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Challenges of urban plan implementation in small towns of Ethiopia:

The case of Gelan town

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DECLARATIONS

I, Habtamu Legesse Simie, Registration Number GSR/2268/02 do hereby declare that this thesis is my original work and that it has not been submitted partially or in full by any other person for an award of a degree in any other University

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Abstract

The sudden establishment and eventual growth of *Gelan* town brought many urban plan implementation challenges that need to be investigated to minimize the spillover impacts of urbanization in *Gelan* town. *Gelan* town is established after the establishment of some investments and has been grown by displacing and affecting the livelihood of local farmers. The overall impacts of urbanization on the local farmers requires to look into the local ecology towards which *Gelan* town is expanding, role of investments operating in the area, the plan that guides development and future expansion.

This research is an attempt to investigate the challenges of urban plan implementation in *Gelan* town with a particular emphasis on the livelihood of farmers, role of investments of the town to the local economic development and ground water resource of the area. Accordingly, to look into the issues I have used both qualitative and quantitative data collection and analysis techniques.

Data collected through interviews, questionnaires and field observations were analyzed and presented through discussions, tables, figures and maps.

The findings revealed that most investments and recreational centers before the establishment of *Gelan* are located along highway and occupy large blocks that hinder accessibility of land uses at the back. The ground water catchment area of *Akaki* partially within the planning unit of *Gelan* town. Intensive constructions taking place in the area is believed to have a negative impact on the ground water recharge of the area from where water is supplied to the population of southern Addis Ababa. The research also found out that farmers whose livelihood is based on farming are forced to change their livelihood strategies by renting farmland using money obtained through compensation. As a result, the livelihood of farmers is negatively affected.

The analysis of *Gelan* town structure plan showed that the plan was implemented poorly and lacked plan evaluation, monitoring and updating taskforce. As a result, irregular and irrational development as well as incompatible land uses are common along Addis Ababa-Adama highway crossing the town.

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God bless you all

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Acronyms

ADLI: Agriculture Development Led Industrialization

AAMPPO: Addis Ababa Master Plan Project Office

AAWSA: Addis Ababa water and sewerage authority

FAO: Food and Agricultural Organization

MSE: Micro and Small Scale Enterprises

LDP: Local Development Plans

IDP: Integrated Development Plan

IUDP: Integrated Urban Development Plan

NH_3: Ammonia

KOSPI: Kombolcha steel Products Industry

OUPI: Oromia Urban Planning Institute

RPU: Regional Urban Planning Unit

WHO: World Health Organization

Chapter One

1.1. Introduction

Urban planning is designed to regulate the use of land and other physical resources for public interest with objective of increasing the quality of life and wellbeing of people living in cities. In most countries, urban or spatial planning refers to the planning of the physical structure of development or land use planning. Historically, master plans have played a central role in urban planning process. Master planning approach has been changed/improved but this remains the initial urban planning point for many countries. Kent's General plan is a long-range physical development in terms of land use, circulation and community facilities. The plan might also include sections on civic design and utilities, and special areas, such as historic preservation and redevelopment areas. The plan is vision of the future, but not a blue print; a policy statement, but not a program of action; a formulation of goals, but not schedules, priorities, or cost estimates (*Edward J.Kaiser and David R. Godschalk, 1995).*

According to Kent (1964), plan should emphasize policy with the following functions:

- Policy determination- to provide a process for a community to debate/decide on policy
- Policy communication- to inform those concerned with development (officials, developers, citizens, the courts, and others) and educate them about future possibilities
- Policy effectuation- to serve as general reference for officials deciding on projects

T.J. Kent's urban general plan (1964) that gave chance for community participation was later developed to F. Stuart Chapin and Jr.'s urban land use plan. It was of a generalized, but scaled, design for the future use of land, covering private land uses and public facilities…. Later, the land use plan would become a cornerstone in the comprehensive plan serving as a reference point for officials or implementing bodies.

The format of Chapin's land use plan included a statement of objectives, a description of existing conditions and future needs for space and services, together with mapped proposal for future development. This shows that planning concepts and practices have continued to evolve since mid century, maturing in the process (*Edward J.*, et al, 1995).

By 1970s, a number of new ideas have taken root increasing several distinct branches of the family tree trunk (the early genealogy is represented as the root of a tree and the general plan constituting consensus practice at midcentury). This includes land use

design, land classification plan, verbal policy plan and development management plan (*Edward J*., et al, 1995).

The contemporary hybrid plan identifies the common elements of land use governance systems, (*Edward J*., et al, 1995):

- Consistency- inter governmentally and internally (i.e., between plan and regulations)
- Concurrency-between infrastructure and new development
- Compactness- of new growth to limit urban sprawl affordability
- Economic development- or "managing to grow"
- Sustainability- of natural systems … which base on three core values, namely, social equity, environmental stewardship, and economic security and opportunity

Today's prototype land use design continues to emphasize long range urban form for land uses, community facilities, and transportation systems by maps, but the design is expressed by general policies, (*Edward J*., et al, 1995).

From the above development of planning processes it can be understood that planning is no longer perceived as a random set of activities brought together to achieve some blue print for the future. Planning is rather the interconnectedness of decision areas explicitly recognized in a cyclical process to enable planners to address new problems as and when they arise at different stages of planning.

The stages in the planning process according to Brain Field and Bryan (1993) include

1. definition of objectives in relation to more general goals, or in explicitly problem-solving exercise, the identification of actual problems and issues;
2. generation of strategies to achieve goals and objectives, the formulation of policies to address particular problems; and
3. testing and evaluation of strategies/policy packages; implementation and monitoring

There is integration in all of the above three planning processes. Planning starts by identifying actual problems and definition of objectives related to goals in the process of solving problems. Then, strategies and policies are generated to achieve goals and objectives to address problems. By testing and evaluation of strategies and policy packages, implementation and monitoring of the planning process continues.

1.2. Historical background of urbanization in Ethiopia

In connection with urban planning issues, some findings indicate that modern urbanization of Ethiopia started at Entoto during the reign of *Menelik* II. In connection with this, Addis Ababa got its first traditional plan by empress *Tayitu* around the present palace to guide the early urban settlement. After the establishment of Addis Ababa, different settlements emerged because Menelik II granted land for ministers based on hierarchy and kinship relations. This led to the development of hierarchy of settlement and neighborhoods around the nucleus, the emperor and the empress.

Professional planning was done for Addis Ababa during the Italian period and that shifted the city centre from *Piassa* to National theatre and segregated the residential area of the whites and indigenous people (*Taggebe B., 1976, Amharic version).*

The Italian being the first, there were a number of plans prepared for Addis Ababa that shaped some of its development up to now. Some of the influential plans next to the Italian includes the one prepared by Sir Patrick Abercrombie, Bolton and Hennessey partnership, Architect De Marine and the 1986 master plan prepared by Addis Ababa Master Plan Project Office, AAMPPO.

With the expansion of Addis Ababa city, housing area development was highly facilitated by the 1986 plan of Addis Ababa (AAMPPO, 1987). The newly revised plan of Addis Ababa in 2002 has a number of proposals on different issues like road network, urban green, markets and urban centers, industrial development, housing, etc.

1.3. Description of the study area

Gelan is found in east *Shewa* zone with a total planning area of 7,516.8 hectares. It is located at 25kms in southeast direction on the *Addis Ababa- Adama* highway.

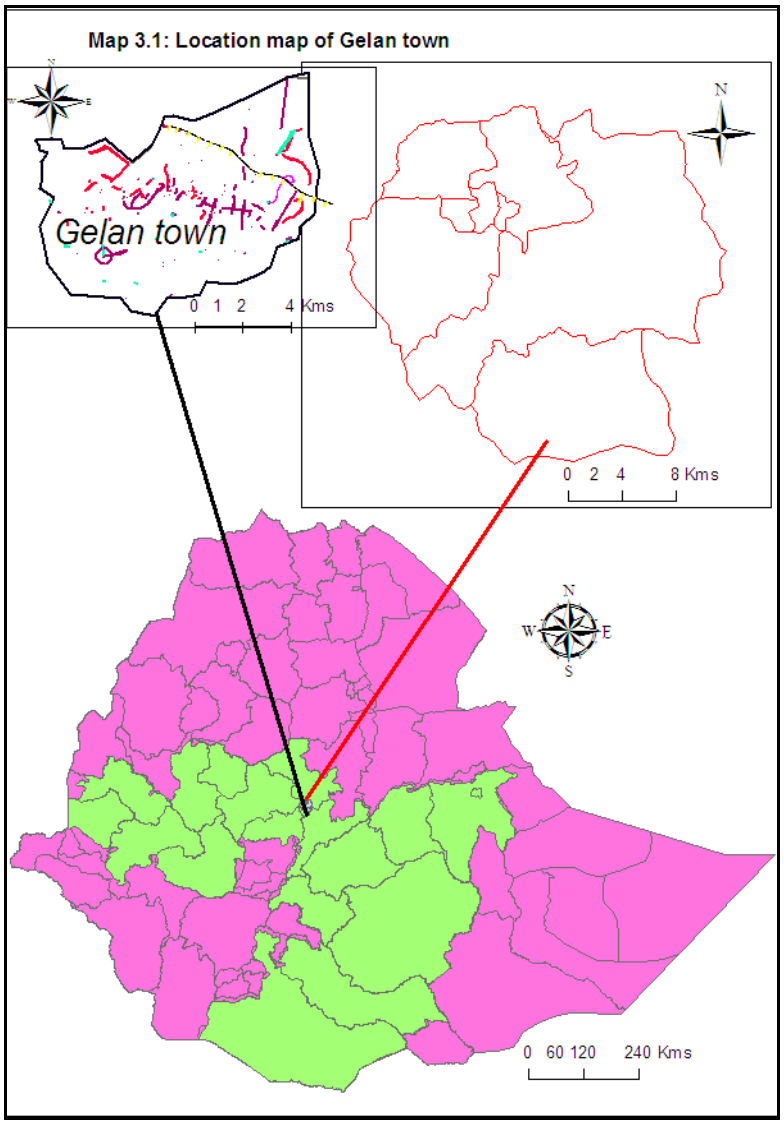
The current boundary of *Gelan* and *Dukem* towns in the southeast is made by artificial boundary formed at the junction of Ethio-Djibouti rail way and *Addis Ababa-Adama* high way. The town is bordered in the East by *Dalota* and *Mero* mountain chain, *Wedesso* Mountain chain and *Abayi Silto* peasant associations in the North, Akaki of Addis Ababa in the North-West and Lake *Aba Samu'el* in north-West. In absolute terms, Gelan is located at 8°50'45"N,38°49'45"E,(Oromia Urban Planning Institute, 2007).

1.3.1. Physical characteristics

Topography of Addis Ababa declines from northern Addis Ababa as well as eastern and southern parts of *Gelan* town to the ground water catchment area of *Akaki*. This allows surface and rain water of northern Addis Ababa and the surrounding hilltops flow to the ground water catchment zone of *Akaki* through Little and Great *Akaki* Rivers.

There is watershed (running from north to south direction) dividing streams flowing to *Akaki* ground water catchment zone and those streams flowing to *Dukem* direction.

With exception to the surrounding hilltops. *Gelan* town is characterized by flat topography which is covered with volcanic and porous nature of soil and rocks.



1.3.2. Population

There were 29 peasant associations in the former Akaki district of Oromia National Regional State in 2007. Of these peasant associations, six of them were included within the planning boundary of Gelan town either partially or fully. These include *Chefe Tuma* (fully), *Gogecha* (partially), *Insilale* (partially), *Gemeda* (partially), *Oda Nebe* (partially), and *Gelan* (fully). Because the later is included fully within planning boundary, the name of the town, *Gelan*, is derived from it. It means the name of Oromo clan residing in Gelan town. The total numbers of farmers included within the planning boundary of the town were 1303 according to information obtained from *Gelan* town municipality.

The impact of urbanization on the residents of the town is mainly related with distance of the residents from the high way passing through the town. The impact of urbanization declines from highway crossing the town to outskirts. In some areas as in the case of the northwestern part of the town where ground water catchment area is located, farmers do not even know their farmland being included within the planning boundary of the town. But in the eastern and southern parts of the town, farmers have lost their prime agricultural land for urban expansion. In such areas, farmlands of residents are transformed to urban land uses.

13.4. Economic Activities

Farming is the means of subsistence for the people included within the planning boundary of Gelan town. The farmers of the area produce variety of cereal crops and fatten animals. They supply their agricultural products to the nearby large urban centers like Akaki and Dukem.

Pertaining to their social relations, farmers of *Gelan* have strong social and cultural affiliations. This is shown by spatial pattern of their settlement that is mainly reflected by the settlement of male adults around their lineage.

Farmers of the area as in most parts of Ethiopia have common grazing areas and water ponds that serve during dry seasons. They also have a culture of supporting each other during times of harvesting, plowing and social ceremonies during times of distress and happiness.

1.4. Statement of the Research Problem

Modern urbanization, though recent in Ethiopia, is one of the fastest growing phenomena in the country. Its horizontal encroachment has adverse impacts on local farmers by sprawling to farmland and natural resources. The fast rate of urbanization displaced farmers and affected their livelihood as well as their confidence to invest in

the urban economy. On the other hand, lack of training for farmers on the use of compensation money limited their potential to invest in different urban sectors after being organized in Micro and Small Scale Enterprises.

Land use change due to urbanization also has an effect on ground water-recharge capacity of *Akaki* that is partly found in *Gelan* town. This further affects water supply from the area for the population of southern Addis Ababa. On the other hand, the presence of investments before the establishment of *Gelan* has created incompatibility and inaccessibility problems as most of them are found along the highway of *Addis Ababa-Adama*. This leads to challenge to implement the structure plan of *Gelan* town and created variance between land use proposal and actual implementation.

1.5. Significance of the Study

The study uncovers the challenges of urban plan implementation in small towns where investment activities are already operational. It also reveals the impacts of urbanization on local farmers, resources and role of investments in local economic development. Thus, the findings of the study can be replicated for other urban centers of Ethiopia by comparing the existing realities and potentials of the respective towns with *Gelan*. They can be important documents for policy makers to design guidelines and regulations on challenges of urban plan implementation for small towns in which investments are already in progress. The findings can also help *Gelan* town administration in coordinating different stakeholders towards the development process by bridging the gap between structure plan proposal and implementation.

1.6. Objectives of the study

To identify the challenges of urban plan implementation in *Gelan* town

Specific objectives

1. To analyze the existing plan implementation situation of *Gelan* town
2. To uncover major challenges of plan implementation and its implications in *Gelan*
3. To reveal opportunities and challenges for future development of *Gelan* town
4. To uncover gap between land use proposal and implementation status in *Gelan*

1.7. The Research Question and Sub questions

Based on the general and specific objectives of the study, the following research questions are addressed.

1) What are the existing situations of plan implementation in *Gelan* town?
2) What are the major challenges of plan implementation and its implications in *Gelan?*
3) What are challenges and opportunities for future development of *Gelan* town?
4) What are the gaps between land use proposal and implementation process in *Gelan?*

1.8. Definition of Terms

Urban centers: Settlements with defined boundary and population of more than 2000

Teff: The staple food crop of Ethiopia especially in urban centers

Guaya: is drought resistant legume crop sown at the end of summer season of Ethiopia.

Hinterland: Those areas that immediately surround the urban center and make strong socio-economic interactions with the urban center

Kebele: the lowest administrative unit of *Gelan* town

Sendel: is thin perfumed sawdust product serving as air fresher

Birr: Paper money of Ethiopia

Invisible hand: Those people that have power to modify or change urban land use due to either their political power or kinship relation with plan implementing bodies

Urban planning: is planning for different land uses of an urban center according to the standard set for different land uses to be accomplished within specified time.

Urban plan implementation: is the accomplishment of plans of different land uses within the planning period by plan implementation task force of urban centers.

1.9. The scope and Limitations

1.9.1. Delimitation of the study

The study mainly focuses on the challenges of urban plan implementation and impacts of urbanization on local farmers and resources. As a result, the outcome of this research will help in identifying the overall challenges of plan implementation with regards to local farmers and resources. Besides, the study focuses on the role of investments to the local economic development. Thus, the scope of the study is limited to challenge of urban plan implementation in *Gelan* town.

The presence of ground water catchment area, its development after the establishment of some investments along highway, its proximity to Addis Ababa and its sudden transformation to township status makes *Gelan* unique to replicate the findings as generalization for other urban centers of Ethiopia. The rest findings about the fate of farmers incorporated into the planning boundary, role of investments in local economic development can be used as generalization for other urban centers of Ethiopia.

1.9.2. Limitations of the study

The absence of urban planning/development policy evaluation and implementation standard are the major limitations of the study. There was also reservation of farmers to give genuine information regarding different issues about their expectations of their future livelihood. Some farmers are also unwilling to give information about the current living status unless there is permission from their respective chairperson of *Kebeles*. Besides, the managers of some factories are not willing to give information without the consent of the owners of the factories. These are the cases of *Yesu* Metal processing industry and *Oromia* coffee producer farmers' cooperatives union regarding origin of their employees, source of raw materials for their factories, linkage of factories with the surrounding hinterland for both input and output. In the presence of these limitations, the researcher tried to relate regulations for approval and implementation of structure plan of Addis Ababa as standard for plan implementation and evaluation task force of *Gelan* town. The researcher also tried to collect genuine information from farmers by briefing relevance of the study to get information on impacts of urbanization on farmers.

1.10. Research methodology and design

This topic mainly focuses on overall research methodology used for the preparation of the paper. The appropriate data collection tools and the types of data required for the study are included together with the methodology used for data analysis.

1.10.1. Research Design

The paper employed descriptive and analytical methods to address challenges of urban plan implementation in *Gelan* town. The types of data required for the study includes information from different offices like Addis Ababa water and sewerage authority (*AAWSA*), investment office and *Gelan* town administration, farmers living within the planning boundary, and major factories that are currently in the production process

within the town. Data collection, processing and analysis are directly related to the statement of problem, general and specific objectives of the research.

1.10.2. Types of data and sources

The study uses both quantitative and qualitative data from different sources. The quantitative data are used to show trend of water production from Akaki ground water zone and proportion of land use implementation and major issues of farmers in *Gelan* town. Qualitative data is also used to show the roles of investments in local economic development and challenges of urban plan implementation.

Primary data sources are obtained from questionnaire and checklist feedbacks, field observation and interviews with offices like *AAWSA*, *Gelan* town land administration office, *Gelan* town investment office, *Kebele* offices of peasant associations included within the planning boundary and different factories' managers in the town. The secondary data are obtained from published and unpublished materials, manuals, proclamations, policies, laws, electronic sources on urban planning process, and standard for drinking water.

1.10.3. Sampling techniques

To have representative samples of investment sectors of *Gelan*, purposive sampling methods are employed. The total investors that are given investment certificate are 264 of which two are agro industries, 23 services and 239 manufacturing industries. The total numbers of investment activities currently functioning in *Gelan* town are 22. To analyze impacts of industries on environment, their compatibility with the nearby land uses and input-output linkages of industries with hinterland, 12 sample factories are selected purposively. The selection criteria are based on the spatial distribution of factories in *Gelan*, their compatibility, environmental impacts of factories and linkage status of the factories with the hinterland.

To get information pertaining to farmers, structured interview questions were administered for the representative farmers of three *Kebeles*. Farmers were interviewed from places where echoes of urbanization are faint (*Tulu Guracha Kebele*), those whose farmlands are totally taken ruthlessly (*Debre Gelan Kebele*) and from those where echoes of urbanization is afar (*Mereno*). After selecting thirty-four farmers purposively through observation of spatial extent of investment activities within *Gelan*, the results of

interviews were analyzed for thirty farmers by thematically arranging interview results. Then, case narrations of four farmers were included and analyzed.

1.10.4. Data collection methods and instruments

Primary data was collected through structured questionnaires, personal interviews and field observations to get feedback from farmers, selected offices and factories. Besides, secondary data was collected from various sources.

a. Check list

In order to check the status of plan implementation by the town administration, checklist is given to *Gelan* town land administration office. This is to collect information concerning status of implementation of different land uses against structure plan proposal for the planning period. The checklist questions cover different aspects of plan preparation, monitoring, implementation task force, land use change, implementation capacity, conformity of socio-economic reports against land use proposal of structure plan and status of plan implementation.

The advantage of selecting checklist as important data collection tool is because of the fact that checklist can help in collecting data about implementation status of land uses against the structure plan proposal that is considered as standard for implementation.

The disadvantage of checklist is that all questions of the checklist are not answered and this leads to modification of checklist questions that are not covered in the first round.

b. Questionnaire

Close and open-ended questions were given to the selected investment sectors or factories of the town, Addis Ababa water and sewerage authority and municipality. The results of the questionnaires are then presented in tabular form. The advantage of using questionnaire as data collection tool is because of its arranged structure that to guide the researcher in collecting data from different sources. The disadvantage of questionnaire is that it cannot help to get additional information to fill gap during data analysis. Besides, information can be misinterpreted carelessly.

c. Interview

Structured interview questions were designed to collect data from farmers who are selected from different spatial locations. Informal interview was also employed through

covert method to gather and triangulate information from different groups. Interview is suitable in collecting data within short period of time. But, the disadvantage of interview in collecting data is reluctance of the interviewee to offer information because of higher turnover of officials in providing detail information. Besides, it is time consuming.

d. Observations

Observation is the main source of data collection method to identify incompatible land uses, to identify large blocks along high way, to check accessibility of blocks at the back, and the land uses currently found on ground water catchment area of the town. Finally. Observation is helpful in demarcating watershed between streams flowing to *Dukem* town and those flowing to the ground water catchment area. But observation leads to quick generalization unless one considers various spectrums of the problem.

e. Digital camera

Digital camera was used to collect status of ground water catchment area found within *Gelan* town. It was also used to capture pictures to show product flow status to Akaki.

1.10.5. Methods of data analysis

Questionnaires and interviews are edited, coded and tabulated. Then, all primary and secondary data are analyzed and presented by tables, figures and texts to facilitate data interpretation. Besides, case narration of farmers is included due to its suitability to find out the feeling, opinion and real life of farmers affected by urbanization. Finally, reliability of data was triangulated through covert and overt data collection methods.

Chapter Two

2.1. Review of Related Literature

The concept of city planning came into being, while trying to find solutions for the problems of 19th century cities (Campbell S .et al, 1996). Of the principle for the need of planning, the approach of Le Corbusier was mass scaled, dense and vertically hierarchical. Frank L.Wright developed the idea of sub urbanization linked by super high way, and the moderate between the two was the approaches of Ebenezer Howard, the idea of self-contained garden city.

The main objectives of city planning are to find ideas that alleviate the grimy situation of the industrial cities. They were aimed at alleviating social inequalities and miseries with new approaches of planning. Hence, only the flesh of the concept disseminated- this approach failed to bring social equality and avoid social and spatial problems (Jacobs J, 1961). This created a question whether planning is required to bring the dream of society or not. Klosterman R in Campbell S et al (1996) explains the basic reasons that compelled to have planning to promote the common interests of community considering external effects of individual & group actions.

Klosterman R, further discussing planning said this; planning is required to resolve prisoners' dilemma condition and providing public or collective consumption of goods such as health and pleasant environment that cannot be provided adequately by perfect and competitive market. From the pluralist viewpoint, planning is required to represent the different interests that are not represented in an organized group. Davidoff P in Campbell S et al (1996) explaining the need of planning said that planning can serve as an advocate for a society's neediest member who are systematically excluded from the group bargaining process.

If planning is necessary, what type of plan is required to match the goals of the society? Many pioneers advocate for various types of planning, which they think will address the interest of the public. Though there are many types of urban plans, comprehensive, structure planning and contingency-based approaches are discussed as review in this research paper.

According to Lindblom E in Campbell S. et al (1996), rational comprehensive method is an approach always starting from new, and always prepares to start completely from the ground with a clear relationship between means and ends.

The concept of comprehensive planning/ land use planning is very much related to the economic prosperity of communities (http://urbanext.illinois.edu/lcr/). With its root in America, a comprehensive plan, an all-inclusive approach, can be a tool for planning the future growth or decline of a local community by establishing guidelines for the process. They often deal with issues related to the appropriate uses of land. In many cases, comprehensive plans are prepared to address compatibility issues between various uses of land, management and preservation of natural resources, identification and preservation of historically significant lands and structures, and planning for infrastructure needs.

A comprehensive plan is the formal document that it is designed to be adopted into law by some form of local government to serve as a policy guide to decisions about community development. According to William I. Goodman, a well-known author on comprehensive planning, the key principle in the concept of comprehensive plan is that it is an instrument to be used by community leaders who establish the policies and make the decisions regarding physical development. They consist of a study of existing conditions and a discussion of future trends, goals, and objectives. Land use patterns, housing conditions, population, roadways, and other infrastructure issues are usually the principal elements that are studied in comprehensive plans. The process of developing comprehensive plan should be a community-wide effort with objectives developing along with a time frame for implementation of plan.

Comprehensive planning is important in that it considers the overall development of community by solving the problems of the community. In this regard, it aims at satisfying the community by appropriately using land and avoiding incompatibilities of urban centers.

Structure plan, with its root in United Kingdom, is a framework to guide the development or redevelopment of a particular area by defining the future development and land use patterns, areas of open space, the layout and nature of infrastructure and other key features.

Structure plans operate at country or sub regional level and are broad in their scope, covering some social and economic considerations as well as those purely of land use. They are highly generalized, which is how they sustain flexibility.

Structure plans comprise one or more maps, plans or diagrammatic representations of the proposed layout, features, character and links for areas being developed or redeveloped. The maps or plans do not typically go into such detail as to define individual lot boundaries or the physical form of buildings and structures. The maps are usually supported by text explaining the background to the issues.

Structure planning is a tool for managing the effects and demands of development or redevelopment in an integrated, holistic and orderly way. They are often associated with green field growth areas but can also be used in areas being redeveloped ("brown field" developments).

Structure plans are able to provide a degree of certainty about future levels of development from which the cost of infrastructure and services, and any effect mitigation measures that will be required, can be quantified. If the structure plan covers a large area which will be taken up over a lengthy time period, consider provisions that stage the development to minimize adverse effects and promote co-ordination and efficiency in service provision and utilization

Some structure plans are very detailed in terms of specifying exactly what services, facilities and spatial layouts are intended for the area. This provides a great degree of certainty, but may result in a lack of flexibility to changes to the structure plan, particularly when the structure plan has been incorporated into a statutory document. The resulting plan changes can reopen the structure plan to challenges, and may be costly in terms of delays.

Structure planning process takes considerable time to progress from beginning to implementation. In this time, landowners and speculators can make implementation difficult by subdividing and selling land in the area to be structure planned. The new land parcels may be of a size, shape or ownership pattern incompatible with future uses.

Structure plans will provide the foundation for activity centre change by defining the preferred direction of future growth and articulating how this change will be managed.

Currently, planning is no longer perceived as a random set of activities brought together to achieve some blueprint to the future; rather the interconnectedness of decision area is explicitly recognized in a cyclical process. Planning is not centrally concerned with the design of artifacts, but with a continuing process that begins with the identification of

social goals and the attempt to realize these through the guidance of change in the environment. At all times, there is monitoring to show the effects of recent decisions and how these relate to the course being steered (McLoughlin, 1965, cited in Brain Field).

In connection with structure planning approach, uncertainty about the future in the planning process necessitated contingency-based planning in the contemporary urban planning process in order to meet unseen future development demands.

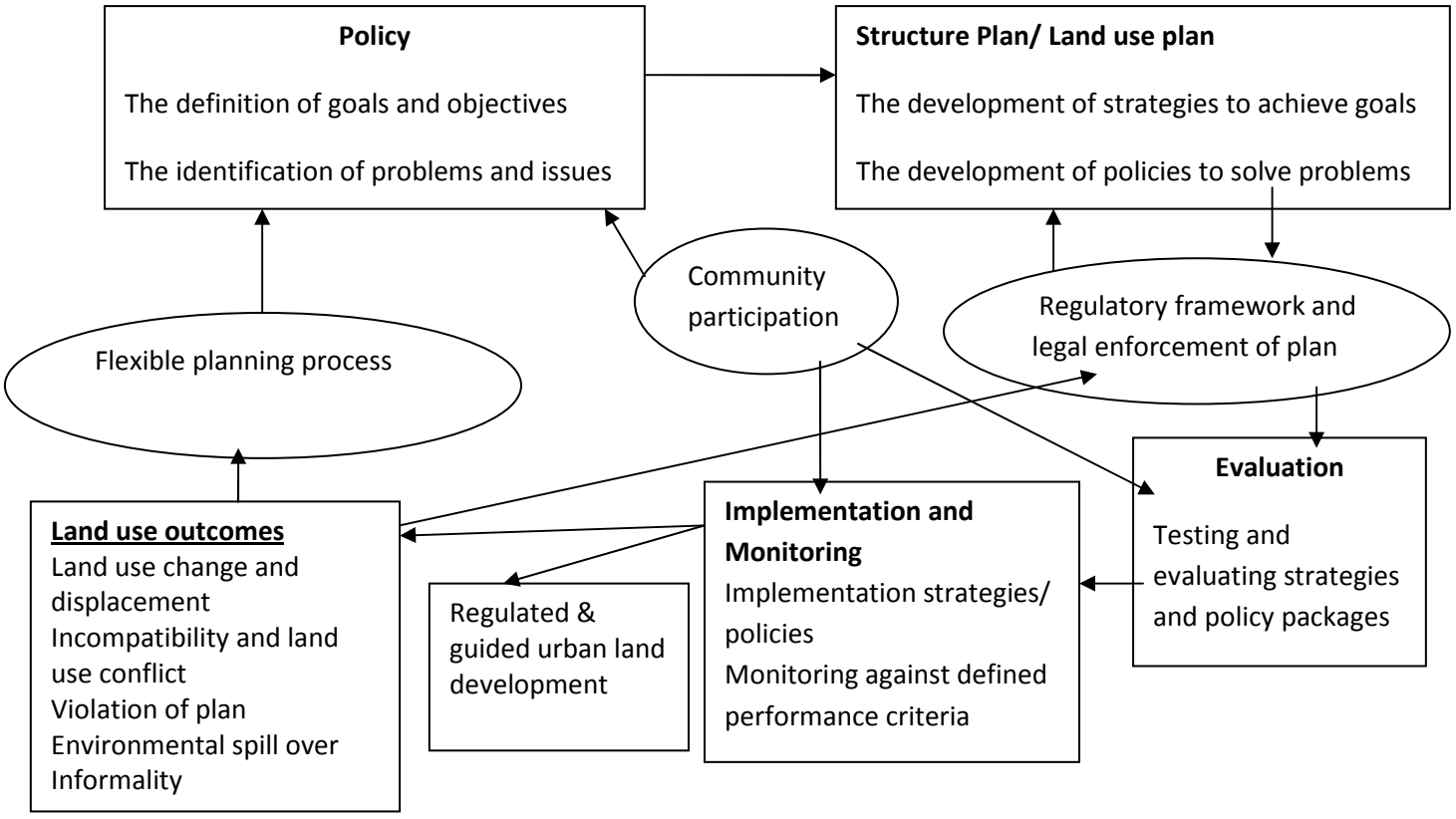
*Contingency-Based Planning (*www.vtpi.org*)* deals with uncertainly by identifying specific responses to possible future conditions. It consists of various *if-then* statements that define the solutions to be deployed as needed. Contingency-based planning recognizes that the future is impossible to predict and conditions may change, and so it is often best to apply flexible and responsive solutions. Because such solutions are only implemented if actually needed and can be adjusted to reflect efficient future conditions.

According to a guide to reorienting urban planning towards local agenda 21, there is a new approach in urban planning due to environmental and social challenges resulting from damage partly caused by conventional urban planning. A more flexible, indicative and proactive type of planning is needed to have sustainable healthy city in the future.

2.2. Conceptual framework

Planning can be considered as a cyclical process that begins with the identification of problems and leads to generation of plans in an attempt to solve identified problems. Planning is a cyclical process and implies that it is subject to change based on the impacts of proposed land uses to overall development of the town and the hinterland as well as compatibility of land uses to one another.

Figure: 2.1. Conceptual framework of cyclical planning process



Source: Modified from the Cyclical Planning process of Brain Field, 1984

As is shown in the cyclical planning process model, there is interconnectedness between processes of cyclical planning. The process begins by identifying problems (by community, professionals and stakeholders) and goes through the development of strategies to achieve goals policies to solve identified problems. Then, regulatory framework and legal enforcement follows if structure plan implementation violated. Then, strategies and policy packages are tested in the implementation and monitoring processes of structure plan to check land use change, displacement, incompatibility and conflicts, violation of urban plan, environmental spill over and informality.

Those land uses that need change because of incompatibility, environmental spill over and land use conflict should be modified and new standards should be set as feedback for the next cyclical planning process. Through flexible planning process new additional goals, objectives and problems can be identified and the cyclical planning process continues with further refinement with closer community participation.

The first stage of the cyclical planning process is identification of a problem and an issue as well as definition of goals and objectives to solve problems or issues identified. In the process of problem identification, the participation of the community is vital because any plan is prepared for the satisfaction of the public. To solve the problems and issues identified, the stage of development of strategies and policies to solve problems follows. In the third stage of the cyclical planning process, regulatory framework and legal enforcement for plan implementation is needed to enforce plan implementation process as policy framework.

In the fourth stage of the cyclical planning process, it is important to evaluate strategies and policy packages in the process of plan implementation and monitoring against defined performance criteria. Community participation is important plan evaluation process by providing feedback to improve policy packages and strategies.

To identify gaps between policy packages and strategies and existing realities of structure plan, it is important to have implementation and monitoring stage where strategies/ policies are cross-checked against defined performance criteria. At this stage, two outcomes are expected. These are regulated & guided urban land development according to structure plan proposal and violated urban land development.

In all of the above stages of cyclical planning processes, there is a possibility to encounter incompatible land uses and environmental spill over that do not match to the land uses of the surrounding areas and create problems to the overall development of the town and the hinterland. This necessitates the change of these land uses to facilitate development of the city and the hinterland. This is possible in the flexible planning process. To get compatible land uses within most parts of the urban centers, it is necessary to evaluate and monitor the generated structure plan proposal to solve land use problems before their adverse impacts on the residents and resources.

In the cyclical planning process, invisible hands have the role of influencing plan implementing bodies to achieve their goals. In this case, land use change and incompatibilities of land uses are inevitable. To modify such incompatibility and land use changes, the town administration and the implementing bodies are forced to apply legal enforcement against land use violation of structure plan. On the other hand, the process of land use change can be made if the changes have developmental, social and

political impacts for the community. It is also important to modify outdated policies and strategies based on the feedback obtained during plan evaluation, monitoring and implementation process. The whole process of cyclical planning continues by modifying policies and strategies of plan evaluation, monitoring and implementation through flexible planning process.

2.3. Relevance of Cyclical Planning Process for the Research problem

In order to see the status of plan implementation in *Gelan* town, cyclical planning process is employed in this research paper. Uncertainty about the future in the planning process leads to land use change and conflicts in the process of implementing land use proposal of the structure plan. Some land use violations opposed to the structure plan are the result of uncertainty while proposing land for future use. These types of land use incompatibilities can be entertained through flexible planning process to minimize the social, economic and environmental impacts of such land uses.

The other problem is negligence of plan implementation bodies and the role of invisible hand in influencing plan implementation process. This type of land use change can create land use disorder in any town affects specialization of land uses. These types of land uses should not be changed and should be controlled by plan implementation body timely through supervision and monitoring of structure plan implementation process. To minimize risks of land use disorder due to negligence of plan implementing bodies and the role of invisible hand, legal enforcement should be taken as corrective measures. From the above discussions, it is vital to conclude that urban planning is no more rigid in the contemporary world. An identified problem during plan implementation process can be resolved if the social, economic and environmental impacts of land use incompatibilities is high. Besides, the solutions for the identified problems can be taken as feedback for policy makers in the preparation of new plan implementation manuals, guidelines and policy packages. The process also checks the validity of existing guidelines, strategies and policy packages for plan implementation and prepares ways of modifying them if they are invalid.

2.4. Urbanization in Ethiopia

The history of urban formation in Ethiopia dates back to the civilization of Axum and Yeha (Belachew K et al, 2003). Two factors can be cited as main reasons for urban

formation in Ethiopia, political (military) and economical. Obudho, R.A et al (1979) explains this as, cities and towns can be divided into those established in response to indigenous pressure and those based on economic factors. Many urban centers in most parts of Ethiopia were established for administrative or as military garrison towns (Belachew K et al, 2003). The other urban centre located along Ethio-Djibouti railway line considered economic factors as basis of their formation.

In Ethiopia, the development of cities includes overall development works of industry, trade, infrastructure and services and requires the coordination of these works (Ministry of Federal Affairs Urban Development Policy, 2005).

Urban centers play the role of coordinating economic activities and services in their boundaries and link these activities and services to the hinterland and to areas that demand these services and products with the development of infrastructure facilities. It is also important to facilitate access to finance and training for those who want to carry out different economic activities and provision of services within the jurisdiction of the town. This helps Small and intermediate urban centers to play a key role in connecting rural areas with both domestic and international markets, spurring local production and providing non-farm employment opportunities, hence, widening a local economic base.

As urban centers develop, they have social, economic and environmental impacts within the urban boundary or the hinterland. The social impacts are mainly caused due to relocation of farmers from their residential areas and farming practices due to urbanization. This is followed by transformation of their previous economic activities (agriculture) to other activities due to conversion of agricultural land to urban land uses. With this dramatic economic land use change, farmers are forced to be involved in different urban economic practices to sustain life.

With urbanization, different land uses such as administration, commercial, recreation, industrial, residential, urban agriculture, social services, utilities and infrastructure development are created within the urban centers. Some urban land uses have little impact on the environment of urban centers while others like industries have high adverse environmental impacts because solid and liquid wastes are released in the process of producing different articles. The wastes have impacts on natural environment (like ground water catchment area), residents and on nearby land uses.

To make cities livable, effective local governments should make cities more competitive, more efficient and more attractive to investors and workers by promoting sustainable development of the urban environment. This implies that the development of cities cannot be separated from the environment. A city's environmental credentials and its marketability are strengthened if investors can see that sustainable resource use has been factored into the resource development strategy, especially the cost of restraints such as finite water supplies, energy costs, the economic and job creating potentials of eco-efficient industries. This includes, water recycling, renewable energy and local urban agriculture to increase income from the sale of recyclable resources on small landfill space, (Swilling, 2006).

2.5. Current urban challenges

In Africa, the dramatic effects of rapid urbanization are very clear in the cities and peri-urban areas. As cities expand, the main zone of direct impact is the peri-urban area and those living in the peri-urban interface. Although, cities serve as 'engines' of growth in most developing countries by providing opportunities for employment, education, knowledge and technology transfer and ready markets for industrial and agricultural products, high urban populations place enormous stress on natural resources and imposes 'ecological footprints' on the peri-urban areas (Rees, 1992; Rees and Wackernagel, 1994). The conversion of farmlands and watersheds for residential purposes has negative impacts on food security, water supply and the health of people.

The quality of several watercourses is poor, with pollutant levels higher than the standards of WHO. Pesticide contamination from urban agriculture, residues from sawmills and manufacturing industries, wastewater from urban drains and municipal dumping of waste especially human excreta pollute drinking water sources that affect the health of the urban and peri-urban populations. In the long-term, treatment of sewage would be required for reducing water pollution and increase safer vegetable production from small plot of land.

2.5. 1. Impacts of urbanization on agricultural land

For farmers, operating in the midst of urban neighbors often means reduced productivity and income, regulatory constraints, vandalism, and legal liability. Dust, noise, odor and chemicals as well as concentrated animal facilities generate more off-

farm impacts to the urban neighbors. At the same time, plant and animal agriculture activities intensified greatly, applying new technologies that increased production can have adverse impacts. This creates proximity conflict between farmland converted to urban uses and urban neighbors. Certainly, nobody likes the negative impacts of living next to certain kinds of intensive farming operations although there is varied levels of tolerance to farm operations. We can speculate that such conflicts are concentrated in a relatively few places while farm-urban relations are generally peaceful in most edge areas because farmers generally adjust their operations to edge realities. Most residential neighbors also learn to tolerate some discomfort from nearby agricultural operations as the price to pay for living in the countryside.

The generalization is that newcomers who move to agricultural locations directly from urban areas are less tolerant of the discomforts of living close to farms than longtime residents who have farm or other rural backgrounds (Van Driesche, 1987). Particularly contributing to the unhappiness of urban newcomers with their new neighborhoods is how the realities of intensive agricultural practices clash with their expectations of pleasant living in the country.

The larger the exposure or interface between farm activities and nonfarm residences, the more opportunity for problems. By implication, this is an argument for planning and residential design that confines urban development in relatively small blocks, as compared to a pattern of scattered home sites throughout an agricultural area.

It generally suggests a high degree of uncertainty among farmers about their ability to continue productive operations in areas beset by rapid population increase and land use change. Anticipating either that they will have the chance to sell their land for development or that surrounding urbanization will restrict their farming activities. In such situations farmers avoid continuing investment in their enterprises with capital improvements, new technologies, and management time and energy.

The very proximity to residential and other urban land uses usually requires some degree of adjustment on the part of farmers. Operating in the shadow of urbanization demands more farm management skills and the use of technology. These abilities and the willingness to adapt and continue to farm in urban-influenced areas require changes

in production practices to minimize negative impacts on urban neighbors and to increase productivity.

For example, some poultry farmers choose to sell their land for development and relocate in more remote locations, the ultimate strategy by farm operators impacted by urban growth. Another kind of adaptation of edge growers is to change the commodities grown to higher value commodities or to those that are less vulnerable to urban impacts. Urban proximity can provide profit-making opportunities and problems for farmers, considering the potential for direct marketing, other forms of access to urban consumers, and off-farm income for operators, (Edelman, et al., 1999).

Conflicts between farmers and urban neighbors over farm activities can be addressed by a variety of techniques for dealing with community level disputes. This includes buffers of waterways, roads, landscaping, walls, residential setbacks, open space greenbelts, and combinations of various types.

Urbanization has negative impacts principally in outward expansion of the built-up area and conversion of prime agricultural lands to residential, industrial and other land uses. This can be controlled by constructing high-rise buildings and promote commercial development in specific zones. The urbanization processes are largely driven by market forces and government policies that lead to simultaneous processes of change in livelihoods, land use, health and natural resources management including water, soil and forests and often-reactive changes in local governance.

2.5.2. Impacts of urbanization on farmers

The major challenges of urbanization start with negative interactions between farmers and urban residents because of the release of agricultural wastes (chemical drift, dust, odor and other sources) of discomfort for urban residents. On the other hand, agricultural areas are desirable locations for new houses because farmland is relatively inexpensive and it has visual and other open space amenities.

To minimize edge conflicts, adjustments in farm practices, life styles and tolerance of urban neighbors are required. The negative effects of farming in an urbanizing environment can be offset for some operators by the economic advantages of close proximity to urban populations. With such proximity comes the potential for direct marketing of certain commodities and the possibilities of agri-tourism. Certainly, there

is added value for both farmers and urban neighbors due to reduced distance between producers and consumers. The opportunities, however, are limited and vary based on population size of urban markets and by the skills and interests of individual farmers.

More broadly, the urbanization of communities once dependent on farming or other extractive industries changes local attitudes, life styles, and economic realities by diminishing attachments to community support of rural areas.

2.6. Role of urban centers in Regional & National Development

The current urban development policy of Ethiopia implies that urban centers should develop with the surrounding hinterland by playing a catalytic role in facilitating the development process in the provision of inputs for agro-industries. Urbanization as center of innovation should provide technological aid to the development of rural areas by providing modern agricultural tools, improved seeds and other technical assistance to increase productivity in rural areas. This higher productivity increases the capital of farmers and helps them to use more technologically intensive farming systems. These release more labour in rural areas that can meet the labour demands of urban centers.

In order to use raw materials of rural areas in the urban centers, infrastructure development facilitates the flow of commodities from urban centers to rural areas and vice versa. Thus, market and raw material supply linkage with urban customers and industries can be the major advantages of integrated urban and rural development.

The development of services in urban areas does not only provide services for the population of urban areas but also for the population of the hinterland. This is because of higher spatial extent of such higher order services like college and university education and Hospital treatment. This integrates development of urban areas with the hinterland and this is the current priority development policy issues of Ethiopia.

2.7. Legal frame wok

Structure plans provide broad land use zones for entire administrative area and can be implemented through a more detailed local plan. In general, their scope has to be fairly narrow, confined to areas of imminent change or where strict control is necessary. They operate at country or sub regional level and are broad in their scope, covering some social and economic considerations. They are highly generalized to sustain flexibility. According to structure plan manual by Matheos consult (2006), Structure plan is a tool

for implementing development policies, strategies, programs and laws of federal and regional governments ….at an urban level. It is a binding technical, institutional and policy framework for guiding development of urban centers by serving as framework for Local Development Plans (LDP) and Integrated Development Plan (IDP). In Ethiopian urban planning context, structure plan may be conceived as a long term (10 years) urban plan that frames the major development issues of an urban center. It is guided by a long term integrated urban development plan (IUDP) that gives an overall long term policy direction, strategies, vision and goals. The urban structure plan serves as a framework for other citywide sectoral or local plans.

Professionals involved in structure plan preparation and implementations need to undertake review of all relevant policies, strategies, laws, regulations and decrees, scale down and incorporate their recommendations and prepare proposals within these frame works. In this regard, the structure plan proposal should be integrated with the national development framework of Agriculture Development Led Industrialization (ADLI), the industry strategy, the national urban development policy, the existing urban planning law and other related national development issues. To avoid conflicting issues within the urban centers, monitoring and evaluation of structure plan are undertaken.

According to proclamation number 17/2004, “Structure plan” shall mean a document of the city plan that has legal force and seize the major leading concepts of land use of the city as well as that indicates reserve place for residential and essential functions in different parts of the city and place. The revised urban planning proclamation of Ethiopia, number 574 in 2008, defines structure plan as a legally binding plan along with its explanatory text formulated and drawn at the level of an entire urban boundary. It sets out the basic requirements regarding physical development which could produce a coherent urban development in social, economic and spatial spheres. In both cases, it is prepared to foster development in both urban areas and the hinterland by using the resources of the surrounding and minimizing land use conflicts within the urban centers and bottlenecks of urban physical development.

The relevance of discussing structure plan with regards to conceptual framework of the research is that the development of large urban centers in Ethiopia is guided by

structure plan proposal. The policies, strategies, laws and regulations of structure plan are in conformity to the national policies, laws, proclamations and decrees.

Structure plan is a document that has legal enforcement and any violation of this document shall lead to confinement. But, violation of urban land uses to meet the interests of the community shall be amended through flexible planning process by taking feedback of community and stakeholders. To prepare practical structure plan according to urban planning proclamations of the Federal government of Ethiopia, federal urban planning and coordinating institutes, regional governments, plan preparing institutes and consultants set up urban planning units. It is in this context that Oromia National Regional State set up a Regional Urban Planning Unit (RPU) with the task of plan preparation, providing assistance to municipalities in implementing and conducting studies as required.

According to Regulation number 67/2006, Oromia Urban Planning Institute (OUPI) was established with the following major objectives:

- To prepare or cause to be prepared master plan and development plan for urban centers and rural villages that will serve as centers of development in the region,
- To facilitate capacity building support to zonal, urban centers and the private sectors on matters pertaining to urban plan preparations and implementation,
- To achieve a balanced urban system by way of preparing urban plans that ensure plan-led development of urban centers that have strong linkage with their rural hinterlands that serve as center of rapid development in the region.

In addition to these duties, OUPI has power to prepare urban plan upon the request of zonal and urban centers by its own or in collaboration with others.

2.8. Unit summary

The main objectives of city planning are to find solutions for industrial cities of 19th century to alleviate social inequalities. In this context, comprehensive planning is a policy guide and deals with appropriate use of land about future growth or decline of community. Structure plan is a more generalized framework to guide development a particular area by defining land use patterns, areas of open space, layout and nature of infrastructure. In contemporary world, uncertainty about the future necessitated contingency-based planning to accommodate problems of future conditions.

Planning can be considered as a cyclical process that begins with the identification of problems and goes through interconnected processes until problems are solved. Legal enforcement and regulatory framework is needed to minimize effects of land use change, incompatibility and land uses conflict, violation of urban plan, environmental spill over and informality.

The history of urban formation in Ethiopia dates back to the civilization of Axum and Yeha (Belachew K et al, 2003) to regulate overall development of urban centers and the hinterland. Expansion of cities necessitates conversion of farmlands and watersheds for residential purposes and this has negative impacts on food security, water supply and health of people. Conflicts between farmers & urban neighbors can be resolved by using buffers of waterways, roads, landscaping, walls, residential setbacks & open spaces. Expansion of built-up areas to agricultural land can be controlled by constructing high-rise buildings & promoting commercial development in specific zones.

The current urban development policy of Ethiopia implies that urban centers should develop with the surrounding hinterlands by providing agricultural tools, services, improved seeds and technical assistance for more productivity of farmers. In Ethiopian context, structure plan is a long-term urban plan that frames the major development issues. It should be integrated with the national development framework of agriculture, industry, urban development policy and the existing urban planning law to integrate policies, strategies, laws and regulations of structure plan with national policies.

Chapter 3
3. Data Presentation and Analysis
Introduction

According to Urban Development Policy of Ethiopia of 2005 by Ministry of Federal Affairs, cities have irreplaceable role for rural development by being industrial and service centers for rural products and hinterland population. It is in cities that marketing of agricultural and industrial products and consumption goods are coming and going to rural areas. This is possible if cities and the hinterland are linked with infrastructure. In this regard, cities have the role of coordinating sectors of agriculture and industry and industries themselves. Apart from this, cities will provide medium and high level services for rural and urban areas. In doing this, cities will supplement rural areas with services and help them to be efficient competitors. Thus, cities will be areas where industries expand together with infrastructures, services, and trained work force development.

In this data presentation and analysis section, the major research themes such as investments before and after the establishment of Gelan town, issues of farmers, and bottlenecks of plan implementation are presented and discussed. In line with this, the challenges of structure plan implementation; opportunities and limitations of future development of *Gelan* town are presented and analyzed.

3.1. Investments in Gelan town
3.1.1 .Introduction

During the time of field survey in January 2011, 264 investors were given investment licenses. Of these investments, 239 (90.5%) are involved in manufacturing, 22 in service and 2 in agro-processing sectors. There were 22 functional investments during field survey of which12 are taken as sample to study the investment sector. This excludes recreational services, hotels, small metal and brick works. These sample investments are divided into two based on the time of establishment before and after the establishment of *Gelan* town. Thus, seven sample investments were selected before township status to see roles of investments before and after the establishment of *Gelan* town.

Gelan was officially recognized as town with a status of second-A in 2007. According to regulation 65/95 of Ethiopia, rank of towns is dependent on the size of population, investment potential of the area, income of the town, availability of social services in the town and administrative status of the town. But, the main reason for Gelan to be given such rank is

its huge potential for external investors, (Socio-economic profile of *Gelan* town, 2007). To this end, the first structure plan was prepared by *OUPI* to regulate investment and development processes.

As data collected from twelve sample investments indicate, two issues are common for investments of *Gelan* regarding employment need and domestic output destiny.

A. Employment

Employment is the major factor in the production process of any investment activity. Employees in different investment sectors of Gelan are from many parts of Ethiopia.

The spatial extent of employment in sample investments of *Gelan* is small, mostly extending between Bishoftu and Addis Ababa for employments that require low educational background and training. On contrary, *Gelan* provides employees that are mainly involved in jobs requiring low educational background like guard. On contrary, those investments that require high technical expertise have large spatial extent and attract employees from distant areas thus increasing employment linkage distance.

The major employees in different investment sectors of *Gelan* town are from *Akaki – kaliti* due to its proximity and the presence of skilled/ semi-skilled employees previously working in factories of the sub city. Recent urban history of Gelan to provide rental houses for employees of the town is also another reason.

B. Output linkage

The final destiny of products of twelve sample investments of *Gelan* is with in Ethiopia. This accounts for 83.3% of the total investments of the town. However, sample investments like NOVA Star garment and Belay Kinde Import-Export are excluded from the category of investments whose products are destined within Ethiopia because parts of their final products are for export. For example, Belay Kinde Import-Export investment exports sesame while maize is consumed by industries of Addis Ababa. The same is true for NOVA Star garment that supplies only 1% of its product for local consumption.

From the output destiny of sample investments of *Gelan* town (table 3:3 and 3:4), it can be generalized that the final products are for domestic consumption with the aim of curbing import substitution. Furthermore, they have inter-industrial input-output interaction(back ward and forward linkages). They also create intermediary people

between producers of raw materials and investments processing the inputs. In this case, Oromia agricultural cooperative Federation maize flour factory has output linkage with Addis Ababa, Adama, Harar and Moyale. The byproducts are also linked with investments of Sebeta, Blue Nile of Bishoftu, NUOVA of Gelan and Burayu.

Few sample investments of *Gelan* town like Belay kinde import export and NOVA Star garment Factory have little contribution to the domestic market demand of products. In this regard, Belay kinde import export uses sesame from Gonder, Gojam and Wellega to process it for international market.

NOVA Star garment Factory Plc imports garment products from abroad for cutting and making garments for international market. This type of investment has very little linkage with local market. Even the prices of products of such factories are higher compared to those garment products, which are imported. The processed garment products of NOVA Star factory has higher price because of taxation and hard currency. It also has higher price compared to garment products produced locally.

3.1.2. Investments before the establishment of Gelan town

There are investments before the township status was given to Gelan town. These investments got land for investment office of the former *Akaki* district in which the present *Gelan* is located. All investments except Mesfin Industrial Engineering are located along Addis Ababa-Adama highway. Even Mesfin Industrial Engineering is located at a distance not more than 200 meters from the highway. In fact, Mesfin Industrial Engineering is located along the Addis Ababa-Djibouti railway to have the location advantage of importing bulk inputs by the use of the railway in the past.

Table 3.2: Sample investment sectors before the establishment of *Gelan*

No	Factory	workers	Established in	Area(ha)	workers origin	Source of Input	Output destiny
1	Trackon Trading	115	2005	-	Akaki -kaliti, Gelan	Import	Local market
2	KOSPI	110	1997	7.6	A.A, Akaki -Kaliti	Import coil sheet	Local market
3	DH. Geda	170	2006	5	Akaki -kaliti	Import	Local market
4	Ada'al industrial	130	2006	1.7	A.A, Akaki -kaliti, Gelan	Guraghe & Sidama	Local market
5	Dot Pencil Plc	160	2004	5.3	Akaki -kaliti, Gelan, A.A	Import & local inputs	Local market
6	NOVA Star garment factory	500	2004	3.3	Akaki -kaliti	Import to cut & make	Export (99%)
7	Mesfin Indus. Engineering	156	2001	3.1	A.A, Gelan	Import	Local market

Source: tabulated from Field survey by the researcher, January 2011

As it is shown in table 3:2, investments before the establishment of Gelan have large blocks. The minimum block size of these investments is 1.7 hectares (Adaa'al industrial Plc) while the largest is 7.6 hectares (*Kombolcha* Steel Products Industry, KOSPI) as data is computed from the topographic map of *Gelan* town. These large blocks of investments create problem of accessibility to land uses at the back. This is further aggravated by large block size of recreational land uses along highway the majority of which were established before township status of *Gelan*.

The recreational land uses of *Gelan* that are found along highway include *RAMSA*, Atlas Resort Center, *Gelan* and the woodlands. They have large areas. *RAMSA* has an area of 2 hectares while Atlas Resort Center, *Gelan* and the woodlands, respectively, have an area of 5, 0.5, and 4 hectares.

The investments before the establishment of *Gelan* import inputs from abroad except *Ada'al* industrial Plc. This includes *Trackon* Trading, *KOSPI*, *DH. Geda* Plc, Dot Pencil, *NOVA* Star garment Factory and *Mesfin* Industrial Engineering.

Trackon trading imports finished products of aluminum and mirrors to process final products as to the designs and sizes of their customers. It has no domestic input linkage except for the final product needed by the major real estates of Addis Ababa.

Kombolcha Steel Products Industry (*KOSPI*) imports sheet of coil iron to process corrugated sheets of iron and other products that are used for domestic constructional purpose. It does not have inter-industrial linkage with domestic industries.

DH. Geda Plc imports different types of chemicals to dye garment products. It does not have linkage with domestic paint factories.

Dot Pencil Plc imports lead from abroad. It also uses domestic inputs like flour, paper and urea to manufacture pencil. It has no linkage with domestic factories of Ethiopia.

NOVA Star garment Factory Plc imports finished garment products only for cutting and making. It does not add additional value to imported products. It does not have any domestic input linkage. But, in cases of shortage of imported garment products inter industrial linkage is made with *Almahdi* garment factory of Turks in *Sebeta* town.

Mesfin Industrial Engineering Plc, import products from abroad to

- design, manufacture, supply and service of high and low bed trailers and dry and liquid cargo drawbar trailers,

- design, manufacture, supply and erection of petroleum liquid reservoirs
- manufacture & supply of steel fabricated products for industrial application and
- maintenance of vehicle equipment and renting

Ada'al industrial Plc uses high land bamboo as raw material to process different outputs. The raw materials are mainly from *Guraghe* and *Sidama* zones of Southern Nations Nationalities and Peoples Republic. It has no inter industrial linkage with other domestic industries of Ethiopia. The sawdust (bamboo residue) of the factory is reprocessed in the compound of the factory to produce charcoal and *sendel.*

3.1.3. Investments after the establishment of Gelan town

Origin of Raw materials

Raw material is important factor in the production process of any investment activity. On the basis of origin of inputs, investments of *Gelan* are divided as those that use domestic inputs and those which use imported inputs. Five sample industries are selected after the establishment of *Gelan* town to analyze challenges of plan implementation. This includes Belay kinde import export, Awash Auto battery, NUOVA Textile, Sof Umer Marble & Tiles and Oromia Cooperatives maize flour factory.

Table 3.1: Sample investment sectors after the establishment of *Gelan* town

No	Factory	workers	Established in	workers origin	Source of Input	Output destiny	Products
1	Belay kinde import-export	42	2009	Gelan	Gonder, Gojam,Wellega	Sesame(export) Maize local market	Processed sesame
2	Awash Auto battery plc	200	2008	Gelan, Akaki -kaliti	Local factories	Local market	Battery of vehicles
3	NUOVA Textile	600	2008	Akaki - kaliti, Gelan	Import	Local market	Garment products
4	Sof Umer Marble & Tiles	14	2009	Gelan, Bishoftu	Wellega, A.A	Local market	Constructio n goods
5	Oromia Coop. maize flour factory	20	2008	A.A, Gelan	Wellega. Ambo, Bedele, Shashemene	Local market	Maize flour

Source: tabulated from field survey by the researcher, January 2011

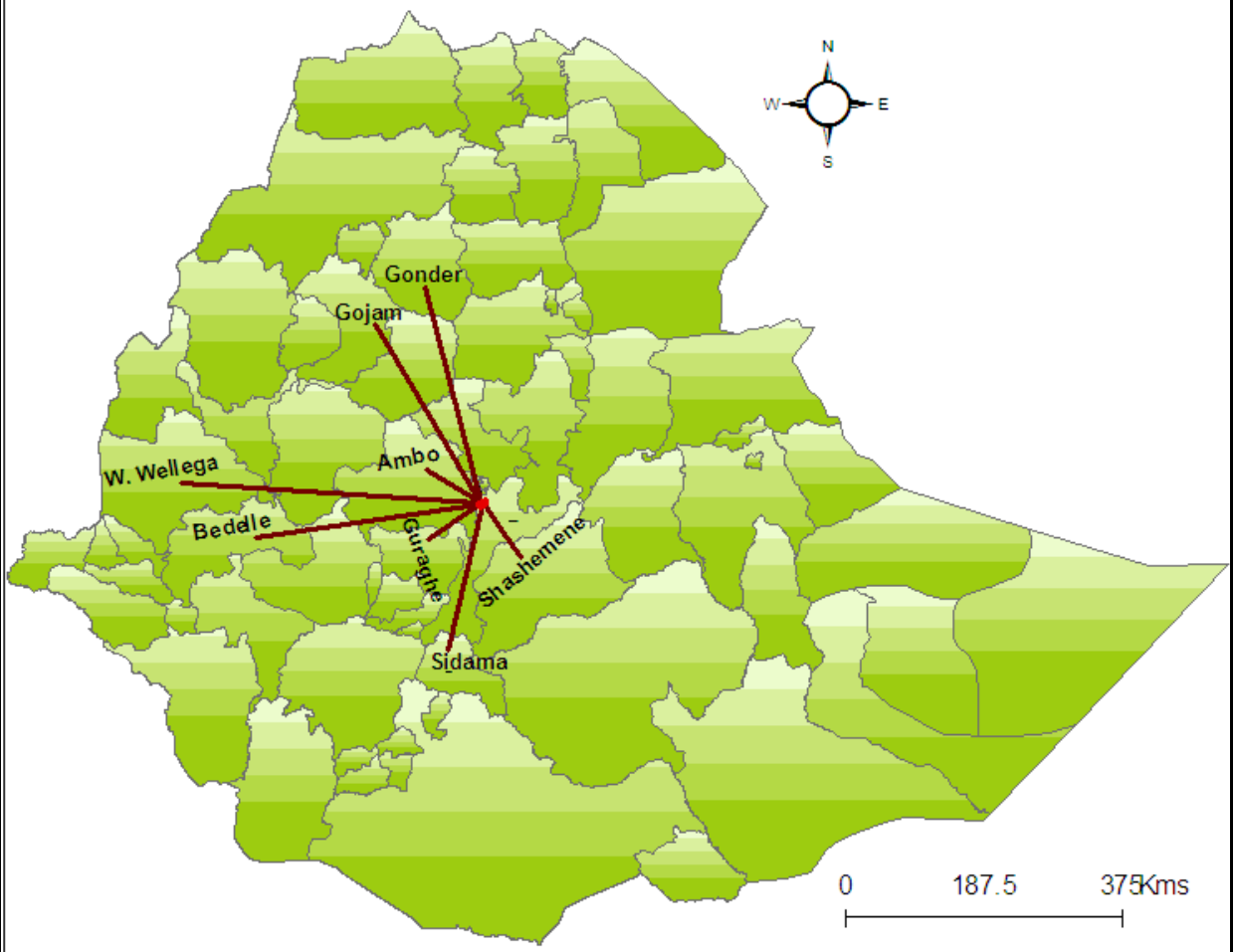
Belay Kinde import-export plc gets sesame and maize from Gonder, Gojam & Wellega. The factory processes sesame for export while it stores maize for sale to factories of Addis Ababa. Similar to Belay Kinde import-export, Oromia Agricultural cooperative federation maize flour factory has raw material linkage with Ambo, Bedele, Wellega and Shashmene. Though Shashemene is found at relatively short distance, it has low linkage with the factory due to limited supply of maize.

Awash Auto battery plc uses locally processed products of domestic industries such as metals and scrap batteries from local informal collectors. It has linkage with industries such as Yemane Abera general metalwork, sky industries plc, Yohannes Abadi steel industry and Syria industry in Bishoftu. It has better inter-industrial domestic linkage compared to other sample industries functioning within Gelan town. But the factory is incompatibly located with Belay Kinde Import Export factory as chemical dust from Awash Auto battery may affect processed sesame.

Sof Umer Marble & Tiles Plc gets raw marble from Wellega. It also buys abrasives from Addis Ababa to process its final products. It has job opportunities for nearby residents.

The input linkage of investments of Gelan is shown in the map 3.3.

Map 3:3. Spatial extent of domestic inputs for industries of Gelan



Source: compiled from Ethio_Geo database and Gelan town

NUOVA Textile investment plc imports semi processed garment products from abroad to make products for domestic use. It has no linkage with other garment factories of *Gelan* town and other garment factories of Ethiopia. It is a Chinese garment factory operating within the building rented from ZEFMESH for five years. It has no domestic input linkage with other textile factories though its product is sold in Addis Ababa.

From map 3:3, it can be concluded that *Gelan* town has little linkage with its immediate hinterland to get inputs. They mainly get inputs frrom Gonder, Gojam, West Wellega, Ambo, Bedele and Shashemene.

3.2. Impact of urbanization on farmers' livelihood of Gelan

3.2.1. Introduction

In order to get reliable information from farmers living within the planning boundary of *Gelan* town, four farmers are chosen for case narration by asking their willingness to include their information in this research paper. But, for security reasons, fake names of farmers are used by the researcher.

Case narration is an important data collection method within short period possible from farmers who are now included within the planning boundary of the town. Of the farmers selected for case narration, one is found in the southern part of *Gelan. H*is farmland is not totally confiscated and so he is still working on his farmland. The other farmer is found in *Debre Gelan* (the central part) of the town. He is no longer working on his farmland because his farmland is encroached due to urban expansion. The third farmer has farmland the ground water catchment area that is inherited from his father. Because of small size of his farmland, he usually rents farmland on yearly basis. The fourth farmer is found in the eastern part of the town. His farmland is partly taken from him due to horizontal expansion of urbanization.

3.2.2. Case narrations

Case narration one (Geleta Tessema)

I am seventy and it is 50 years since I started living in Tulu Guracha, the eastern part of Gelan. I have twelve children. The area of my residential plot is about 2500m².

When land was proclaimed for peasants during the Derge regime, I was given 5.5 hectares of farmland and grazing land. Now, I am left only with 2.5 hectares. I got

compensation for three hectares by considering cost of production of ten years.

The compensation is small and even it was given in different installments. I was given compensation for 0.5 hectare for 2.50 birr, 0.75 hectares for 6 birr, 0.5 hectare for 9.40 birr and 0.75 hectare for 15.20 birr. I got 12,500 birr in the first installment, 45,000 in the second, 47,000 in the third and 114,000 in the fourth. The total amount of compensation I received is 218,500 birr.

Giving compensation money in different installments has affected my livelihood negatively because I have neither the farmland to work on nor the money to plan on for investment. As a result, I used compensation money to buy farmland on yearly basis. I tried to invest in poultry faming but I was not successful in the business. I also tried to fatten animals to sell them during big holidays to get advantages of higher prices. Even this business is not profitable. To be successful in business, I was told to be organized in Micro and Small Enterprises although it was only ideal. As a result, I decided to buy mill to sustain livelihood with small amount of money left with me. I already constructed mill house but I could not buy the machine yet. I am in fear that the money left with me is not enough to buy the machine.

Case narration two (Birhanu Kebede)

I am 60 years. I am born in the former Akaki district. I am married and have four males and two female children. Two of my children are married. The third is an employee of Mesfin industrial engineering. My youngest child is a high school student.

I had 2.5 hectares of farmland obtained during land redistribution of Dergue regime. Since then, there was no land redistribution in Gelan area. Because of this, I shared two hectares of my farmland with my male children leaving half hectare for me.

Because of shortage of agricultural land to sustain my livelihood and my family, I usually rent a quarter hectare of agricultural land for thousand birr.

I usually produce teff and get 10 quintals from my farmland. I sell half of it to buy commodities for home consumption. Depending on weather conditions, I also produce wheat and chickpea. Because of limitation of farmland to sustain my livelihood and my families, I also rear animals and fatten two oxen a year to sell them in Akaki market on eve of big holidays like Christmas, Easter and new Ethiopian year.

I had an intention of selling my farmland informally. Nevertheless, I could not get good price at that time due to further location of my farmland from highway. But some friends of mine sold farmland alon high way for 6birr/m² before five years.

At the present time, horizontal expansion of Gelan town has consumed my farmland in the east at compensation of 10birr/m² and I am left only with 140m² of residential plot. I am told to construct residential house according to the plan of the municipality. Lucky enough opposed to their friends, my four male children got residential plot of land and they are expected to construct their own house on 140m². Because of high cost of living, I am employed as a guard in a non functioning factory in Gelan.

Case narration three (Alemayehu Gurmu)

I am 40 years of age. I am born in the former Akaki district that is currently known as Mareno Peasant association. My father had 9 children and 2.5 hectares of land. Because of the absence of land redistribution since the dergue regime, my father shared his farmland among four male children each with a share of half hectare. I am married but have no children. I usually rent a hectare of farmland for 4000 birr/year. But the amount of rent is high with cost of fertilizer, seed, farm animals & herbicides.

From my own and rented farmlands I harvest different types of crops like teff, wheat, chickpea and guaya depending on favorability of weather condition. If the weather condition is good, I usually harvest 10 quintals of guaya, 8 quintals of chickpea, 6 quintals of wheat and 5 quintals of teff from quarter hectare. I diversify different types of crops for fear of bad weather condition for specific crops in a given year.

I sell agricultural products to Akaki market because of short distance between Akaki and my residential house. I do not usually sell straw and crop residues because I use the products to fatten animals for sale. I also let sheep graze on residue of crops after crops. By selling my agricultural crops and fattened animals, I buy fertilizer, chemicals, clothes and consumer goods for my wife and myself. **Case narration four (Gemechu Tolessa)**

I am 45 currently living in the southern part of Gelan town where I am born. I am married and have nine children. All of them are students.

Before the establishment of Gelan town, I had 4 hectares of Farmland. One hectare is

taken from me by the town administration at compensation 20,000 birr in the first installment. In the second phase, I lost two hectares at an average compensation rate of 7 birr/m² (140,000 birr). At the present time, I am left only with one hectare. The present compensation value of farmland is 15.30 birr/m². I was not given any training on the use of money obtained through compensation. I produce different types of crops such as teff, wheat, chickpea and others depending on the market value of past production year. I sell agricultural products in Akaki due to the absence of market in Gelan in the past and the absence of permanent urban residents.

I also fatten oxen by adjusting fattening time to big holidays during which prices of fattened animals rise. I get feeds from crop residues and straw. Because of simplicity to manage, fatten and rear, sheep have never been absent from my home.

The major problems regarding to compensation for my farmland is that I do not exactly know the area of my farmland in square meters before it was measured by surveyors of Gelan town administration. Because of this, I am forced to accept the measurement of my farmland. There is also lack of training related to compensation money. This leads to wastage of money for practices that do not add value for my livelihood. Besides, payment of compensation in different installments discourages transformation of my livelihood to other economic sectors because of the need of high capital for economic transformation. Because of this, I wasted much of compensated money. Currently, I am living in my own house together with all of my children. They are not given a 140 m² of residential plot because horizontal expansion of Gelan town did not swallow my farmland and residential area.

3.2.3. Analysis of case narration

From case narration of farmers included within the planning boundary of Gelan town, it can be concluded that farmers were producers of diversified types of crops. They did not have problem of market for their products because of short distance to large markets like *Akaki* and *Dukem*. They have strong product linkage of crops and fattened animals.


Source: Field survey, February, 2011

The land holding of the farmers of Gelan town is generally small and usually ranges between half to five hectares. It was dependent on family size of the present farmers and land redistribution period of *Dergue* regime. This farmland was later fragmented to male children of the farmers. Some of the farmland found near the highway is informally transacted for land speculators and this aggravated land-holding size of the farmers. As a result, the youngsters currently have small plot of farmland and this forced the youngsters to rent farmland from others.

With horizontal expansion of *Gelan* town, some farmers lost their farmland and given compensation. But, compensation given to the farmers does not include loss of business income, types of crops produced, cost of rehabilitation and market value of structures and buildings. Moreover, payment of compensation is in installment leading to wastage of money that could have been used for economic activities that transform livelihood of farmers. The compensation given for farmers ranges from 2birr/m^2 to 15.30 birr/m^2. During the first stage, compensation amount was very small for farmers to be involved in investment activities. But, farmers whose farmland is swallowed by urbanization have already started investment in poultry, quarrying, dairy farming and small businesses.

Farmers lack training on use of compensated money to run business. They were not ordered to deposit compensated money in bank accounts for future investment. Besides, they are not organized to Micro and Small Scale Enterprises to work on urban agriculture/any-urban economy opposed to the urban development policy of Ethiopia.

3.2.4. Means of Adaptation of farmers to urbanization in Gelan

A. Introduction

To reveal impacts of urbanization, 30 farmers were selected and interviewed. The issue included in the interview of farmers are year of stay in the area, family size of the household, land holding size, urbanized land, compensation per meter square and the total amount of compensation paid for the land confiscated. Some of these issues are discussed briefly and presented in a table or figures to easily reveal the impact of urbanization on local farmers.

Table: 3.3. Summary of interview results of farmers

NO	Year of stay	Family size	Located in	Land holding		Urbanized land	Remaining land	Compensation per M^2	Total compensation
				Residence	Grazing & farmland				
1	50	5	Debre Gelan	1000m^2	5 ha	2 ha	3 ha	2.5- 15.2	111,000
2	50	5	”	500m^2	2 ha	1ha	1ha	9.40	94,000
3	55	8	”	500m^2	3 ha	1.75ha	1.25ha	2.50-9	76,250
4	35	5	”	500m^2	0.75ha	0.5 ha	0.25 ha	9.40	47,000
5	75	8	”	1000m^2	4.25ha	0.75 ha	3.5ha	2.5	18,750
6	102	7	”	1000m^2	3.5ha	2ha	1.5ha	2.5-9	127,500
7	70	8	”	2000m^2	2.25ha	2ha	0.25ha	2.5-9	132,500
8	46	7	Mendelo	500m^2	2 ha	0.75ha	1.25ha	2.5-9	35,000
9	38	5	”	500m^2	2 ha	1.25ha	0.75ha	9.40	117,500
10	65	11	”	500m^2	3.5 ha	3.25ha	0.25ha	2.5-9.40	204,250
11	37	9	”	500m^2	3.75 ha	0.5ha	3.25ha	7	35,000
12	80	10	”	1000m^2	6 ha	4.75ha	1.25ha	2.5-15.20	139,000
13	50	12	Tulu Guracha	1000m^2	4.25ha	2.5ha	1.75ha	2.5-15.2	218,500
14	36	4	”	200m^2	2 ha	1ha	1ha	15.20	152,000
15	55	13	”	1000m^2	3.25ha	2.5	0.75	2.50	62,500
16	30	4	”	500m^2	*	*	*	*	-
17	60	5	”	1000m^2	3 ha	*	*	*	-
18	32	3	”	200m^2	0.5 ha	*	*	*	-
19	28	3	”	500m^2	0.5 ha	*	*	*	-
20	50	11	”	1000m^2	2 ha	1.25ha	0.75	15.20	-
21	30	3	”	500m^2	0.5 ha	*	*	*	-
22	58	10	”	1000m^2	4 ha	0.5ha	3.5ha	15.20	-
23	32	5	”	1000m^2	0.5ha	0.25ha	0.25	15.20	-
24	44	6	”	1000m^2	2 ha	1.25ha	0.75ha	9.4-15.2	-
25	48	2	”	200m^2	1.5 ha	1ha	0.5ha	2.5-9.40	-
26	30	2	Mereno	500m^2	0.5 ha	*	*	*	-
27	50	14	”	1000m^2	4 ha	0.16ha	3.4ha	9.40	-
28	50	8	”	1000m^2	2.5 ha	*	*	*	-
29	50	7	”	1000m^2	4 ha	*	*	*	-

30	50	8	”	1000m²	4 ha	*	*	*	-

Source: Computed from structured interview of farmers, March 2011

* Land not overtaken due to urbanization

B. Family size of households

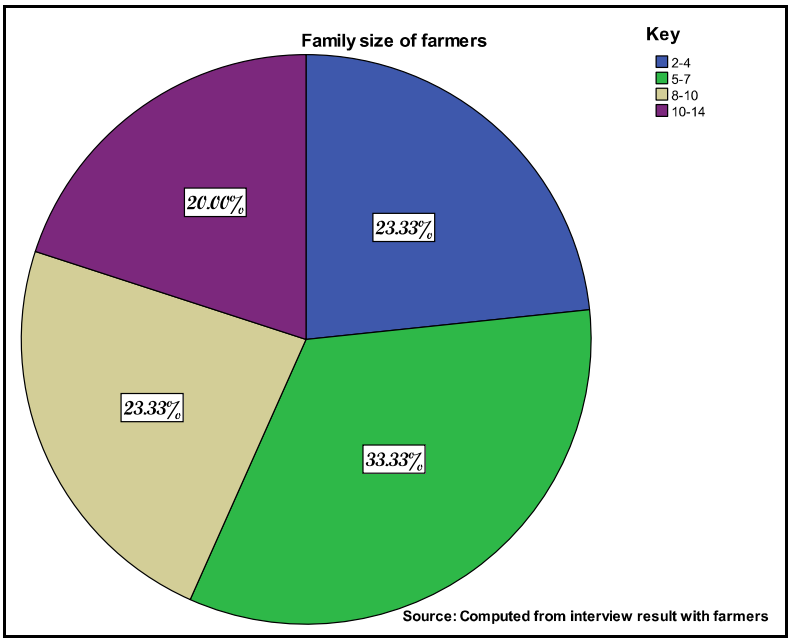
To simplify things, the family size of interview result is summarized in table 3:5

Table 3:4. Family size of households of farmers

Household size	Sample farmers	Percent
2-4	7	23.3
5-7	10	33.3
8-10	7	23.3
10-14	6	20.0
Total	30	100.0

Source: Compiled from interview result

As it is shown in table 3.5, farmers residing within the planning boundary of *Gelan* town have large family size. The dominant family size of farmers within the planning boundary of *Gelan* ranges from 5-7. This accounts for 33.3% of the total family size of interviewed farmers. Large family size of the farmers is due to more labour requirement of farming and social outlooks (social protection and dowry) towards large family size.

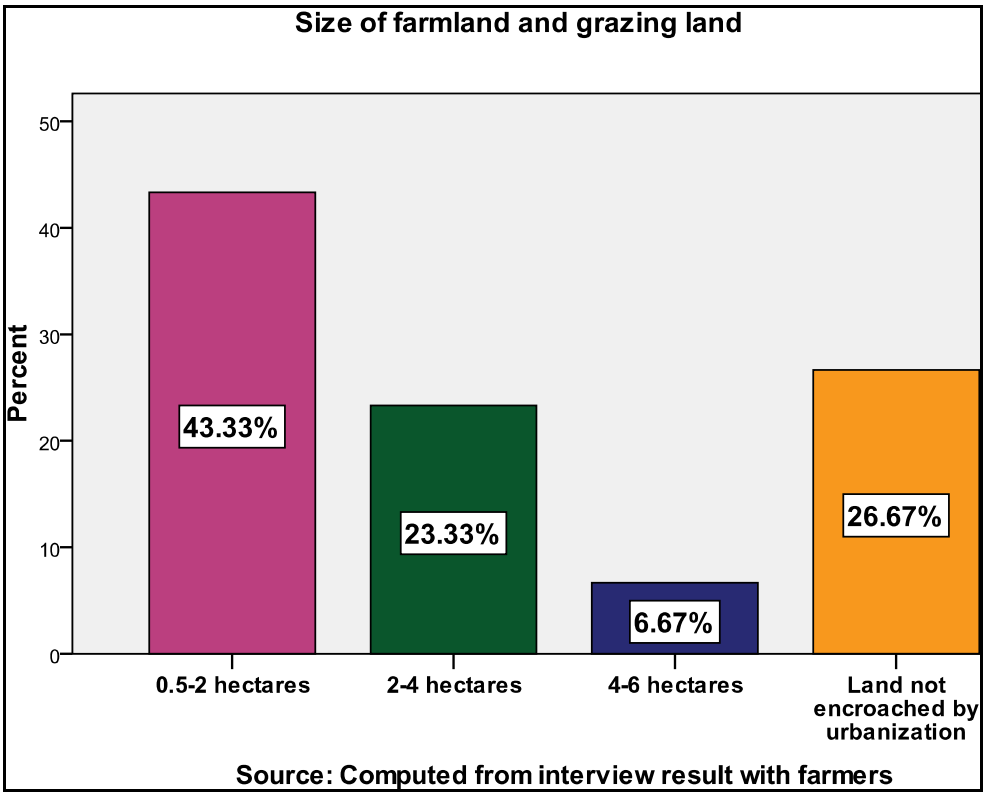


C. Landholding

Pertaining to land holding of farmers of *Gelan* town, there is large residential plot size owned by the farmers of *Gelan* town. This ranges from 200m² to 2000m². This is

because of large family size of the farmers and farming practiced in the gardens of the respective farmers. Most farmers grow vegetables and high value cash crops within their compounds because of relatively high fertility of soil.

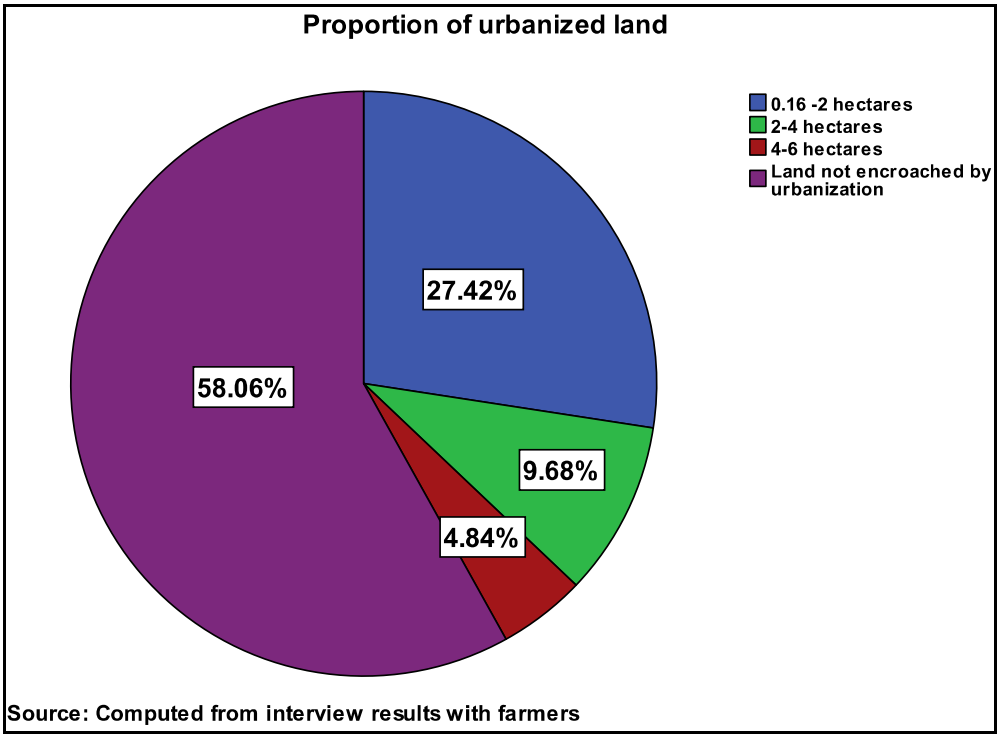
The average size of farmland and grazing land of farmers within the planning boundary of Gelan town ranges from 0.5 hectares to 6 hectares. The size of individual farmer's plot land is associated with the family size of farmers. Those farmers with large male children have small plot size because farmers falling within the planning boundary of *Gelan* share their farmland with their male children when they reach adulthood.



As it is shown from the figure that shows size of farmland and grazing land, 43.33% of household have farm and grazing land size of 0.5-2 hectares. Because of this, most of them procure farmland on yearly basis at higher price. They also involve in off farm activities to get additional source of income. On the other hand, horizontal crippling of urbanization does not encroach to 26.67% of farm and grazing land of farmers.

The impact of urbanization on the farmers of *Gelan* is not uniform. The size of farmland or grazing area taken because of urbanization ranges from 0.16 hectares to 4.75 hectares of land. In fact, land confiscated from farmers ranges from 0.16 to 2 hectares and this

accounts for 27.42% as it is shown in the figure of proportion of urbanized land. Large farmland or grazing land is taken from farmers from *Mendelo* and *Debre Gelan* neighborhoods. This is because of the encroachment of urbanization to these neighborhoods. In areas like Mereno and *Tulu Guracha,* where urbanization has not fully reached, farmland and grazing land is still with farmers.

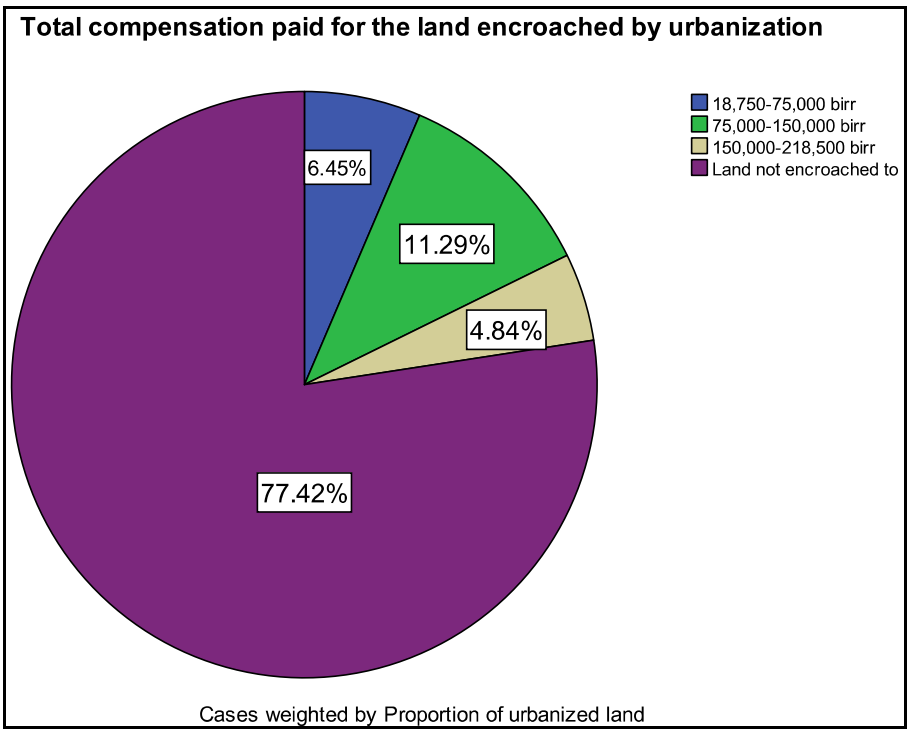


Source: Computed from interview results with farmers

The size of farmland and grazing land currently remaining for farmers ranges from 0.25 hectares to 3.5 hectares. In fact, the smallest portion of farmland and grazing land is left in *Debre Gelan* and *Mendelo* neighborhoods while the largest proportion is left for farmers of *Mereno* and *Tulu Guracha*. In areas where the smallest portion of farmland or grazing land is left, farmers procure farmland from others by paying large amount of money on yearly basis. But, the yearly payment for plot of farmland is dependent on the supply of farm land. Farmers have chosen this adaptation mechanism because of availability of compensation money at their disposal. Using compensation money to procure farmland wastes the money, which could have been used in other businesses by being organized in Micro and Small Enterprises to involve in urban agriculture and other investments like quarrying, small and medium scale trade. It also affects the psychology of farmers by limiting their livelihood only to farming.

D. Compensation

The amount of compensation money for loss of farmland and grazing area ranges from 18,750-218,500. But the largest proportion of compensation for farmers is between 75,000 and 150,000 birr. This accounts for 11.29% of the total compensation paid.



Those farmers who already received large amount of compensation money have started businesses but in disaggregated manner because of absence of training and lack of knowledge to carry out their investment activities.

3.3. Opportunities of future development of Gelan town

Gelan town has huge potential for future development. This is mainly because of the location advantage that the town has. One of the location advantages of the town is its access to the ground water of *Akaki* for the residents and investment activities of the town. The other location advantage of *Gelan* town is the presence of Addis Ababa-Djibouti highway that crosses *Gelan*. Because of the presence of this highway, inputs from the port of Djibouti are imported to the town. It is also true that the final garment products for export are transported to the port of Djibouti by using the highway.

The high-speed highway of Addis Ababa-*Adama*, which is currently on construction, is also another future development potential of the town. Touching the eastern part of

Gelan town, the superhighway can be a gateway for the future development of the town. In order to facilitate transportation of products from/to *Gelan* town Mini dry port is being constructed in the eastern part of the town near the expressway disregarding the freight terminal proposed southeast of *Akaki* toll station.

The development potential of *Gelan* town is also dependent on the Addis Ababa-Djibouti railway crossing the town. This railway is expected to contribute for the future development of *Gelan* town by transporting bulky inputs or products from port to the town and vice versa. In doing that, the railway contributes its role in creating access of the town to the international market.

As data obtained from most investments of the town (table 3.1 and table 3.2) indicate, the final products of the industries are for domestic consumption either in the market of Addis Ababa or in different parts of Ethiopia after wholesale undertaken in Addis Ababa. Garment products of NUOVA are sold in Merkato at wholesale level and then redistributed to different parts of the country. DH Geda factory also produces clothes for uniforms of students that are found in different parts of Ethiopia.

Located at 25kms from Addis Ababa has also given Gelan town the chance of accessing to huge labour potential to the investment activities of the town. At the present time, most of the employees in various investment sectors of the town are from Akaki-Kality sub city of Addis Ababa (table 3.1 and table 3.2). The town also ahs high access to technical expertise especially with development of residential house in the town in the future so as to reduce cost of transport for potential employees in the investment sectors. Besides, its location at accessible part near Addis Ababa, the capital city, has increased the investment security in *Gelan* town.

In conclusion, *Gelan* town has huge potential for future development by using the multiplier effects of location and infrastructure advantages, access to huge market of Addis Ababa and the nearby towns of eastern *Shewa* and investment security. The town has also access to agricultural products of east Shewa zone for the residents the town.

3.4. Challenges of urban plan implementation in Gelan town

3.4.1. Introduction

The challenges of urban plan implementation of Gelan town are broadly divided into three categories. These are challenge of plan implementation due to the presence of

ground water catchment area within the planning boundary of Gelan but the water being consumed by the population of Addis Ababa. Besides, presence of some investments before and after the establishment of the town. Thus the study tries to investigate such challenges to recommend solutions for plan implementation.

3.4.2. Plan implementation challenge & ground water catchment

Twenty-nine deep-water wells are found in Akaki ground water catchment zone. From these deep water wells 17% of water requirement of *Akaki* , *Saris*, *Bole Bulbula*, *Wello Sefer*, *Stadium*, *Mekenisa*, *Ayer Tena* up to *Karakore* is obtained.

The average daily contribution of *Akaki* ground potential site for the population of southern Addis Ababa is 45,000m^3 if everything is for water pumping is perfect.

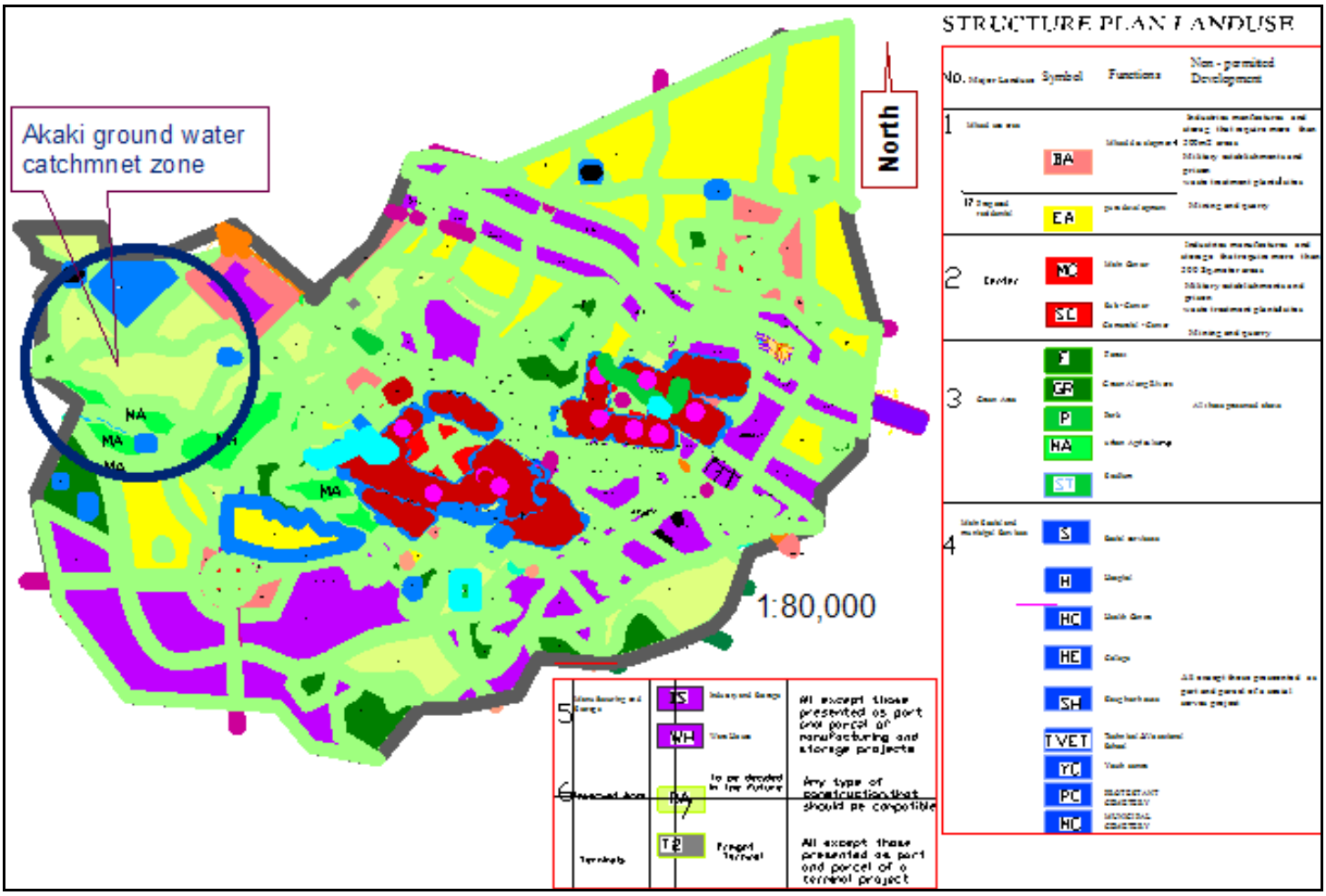
Table 3:5. Production of ground water in m^3 from *Akaki* deep wells, 2007/2008-2008/2009

Fiscal year	2007/2008	2008/2009	Average monthly
July	1256113	1288505	1272309
August	1674972	1589126	1632049
September	1428858	1333355	1381107
October	1525661	1416109	1470885
November	1338988	1360764	1349876
December	1379507	1402702	1391105
January	1646783	1333970	1490377
February	1431610	1375959	1403785
March	1356807	1514665	1435736
April	1555052	1378385	1466719
May	1293952	1403648	1348800
June	1107590	1434030	1270810
Total	16995893	16830076	16,912,985

Source: AAWSA, December, 2010

As shown in table 3:1, average monthly water supply for Addis Ababa is 16,912,985m^3.

At the present time, the ground water catchment area has a total of 335 hectares. On the structure plan, the area is reserved for any type of construction that is compatible. But, the question is in what regard is compatibility? Is compatibility to the land uses to be established in the site or to the ground water catchment area?



Source: Location of catchment area on land use proposal of Gelan town, 2007

Logically, if the area is to be used for huge construction, flood risks increase due to compaction & this reduces water recharge thereby affecting livelihood of farmers. There is also limited institutional linkage between *Gelan* & AAWSA concerning ground water.

3.4.3. Investments prior to Gelan & implementation challenges

Investments before the establishment of *Gelan* town are mainly located along Addis Ababa-*Adama* highway with exception to *Mesfin* Industrial Engineering which is located along railway not more than 200m. These investments have large blocks ranging from 1.7 hectares (Adaa'al industrial Plc) to 7.6 hectares (KOSPI). These large blocks of investments create problem of accessibility to land uses at the back.

The major recreational land use along highway are also established before *Gelan* town. They also have large block size that ranges from 0.5 hectares (*Gelan* recreational center)

to 5 hectares (Atlas Resort Center). In between these extremes are the wood lands with an area of 4 hectares and RAMSA 2 hectares.

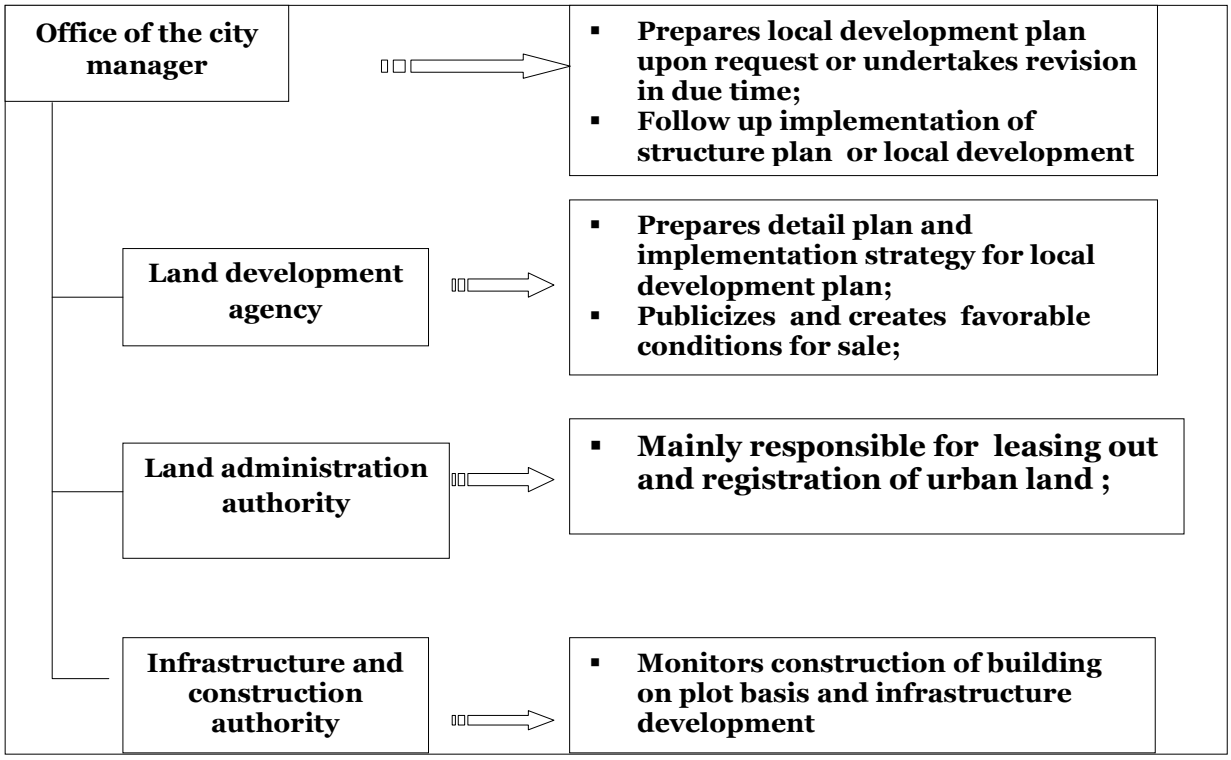
The majority of investments before the establishment of *Gelan* import inputs. This includes *Trackon* Trading, *KOSPI*, *DH*. *Geda* Plc, Dot Pencil, *NOVA* Star garment Factory and *Mesfin* Industrial Engineering. They have no domestic input linkage.

3.4.4. Implementation challenges after establishment of Gelan

After deciding the urban-rural boundary between *Gelan* town and *Akaki* district, it was given a status of township at the end of 2007 budget year of Ethiopia. The main economic and political reasons of *Oromia* National State to give *Gelan* a status is to attract investors from different parts of Ethiopia and from abroad. Before and after the establishment of *Gelan* there was no plan implementation, evaluation and monitoring taskforces in conformity with the structure plan proposal within the validity period. There is no plan evaluation and monitoring manual, checklist/guidelines and action plans, implementing bodies and time schedule.

Plan implementation taskforce can be organized from experience of cities like Addis Ababa according to regulation number 16/2004 to indicate urban redevelopment intervention areas, environmental aspects and industry zone. To implement this, a local development plan shall be prepared and implemented within the validity period. Accordingly, towns shall be responsible to implement plans by through various organs.

Figure: 3.2. Hierarchy of plan implementation of Addis Ababa structure plan



Source: Regulation for Approval & Implementation of Addis Ababa city structure plan

Though the plan implementation taskforce is not available in *Gelan* town, the objective of establishing special taskforce organized from representatives of stakeholders of institutions in the town is to facilitate implementation of investments. It also helps to design corrective measures to promote plan implementation process of *Gelan* according to structure plan manual. This encourages plan implementation process and hence development process of the town by defining sets of objectives, targets and strategies of plan implementation process in line with the structure plan proposal of *Gelan*. It is also important to check objectives, targets and strategies in plan implementation process against land use proposal.

Absence of plan implementation and special taskforce within specified time can affect plan implementation process of land use proposal. In this case, objectives, targets and strategies are not set even when tools are available for plan implementation. It is also impossible to assess and control progress of plan implementation within the town at specified period of structure plan. This leads to wastage of urban land due to land

allocation on unspecified legal framework and develops irregular land use morphology leading to limited land for investment before the end of structure plan period.

There are no priority areas during plan implementation in *Gelan* town. But the presence of priority areas while implementing land use helps to have similar pattern of development with the land use proposal of the structure plan without affecting the financial capacity of *Gelan* town. It also helps to relocate those non-functioning incompatible land uses along highway existent before the establishment of the town. This strengthens the financial capacity of *Gelan* town.

The reasons for the existence of investment activities along high way of *Gelan* town are mainly because of the presence of some investment activities before the establishment of the town, poor land administration system of the former *Akaki* district and the presence of informal land transaction and speculators.

There is no taskforce and defined time to carry out supervision of plan implementation process in *Gelan* town. Nevertheless, the municipality of the town is responsible to conduct supervision of buildings and construction processes according to the plan and design to minimize wastage of capital and inappropriate land use change.

There is no concerned body to cross check socio economic reports against structure plan proposal in *Gelan*. This hinders to check clarity, consistency & conformity of socio-economic reports in the process of preparing feedback, manual & checklist in the future.

Currently, proportion of land use implementation of *Gelan* is mainly for few land uses like industrial, residential and commercial.

Table:3.6. Proportion of implementation of different land uses in *Gelan* town

No	Land use	Proposed land use (ha)	Implementation(ha)	%	Remark
1	Residence & Administrative	1,259.56	285.39	22.7	On construction
2	Commerce	238.55	32.75	13.7	21.8
3	Industry, storage & investment	2122.10	677.51	31.9	65.67
4	Greenery, Recreation, urban agriculture	1086.39	6	0.6	For MSE
5	Social service	733.44	125.4	17.1	
6	Infrastructure	1100.6	-		
7	Reserved area	975.36	-		
Total		7,516.8			

Source: Gelan town land administration office, January 2011

As it is shown table 3.6., the largest portion of implemented land use in *Gelan* town is for industry. This is because some industrial land uses were present before the establishment of the town. The second largest land use implemented is for residential use. But, residential land use implementation does not regard those activities that fully completed construction but only residential plot rendering to the respective individuals.

Table: 3.7. Standard of land uses for medium & small towns compared to *Gelan* proposal

Land use	Area (ha)	%	Standard (%)	Gap from standard
Social services	733.44	9.76	5-10	Within range
Manufacturing	2122.10	28.24	5-10	+18.24%
Commerce	238.55	3.17	5-10	-1.83%
Green area(park, recreation, open spaces)	1086.39	14.45	15-20	Within range
Reserved area	975.36	12.98	-	-
Pure Residence, mixed use & administration	1,259.56	16.76	55-70	-38.24%
Infrastructure	1100.60	14.64	15-25	-0.36%
Total	7516.8	100.0	100	-

Source: Calculated from land use proposal of Gelan against standard of structure plan

As it is shown in table 3.7., the major land uses of structure plan of *Gelan* include Social services, Manufacturing, administration, Commerce, Green area(park, recreation, forest, open spaces, urban agriculture), reserved area, pure residence, mixed use and infrastructure. They are proposed based on the standard set by structure plan manual of Matheos consult. But in reality, structure plan proposal is in variance to the standard set

for structure plan preparation. This is shown by manufacturing land use that exceeds the maximum standard of 5-10% by 18.24%. Besides, manufacturing industries in many parts of *Gelan* are proposed along high way, the area that has the highest land value and could have been used for commerce. On the contrary, land use for pure/mixed residencese & administration has area less than the minimum by 38.24% of the standard (55-70%). This shows gap between land use proposal standard and the actual land use of *Gelan* town.

3.4.5. Gaps analysis of urban plan implementation in Gelan

No	Gaps	Implications
1	*Gelan* has a role of external investment with limited hinterland linkage	Urban centers have a role of linking the overall development of the country, the hinterland and surrounding rural areas by providing and creating economic, market, and social services for urban and hinterland population
2	Absence of structure plan implementation taskforce	It facilitates plan implementation in conformity to land use proposal by defining sets of objectives, targets and strategies
3	Absence of plan evaluation and monitoring checklist, manual or guidelines	This helps to cross check implementation process against land use proposal of structure plan during planning period
4	Absence of action plan, implementing bodies & time schedule in line with legal framework of structure plan	Plan implementation process is assessed and controlled to check progress of structure plan implementation. It reduces wastage of urban land and irregular land use morphology and attracts investors before planning period is over.
5	Absence of priority areas of *Gelan* similar to land use proposal of structure plan	This created mixture of residential, commercial, recreational and industrial land uses along highway. Incompatible investments located along highway and are already in production process affected other land uses at the back thereby creating inaccessibility.
6	Absence of taskforce to supervise construction & building processes as to plan of the municipality and structure plan	This helps to check illegal construction-disregarding plan and design timely. It minimizes wastage of capital to correct modified plan and violation and discourages land use change without prior notification. It creates disorder and incompatibilities against flexible cyclical planning process
7	Absence of priority areas to carry out structure plan implementation process	Priority areas helps municipality to design implementation process with available resources based on investment inflow. This avoids mixture of incompatible land uses in specified pattern of development from center to outwards.
8	Absence of concerned body to check socio economic reports variance to structure plan proposal	This is a hindrance to countercheck clarity, consistency and conformity of socio-economic reports and the structure plan for feedback preparation to modify structure plan manual in the future.
9	Land use proposal variance of structure plan manual	Created disproportionate land uses that affected proportion of administration, residence, mixed uses.
10	Failure to separate incompatible land uses	Created incompatibilities between Awash Auto battery and Belay kinde import export factory with adverse impacts on the residents and nearby land uses.

Source**:** Analyzed from structure plan implementation check list

Chapter 4
4. Findings and Recommendations
4.1. Findings
4.1.1. Implications of investments of Gelan town

Investments before the establishment of *Gelan* town are located along Addis Ababa-Adama highway crossing the town. Many of them are established for external investment. They get their inputs from abroad and then use the location advantages of access to large market, trained labour, investment security and the multiplier effect of Addis Ababa-Adama highway. Many of them are established for external investment. Investments that export final products also contribute development by earning foreign currency and foster production process within Ethiopia. They can also help development of infrastructure between areas producing inputs and processing outputs.

Loosely linked with the town administration and the hinterland, these investments have little contribution to the infrastructure development of the town. Some are functioning within the town on contractual basis in rented buildings and this creates difficulty for town administration to collect tax. Thus, they have little contribution to coordinate the immediate hinterland with *Gelan* and have little role to the local economic development. With exception to *Ada'al* industrial Plc, investments before the establishment of *Gelan* town have no domestic input linkage as they import raw or semi processed materials to produce final outputs. They are currently functioning in large blocks along highway. This has created accessibility problem to the blocks found at the back.

Many of the investments after the establishment of *Gelan* use domestic inputs from a distant areas to produce final outputs. This plays a pivotal role in fostering production of inputs with higher productivity and can have a possibility of creating intermediary people between producers of inputs and investments processing them for consumption. Thus, they have little contribution to the local economic development of the hinterland.

Investments found in Gelan town produce various products to be consumed over larger spatial extent while others are established to use the market advantages of Addis Ababa. There are only few factories that support other investment activities by providing their outputs and playing the role of import substitution. In this regard, they facilitate production process and attract investment to have sustainable supply of inputs.

4.1.2. Findings pertaining to Farmers

Farmers residing within the planning boundary of *Gelan* town have large family size. They also have large residential plots to perform off farm activities within their gardens. The size of their farmland and grazing land ranges from 0.5 to 6 hectares per household while land confiscated from them ranges from 0.16 to 4.75 hectares. In fact, large farmland or grazing land is taken from farmers living in the central part of *Gelan* (*Mendelo* and *Debre Gelan)* neighborhoods. These farmers have access to *Akaki* and *Dukem* markets for their crops, fattened animals and dairy products.

The adaptation strategies of farmers to overcome shocks of urbanization include renting of farmland on yearly basis, fattening animals and involving in investments like urban agriculture, quarrying, small and medium scale trade by using compensation money. But many of the farmers who are victims of urbanization were not successful in their business and investments because of lack of training, disaggregated form of private business and lack of knowledge about profitability of the businesses they are involved in.

4.1.3. Findings of Ground water catchment area

Akaki catchment area, with an area of 335 hectares within the planning boundary of Gelan town, is located at the lowest elevation compared to the topography of Addis Ababa and the surrounding areas. As a result, surface and rainwater of northern Addis Ababa flow to the ground water catchment zone through outlets of little and great Akaki Rivers. Streams of the surrounding watershed hilltops of Gelan town also flow to the direction of catchment area due to land inclination from north, south & east directions of the town. Because of volcanic and porous nature of the soil and the rocks of the catchment area, surface and rainwater percolate down to the aquifer and recharge ground water catchment zone of Akaki.

Land use proposed on the ground water catchment zone of Akaki is any type of construction that is compatible. But any land use change on the ground water catchment zone cements porous soil and rocks thereby creating problem of water recharge. On the other hand, Addis Ababa water and sewerage Authority, though stakeholder of water has limited institutional linkage with Gelan town, Oromia Regional State and Federal government on the use and administration of the catchment area.

4.1.4. Findings of urban plan implementation in Gelan town

Gelan town lacks structure plan implementation taskforce, plan evaluation and monitoring checklist, manual or guidelines. The town lacks concerned body to cross check socio economic reports against structure plan proposal. There is also variance between the standard of structure plan manual and land use proposal of *Gelan* town.

The combined effects of problems related to plan implementation resulted in shortage of land for residential, mixed and services needed by the population of the town and the hinterland before the completion of the planning period. On the other hand, there is wastage of urban land due to irregular morphology and land delivery on unspecified standards. This situation retards investment flow to the town.

The absence of concerned body to countercheck clarity, consistency and conformity of socio-economic reports and the structure plan limited the possibility to get feedback for the identified problems in the process of preparing plan evaluation and monitoring checklist, manual or guidelines.

Failure to identify priority areas for structure plan implementation resulted in the presence of incompatible land uses to exist side by side. Investment activities that are located along high way and have already in the production process cannot be relocated due to low financial capacity of *Gelan* to pay compensation. This shows that plan implementation of the town is dependent on its financial capacity. Even those incompatible non-functioning investment activities established prior to *Gelan* are not relocated to the industrial zone due to absence of priority areas in the town. This violates the principles of cyclical planning process where the identified land use problems are resolved to avoid land use conflicts.

4.2. Recommendations

1. The development of *Gelan* town disregards the urban development policy of Ethiopia where urban centers have the role of coordinating the overall development of urban centers and the immediate hinterland. Therefore, care should be taken by the town administration and investment stakeholders while giving investment certificate to work in the town. They should be chosen based on their contribution to the overall development of the town and the hinterland, their contribution to import substitution and foreign currency earning**.** Stakeholders should also design techniques to foster

economic and infrastructure development between *Gelan* and the surrounding hinterland by giving priority for investments that integrate rural areas with *Gelan*.

2. The farmers included within the planning boundary of *Gelan* town should be given training on the use of compensation money to be involved in investment and economic activities like urban agriculture, trade and quarry. True, training farmers on the use of compensation money and creating access to different financial institutions give farmers chance to organize their family into businesses. To this end, farmers should be organized in Micro and Small scale Enterprises. Besides, *Gelan* town administration should link farmers with different investments so that farmers can access to employment opportunities. It is also vital to build commercial complexes for farmers and convince them to have bank accounts to involve into the urban economy.
3. From economic, social and environmental perspectives, the ground water catchment area should be used for urban agriculture by using modern technologies to sustain livelihood of farmers. This increases water recharge of the catchment area and reduces flood caused due to compaction by different urban land uses that need huge construction. To minimize risks of ground water catchment area, there should be institutional and inter sectoral linkage among stakeholders on the use and administration of ground water catchment area.
4. *Gelan* town administration should implement the structure plan proposal according to the standard set. If problems of incompatibilities, land use change and informality are persistent, they can be treated according to the cyclical planning process. There should also be special plan implementing, evaluating and socio-economic report crosschecking taskforce in the town that can identify the problems of plan implementation and prepare feedback for such problems. It is also vital to identify priority areas in the town to relocate those non-functional investments before the establishment of *Gelan* town to industrial zone to have compatible and accessible land uses along highway with minimum financial capacity of the municipality. Investments with large blocks before the establishment of *Gelan* and located along highway should be adjusted according to increase accessibility and compatibility of planning principles.

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Lists of my informants

No	Name	Institution	Address
1	Alemayehu Eshetu	Adal Industrial Plc	0911635790
2	Nigatu Dinku	Oromia agriculture Cooperative Federation maize flour factory	0912075297
3	Yilikal Eniyew	Belayineh Kinde Import Export Plc	0912126008
4	Besufikad Shewaye	Mesfin Industrial Engineering Plc	0114450433
5	Umer Ali	Nova Star Garment Factory Plc	0911235182
6	Yohannes	Nuova Textile Plc	0114450434
7	Beyene	Dh. Geda Plc	-
8	Kiflu Girma	Dot Pencil Plc	0114450168
9	Amin Yahiya	Sof Umer Marble and Tiles Factory Plc	0114673261
10	Beyene	Awash Auto Battery Plc	-
11	Yirga	Addis Ababa Water and Sewerage Authority	-
12	Belay Mitiku	Trackon Trading Plc	0911923003

This questionnaire is prepared to collect data for the preparation of thesis in partial fulfillment of the Masters of Arts in Geography and Environmental Studies at Addis Ababa University in 2010/11. The objective of this questionnaire is to identify the impacts of different activities like investment, linkage, urbanization on the environment and farmers included in the planning boundary of the *Gelan* town. This questionnaire is used only to collect data needed for this study and will by no means be given to the third party without the consent of the respondents.

Thank you in advance for filling this questionnaire.

Investment questionnaire

1. Name of the factory _____
2. Year of establishment _____
3. How did the factory get the land for investment?
    a. From investment bureau of the zone _____
    b. From investment bureau of the district _____
    c. From land administration office of the municipality _____
    d. From the district's land administration and environmental protection office _____
    e. Please specify if other _____
4. Who was responsible in choosing the land for investment in *Gelan* town?
    a. investment bureau of the zone _____
    b. investment bureau of the district _____
    c. land administration office of the municipality _____
    d. district's land administration and environmental protection office _____
    e. Choice of the investor _____
    f. Please specify if other _____
5. What were the criteria to choose the land for investment in Gelan town?
    _____
    _____
6. Were there problems encountered while trying to get land for the factory? Yes _____ No _____
7. Please state problems encountered while trying to get land for the construction of the factory?
    _____
    _____
    _____
8. How is the compatibility of the factory with the nearby land uses?
    a. The factory is surrounded with residential houses
    b. The factory us engulfed by other factories

c. The factory is surrounded by recreational areas

d. The factory is surrounded by commercial areas

e. The factory is surrounded by social services

f. Please specify if other _____

9. Was there any opposition by the residents of the surrounding and or any other body because of the establishment of the factory at the site?

   Yes _____ No _____

10. Please specify the reasons for the opposition

    _____
    _____
    _____
    _____

11. By the time you get land for constructing the factory, did the area has a problem of road for access? Yes _____ NO _____

12. How was the problem of road resolved to access the factory

    _____
    _____
    _____
    _____

13. From where does the factory get its raw materials to process?

    _____
    _____
    _____
    _____

14. When the factory started producing, did it create market linkage with the hinterland population to sell its products or buy raw materials? Yes _____ No _____

15. How did the factory get site for selling its product?

    _____
    _____
    _____

16. When the factory is producing its products, where does it dispose both solid and liquid wastes?

A. In the compound of the factory _____

B. In the well dug in the compound of the factory _____

C. In the septic tank prepared in the factory compound _____

D. To the open space of the surrounding _____

E. To the nearby stream _____

F. Please specify if other _____

17. If the factory buys raw materials from the hinterland and sells factory products to the population of the hinterland, how was the problem of access road resolved?

_____
_____
_____

18. Does this factory have forward and backward linkage (raw material and output linkage) with other factories of *Gelan* town? Yes _____ No _____

19. If the factory has linkage with other factories found in the town, are the locations of factories established closer to one another? Yes ___ No ___

20. If the factories are not established closer to one another what are the reasons for long distance between or among them?

_____
_____
_____

21. Before the establishment of the factory, was it certified for environmental pollution free production from concerned body? Yes _____ No _____

22. If the factory does not have certificate on pollution free production from the concerned environmental protection office, please specify the reasons

_____
_____
_____

23. What was the total number of employees when the factory started its production? permanent _____ contract _____

24. What is the number of employees currently? permanent ____ contract ___

25. Does the factory have transport service for permanent and contract employees? Yes _____ No

26. In which radius of distance is the transport service available for the employees? A. Below 2kms B. 2-5kms

C. 5-10kms D. 10-25kms

E. Please specify if other _____

27. Do most jobs in the factory need educational back ground?

A. It does not need any educational back ground _____

B. It needs educational back ground from grade 1-6th _____

C. It needs educational back ground from grade 6-8th _____

D. It needs educational back ground from grade 8-10th _____

E. It needs educational back ground from grade 10-12th _____

F. It needs educational back ground of college diploma and above _____

28. What are the major problems hindering the daily functioning of the factory in the town?

_____
_____
_____
_____
_____
_____
_____

Interview Questions for farmers

1. When did you start living in the area that you are living now? _____
2. How many hectares of land do you have at house hold level? _____
3. Who measured the size of your farm land?
4. For how many hectares of land did you get compensation?
5. Is there problem of measuring your farm land for compensation?
6. What was the cause of the problem of your farm land measurement?
7. What ants the components of compensation in Gelan town?
   A. the market value of the land B. the market value for structures and buildings
   C. loss of business income D. cost of rehabilitation E. Others
   _____
8. What are the major crops that you produce in the last five years?
   _____
   _____
9. Where do you usually sell your products? _____
10. In what types of economic activities are you involved during off farm period?
    _____
    _____
11. What economic advantages do you have due to your location to large market like Akaki and Addis Ababa?
    _____
    _____
    _____
    _____
12. Have you compensated for your property when your farmland was overtaken by urbanization of *Gelan*?
    _____
    _____
    _____
    _____
13. For how many years future produce were you given compensation? _____

14. Is /was the compensation given for your property enough to transform your livelihood to other activities like investment? Yes _____ No _____

15. What was the amount of compensation given for the property found on M^2? _____

16. For what properties did not you get compensation? Why?

    _____
    _____
    _____
    _____

17. Were you given training on how to manage your compensation so that you can be involved in other investment sectors of the town? Yes _____ No _____

18. If you were not given training on how to manage your money for economic transformation, on what did you spend the money that you were compensated for your property?

    _____
    _____

19. If your farmland was totally taken by urban expansion of *Gelan,* what was the total area of land given to you for residential house construction? _____

20. If your farmland was totally taken by the urban expansion of Gelan town, were you given chance to organize in MSE to work on urban agriculture? Yes _____ No _____

21. If you are given the chance to be organized in MSE to work on urban agriculture, what types of agricultural products do you produce?

    _____
    _____
    _____
    _____

ይህ መጠይቅ በአዲስ አባባ ዩኒቨርሲቲ የድህረ-ምረቃ ፅሁፍ ማማEያ ለሚውል ጥናት የተዘጋጀ ሲሆን የዚህ ጥናት ዓላማ የተለያዩ የከተማ ግብርና የምርት እንቅስቃሴዎች በገላን ከተማ ክልል ውሰጥ በሚገኝ የከርሠ ምድር ውሃ ላይ ያላቸውን ተፅእኖ በማጥናት የመፍትሔ አቅጣጫዎችን ለመጠቆም ነው፡፡ ይህ መጠይቅ ለጥናት ዓላማ ብቻ የሚውል ሲሆን ይህንን መጠይቅ የሚሞላ ማንኛውም ግለሠብ የሠጠው መልስ ለሌላ ሦስተኛ ወገን ያለ ፍቃድ ተላልፎ አይሠጥም፡፡

ይህንን መጠይቅ በመሙላት ስለተባበሩኝ በቅድሚያ አመሰግናለሁ፡፡

የሚከተሉት ጥቄዎች በገላን ከተማ ክልል ያለውን የከርሠ ምድር ውሃ ሁኔታ ይመለከታሉ፡፡

1. **የከርሠ ምድር ውሃ የሚገኝበት ቦታ ስፋቱ ምን ያህል ነው**? _____
2. **የከርሠ ምድር ውሃው በስንት ሜትር ጥልቀት ላይ ይገኛል**? _____
3. **በዓመት ውስጥ ስንት ሜ^3 ውሃ በከተማው ክልል ውስጥ ይመረታል**? _____
4. **የከርሠ ምድር ውሃው ጥራት በምን ሁኔታ ላይ ይገኛል**?

   _____

   _____

   _____
5. **ውሃው ከመሰራጨቱ በፊት ህክምና ይደረግለታል**? **አዎ** [ ] **አይደለም** [ ]
6. **ለጥያቄ** 5 *መልሱ* **አዎ ከሆነ በምን ያህል ጊዜ** _____
7. **የውሃ ማጣሪያ የሚካሄደው በከተማዋ ክልል ውስጥ ነው**? **አዎ** [ ] **አይደለም** [ ]
8. **ለጥያቄ** 7 *መልሱ* **አዎ ከሆነ በማጣሪያው ክልል አካባቢ የሚታዩ የውሃ በካይ አካላት ይገኛሉ**? **አዎ** [ ] **አይደለም** [ ]
9. *መልሱ* **አዎን ከሆነ እነዚህ የውሃ በካይ አካላት ምን ምንድናቸው**?

   _____

   _____

   _____
10. **አሁን የከርሠ ምድር ውሃ በሚገኝበት ቦታ ላይ የሚገኙ የምርት እንቅስቃሴዎች ምንድናቸው**?

    _____

    _____

    _____
11. **እነዚህ የምርት እንቅስቃሴዎች በከርሠ ምድር ውሃው ላይ ብክለት ሊያደርሱ ይችላሉ**? **አዎ** [ ] **አይደለም** [ ]

12. **ለጥያቄ** 11 *መልሱ* **አዎን ከሆነ እነዚህ በካይ የምርት እንቅስቃሴዎች ምንድናቸው**?

    _____

    _____

    _____
13. **የተለያዩ የአትክልት አይነቶችንና የእህል ዘሮችን ማልማት በከርሠ ምድር ውሃው ላይ የብክለት ተፅእኖ ይኖረዋል**? **አዎ** [ ] **አይደለም** [ ]
14. **ለጥያቄ** 13 *መልሱ* **አዎን ከሆነ እነዚህ የከርሠ ምድር ውሃ ብክለትን የሚያስከትሉ አትክልቶችና የእህል ዘሮች ምንድናቸው**?

    _____

    _____

    _____

15. **የተለያዩ እንስሣትን በከርሠ ምድር ውሃው ክልል ውስጥ ማርባት በከርሠ ምድር ውሃው ላይ የእነርሱ ቆሻሻ ማለትም እበት'ኩስ እና ሽንት የከርሠ ምድር ውሃውን ሊበክል ይችላል?**
አዎ [ ] **አይደለም** [ ]
16. **ለጥያቄ** 15 *መልሱ* **አዎን ከሆነ አደገኛ ብክለት የሚያስከትሉት ምን ምንድናቸው**?

_____

_____

_____

17. **እነዚህን የውሃ በካይ አካላት ለመቆጣጠር በመሥሪያ ቤትዎ በኩል ጉዳዩ ከሚመለከተው አካል ጋር ምን እርምጃ ተወሰደ**?

_____

_____

_____

18. **በከርሠ ምድር ውሃው ክልል ውስጥ ወይም አቅራቢያ መሆን የሌለባቸው የግብርና ወይም የፋብሪካ አይነቶች ምን ምንድናቸው**?

_____

_____

_____

19. **እነዚህ በቁጥር** 18 **ላይ የተገለጹት የግብርና ወይም የፋብሪካ አይነቶች ወደ ከርሠ ምድር ውሃ ክልሉ እንዳይጠጉ ከሚመለከተው የመንግስት አካል ጋር የተደረገ ስምምነት አለ**? **አዎ** [ ] **አይደለም** [ ]
20. **የተደረገ ስምምነት ካለ ይገለፅ፡፡**

_____

_____

_____

21. **ከከርሠ ምድር ውስጥ ውሃው የሚመረተው ከምንድነው**?
ሀ. **ከጥልቅ ጉድ ጓድ ለ. ከምንጭ ሐ. ከኩሬ መ. ሌላ ካለ ይገለፅ** _____

ሀ. **ከጥልቅ ጉድ ጓድ የሚገኘው የውሃ መጠንና አጠቃላይ ሁኔታ ምን ይመስላል**?

የጉድጓዱ ስም	**የሚገኝበት ቦታ**	**የተቆፈረበት ዘመን**	**የጉድጓዱ ጥልቀት**	**የከርሰ ምድር ውሃ ከፍታ**	**የምርት መጠን (ሜ^3)**

ለ. ከምንጭ የሚገኘው የውሃ መጠንና አጠቃላይ ሁኔታ ምን ይመስላል?

የምንጩ ስም	የሚገኝበት ቦታ	የተሰራበት ዘመን	የምርት መጠን (ሜ^3)	አሁን ያለበት ሁኔታ

የውሃ ምርት ሁኔታ

22. ባለፉት አምስት የኢትዮጵያ ዓመታት ወርሃዊ የውሃ ምርት መጠን ምን ይመስላል?

የበጀት ዓመት	የውሃ ምርት መጠን በሜ^3				
	1998	1999	2000	2001	2002
ሐምሌ					
ነሐሴ					
መስከረም					
ጥቅምት					
ህዳር					
ታህሳስ					
ጥር					
የካቲት					
መጋቢት					
ሚያዚያ					
ግንቦት					
ሰኔ					

23. ባለፉት 5 ዓመታት የውሃ ፍጆታ መጠን ምን ይመስላል?

የበጀት ዓመት	የውሃ ፍጆታ መጠን በሜ^3				
	1998	1999	2000	2001	2002
ሐምሌ					
ነሐሴ					
መስከረም					
ጥቅምት					
ህዳር					
ታህሳስ					
ጥር					
የካቲት					
መጋቢት					
ሚያዚያ					
ግንቦት					
ሰኔ					

24. **የከርሠ ምድር ውሃውን አቅርቦትና ጥራት ለማሻሻል የተዘጋጀ የ**3/5 **ዓመት ዕቅድ ካለ ይገለፅ፡፡**

_____

_____

_____

የገላንን የከርሠ ምድር ውሃ ለመጠቀም ያጋጠሙ አጠቃላይ ችግሮች ምን ምንድናቸው?

_____

_____

_____

25. **በእርስዎ ወይም በመስሪያ ቤትዎ በኩል መሻሻል ያለባቸው ጉዳዮች ምን ምንድናቸው**?

_____

_____

_____

Linkage questionnaire

1. From where do the residents of *Gelan* town get food crops?

A. From Market B. From ware houses C. From mill houses

D. Please specify if any other _____

2. Is there permanent market in the town for the residents of *Gelan* town and the hinterland?
Yes _____ No _____

3. What types of products are supplied from the hinterland? A. fruits B. food crops
C. Vegetables D. Others _____

4. How do farmers bring their products to the market of *Gelan*?

5. On shoulder B. By cart C. By pack animals D. By cars E. Others _____

6. What was the role of Gelan town administration for the farmers included in the boundary of the town to involve them into different economic and social activities within the town?

a. Preparing land for residential house construction b. Preparing market for their products

c. Involving the farmers in urban agriculture d. Involving the farmers in MSE

e. Involving the farmers in commercial activities

f. Please specify if other _____

5. How do the farmers included in the planning boundary of Gelan town sell their agricultural products?

a. On farmland b. Retailing their products at general market\

c. For merchants d. For enterprises

e. Please specify if others _____

7. For what was compensation given to the farmers of Gelan town included in the planning boundary?

a. For their farm land b. For their permanent trees c. For their agricultural crops
d. Please specify if any other _____

8. What efforts were played by Gelan town administration to include them into the economic activities of the town?

a. Preparing training for the farmers

b. Organizing them in MSE

c. Preparing training for the farmers

d. Giving the famers credit

e. Creating linkage with others for the products of the farmers

9. How do the farmers in the immediate hinterland of Gelan town bring their products to the town?

a. By foot path b. By surface road c. by gravel road d. by asphalt road
e. Please specify if any other means is available

_____

10. What services do the farmers in the immediate hinterland get from Gelan town?

A. Market B. Education C. Health D. Water E. Training
F. Please specify if any other service they can get from *Gelan* town

_____

Structure plan implementation questionnaire of *Gelan* town

The objectives of this questionnaire are to view products and services of the structure plan on the ground and to promote the actual work of the plan.

1. When and by whom did *Gelan* town get its legal status?
   _____
2. Does the plan of *Gelan* town have legal and political backing? Yes _____ No _____
3. If the answer for question 2 is Yes, please specify legal and political backing of the town.
   _____
   _____
4. Is there a task force in the town that can administer the various implementation activities of the Structure plan of the town? Yes _____ No _____
5. If task answer for question 4 is yes, state the professional mix of the force?
   _____
   _____
6. What is the position of the manager of the plan implementing task force of the town?
   _____
   _____.
7. Is there a special implementation project or task force organized from the representatives of different stakeholders of different institutions found in the town? Yes _____ No _____
8. If the answer for question 7 is yes, what is the objective of forming such a special task force other than plan implementing task force?
   _____
   _____
   _____
9. Is there coordination between the plan implementing task force and special task force? Yes _____ No _____
10. If the answer for question 9 is no, how can the different opinions of the two plan implementing task forces be resolved?
    _____
    _____
    _____

11. Do the two plan implementing task forces have defined sets of objectives, targets and strategies to be achieved in the plan implementation process? Yes _____ No _____

12. If the answer for question 11 is yes, what are the objectives, targets and strategies in the plan Implementation process?

_____
_____
_____
_____

13. If the answer for question 8 is no, what are the reasons for not setting the objectives, targets and strategies in the plan implementation process?

_____
_____
_____
_____

14. Do the objectives, targets and strategies in the plan implementation process set within specified time span? Yes _____ No _____

15. Does the time span to achieve objectives, targets and strategies in the plan implementation process match with the time span of planning period? Yes ____ No ___

16. If the two time spans do not match, what is the reason for not keeping the two time spans to match?

_____
_____
_____

17. Are the objectives, targets and strategies in line with the legal frame work proposal for plan implementation? Yes _____ No _____

18. If the answer for question 17 is no, how can it be possible to assess and control the progress of plan implementation?

_____
_____
_____

19. Is there integration (vertical and horizontal) in the town in implementing the envisaged plan with sector offices, plan preparing institute and utility providers? Yes _____ No _____

20. If the answer for question 19 is No, how is it possible to resolve developmental problems while implementing the plan among utility providing offices and others?

_____
_____
_____
_____

21. Does the town get support from other organs while implementing the plan of Gelan town? Yes _____ No _____

22. If the answer for question 21 is yes, from which organs does the town get support while implementing the plan?

a. Federal government _____
b. Regional government _____
c. Regional Bureau of Works and Urban Development _____
d. Regional Urban Planning Institutes/Units _____
e. District/ Zonal Administration _____
f. Respective sectoral institutions _____
g. Federal Ministry of Works and Urban _____
h. Sister city (which) _____
i. Communities _____
j. Others (specify) _____

23. Are there development priority areas of plan implementation in the town? Yes _____ No _____

24. If the answer for question 23 is yes, what are these development priority areas of critical importance?

_____
_____
_____

25. If the answer for question 16 is yes, why are these areas considered as priority areas?

_____
_____
_____

26. What are criteria for selecting priority development areas?

_____
_____
_____

27. Which sector of the town administration is responsible to conduct building and other construction permit processes according to the design?

_____

_____

28. What is the time span required to carry out implementation process in Gelan town?
A. every four months B. Every six months C. Every nine months D. Every year
E. Not defined

29. Which sector of the town is responsible to conduct supervision for different construction and development activities in the town?

_____

_____

30. During supervision, does the responsible sector assess areas that need modification of plan? Yes _____ No _____

31. If the answer for question 30is yes, how did the responsible body resolve the plan modification?

_____

_____

Table: Land use change format

No	Land use change				Compatibility with neighbour land use
	From	Area(m^2)	To	Area(m^2)	
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

32. Does the community or representatives of different stake holders participate in supervision of plan implementation process? Yes _____ No _____

33. If the answer for question 32 is No, please state the reasons

_____
_____
_____

34. What are the major problems observed during plan implementation of Gelan town?

_____
_____
_____
_____

35. What are the corrective measures being undertaken for promoting the plan implementation process of Gelan town?

_____
_____
_____
_____

36. Are there benchmark and triangulation points in Gelan town needed for plan implementation? Yes _____ No _____

37. If the answer f or question 36 is Yes, what are the significances of benchmark and triangulation points for plan implementation?

_____
_____
_____
_____

38. Are there urban plan implementation capacity problems of the municipality? Yes _____ No _____

39. If the answer to question 38 is yes, what are the problems related to urban plan implementation capacities of the municipality?

a. Equipment capacity _____
b. Manpower capacity _____
c. Institutional capacity _____
d. Financial capacity _____
e. Others (please specify) _____

40. What are the tools currently in use for plan implementation?

_____
_____
_____
_____

41. What are tools needed for plan implementation?

_____
_____
_____
_____

42. What is the number of man power working on plan implementation? _____

43. What is the total man power needed for plan implementation?

_____
_____
_____
_____

44. What is the total agricultural land converted to urban use in Gelan town? _____

45. Is the direction of future expansion of the town suitable for most of the dwellers, investors and stakeholders? Yes _____ No _____

46. If the answer for question 45 is No, what is the reason for dissatisfaction of future expansion direction?

_____
_____
_____
_____

47. What is the total compensation paid for relocating the farmers? _____

48. What were the major challenges of compensation?

_____
_____
_____
_____

49. Was training given to the compensated farmers on how to invest compensation money? Yes _____ No _____

50. If the answer for question 49 is No, what are the strategies of the town administration to reduce urban poverty especially with regards to farmers?

_____
_____
_____
_____

51. Was there urban-rural conflict during implementation process? Yes _____ No _____
52. How was the urban-rural conflict during plan implementation resolved?

_____
_____
_____
_____

53. Is the urban-rural boundary issue resolved during plan implementation process? Yes _____ No _____
54. What were the causes of urban-rural conflicts?

_____
_____
_____
_____

55. If the answer for question 53 is No, please, state the current negotiation issues being under taken.

_____
_____
_____
_____

56. Is there plan evaluating and monitoring task force in Gelan town? Yes _____ No _____

57. If the answer for question 56 is Yes, does the task force have checklist and/or manual or guidelines that help to carry out the monitoring and evaluation activities?
Yes _____ No _____
58. If the answer for question 57 is No, how does the task force cross check plan implementation process?

_____
_____
_____
_____

59. Does the plan monitoring and evaluation task force have an action plan that consists of activities, implementing bodies, time schedule for conducting monitoring and evaluation? Yes _____ No _____

60. If the answer for question 59 is no, how can the plan implementation process be cross checked?_____
_____
_____
_____

61. What are the scales and types of maps submitted for plan implementation?
1:2000 1:5000 1:10000 Blue print Semi original Soft copy

62. What are the problems with regards to the maps submitted by plan preparing institute?_____
_____
_____
_____

63. Do the maps submitted show different land uses like topography, Constraint/hazard, Existing land use, existing road network, Proposed land use and road net work, Water supply and drainage net work , and detailed plans? Yes _____ No _____

64. If the answer for question 63 is no, what problems are encountered due to the absence of such maps?
_____
_____
_____
_____

65. What types of documents are submitted to the town by plan preparing institute?
_____
_____
_____
_____

66. Are the reports clear, consistent and conform with the base map submitted to the town? Yes _____ No _____

67. If the answer for question 66 is No, what measures did the town take so as to solve their problems? _____

Table: Status of plan implementation of industries

No	Land use type	Area(hectare)	% of implementation	Remark
1	Total area proposed for industry			
2	land provided with infrastructures			
3	land permitted for industry			
4	land under construction of industry			
5	completed industrial construction			
6	Industry with service/operation			
7	land permitted to educational service			
8	land under construction for educational institution			
9	completed educational institution			
10	Educational institution with service/operation			
11	land permitted for health service			
12	land under construction for health institution			
13	completed educational institution			
14	Health institution with service/operation			

Table: Proportion of implementation of different land uses

No	Land use	Planning process	Implementation	Remarks
1	Administrative			
2	Commercial			
3	Industrial & storage			
4	Tourism/historical			
5	Recreation			
6	Social service			
7	Infrastructure			
8	Open space/greenery			
9	Others (specify)			

Table: Land use categories that are reserved, implemented and their adequacy

No	Categories of land use	Area reserved (ha.)	Area implemented (ha.)	Land use adequacy, suitability & accessibility
1	Residential			
2	Administration			
3	Commerce and trade			
4	Services			
5	Manufacturing & Storage			
6	Transport			
7	Recreation			
8	Agriculture			
9	Forest and Informal Green			
10	Special function			
11	Infrastructure			
Total area				