primary goal of urban land management is to facilitate efficient land use and supply tracking techniques (Udessa et al., 2023). With the fast development of social economy, the contradictions between social development and land use are becoming increasingly serious. In order to ease the contradiction between human and land, and promote the balanced development between social economy and resource environment, there should be a higher request for land use planning (Liu & Guo-Hua, 2016).

The expansion of varied agricultural activities, timber removal and development in infrastructure are the major direct causes of land use land cover (LULC). While, complexes of economic, technological, demographic, political, institutional and socio-cultural factors are classified as a major root causes of land use land cover changes (Sisay, 2020).

The key challenges revolve around the inefficient and ineffective capacity of the institutions bestowed with the responsibility of urban plan preparation and implementation according to urban planning legal frameworks and the Structure plan and local development plan (LDP) preparation invested effort is not enough as compared with the size of urban towns (Fraol Udessa et al., 2021).

The urban centers in most developing countries are in a difficult situation i.e. the balance between urban growth and fast economic development. Urban planning tools play a key role in anticipating rapid urbanization and harmonious futuristic management (Sissoko & Founemakan, 2020).

Cities can use a range of principles and approaches to integrate the environment in urban planning and management. Cities are important sites for engaging with environmental issues. Activities in towns and cities affect the environment locally, regionally and globally in both negative and positive ways. Although localised issues of public health, sanitation, and waste management are very visible in low-income cities, high levels of consumption can generate far-ranging environmental consequences through the use of raw materials and energy in distant locations to produce goods and services. A range of strategies can be used to integrate the environment in urban planning and management. City Development Strategies (CDSs) have shown how to integrate environmental concerns in long-term city visioning exercises. Environmental mainstreaming can help to incorporate relevant environmental concerns into the decisions of institutions, while emerging ideas about the green urban economy show how density can generate environmental and social opportunities (including through green urban infrastructure) and can foster environmental and social innovation and competition. Environmental strategies for urban areas need to be supported by key underlying principles (Dodman et al., 2013).

To date, land-change Regardless of the widely accepted premise that planning affects urban land change, science has paid little attention to spatial policy and planning in urban landscapes. This is basically due to a lack of relevant data and an underdeveloped theoretical understanding of the

impact of spatial planning on urban land change (Hersperger et al., 2018). Geographic Information Systems (GIS)/Remote Sensing (RS) and survey-based data to investigate the key challenges of land use planning and its environmental assessments for the purpose of improving the urban and environmental sustainability of city-regions (Enoguanbhor et al., 2021).

Urban land use plan is a tool to guide and manage the growth of cities/towns in a planned manner. The soul of land use plan lies in the preparation and its implementation, if not people are trapped in a mess of urban problems particularly environmental problems. If these problems are not well considered at urban plan preparation and implementation, it may be farther intensified even beyond their immediate vicinity. Thus, bearing these environmental problems into consideration the study focuses on approaches of existing land use plan and its implementation in the study town (Mekonnen, June, 2012).

Ghana's urban centers have grown rapidly because of population growth, economic development, and rural migration to urban areas. One reason is that spatial planning, particularly urban planning, faces various social, economic, and political challenges that impede structured and planned urban development, resulting in urban sprawl (Kleemann et al., 2017). Sustainable urbanization necessitates the planned development of urban centers, the establishment of competent institutional frameworks, and proactive management and governance strategies (Dube & Engida Esayas, 2013).

Both plans allocated large proportions of development quota to the new city and key towns, which are also the most populous and economically advanced areas, based on the spatial arrangements of new construction land to be developed during the planning period. The land use plan, on the other hand, places a greater emphasis on controlling urban growth in regular towns than the urban master plan (Liu et al, 2020).

Urban land use planning is the process of allocating land for different uses, such as residential, commercial, industrial, and public. It is a critical tool for managing urban growth and development in a sustainable way. The environmental dimension of urban land use planning is concerned with the impact of human activities on the environment. This includes the impact of land use on air quality, water quality, soil quality, biodiversity, and climate change.

The case of Gelan sub city, Sheger City, Oromia National Regional State, is a good example of the challenges and opportunities of urban land use planning. Gelan sub city is a rapidly growing

town located in the Oromia National Regional State of Ethiopia. The town has experienced rapid population growth in recent years, due to both natural increase and migration. This growth has put a strain on the town's infrastructure and resources.

The town's current land use plan is outdated and does not adequately address the challenges of rapid growth. The plan does not provide for enough green space, affordable housing, or public transportation. As a result, the town is facing a number of environmental problems, such as air pollution, water pollution, and deforestation. There are a number of lessons that can be drawn from the case of Gelan sub city. First, it is important to have a well-designed and implemented land use plan. A good land use plan will help to manage urban growth and development in a sustainable way. Second, it is important to involve the community in the planning process. This will help to ensure that the plan meets the needs of the community and is more likely to be implemented successfully. Third, it is important to monitor and evaluate the implementation of the land use plan. This will help to identify any problems and make necessary adjustments.

There are a number of research gaps that need to be filled in order to improve urban land use planning. One gap is the need for more research on the environmental impact of different land use patterns. Another gap is the need for more research on how to involve the community in the planning process. Finally, there is a need for more research on how to monitor and evaluate the implementation of land use plans.

The research gaps identified above can be addressed by conducting more research on urban land use planning. The research should focus on the environmental impact of different land use patterns, how to involve the community in the planning process, and how to monitor and evaluate the implementation of land use plans. The findings of the research could be used to improve urban land use planning in Ethiopia and other countries. This would help to make cities more sustainable and livable (Beltrão, February 2013).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Under this section of the study two issues are discussed briefly. The first issue is related to description and background of the Gelan sub city (case study area). The descriptions of the case study area included subsection such as location of the case study area were presented briefly. The second issued is about study methodology that followed to conduct this research. To adopt appropriate methodology, reviews of previous literatures and their approach in conducting the same study is scanned and also followed the same for this study. There are also subsections that used to describe the process, such as research design, research methods, data source, collection and analysis and population under study are discussed in this section.

3.2. Description of the Study Area

The study would conducted at Gelan sub city, located in Oromia Sheger city which is the capital city of Oromia National Regional State. Gelan (Oromo: Galaan) is a sub city located in the Akaki district of the Oromia sheger city Surrounding Finfine and 25 km South East from Addis Ababa- Addis Ababa-Adama highway crossing Gelan sub city. There were two reasons why the city would selected. First, the city could were considered as a representative of all cities of the government as there were considerable similarities in terms of budget, facilities, service pressure, human resources and management structure. Secondly, addressing the required sample participants would cost for the investigator as it is around my work place. Land for long time has played the fundamental role among Gelan inhabitants life. Numerous socio- economic lives are intensely attached with their productive asset i.e., land. Hence economically inhabitants of Gelan are dependent to their land.

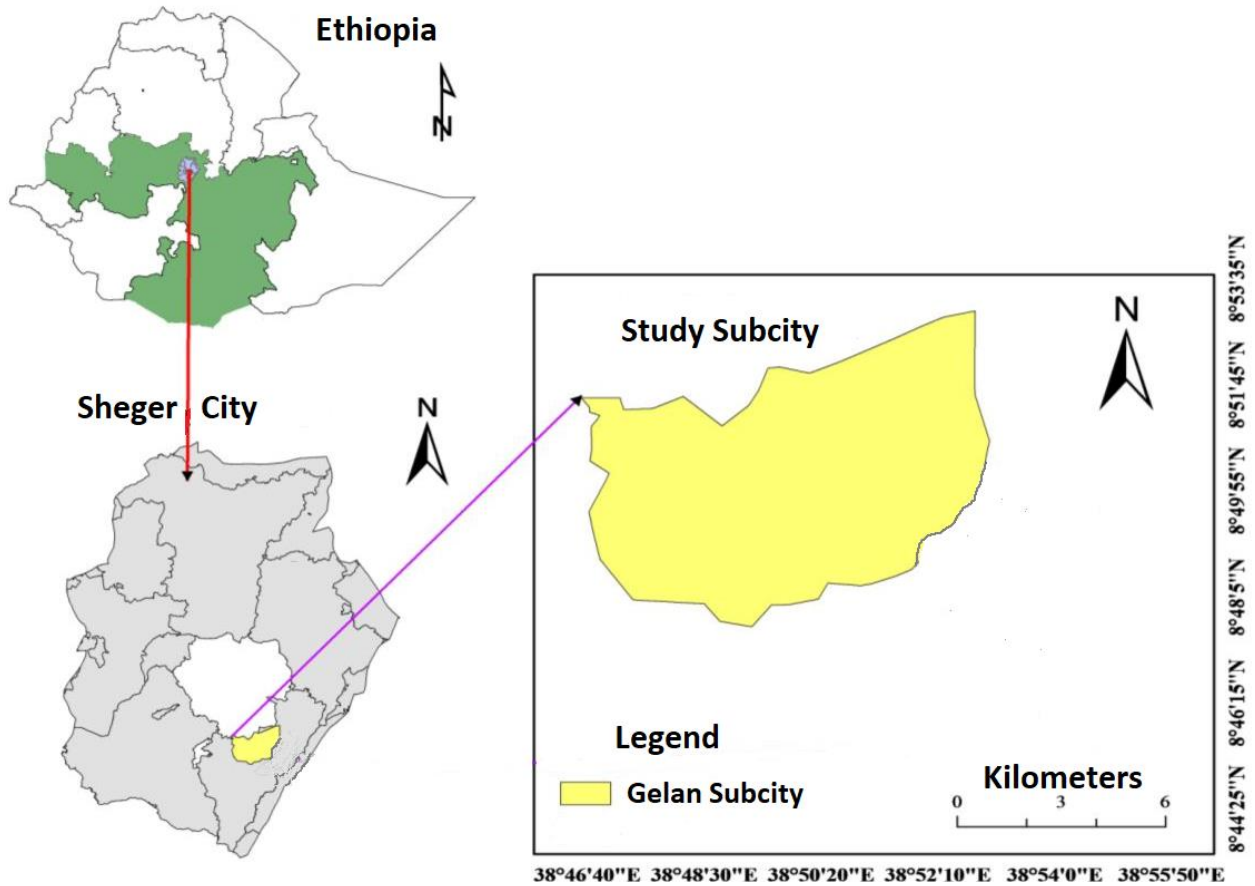


Figure 3. 1: Description of the Study Area.

Source: Base map of Gelan sub city surveyed by OUPI, 2016.

3.3. Study Approach

This study would use both qualitative and quantitative data and mixed methods to triangulate the finding.

Quantitative data: For the quantitative data collection; survey methods of urban land use planning would adopted as quantitative methods of analysis.

The survey would depend on questionnaire that contains closed ended and open ended items. Survey is better for sampling and gathering information from larger population which is quick and helps in cross sectional study design to describe the basic characteristics or experiences of large populations (Groves, et al., 2011). On the other hand, it helps to draw conclusions and to generalize the effect of urbanization on agricultural lands and the consequence of the expansion on farming communities (Lai & Chen, 2011). The open ended question would be used to give an

opportunity for the community to note down the issues that may not indicated in the survey questions.

Qualitative data: The qualitative data would collected through interview of the experts and other key informants who would know about urban land use planning and its implementation with respect to environmental issues. The main objective of using qualitative data would for triangulating result with views and perspective of urban land use planner, management staff and community household attained from survey.

3.4. Data Type and Sources

For the purpose of the study both primary and secondary data would use.

The primary Data: The primary data would be essential for this study and the collection would be through a survey of urban land use planners, management staff, and community households of Gelan sub city area.

Secondary Data: Secondary data source were through reviews of the literatures and office data explaining about lands grasping, number of community household, the management staff related data. The number of community household in the case study area were collected from the office and used for samples size calculation. While the review of the literature would used to understand from previous study on the areas of data collection methods, analysis and a general understanding of the urban land use planning and it's environmental issues.

3.5. Study Population

The populations of this study were the urban land use planner, management staff and community household who were living in Gelan sub city of the case study town.

3.6 Sample Size and Sampling Technique

In general, the sampling and techniques would apply for study in Gelan sub city and Community household selection and governmental body.

Study town (study site) selection: To select study town and respondents under urban land use planner, management staff and community household areas of Gelan sub city; a purposive sampling technique was used. Accordingly, the selection would base on the criteria such as town

found on the boundary of the Ethiopia country Oromia region, town contain urban land use planner, management staff and household communities which that can the researcher accessed and directly concerned body to the title. According to those criterion Gelan sub city which completely fit the stated criterion would selected.

Urban land use planner, management staff and community household selection for the survey: The systematic sampling would used to delineate the sample size of community households for the surveying in the Gelan sub city. To determine the sample household, a systematics equal interval of....3,3,3...would use to distribute the survey questionnaires for the selected urban land use planner, management staff and community households.

To calculate the sample size from the urban land use planner, management staff and community household, also data were collected from Gelan sub city administration and used to calculate number sample size. For the convenience of this study, Yamane formula was used to determine the minimum sample size.

$$n = N / (1 + N(e^2)) \text{-----}(1)$$

where n = minimum required sample size, N = population size, and e = level of precision (Yamane,1967). Hence, based on this figure the author would surveyed from urban land use planner, management staff and community household of Gelan sub city.

In determining the representative sample sizes for the study, the following steps and procedures were applied. Israel (2009) provides a simplified formula to calculate sample sizes of finite population, which is used to determine the sample size for this particular study. A 93% confidence level is assumed for this formula to determine the sample size, at e=0.07 and the sample size is determined by the following formula.

Therefore, for their representativeness sample is determined using a scientific formula adopted from (Yamane, 1967). The recent population of the Gelan sub city community house hold are about 5,200 house holder, from urban land use planning staff and management staff there are 130 employees. As a purposive sampling technique was used the sample size is taken from both governmental body and community house holder stockholders to get the wright concerned body to answer research question.

- ❖ Community house holders sampling size

$$n = 5200 / (1 + 5,200 (0.07^2)) \dots\dots\dots n = 196$$

- ❖ Governmental body stockholder

$$n = 130 / (1 + 130 (0.072)) \dots\dots\dots n = 79$$

Total n = 275

3.7. Study Instruments (Data Collection Tools) and Data collection

Questionnaires are used to collect data from the study area. It is done by distributing questionnaires in addition to oral discussion and is another systematic way of collecting primary data needed to achieve the objective of the research. Questionnaires' of this research has three main attributes to approach the objective of the study without the demographic characteristics of the respondents. The first part is the Organizational culture. The second part is step used in implementation of environmental dimension. The third part is Factors influencing implementation of environmental issues and the last part is all contribution of government and community on implementation of land use planning and contribution of Community on implementation of land use planning.

The Urban land use planner, management staff and community household survey was conducted in order to generate quantitative data. Before the survey questionnaires and interview question would distributed for Urban land use planner, management staff and community household the items types would carefully tested. As soon as the training of the data collectors and test of the questionnaires were completed the collection would started. Furthermore, all the data in the questioners were also personally collected by the researcher itself.

Interviews were another method that, the researcher used to collect qualitative data. Structured interviews were made with selected Gelan sub city municipality officials and with key informants purposefully selected from urban land use planner and management staff. The intension of the interview with the selected urban land use planner and management staff was to get an in-depth knowledge and understanding of organizational culture of the town and to evaluate urban land use planning principles. In addition, in different time of my field stay, The study used to make informal conversations with residents local government officials on several

issues related to urban land use planning were also discuss. Because informal conversations were important to adding and supporting the formal interviews.

3.8 Data Analysis and Interpretation

As indicated under study design, both descriptive and inferential statistics would apply for this study. Hence, to identifying the effect of urban land use planning and consequences on urban land use planner, management staff and community household, it's very crucial to use statistical power and useful for conclusion and discussion of its implication to the urban planner, for economic planners, for policy recommendation and any other. Therefore, both descriptive and inferential statistics would conduct for this study. Furthermore, to triangulate the data, a qualitative description of data through interview and structural plan maps of the town would also use as discussed bellows.

Descriptive Analysis

Kothari (2004) indicated descriptive statistics analysis should be the first act, to understand the characteristics of data and it is level of quality. It helps the researcher to organize, and identify for further analysis by using power full methods. Hence, also descriptive analysis i.e. skewedness of data, mean, mode and standard deviation were uses to describe the data that collected. In addition, description of maps and urban land use planning would conducted using this analysis method.

Multinomial logistic Model Analysis

Multinomial logistic model is a one of prominent regression models that allows and to predict the influence of explanatory variables. Hence, multinomial logistic model would used to examine and predict the urban land use planner, management staff and community household segments into their demographics, with the effects of urban land use planning on environmental issues. As with other types of regression, multinomial logistic regression can have nominal and/or continuous independent variables and can have interactions between independent variables to predict the dependent variable. The analysis would conducted with SPSS version 24 and the data would presented in table and graphs.

Qualitative Data Analysis

Data collected through interviews and open ended questionnaires would coded in to thematic according to their implication and concerns on the urban land use planning and other related responses. The themes identified would also analyzed along with the result of close-ended. questionnaires based on the relationships of their concern to specific factors and regression results.

3.9 Ethical Considerations

Inform verbal consent is obtain from the study subjects and data collection to be undertaken on the basis of their voluntarily participation. Participating respondents have ensure that information obtain is kept confidential and has utilize for the purpose of this research endeavor only.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter intends to reveal the findings and statistical analysis used to evaluate the research question that has been established in earlier chapters. Subsequent to the data screening process and also the chapter reports the results of the screening for errors in the sample and the procedural check on the instruments utilized. With the help of the preliminary and analysis of the results, try to assess urban land use planning and implementation versus the environmental issues in Oromia Region, Gelan sub city in Focus. Therefore, this chapter has two parts: the first part deals with the characteristics of the respondents and the second part presents the analysis and interpretation of the main data. To this end, quantitative data obtained through questionnaire items were used to answer the basic research questions.

The population of this study were the urban land use planner, management staff and community household who are living in Gelan sub city of the case study town, the urban land use planner, management staff and community household were selected systematically and yemane formula of sample sizing is used in the sample. Accordingly, 275 of urban land use planner, management staff and community household were participated in the study when 79 is from urban land use planner, management staff and 196 is from community house hold. The number of participants involved in the study and sampling proportion was statistically representative and adequate to the analysis as well as to make the inference. The respondents were provided with 275 questionnaires. Accordingly, 249 (90.55%) of Urban land use planner, management staff and community household, Oromia Region Gelan sub city completed and returned the questionnaire just in time while the remaining 26 (9.45%) of the respondents did not returned back the questionnaire for various reasons.

The collected data were analyzed by descriptive statistics such as frequency count, percentage, mean, standard deviation, T-value and P-value respectively. Data were analyzed using the “Statistical Package for the Social Sciences” (SPSS) version 24 software.

4.2 Demographic Profile of Respondents

In this research a sample of 249 respondents were participated in the survey. The demographic background of respondents was depicted in table 4.1 below.

Table 4. 1: Demographic Profile of Respondents.

		Frequency	Percent
Gender of Respondent	1 Male	153	61.2%
	2 Female	96	38.4%
	Total	249	100%
Age of Respondent	Less than 25	18	7.2%
	26-35	142	57%
	36-55	89	35.7%
	Total	249	100%
Educational Level	Diploma	15	6%
	Bachelor Degree	138	55.2%
	Master	86	34.4%
	PHD	9	3.6%
	Other	1	0.4%
	Total	249	100%
Marital Status	Single	81	32.4%
	Married	142	56.8%
	Divorce	14	5.6%
	Widowed	12	4.8%
	Total	249	100%
Job Position	Urban land use plan staff	23	9.2%
	Urban land use management staff	41	16.4%
	Others	185	74.0%
	Total	249	100%

4.2.1 Gender of Respondent

The total number of responders was 38.4% female, with the remaining 61.2% male. The sample composition indicates a higher proportion of male respondents than female employees in the study area.

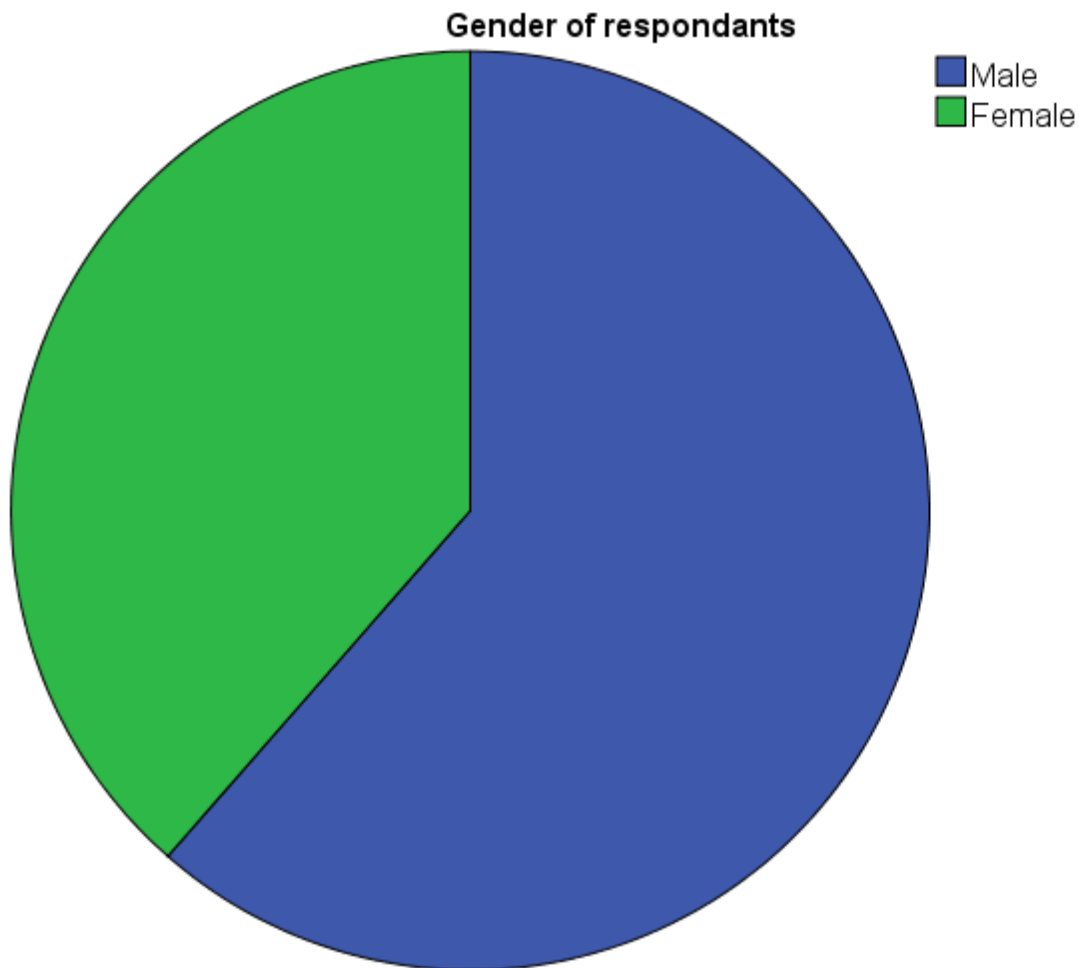


Figure 4. 1: Gender of respondent.

Source: Own computation and survey, 2023.

4.2.2 Age of Respondent

In terms of age distribution, 57% of respondents were between the ages of 26 and 35. The adult age group, 36-55 years, was represented in the sample by 35.7%. Almost 7.2% of the sample size was under the age of 25. The age composition was discovered to be evenly inclusive of all age groups who may have knowledge of the issue.

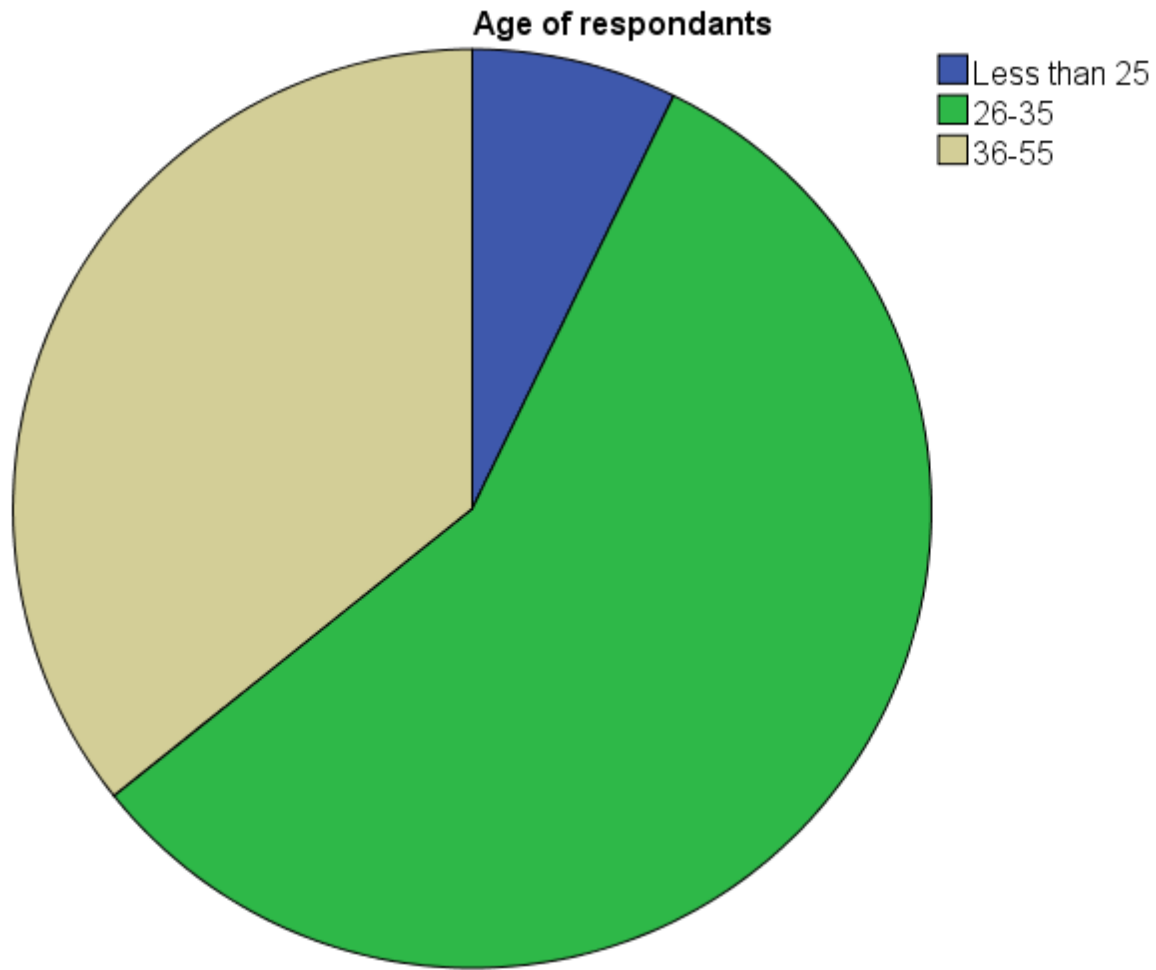


Figure 4. 2: Age of respondent.

Source: Own computation and survey, 2023.

4.2.3 Educational Level of Respondents

In terms of education, the majority of respondents (55.2%) held a Bachelor's Degree. Diploma and Master's degree holders made up 6% and 34.4% of the sample, respectively. Only 3.6% of respondents had a PHD and 0.4% had another educational level. In general, the educational level of the respondents ranges from high school to college, and they were found to grasp the survey study well enough to make relevant responses to the questions.

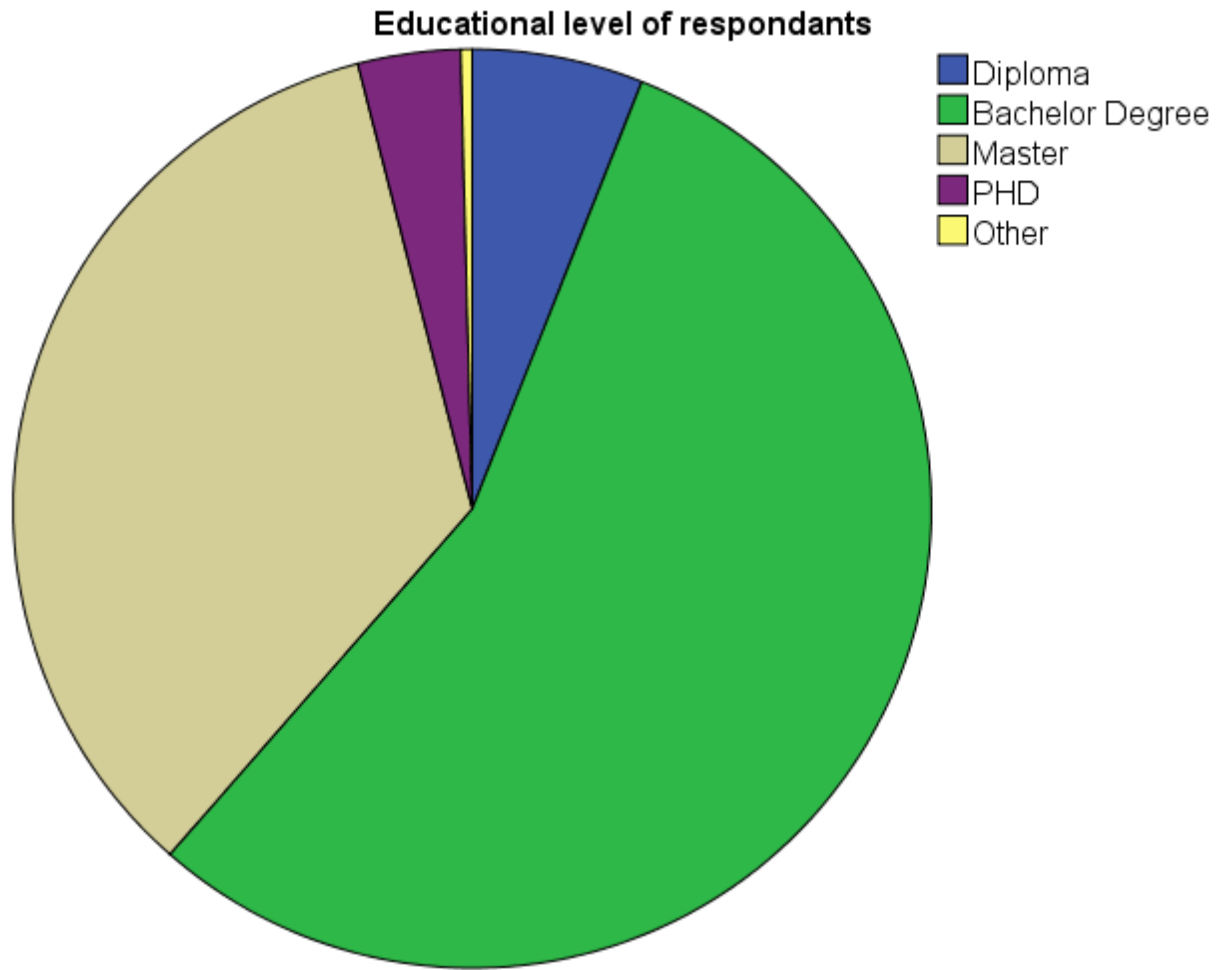


Figure 4. 3: Educational levels of respondents.

Source: Own computation and survey, 2023.

4.2.4 Marital Status of Respondents

The majority of respondents (56.8%) reported being married. There were also a sizable proportion of Single respondents (32.4%). Divorced respondents made up 5.6% of the sample, while widowed respondents made up the remaining 4.8%.

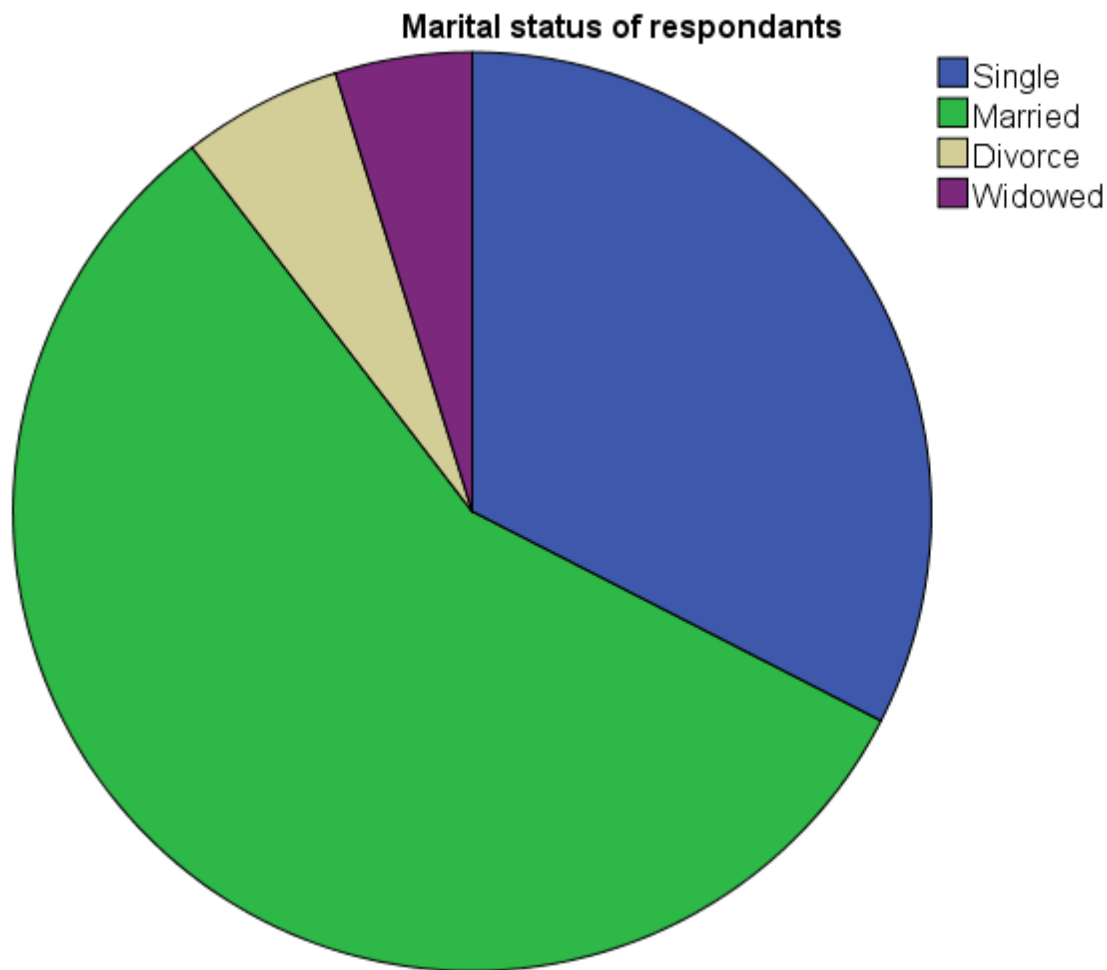


Figure 4. 4: Marital Status of Respondents

Source: Own computation and survey, 2023.

4.2.5 Job Position of Respondents

With regard to job position, the majority of respondents (74.0%) held other job positions. Staff from urban land use plans and urban land use management made up 9.2% and 16.4% of the sample, respectively. In general, the respondent's job position consists of several involved bodies that have an awareness of the survey study and can provide valuable responses to the questions.

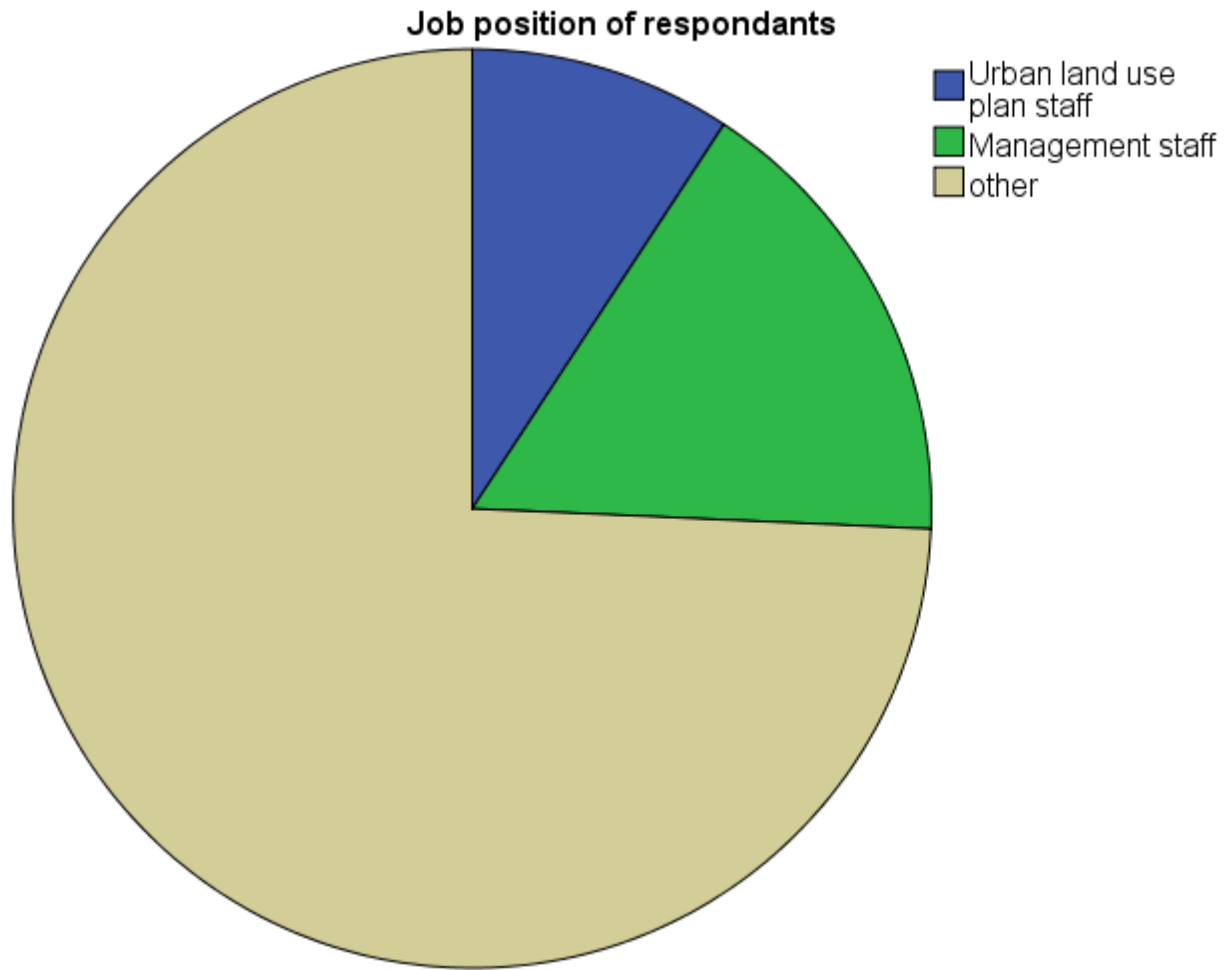


Figure 4. 5: Job Positions of Respondents

Source: Own computation and survey, 2023.

4.3 Environmental Issues Considered During the Land Use Planning

Gelan sub city urban land use planning includes most urban land use planning principle. Structural plan of the town includes Residence house, Commerce business and administration, Service, Green, open and reserved areas, Administration, industry, manufacturing, ware house depots and workshops and Road, transport utilities and infrastructure. The following picture describe structural plan of Gelan sub city.

Respondents were asked to rate the importance of various environmental issues considered during land use plan in Gelan sub city. Unfortunately, 11 (13.92%) of the respondents did not

provide valid responses to these statements. Among all 79 respondents, 68 (86.08%) complete the surveys correctly.

Among these, the respondent were asked regarding the environmental dimensions under considered during urban land use planning like industrial waste disposal, issue of greenhouse gases and is sewage and wastewater design then 57,62, and 56 of respondents chose "YES" while asked. This indicates that they believe the existence of industrial waste disposal, issue of greenhouse gases and is sewage and wastewater design

By 83.8% of respondent industrial waste disposal is considered In land use planning which is helpful for environmental dimension. The second land use planning are greenhouse issues of land, with an average grade of mean =1.09 and sewage and wastewater design (82.35%) respondents believing that this is in urban land use planning or locally (as trained).

In other hand environmental dimension considered during land use planning, afforestation and public sanitary like public toilets with $M=1.88$, and $M=1.87$ mean rate. the environmental issues examined during land use planning are not good enough for environmental conservation as The average rank given by respondent were $M=1.84$, The standard deviations for those environmental dimensions points in urban planning including rate of opinion on being enough of environmental issues included during land use planning for environmental conservation are 0.325, 0.341, and 0.371, respectively.

Table 4. 2: Environmental Issues Considered During The Land Use Plan.

	Yes	No	Total	Minimum	Maximum	Mean	Std. deviation	T-value	p-value
Does industrial wastage disposal are considered during land use planning?	57	11	68	1	2	1.16	0.371	25.824	.000
Does greenhouse issues considered?	62	6	68	1	2	1.09	0.286	31.405	.000
Do you think that as the environmental issues considered during land use planning is good enough for environmental conservation?	11	57	68	1	2	1.84	0.371	40.861	0.000
Does Afforestation is considered in urban land use planning?	8	60	68	1	2	1.88	0.325	47.822	.000
Does public sanitary (public toilet) is included in planning or urban land use?	9	59	68	1	2	1.87	0.341	45.112	.000
Does sewage and wastewater design is in planning of urban land use or locally (as trained) it is disposed?	56	12	68	1	2	1.18	0.384	25.261	.000
Validity			68						

Source: Own computation and survey, 2023.

4.3.1 Summary of Environmental Issues Considered During the Land Use Plan

In general, all Environmental issues considered during the land use plan were considerably persistent with Min 1, Max 2, average rating (mean) is $9.01/6 = 1.502$ and standard deviation $0.922/6 = 0.15$ in Gelan sub city.

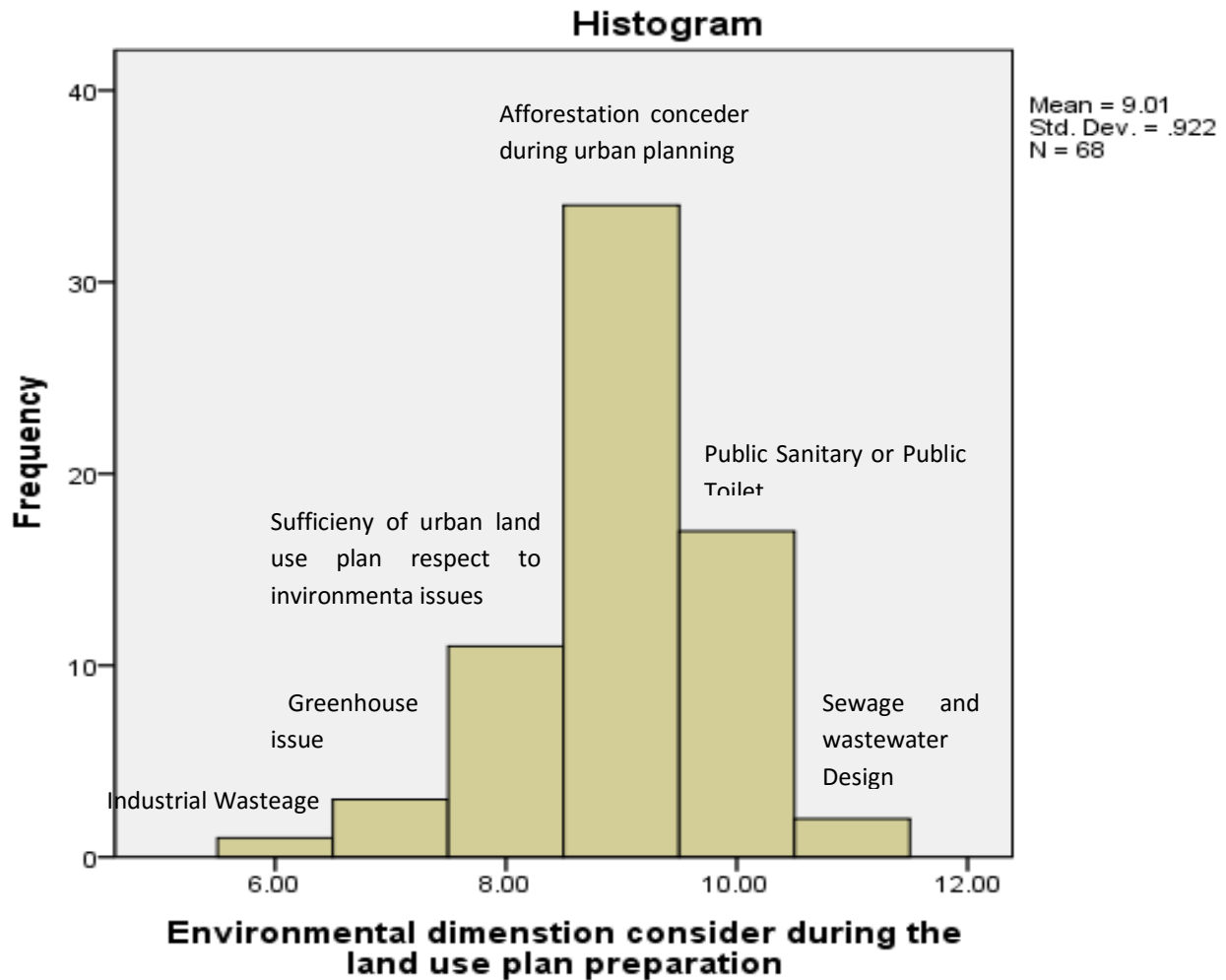


Figure 4. 6: Graphic representations of environmental dimensions during land use plan.

Source: Own computation and survey, 2023.

According to structural plan of Gelan sub city there is liquid waste disposal site, Solid waste disposal and forestation. As identified above there are wastage disposal areas in urban land use planning according respondent answer but there is no afforestation and public sanitary or public toilet. This is more likely to the structural plan of the town the existence of forest area is not the fully interchangeable with the afforestation. Those issues are clearly implied and identified as the following on structural plan of the town.

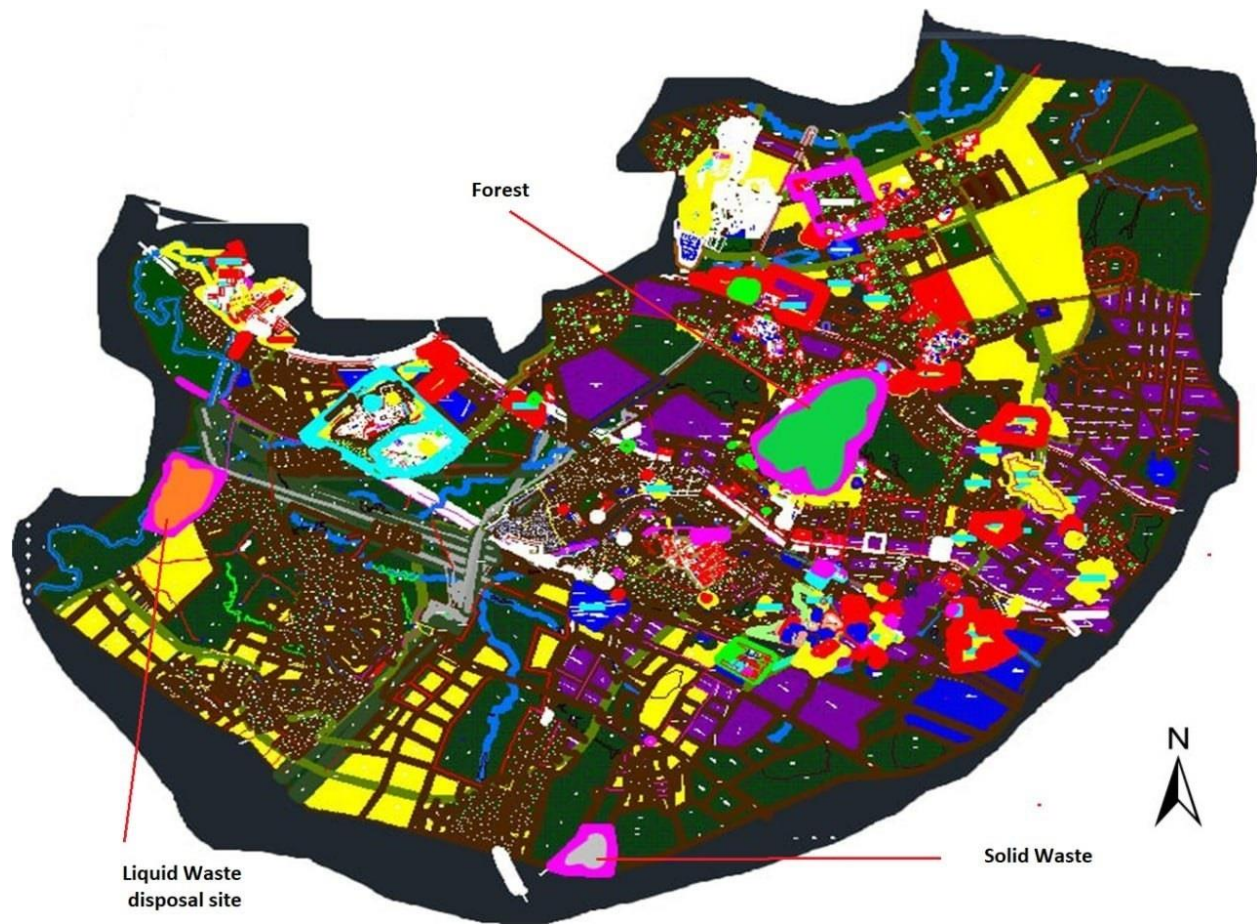
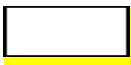
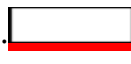
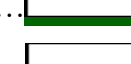
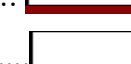


Figure 4. 7: Structural plan map of Gelan sub city with referred points.

Source: Own computation on structural plan map of Gelan sub city.

Legend

- | | | |
|--|---|--------|
| 1. Residence |  | Yellow |
| 2. Commerce, business and administration..... |  | Red |
| 3. Services |  | Blue |
| 4. Green, open space/reserved areas and recreation |  | Green |
| 5. Administration..... |  | Brown |
| 6. Industry, manufacturing, ware house depots and work shop..... |  | Violet |
| 7. Road, Transport utilities and infrastructure |  | Grey |

4.4 Procedures to Implements Environmental Issues with Respect to the Urban Land Use Planning

Respondents were asked about the scope of several concerns of Procedures to implement environmental issues in urban land use planning. This study's populations were Gelan sub city's urban land use planner, management personnel, and community households. As a result, 279 people were sampled: 79 from urban land use planners, management employees, and 196 from community households. Unfortunately, 26 of the respondents did not respond to these assertions with genuine responses. As a result, the values of 249 respondents were taken into account.

The Legislative way to implement environmental issues in urban land use planning was reported as min 1, max 5, mean 3.50, and 0.857 standard deviation. Respondents rated this issue as extremely high or high concern in the research area.

The second significant issue was Award and penalties for implementing environmental issues in urban land use planning, which received an average rating of $M=3.43$. This topic was rated as agreeable by 103 respondents and as average by 94. It is a disagree and strongly agree issue for 27 and 20 responders, respectively.

The third concerning problem was the development of rules for implementing environmental issues in urban land use planning, which received an average rating of $M=3.55$. This topic was rated as agreeable by 100 respondents and as Average by 83 respondents. It is a disagree and strongly agree level issue for 29 and 35 respondents, respectively.

The issue of providing funds for Land Use Plan implementation and cooperative/collaborative planning process is likewise a significant high-level concern, with average ratings of $M=3.04$ and $M= 3.0$, respectively. The topic was rated as disagree by 29 and 74 percent of respondents, respectively, whereas 62, 78, and 69, 65 percent of respondents rated it as average and agree.

An administrative rule within implements environmental issues with respect to the urban land use planning was also a concern in the study area. This issue was also highly persistent issue with average rating of $M=3.44$. For 99 of the respondents the issue was a concern to agree ranking extent. While 90 of respondents found the issue as average level concern; and 31 of the respondents believed it as disagree level issue.

Political oversight and involvement, GIS for management, and insufficient human resources are also key high-level concerns, with average ratings of $M=3.53$, $M=3.52$, and $M=3.34$, respectively. The topic was ranked as disagree by 37, 27 and 47 respondents, respectively, while it was ranked as agree by 107, 107, and 83 respondents, respectively. In contrast, 68, 78, and 87 percent of respondents are concerned with the average level of ranking.

Stakeholders involvement and Proper Implementation strategies like NDP within implements environmental issues with respect to the urban land use planning was also a concern in the study area. This issue was also highly persistent issue with average rating of $M=3.63$ and $M=3.58$. For 112 of the respondents the issue was a concern to the agree ranking extent. While 70 and 74 of respondents respectively found the issue as average level concern; 40 and 35 of the respondents believed it as strongly agree level issue.

Almost all issues scored considerably higher than the agree level ($p < \text{values } 0.005$), and the overall significance of the issues is appraised with an average rating of $m=3.415$ ($p\text{-value} < 0.005$). This indicates that in order to implement urban regional plans, the parties involved must thoroughly address these and associated concerns.

Table 4. 3: Procedures to Implements Environmental Issues with Respect to the Urban Land Use Planning.

	strongly disagree	disagree	Average	Agree	strongly agree	Total	Min	Max	Mean	Std. Deviation	T-value	p-value
Legislative Way	5	22	89	110	23	249	1	5	3.50	0.857	64.38	.000
Award and penalties	5	27	94	103	20	249	1	5	3.43	0.863	62.60	.000
Development of guidelines	2	29	83	100	35	249	1	5	3.55	0.902	62.13	.000
Providing budget for implementation of Land Use Plan	18	74	62	69	26	249	1	5	3.04	1.133	42.38	.000
Cooperative/colaborative planning process	11	77	78	65	18	249	1	5	3.01	1.020	46.53	.000
Administrative rules	4	31	90	99	25	249	1	5	3.44	0.892	60.87	.000
Political oversight and involvement	3	37	68	107	34	249	1	5	3.53	0.946	58.87	.000
GIS for management	6	27	78	107	31	249	1	5	3.52	0.929	59.81	.000
Inadequate human capital	4	47	87	83	28	249	1	5	3.34	0.962	54.72	.000
Stakeholders involvement	7	20	70	112	40	249	1	5	3.63	0.941	60.92	.000
Proper Implementation strategies like NDP	9	19	74	112	35	249	1	5	3.58	0.947	59.67	.000

Source: Own computation and survey, 2023.

4.4.1 Summary of Procedures to Implements Environmental Issues with Respect to the Urban Land Use Planning

In general, all Procedures to implements environmental issues with respect to the urban land use planning were considerably persistent with Min 1.27, Max 4.72, average rating (mean) is 3.415 and standard deviation 0.509 in Gelan sub city.

Table 4. 4: Summary of Procedures to Implements Environmental Issues with Respect to the Urban Land Use Planning.

	No	Min	Max	Mean	Std. Deviation
Procedures to implements environmental issues with respect to the urban land use planning	249	1.27	4.72	3.415	0.509
Validity	249				

Source: Own computation and survey, 2023.

4.5 Factors Influencing Implementation of Environmental Issues

Respondents were asked for the extent of different issues of 4.5 Factors influencing implementation of environmental issues. The populations of this study were the urban land use planner, management staff and community household who are living in Gelan sub city of the case study town. Accordingly the sampling sizing was 279, among all 79 form urban land use planner, management staff and 196 from community household. Unfortunately, 26 of the respondents were not addressed these statements with valid responses. So that 249 respondents values were considered.

The Factors Influencing Environmental Issue Implementation Missed planned land use and interchangeable intended land use issues were given as min 1, max 5, mean 3.69, 3.78, and 1.058,0.931 standard deviations. This topic was identified as a very high and high level of concern by 116 and 127 respondents in the study area, respectively.

The other concerning issue was Over population of people over urban lands which was rated with average rating of M=3.32. This issue was considered to the agree extent by 68 people of the

respondents and as Average level issue by 83 people of the respondents. It is a disagree and strongly agree level issue for 35 and 43 respectively of the respondents.

Low consideration of planned land use by community and government, as well as the transfer of property from public to private ownership, are also substantial high-level concerns, with average rating means of $M=3.91$ and $M=3.94$, respectively. The issue was rated as disagree by 16 and 26 respondents, respectively, while the issue was rated as average by 47,30 and 105,99 respondents, respectively.

Management factor, Absence of Leaders' Commitment and Absence of Good Governance was also a concern in the study area. This issue was also highly persistent issue with average rating of $M=3.97$, $M=3.39$ and $M= 3.37$. For 81, 28 and 38 of the respondents the issue was a concern to the agree ranking extent. While 62, 73 and 92of respondents found the issue as average level concern; and 10, 35 and 32 of the respondents believed it as disagree level issue.

Management factor and frequent land zoning are also important high-level concerns, with average ratings of $M=3.97$ and $M=3.18$, respectively. The topic was rated as disagree by 10, 42, and 94 respondents, respectively, while it was rated as agree by 94 and 77 respondents. On the other side, 62 and 77 percent of respondents are concerned about the average level of ranking.

Poor structural/land use Plan Preparations and Inadequate technical and human capita within influences environmental issues with respect to the urban land use planning was also a concern in the study area. This issue was also highly persistent issue with average rating of $M=3.69$ and $M= 3.49$ for 103 and 93 of the respondents the issue was a concern to the agree ranking extent. While 55 and 79 of respondents respectively found the issue as average level concern; 57 and 39 of the respondents believed it as strongly agree level issue.

Table 4. 5: Factors Influencing Implementation of Environmental Issues.

	Strongly disagree	Disagree	Average	Agree	Strongly agree	Total	Min	Max	Mean	Std. Deviation	T-value	P-value
Miss use of planned land use.	11	27	43	116	52	249	1	5	3.69	1.058	54.990	.000
Interchangeable use planned land use.	6	19	48	127	49	249	1	5	3.78	0.931	64.069	.000
Over population of people over urban lands.	20	35	83	68	43	249	1	5	3.32	1.153	45.353	.000
Low consideration of planned land use by community and government.	6	16	47	105	75	249	1	5	3.91	0.980	63.001	.000
Change of land from public ownership to private ownership	7	26	30	99	87	249	1	5	3.94	1.068	58.141	.000
Management factor.	2	10	62	94	81	249	1	5	3.97	0.900	69.653	.000
Heritage ownership of land by community.	14	51	106	59	19	249	1	5	3.07	0.985	49.210	.000
Absence of Leaders' Commitment	12	35	73	101	28	249	1	5	3.39	1.019	52.560	.000
Absence of Good Governance	13	32	92	74	38	249	1	5	3.37	1.055	50.400	.000
Frequent Land zoning	24	42	77	77	29	249	1	5	3.18	1.141	43.989	.000
Poor structural/land use Plan Preparations	11	23	55	103	57	249	1	5	3.69	1.061	54.890	.000
Inadequate technical and human capita	12	26	79	93	39	249	1	5	3.49	1.032	53.284	.000

Source: Own computation and survey, 2023.

4.5.1 Summary of Factors Influencing Implementation of Environmental Issues

In general, all Factors influencing implementation of environmental issues were considerably persistent with Min 2, Max 5 average rating (mean) is 3.566 and standard deviation 0.571 in Gelan sub city.

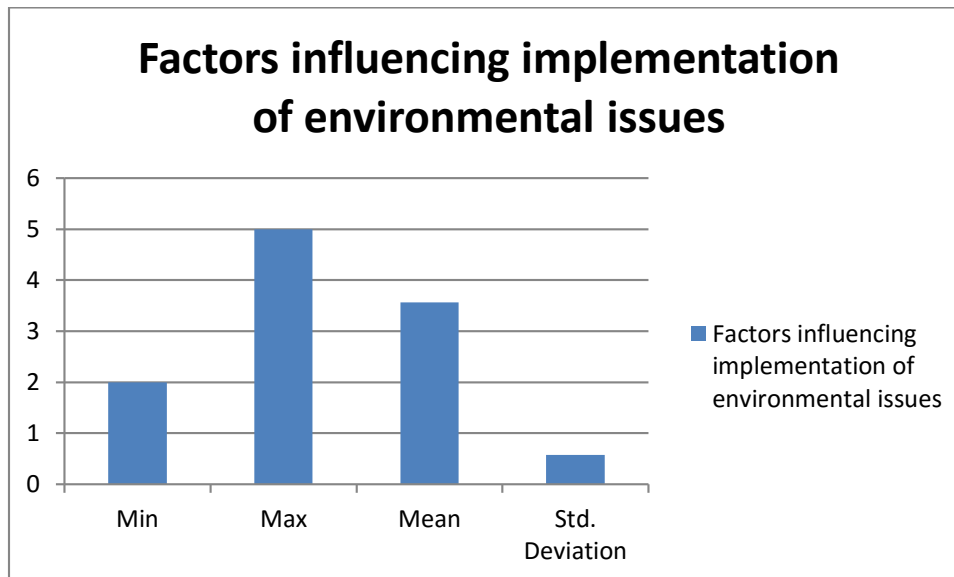


Figure 4. 8: Factors Influencing Implementation of Environment Issues.

Source: Own computation and survey, 2023.

4.6. Contribution of Stockholders in Implementation of Land Use Planning

The extent of several concerns of 4.6 contribution of stockholders and community in land use planning implementation was inquired of respondents. the study's populations were Gelan sub city's urban land use planner, management staff, and community households. As a result, the sample size was 279, with 79 coming from urban land use planners, management professionals, and 196 coming from community households. Unfortunately, 26 of the respondents did not respond to these statements correctly. As a result, the responses of 249 people were taken into account.

4.6.1 Contribution of Government on Implementation of Land Use Planning

Attention paid to domain of land use planning implementation Strategy and Contribution in management of implementation was a concern point in the study area. This issue was highly persistent issue with average rating of 2.62 and 2.65. For 49 and 42 of the respondents the issue

was a concern to agree ranking extent. While 53 and 62 of respondents found the issue as average level concern; and 103 and 109 of the respondents believed it as disagree level issue.

Providing punishment policy to force community to implement land use planning and Greater integration of land use regulation across sector within Contribution of government on implementation of land use planning with respect to the urban land use planning was also a concern in the study area. This issue was also highly persistent issue with average rating of M=2.56 and M= 2.29 for 39 and 29 of the respondents the issue was a concern to agree ranking extent. While 52 and 31 of respondents respectively found the issue as average level concern; 18 and 13 of the respondents believed it as strongly agree level issue.

Table 4. 6: Contribution of Government on Implementation of Land Use Planning.

	Strongly disagree	Disagree	Average	Agree	Strongly agree	Total	Min	Max	Mean	Std. Deviation	T- value	P-value
Attention paid to domain of land use planning implementation strategy	32	103	53	49	12	249	1	5	2.62	1.086	38.104	.000
Contribution in management of implementation of land use planning.	23	109	62	42	13	249	1	5	2.65	1.033	40.492	.000
Providing punishment policy to force community to implement land use planning.	44	96	52	39	18	249	1	5	2.56	1.163	34.773	.000
Greater integration of land use regulation across sector	56	120	31	29	13	249	1	5	2.29	1.098	32.888	.000

Source: Own computation and survey, 2023.

4.6.1.1 Summary of Contribution of Government on Implementation of Land Use Planning

In general, all Contribution of Government on Implementation of Land Use Planning were considerably persistent with Min 2, Max 5 average rating (mean) is 2.53 and standard deviation 0.899 in Gelan sub city (Figure 4.9).

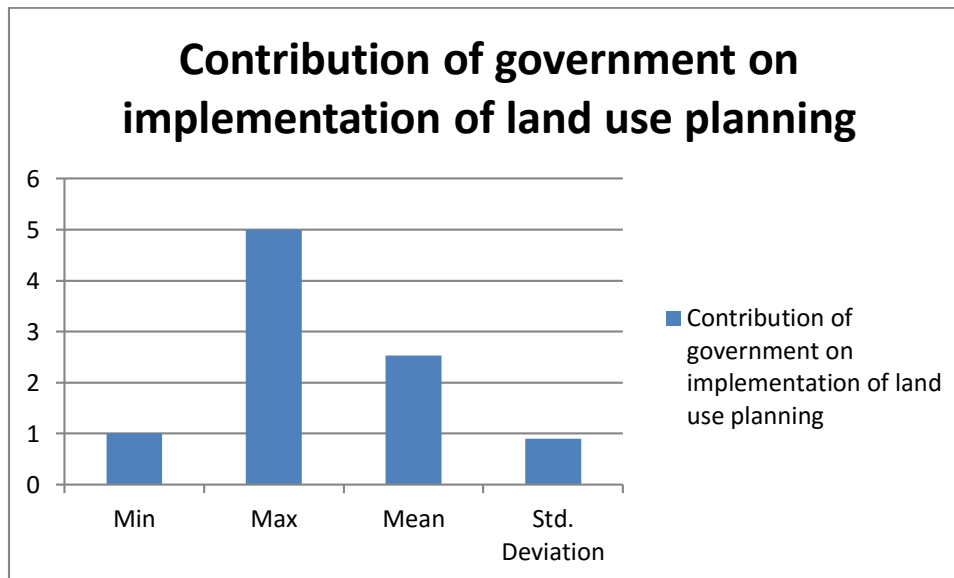


Figure 4. 9: Contribution of Government on Implementation of Land Use Planning.

Source: Own computation and survey, 2023.

4.6.2 Contribution of Community on Implementation of Land Use Planning

Action of taking cover and protection to public space and Reaction to the land use rule and regulation was concern points in the questionnaire. This issue was highly persistent issue with average rating of M= 2.62 and M= 2.65. For 81 and 85 which is concern to the average ranking extent. While 96 and 108 of respondents found the issue as agree level and 31 and 30 of the respondents believed it as disagree level issue.

Participation in sustainable environment respect to implementation of land use planning and Greater integration of land use regulation across sector within Contribution of community on implementation of land use planning with respect to the urban land use planning was also a concern in the study area. This issue was highly persistent issue with average rating of M=3.24 and M=2.60. For 81 and 48 of the respondents the issue was a concern to agree ranking extent.

While 80 and 41 of respondents respectively found the issue as average level concern; 25 and 22 of the respondents believed it as strongly agree level issue.

Table 4. 7: Contribution of Community on Implementation of Land Use Planning.

	Strongly disagree	Disagree	Average	Agree	Strongly agree	Total	Min	Max	Mean	Std. Deviation	T-value	P-value
Action of taking cover and protection to public space.	8	31	81	96	33	249	1	5	3.46	0.979	55.776	.000
Reaction to the land use rule and regulation	1	30	85	108	25	249	1	5	3.51	0.848	65.258	.000
Participation in sustainable environment respect to implementation of land use planning	7	56	80	81	25	249	1	5	3.24	1.004	50.994	.000
Greater integration of land use regulation across sector	75	62	41	48	22	249	1	5	2.60	1.860	22.046	.000

Source: Own computation and survey, 2023.

4.6.2.1 Summary of Contribution of Community on Implementation of Land Use Planning

In Gelan, the average rating (mean) is 3.20, with a standard deviation of 0.814 for Contribution of Community on Implementation of Land Use Planning (Figure 4.10).

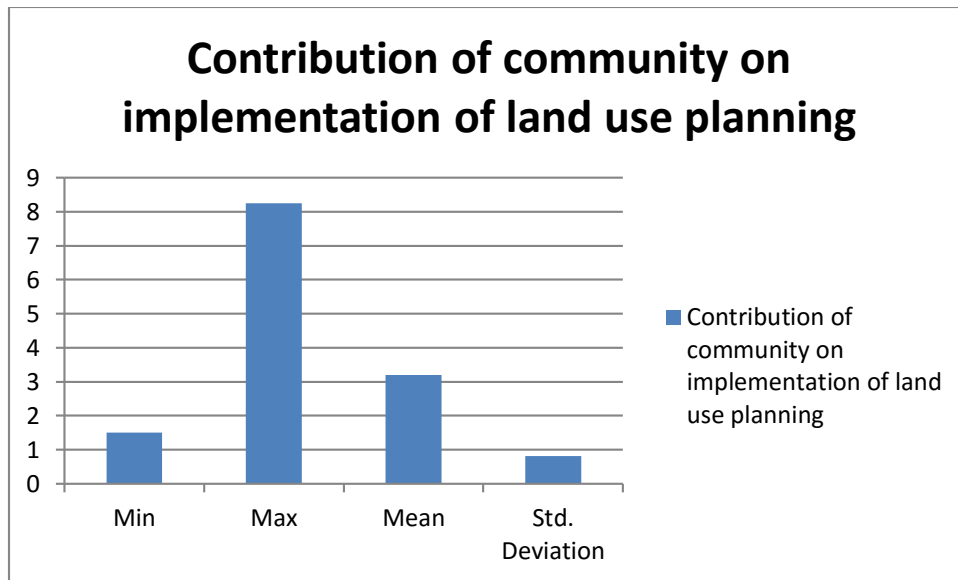


Figure 4. 10: Contribution of Community on Implementation of Land Use Planning.

Source: Own computation and survey, 2023.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter presents the summary of findings, conclusion and recommendation based on the findings from the study. Summary of findings and conclusions from the estimated results is presented in the next section whilst section presents policy implications on the basis of the findings of this study.

5.2 Summary of the findings

The main objective of the study is to examine of urban land use planning and its implementation with respect to environmental dimension, the case of Gelan sub city, Sheger city, Oromia national regional state. In this study there are four specific objectives for which the researcher collected data and analyzed it as it is shown in chapter four as following.

The specific objectives of the study are:-

- ✚ To identify environmental issues consider during the land use plan preparation.
- ✚ To identify and gather procedures to implements environmental issues with respect to the urban land use planning in the town.
- ✚ To identify factors influencing implementation of environmental issues.
- ✚ To examine contribution of stockholders and community on urban land use planning implementation to environmental issues.

This research attempted to investigate urban land use planning versus environmental challenges in the instance institution. Issues were examined with the goal of comprehending the facts from the perspectives of urban planners, management personnel, and community residents. The study used a predominantly quantitative research approach, assuming that reality is socially produced by participants and that there are numerous truths. This research approach was appropriate since the researcher was attempting to comprehend the complexities of the problem under examination holistically through living experience, perceptions, and perspectives.

For the purpose of this study, a descriptive survey method was employed to disclose the understanding of respondents on the issue under study. This method was chosen with the assumption that it helps to conduct data as it exists and to gather several data related to the problem under study. Both primary and secondary sources of data were used. Data were generated via Questionnaire. The respondents were provided with 275 questionnaires. Accordingly, 249 (90.55%) of urban planner, management staff and community house holder of Gelan sub city completed and returned the questionnaire just in time while the remaining 26(9.45%) of the respondents did not return back the questionnaire for various reasons. The data secured through questionnaire was analyzed quantitatively and to this effect, the study attempt to answer the following basic questions:

- What are environmental issues considered during the land use plan preparation?
- What are steps applied to implement environmental issues with respect to urban land use planning in the town?
- What are the factors influencing implementation of environmental conservation in Gelan sub city respect to urban land use planning?
- Who are contributing to urban land use planning implementation to environmental issues and what are stockholders and community contributions?

5.2.1 Characteristics of the Respondents

Related to the demographic characteristics of respondents Table 4.1 specifies that majority of the respondents 61.2% were male headed. Regarding their age level majority of the respondents were in the age group of 26-35 years 142 (57%) and followed by 36-55 years 89 (35.7%). Regarding to level of education, Bachelor Degree is majority by 138(55.2%) of respondent and followed by masters. More 142 (56.8%) of the respondents have been married. Regarding religion majority of the respondents were urban land use management staff 41 and 176 other job status.

5.2.2 Major Findings

Regarding to the environmental issues consider during the land use plan preparation table 4.3 shows the Industrial wastage disposal, greenhouse issues and sewage and wastewater design are considered during urban land use planning as 57, 62 and 56 of respondent respectively response .

Afforestation and public sanitary (public toilet) are not included in planning of urban land use as 60 and 59 respondent response “No” respectively. That is why they do not think that as the environmental issues considered during land use planning is good enough for environmental conservation according to 57(83.82%) respondent rate.

All over, environmental issues considered during the land use plan were considerably persistent with Min 1, Max 2, average rating (mean) is 1.502 and standard deviation 0.15 in Gelan sub city.

Related to Procedures to implements environmental issues with respect to the urban land use planning there are a lot of rules and regulation. From among as per table 4.4 indicated that majority of the respondents 110, 103 and 100 people agree with the Legislative Way, Award and penalties and Development of guidelines are ways of implements environmental dimension with respect to the urban land use planning with the mean 3.50, 3.43 and 3.55. The standard deviation of those indicated methods of implementation are 0.857, 0.863 and 0.902 where t- value be 64.389, 62.609 and 62.131 while p- value is .000 for all. Administrative rules, Political over sight and involvement. GIS for management, inadequate human capital, Stakeholder’s involvement and Proper Implementation strategies like NDP are also issues pointed under Procedures to implements environmental issues with respect to the urban land use planning with agree rate level.

However there are a lot of rule and regulation steps to implementation of the plan, Providing budget for implementation of Land Use Plan and Cooperative/ collaborative planning process steps are concerns with moderate level of rating. As per table 4.4 indicated by 62 and 78 respondent respectively with the mean 3.04 and 3.01. The standard deviation of those indicated methods of implementation are 1.133 and 1.020, where t- value be 42.387 and 46.538 while p- value is .000 for all.

The most prevailing concern in Gelan sub city is Factors influencing implementation of environmental issues. The pointes listed under Factors influencing implementation of environmental issues in the study area are Miss use of planned land use, Interchangeable use of planned land use, Over population of people over urban lands, Low consideration of planned land use by community and government, Change of land from public ownership to private ownership. Management factor, Heritage ownership of land by community, Absence of Leaders

Commitment, Absence of Good Governance, Frequent Land zoning, Poor structural/land use Plan Preparations and Inadequate technical and human capita. As the findings indicate in table 4.6 almost majority of respondents are agree with the issues listed above as factors influencing implementation of environmental issues in Oromia region Gelan sub city. According to the descriptive analysis all points influencing implementation with mean value above 3 and p- value .000 rating values. But Over population of people over urban lands, Absence of Good Governance, Heritage ownership of land by community and Frequent Land zoning are rated with the average (moderate) ranking level. This indicate that among the other points those four points are relatively not much influencing the implementation of urban land use planning.

In general, all Factors influencing implementation of environmental issues were considerably persistent with Min 2, Max 5 average rating (mean) is 3.566 and standard deviation 0.571 in Gelan sub city.

The other specific objective of the study is Contribution of stockholder on implementation of land use planning. Under this specific objective the researcher classifies in to two points: Contribution of government on implementation of land use planning and Contribution of community on implementation of land use planning. Under those stockholders there are points which describe the level of them.

Contribution of government on implementation of land use planning is evaluated under Attention paid to domain of land use planning implementation strategy, Contribution in management of implementation of land use planning, providing punishment policy to force community to implement land use planning and Greater integration of land use regulation across sector. However all are rated with disagree ranking level with average rating of mean under 3 and p- value .000 which indicate the significance. In general, all Factors influencing implementation of environmental issues were considerably persistent with Min 2, Max 5 average rating (mean) is 2.53 and standard deviation 0.899 in Gelan sub city.

Contribution of community on implementation of land use planning are another stockholder which evaluated under Action of taking cover and protection to public space, Reaction to the land use rule and regulation, Participation in sustainable environment respect to implementation of land use planning and Greater integration of land use regulation across sector. The first three

points are ranked with the agree ranking level and have average rate mean above 3 with .000 p-value, but the last Reaction to the land use rule and regulation point is rated with disagree ranking level, and also it have average rate mean under 3 which indicate the disagreement of respondent with p – value .000.

5.3 Conclusion

The following conclusions were made based on the findings of the study and the evidence allow us to conclude that, assessing the urban land use planning implementation versus the environmental issues in Oromia Region Gelan sub city were analyzed and concluded as follows.

- Urban land use planning in oromia region, Sheger city, Gelan sub city includes varies of environmental issues like: wastage disposals, green house issues and sewage and wastewater design. It is an indication of that there is no problem with regard to planning principle as the study shows. However, more rate of respondent believes that environmental issues considered during land use planning are not good enough for environmental conservation.
- Environmental issues consideration during urban land use preparation in study sub city excludes afforestation and public sanitary (public toilets) from part of the plan. Whatever the benefits of afforestation can help protect bare ground from soil erosion, flooding and sequester carbon dioxide from the atmosphere. Well managed afforestation can provide jobs, income from the sale of high-value timber products, social benefits, carbon emission reductions and in previously forested areas afforestation can reverse biodiversity losses and provide carbon sinks, which are natural environments that are able to absorb carbon dioxide from the atmosphere. Also, Poor public sanitation is linked to transmission of diseases such as cholera and dysentery, as well as typhoid, intestinal worm infections and polio. To keep public health those specified items are essential.
- Procedures to implementation of environmental issues with respect to urban land use planning are guidelines with rules and regulations like: legislative ways, awards and penalties, guidelines and administrative rules in Gelan sub city to implementation of environmental issues. But, budget provided for implementation of the land use plan and cooperative/collaborative planning process of government is rated with the average ranking level.
- Whether there are a legal rules and regulations regarding implementation of urban land use planning and environmental issues there are also factors influencing the implementation of urban land use planning and environmental issues. From those influencing factors some are Miss use of planned land use, Interchangeable use planned

land use, Low consideration of planned land use by community and government, Change of land from public ownership to private ownership and Management factor. Then the respondents ranking with the agree ranking level, which implies those factors are practiced in Gelan sub city. This leads the management of plan.

- Government contributions are at a low level for implementation of urban land use planning and environmental issues. In the town Attention paid to domain of land use planning implementation strategy, Contribution in management of implementation of land use planning, providing punishment policy to force community to implement land use planning and Greater integration of land use regulation across sector are all valueless according to the respondent.
- Community contributions are more remarkable relating to the Government in implementation of urban land use planning and environmental issues. Whatever some good reactions regarding the contribution but it also needs more attention to the issue.

5.4. Recommendations

The findings of this study are believed to have some practice recommendations. The implication might show areas of intervention to improve the most wanted urban land use planning and environmental issues. As we think of improving the implementation of land use planning in Oromia Region, Gelan sub city. Accordingly, the following recommendations are made on the basis of the research findings and the conclusion.

- ❖ To implementation of environmental issues with respect to urban land use planning incorporating concreted rules and regulations regarding urban land use planning. As the study implies above there are many factors influencing implementation of urban land use planning. To overcome those factors it must incorporate rules and regulations that cannot pass away by personal interests and governmental bodies.
- ❖ Environmental issues considerations during urban land use preparation in study sub city have to include afforestation and public sanitary (public toilets) from part of the plan. As urban planner public sanitary or public toilet is very essential for one country development, because it is directly related with health of human beings.
- ❖ Environmental issues are essential things in human beings life the stockholder should take their part and responsibility. Either government or community stockholders should pay attention to implementation of urban land use planning to keep the environmental issues.
- ❖ Training and awareness creation should be given to the community to motivate the passion for environmental issues and urban land use planning. This helps the country to minimize the factors that influence the achievements of the plan implantation respecting community and leads to the concept of understanding the importance of plan is publically, not for government.
- ❖ The researcher recommends that efforts need to be made to make the urban land use planning and implementation process participatory, all-inclusive and collaborative enough so that the sustainability of the Gelan sub city would be ensured, competent and responsible institutional frameworks for responsive and proactive management land and land related issues of the town.

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APPENDIX

RESEARCH QUESTIONNAIRES

Dear Respondent

I am in the process of completing my studies towards a Masters of Urban Planning and Design (Msc) Degree in Department of Architectural & Urban planning & design, and this research study forms part of the requirements of the qualification. My research undertaking is Urban Land Use Planning and Its Implementation with Respect to Environmental Issues, The Case of Oromia Region Gelan sub city.

I would much appreciate it, if you could kindly take a little of your time to complete the attached questionnaires. Any information provided by you is for academic purposes only and all responses would be treated with the confidentiality.

Your co-operation is most valued and appreciated and I take this opportunity of thanking you in advance for your kind participation and timeous return of your completed questionnaire.

Yours in Appreciation

INSTRUCTIONS:

- ✓ No need of writing your name
- ✓ Indicate your answers with a check mark (✓) or (x) in the appropriate box.

Note: Questionnaires are prepared for government employee and Gelan sub city community.

A. Gender: 1. Male ☐

2. Female ☐

B. Age: 1. Less than 25 ☐

2. 26-35 ☐3. 36- 55 ☐

C. level of education: 1. Diploma ☐ 2. Bachelor Degree ☐ 3. Master ☐

4. PHD ☐

5. Other sate here: -----

D. Marital Status: 1. Single ☐

2. Married ☐

3. Divorce ☐

4. Widowed ☐

E. What is your current job position in the organization? Only if you are government employee -----

PART TWO: FOCAL PERSON INTERVIEW

A: ORGANIZATIONAL CULTURE

You are requested to rating each statement of effect of organizational culture to indicate you level of agreement with what the statement is suggesting, where the following ratings are:

1. Does industrial wastage disposal are considered during land use planning.

Yes ☐

No ☐

If your answer is No what methods or issues included in land use planning to control industrial wastage?

2. . Does greenhouse issues considered?

Yes ☐

No ☐

If No What issues considered in urban land use planning to overcome greenhouse wastage?

3. . Do you think that as the environmental issues considered during land use planning is good enough for environmental conservation?

Yes ☐

No ☐

4. . Does Afforestation is considered in urban land use planning?

Yes ☐

No ☐

If No, if any regarding desert and biodiversity.

5. Does public sanitary (public toilet) is included in planning or urban land use?

Yes ☐

No ☐

If anything regardsanitary_____

6. Does sewage and wastewater design is in planning of urban land use or locally (as trained) it is disposed?

Yes ☐

No ☐

PART THREE: QUESTIONNAIRE FOR ALL

1. Steps used in implementation of environmental issues

1 = strongly disagree 2 = disagree 3 = Average 4 = agree 5 = strongly agree Please place a tick (✓) or a mark (x) in the box (cell) that represents you appropriate effect of organizational culture rating.

S/No	Points	Ranking				
		1	2	3	4	5
1	Legislative Way					
2	Award and penalties					
3	Development of guidelines					
4	Providing budget for implementation of Land Use Plan					
5	Cooperative/collaborative planning process					
6	Administrative rules					
7	Political over sight and involvement					
8	GIS for management					
9	Inadequate human capital					
10	Stakeholders involvement					
11	Proper Implementation strategies like NDP					

2. Factors influencing implementation of environmental issues

1 = strongly disagree 2 = disagree 3 = Average 4 = agree 5 = strongly agree Please place a tick (√) or a mark (x) in the box (cell) that represents you appropriate effect of organizational culture rating.

S/N	Points	Ranking				
		1	2	3	4	5
1	Miss use of planned land use.					
2	Interchangeable use planned land use.					
3	Over population of people over urban lands.					
4	Low consideration of planned land use by community and government.					
5	Change of land from public ownership to private ownership.					
6	Management factor.					
7	Heritage ownership of land by community.					
8	Absence of Leaders' Commitment					

9	Absence of Good Governance					
10	Frequent Land zoning					
11	Poor structural/land use Plan Preparations					
12	Inadequate technical and human capital					

3. Contribution of stockholders and community in implementation of land use planning.

1 = strongly disagree 2 = disagree 3 = Average 4 = agree 5 = strongly agree Please place a tick (✓) or a mark (x) in the box (cell) that represents you appropriate effect of organizational culture rating.

❖ Contribution of government on implementation of land use planning.

S/N	Points	Ranking				
		1	2	3	4	5
1	Attention paid to domain of land use planning implementation strategy.					
2	Contribution in management of implementation of land use planning.					
3	Providing punishment policy to force community to implement land use planning.					
4	Greater integration of land use regulation across sector.					

❖ Contribution of community on implementation of land use planning.

1 = strongly disagree 2 = disagree 3 = Average 4 = agree 5 = strongly agree Please place a tick (✓) or a mark (x) in the box (cell) that represents you appropriate effect of organizational culture rating.

S/N	Points	Ranking				
		1	2	3	4	5
1	Action of taking cover and protection to public space.					

2	Reaction to the land use rule and regulation.					
3	Participation in sustainable environment respect to implementation of land use planning.					
4	Greater integration of land use regulation across sector.					

Thank you!