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A Project Thesis submitted to school of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirements for Masters Degree in Urban Design and Development.

Sustainable City Fabric for Urban Slum Areas

Case of Bahir Dar

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Aug.2010

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GOD IS GREAT!

Aug.2010 Samson Debele

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Sustainable City Fabric

For Urban Slum Areas

Case of Bahir Dar

By Samson Debele Tulu

Aug.2010

Approved by Board of Examiners

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	Chairman	signature	Date

Chapter one

INTRODUCTION

1.1 Background of the study

Today, Ethiopian cities are facing a lot of challenges because of rapid increasing in population mainly due to high birth rate and high population migration from rural to urban areas. One of this cities that I am focusing for my study is Bahir Dar, the capital of the Amhara national regional state, it is located 565 km northwest of Addis Ababa, is situated at the southern tip of Lake Tana, the largest lake in the country and at the emergence of Blue Nile River. The city is established as modern city late in 1930, its population was known to be 12,000 in 1965 and after 20 years, in 1984, the population was reached 54,000(NUPI, 1996, p.110). Presently the population of Bahir Dar is expected to be more than 250,000, which shows it's fast growing. The city is one of the fast growing cities in the country. It has huge development potential among others that include tourism, industry, and service sectors.

The city as one of the urban area has some challenges that are hindering the existing quality from being a place for tourism to the maximum extent that the city full potential can be reflected and especially the direction of the development like in getting formal and moderate way of living style which is living in a place where the person can have a space for recreation, a place for car parking, spaces for reading and chatting, a street with sufficient space for cars and walkways, and a building with full of facilities, amenities and utility services.

The study as one part of the Bahir Dar city admistration upgrading program will do a lot in solving all mentioned challenges by improving the targeted slum area even if every part of Bahir Dar, which is covered by the city plan, requires an implementation plan or local development plan to reverse the above mentioned challenges. The intervention area includes the former kebele 4. The area is one of the fast transforming areas in the city and it is one of the areas where there are many redevelopments and upgrading demand is existed. The city main market and other commercial activities are located in this area. This area is the first graded intervention area that covers 55 hectare including 15 hectare from the portion of the lake side of Tana.

1.2 Research questions

Urban redevelopment are important concern for the betterment of a given environment in terms of achieving sustainable environment with quality open spaces, car parking, landscaping, street pattern and aesthetically beauty blocks.

1. What area the possible approaches to create an environmental friendly urban space?
2. Where exactly need the slum clearance in the targeted tissue?
3. How urban design should become a function of convenience, comfort, efficiency, play and pleasure?

1.3 Project Objectives

The main objective of the research is to create sustainable urban fabric that can definitely consider and address tree major issues which are environment, economy and social aspects achieved through

- To Creating an environmental friendly urban space comfortable for neighborhood development and tourism.
- To identify the existing situation on the area and come up with feasible solutions
- Reducing the area coverage slum places in the city by providing better access to live, work, shopping, cultural and modern opportunities.
- To increase the range of green areas and to use effectively the water front.
- To improve the physical and social infrastructures of the targeted are, for creating safe community.
- Transforming the decayed part of the city in to sustainable urban fabric.
- To achieve an urban space that becomes a function of convenience, comfort, efficiency, play and pleasure.
- To minimize waste and pollutants in the area.

1.4 Research /project/ methods

Design /local development plan/

Designing the local development plan is the main research /project/ method in achieving the project goal at the end. This will include all the necessary document helping for in the implementation of the project starting front the analysis up to end of whole design part.

Data collection

The process of investigating the project needs data collection, information gathering, fact findings directly from the study area, by using primary sources and information from published and unpublished documents, master plan, terms of reference (TOR) and all other necessary documents as a secondary sources.

1.5 Scope and limitation of the research /project/

As it is difficult to do once all on the city plan, priority intervention areas have been selected based on weighting parameters; the parameters are

- The scale of redevelopment demand in the area
- The category of the area, if it is labeled as slum or near to slum
- The state of infrastructure provision in the area
- The importance of the area in the city scale
- The vulnerability of urban dwellers in the area

The degree of deterioration of urban environment in the area on this case the study will cover the one huge kebele and some portion from the lake side of Tana totally covering around 55 hectares

The study is limited mainly by finance and time boundary for this case this project will end up after total given time of four months including one month for data collection on the study area.

1.6 Relevance of the research /project/

From the point of urban design and planning the project of upgrading is important because urban design as it is a man made environment which is functionally and aesthetically satisfying with its basic elements like convenience, comfort, efficiency, play and pleasure. It is one of the urban planning tools and mechanisms that deals with the physical and abstract components

The physical components are like buildings, trees, street patterns, open spaces, parking areas, landscaping, and infrastructures and other city fabrics. Human being, vehicles make up the dynamic physical components of the city.

The abstract components are also like beauty, comfort, psychological, satisfaction, aesthetics, pleasure, convenience, efficiency, and climate, social and cultural aspects.

In general urban design projects like this local development plan are important for achieving morphological, perceptual, visual, functional, social and temporal urban design dimensions for a better sustainable urban fabric.

1.7 Organization of the project

The study has the following major parts

1. The first part will be the introduction part focusing on the background, objective, methodology, scope and limitations, relevance of the project.
2. The second part will explain the theoretical part that is the literature review on the local development plan (LDP) projects.
3. The third part will have an idea within a suitable context of field findings and analysis part.
4. The fourth part will be the case study
5. The fifth part will briefly explain urban design proposal, which is the local development plan (LDP).
6. The sixth and the last will for discussion, conclusion, and recommendation

Chapter two

SITUATION ANALYSIS

2.1 Socio-economic Analysis

Bahir Dar profile

Bahir Dar city Google earth map

Bahir Dar, the capital of the Amhara National Regional State located at 11° 38' N and 37° 15' E, about 565 km road distance North West of Addis Ababa. The city is encompassed with flat landscape in-between 1,780 - 1,886 m.a.s.l (BDIDP, 2006). The city has got a metropolitan administration status with state and municipal level functions. In this regard, the nearby small urban localities named Tis Abay, Zegie and Meshenti are integrated with the city proper. For administrative purposes the core city area is divided into nine urban Kebeles and nine rural Kebeles

Bahir Dar has a flat land topography situated on the South Eastern shore of Lake Tana. The slope varies from 0 to 20 % with swampy areas, especially during the rainy season (NUPI, 1996). The city, in

The study area

Bahir Dar city is labeled as metropolitan city containing 9 urban kebeles and 4 satellite towns, which are located in the outskirts of the main city. Bahir Dar has been shown tremendous growth since its establishment, in particular after it was given the status of the regional capital. Currently it is one of the fast growing cities in the country.

The city plan of Bahir Dar was first prepared in the late 1960's by the Germens. Since then, the city plan has revised four times. The present city plan of Bahir Dar is prepared by the Federal Urban Planning Institute (FUPI) and delivered to the city in 2006. This plan indicates only the land use pattern of the city, but has not been supported with any local development plan, which is very vital for its implementation. The lack of such implementation plans has hampered an efficient use of urban land for long time and the same practice is still occurring.

The following 3 areas on the map are selected for intervention areas and the selected project area is located on intervention 2 which is kebele 4.

Areas (kebeles) selected for intervention

Intervention area 2

This area includes the former *Kebele 4*. The area is one of fast transforming areas in the city and it is one of the areas where there are many redevelopments and upgrading demands are exist. *The city main market and other commercial activities* are located in this area. This is also 1st graded intervention area and it a place where am focusing and working.

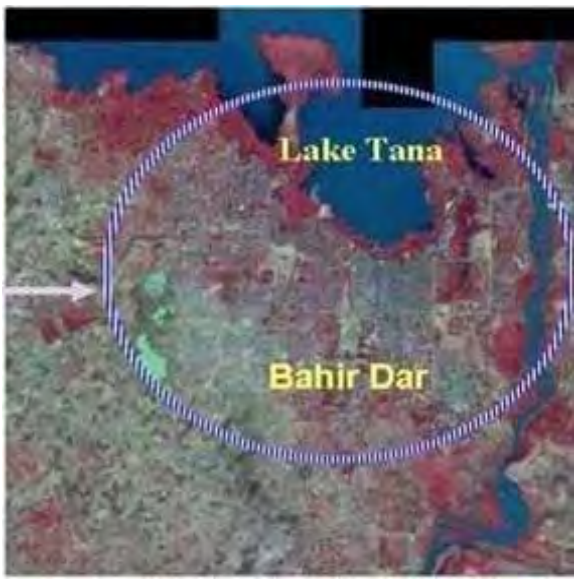
2.1.1 Environmental Aspects

Historically Bahir Dar has been started about 100 years ago as a small fishery village at the Lake Tana shore. The city centre of Bahir Dar comprises two separate features, dry land and water, and there is a strong dependence between these two features. Notwithstanding, the city of Bahir Dar has experienced 50 years of sustainable development with planning as a driving force.

Green streams of the study area

The following image depicts the gap between old and new Bahir Dar.

Aerial photo, 1957



Satellite image, 2007

Urban planning plays a key role in creating a harmony between water and land resources developments and enabling the city to efficiently utilize and equitably distribute its development potentials. Planning is expected to maintain the balance between environment, social, economic, political and spatial dimension of growth and development.

Pollution is an undesirable environmental hazard that affects the health and economy of the local community. Pollution can be a physical, chemical and biological characteristic of water, air, land, noise and waste that may harmfully affect human life, living conditions and cultural assets of a society. In this sub section water, air and noise pollution factors and waste management are discussed.

Water pollution

The survey result shows that 5.9% of the households are subject to water pollution. The major causes of water pollution are mainly residential and commercial wastes. The residential waste accounts 66.9% of the water pollution (liquid waste being discharged in the open field) and commercial waste accounts 33.1% (inorganic and organic waste).

Air pollution

Apart from natural causes, air pollution mainly occurred as a result of desperation of particulate or gaseous pollutants completely miscible with air in varying proportions. The level of air pollution appears in the study area due to smoke emission from houses and cars. The survey result shows that 21.1% of households feel that household smoke causes air pollution, 5.8% says dust and the remaining 73.1% observed liquid and solid waste smell.

Noise Pollution

Noise pollution occurred due to over sound and other sources of sounds in the surrounding. It affects speech, hearing, general health and behaviour of people exposed to it over extended period of time. Noise pollution in the study area is not seen as a side effect on the health of the residents rather disturbs their speech and hearing. The survey result shows that 30% of noise pollution occurred by vehicle, 40.2% by hotel and bar, 28.4% by music shops and 1.4% occurred by movable advertising.

Solid Waste

According to the survey solid wastes discharged from the houses contain plastic, wood, paper and cloth (82.5%), metal (3%), food and fruit residuals (7.6%) and others (6.9%). In addition, the survey result tells that 26.6% of the household's burn wastes in their compound, 5.5% dump in a pit, 36.7% dump outside the compound on open space, ditches and roads, and the remaining o.3% of the households recycle their waste directly. Only 30.9% of the home effluent is collected by the municipality.

Unfortunate waste management system

The new private door to door waste collection service is covering most of the city. Hence, residents will no more discharge home effluents on open spaces, ditches and roads. Further, the recycling and composting measures may generate money to the municipality and private processors.

Liquid Waste

The liquid waste disposal survey shows that 22% of the households in the study area used septic tanks, 9.1% dispose on drainage, 36.4% on open field, 12% on pit and the remaining 40.3% on the roads. This needs creating awareness on liquid waste management as well as providing regular services to collect the liquid waste.

Unprotected liquid waste of the study area

2.1.2 Housing and living condition

Poor housing quality in the tissue

According to the 2007 census the total population of Bahir Dar was counted to be 220,344. With a 2.6 percent national average growth rate the total population of Bahir Dar is estimated to be 231,950 in 2009. And a door to door survey of the planning area depicts that about 20,855 people resides in Kebele 05, 06 and 12. Of the total population of the planning area 52.8% are female and 48.2% male. The dominant of female citizens is mainly due to female immigrants from bordering rural Woreda and Zones. This requires affirmative action and awareness creation for female citizens to make them more productive and beneficiaries in different development programmes and projects.

Condition	Housing Unit	%
Good	82	14.8
Fair	131	28.6
Bad	302	56.6
Total	515	100

Table showing Housing Conditions

Function of Houses

The local area housing function varies based on the peculiarity of the sub local area. The survey shows that 23.0% of the houses in the study area are residential, 29.0% mixed use (residential and business), 43.0% business service centres, and the remaining 0.6% are administrative offices.

Kitchen Facilities

The study indicates that 66.3% of houses have no kitchen, 28.7% of households have private kitchen and 5% of the households used shared types of kitchen. The shared kitchens are constructed by an NGO for the low income households. Due to income and space limitation some residents cook at drainage lines.

Outdoor kitchen between many houses

Toilet Facility

The survey result indicates that 44.6% of the local area households do not have toilet, 28.8% use shared toilet and the remaining 26.6% own private toilet. Hence, the city administration is expected to construct standard communal toilets in collaboration with community organisations and development partners.

Commune toilet for more than 10 households

Water Supply

The city water supply potential is sufficient to meet the demand of residents. Figure 2.10 shows that 43.3% of households own private tap, 21.9% shared tap and the remaining 34.8% of households access from other sources such as ponds, private and public vendors. This suggests to having more work on water distribution and networking.

Electricity Supply

In a modern world supply of electricity is a basic requirement for sustainable development. As a regional capital, Bahir Dar has no serious electricity problem.

Almost all households in the local area access electricity service; 43.3% have private meter, 50.2% have shared meter and the remaining 6.5% other means.

Telephone Facility

The local area telephone service connection is low. Only 39.8% houses have land line telephone connection. Mobile telephone and internet users are rare due to income limitations.

Access to Street Light

Street light service is crucial for security and night life. The data obtained from the survey shows that 66.3% of the local area houses do not have access to street light.

2.1.3 Transportation system

Nearly 95% of the residents in the local area have access to road. Of the roads available in the local area 30.2% are asphalt, 27.4% gravel, 6.6% pavement and 55.8% graded and earth road. The inner roads providing service to the residents of the local area are adequate, planned and wide.

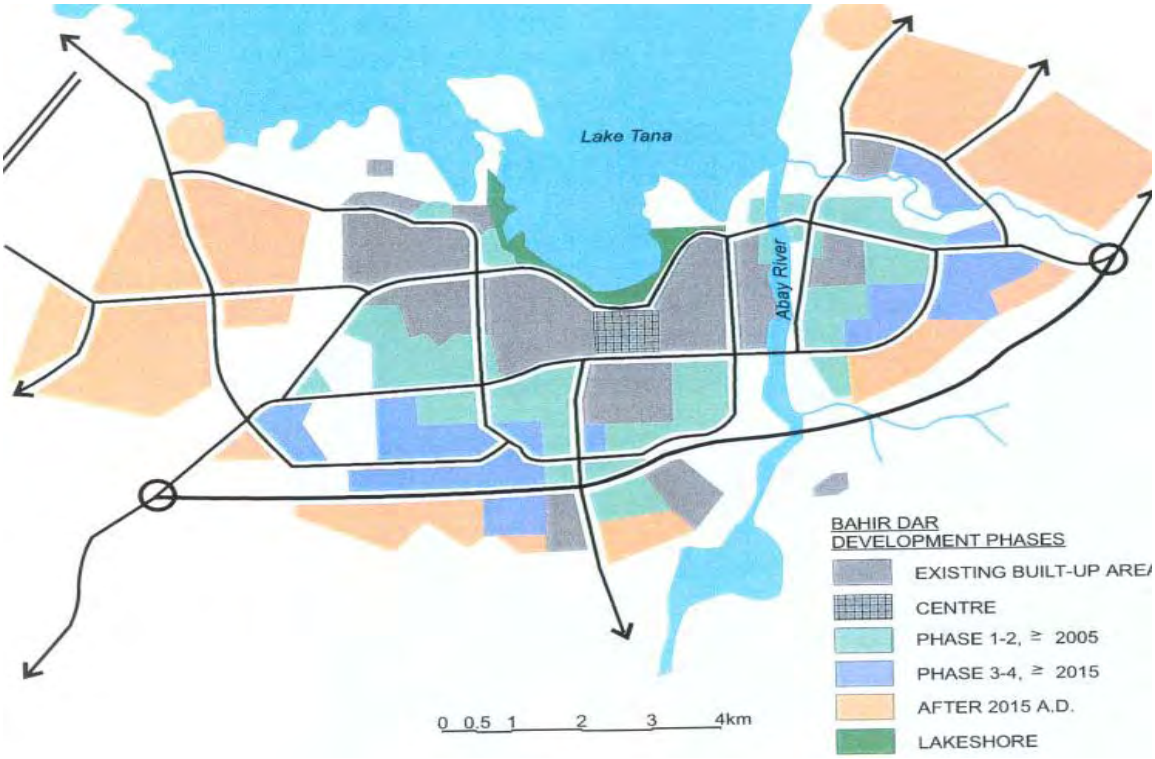
Cobble stone cover for internal roads

The planning area has proper transport facilities. Of the surveyed households 69.4% are walking of cobble stone made, 15.8% use bicycle and the remaining 14.8% use public bus and taxi.

Main streets with its wonderful green buffers (palm tree)

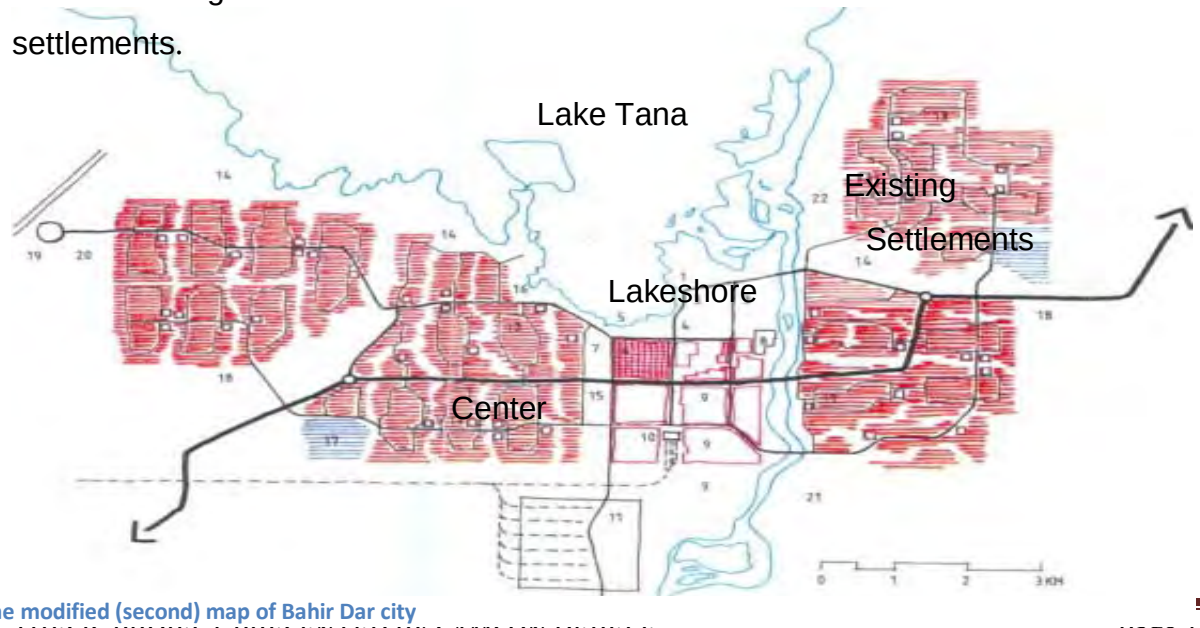
2.2 Physical analyses

Bahir Dar has been started about 100 years ago as a small fishery village at the Lake Tana shore. The city centre of Bahir Dar comprises two separate features, dry land and water, and there is a strong dependence between these two features it was only for feeding themselves by fishing. The below shows the existing built up area, the lakeshore, the centre, and also future plans of the city.



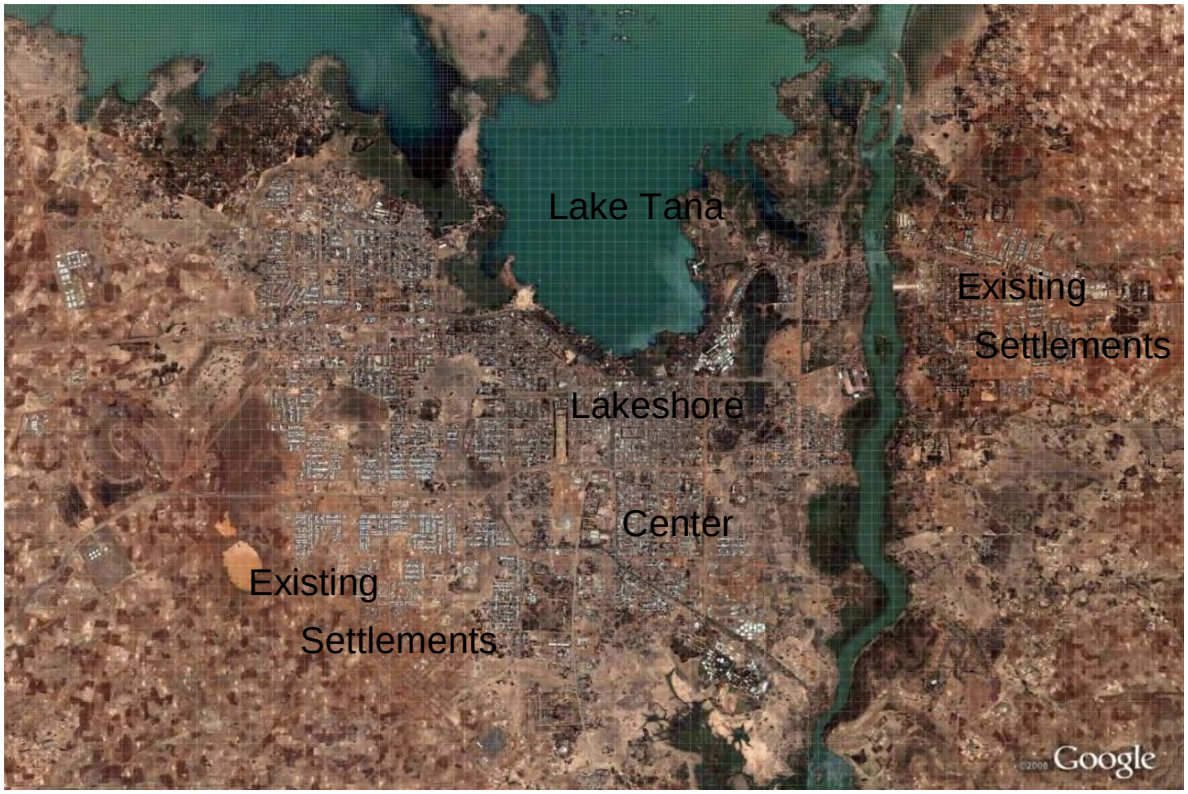
The first map of the city

The second plan was the plan where we can see a huge expansion on the city both to the right and left side of the street direction with much more increase on settlements.



The modified (second) map of Bahir Dar city

The third one is the existing one which is based on the previous plans with a big change on upgrading and huge construction of commercial buildings even if Opportunities and challenges for development are highly concentrated in urban cities and towns.



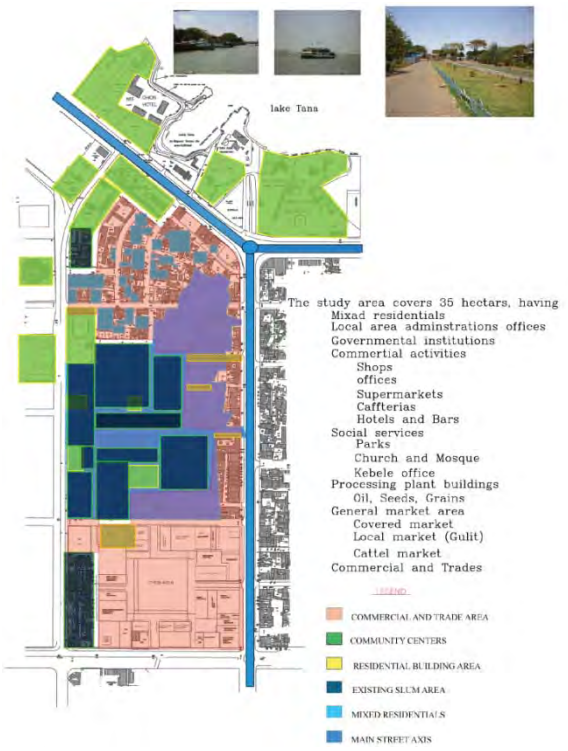
The whole city with the center the study area

The study area 1

The study area

This study area includes the former *Kebele 4*. The area is one of fast transforming areas in the city and it is one of the areas where there are many redevelopments and upgrading demands are exist. *The city main market and other commercial activities* are located in this area. This is also 1st graded intervention area and it a place where am focusing and working.

Existing land use of the area



The existing land use provides every function for the given commercial area with some lack of order and design.

Existing street network

The Bahir Dar street network is one which can be mentioned as a best form those developing cities of Etiop.

Existing slum areas

The housing quality found in the study area is very poor having large number of slums which needs to be renewed, upgrading and full intervention.

Existing mixed use buildings

Mixed use buildings in the study area are from the small kikle bokolo houses (boiled maize) to the large super markets.

Existing commercial areas

As the area is commercial area the spaces found around and in are not to the standard for circulation and parking.

Existing community centres

From community centers on the area parks and open spaces are not well designed and sufficient as a city.

Part of the spaces in and around the study area

Book stores and cafeteria

Huge commercial centers

City Park (meskal squire)

Preserved green area

Main city market area around the center

City center with high activity

Chapter three

LITERATURE REVIEW

Introduction

Rapid urbanization can bring many environmental risks and problems. These vary across the globe, but commonly have an adverse effect on a healthy urban environment in its broadest sense and, by extension, on long term growth and development. Cities of industrialized and transition countries have created and inherited a frightening legacy of pollution, soil and water contamination, “dirty” production techniques and high-waste consumption patterns. In most of these countries, improvements are now being made, but at a significant cost. In the cities of developing countries, the risks and the problems are much greater, because of the overwhelming scale and speed of urbanization. These cities face a rate of urban growth that was not planned for. The result is a conflict between their environmental resource base and development needs.

This conflict damages both the environment and the economy. Apart from its effect on health and well being, environmental degradation constrains development and the growth of cities themselves. Health and premature death not only cause pain and suffering, but also impose heavy costs on the economy. Ultimately, neither the human population nor the environment escapes the detrimental effects of unsustainable consumption and degradation.

Urbanization is arguably the most significant process of land use change in Bahir Dar. According to the Bahir Dar Environment Agency, more than 30% of Bahir Dar population is now living in urban areas. In size, these urban areas have grown by almost 40% over the last fifty years. Urbanization is most visible through the spread of built-up areas, business parks and the creation of large transport networks and hubs. New leisure parks, but also the conversion of farmsteads into residences and hobby farms in near-urban landscapes are other manifestations of urbanization. A change in the relationship between rural and urban land uses has major consequences both for people’s quality of life and for the environment. Inefficient land use patterns result in economic, social and environmental costs. Examples of these costs are the need to maintain transport and social infrastructures over larger areas, distorted land prices, and increased energy consumption and emission of greenhouse gases as a result of commuting. Urbanization can also have a negative

impact on environmental services such as the provision of drinking water. It can erode the character, identity and attractiveness of cultural landscapes.

Sustainable land use planning requires recognition of the limitations of the biosphere and the need for a balance of social, cultural and economic uses within these natural limitations. Land use planning is fundamentally related to sustainability planning, defined by as planning that integrates five dimensions of sustainability: social, cultural, environmental, economic, and governance. The slum is not only a manifestation of mismanaged urban planning in the Countries of the South.

The urban environment is highly complex. In the past, public policies have aimed at eradicating slums, without taking into account the potential of their inhabitants to resolve the very problems that slums reputedly generate. Especially in the contemporary era of globalization, it is important to stress the resources that slums can offer the 'chaotic' city. This requires a reassessment of views on urbanization. Sustainable urban development will only be possible if we concentrate on solving the problems of the majority of urban populations in ways that make use of their own creativity and involve them in decision-making. According to a whole range of material, natural and socio-economic indicators on developing countries, spatial and demographic urban growth is characterized by the deterioration of physical, economic and social living conditions for a large and increasing part of the urban population. In this context, this article highlights the contradictions between housing-related practices, social mechanisms and public policies, as well as the need to define sustainable solutions which promote the wellbeing of the majority of urban dwellers. It is argued that there is a need to reconsider certain established approaches:

- On the one hand, there is an exclusively sect oral, technological and local approach which posits a 'radiant future' for every poor city neighborhood in the Third World, a future consisting mainly of better provision of water and sanitary services.
- On the other hand, a more realistic approach that accepts that, although the policies and plans of governments and international organizations may reflect a true commitment to solving the problems of the poor in urban areas, they are often ill-advised or wrongly conceived

3.1 Definition of key terminology

3.1.1 Sustainability

Efficiency: Resources should not be over exploited. Neither should they be un-utilized. Utilization however must prescribe full restoration;

Sufficiency: Resources are to be used for absolutely necessary ends. Their use must aim for the highest marginal returns;

Consistency: Ecosystems should be managed in a manner that is compatible with each other;

Precaution: If the potential threats posed by the economic activity to ecosystems are serious, or where the environmental damage due to it is expected to be irreversible, lack of full *scientific* certainty that the threats or damage will in fact occur is not to be a reason for postponing measures to prevent their occurrence. Gambling with the environment is not advised, particularly if the stakes are high.

Key terms to be considered in **sustainability** are

- Protection of Air Quality and Water Quality and Quantity
- Protection of Soil Productivity
- Accommodation of Expected Population Healthy with its Diversity
- Cost of Public Infrastructure
- Employment, Income and Taxation
- Provision of Basic Needs and Services
- Reduction of Vulnerability to Flooding
- Species and Habitat Diversity (Biodiversity)
- Single Species of Concern Habitat Abundance
- Protection of Important Ecological Processes
- Consideration of Ecological Goods and Services
- Protection of Cultural Resources
- Protection of Traditional Uses and Values
- Visual Quality
- Recreational Opportunities.

3.1.2 Urban Fabric

Urban

- Relating to concerned with a city or densely populated area located in or characteristics of a city or city life.
- It is a living working planet.
- It is a man made environment.
- It is a place for innovation and technology

Fabric

The generic term for the physical aspect of urbanism, emphasizing building types, thorough fares, open space, frontages, and streetscapes; while excluding without prejudice to this useful term, environmental, functional, economic and socio-cultural aspects.

City fabrics

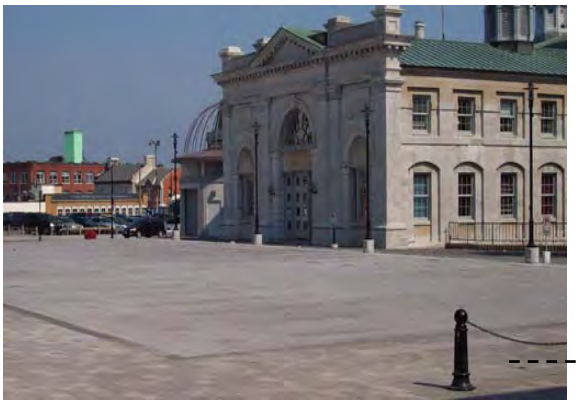
Market activities in city with clear urban spaces

Urban fabric" frequents the vocabulary of urban designers and planners. As an image rich metaphor, it communicates the complexity and interrelatedness within cities. Like fabric, sidewalks, streets, parks and buildings weave together, forming a backdrop for civilization, commerce and culture to transpire and grow. Textures and colors weave expressions at all scales. Big scales include Google Earth-like views showing skyscrapers, skylines, grid street layouts that discipline building placement laced by parks whose emerald threads embellish the city plan. The smallest scales are subtly expressed in the stone walls of historic buildings, ornate roof gardens crowing buildings and cafes garnished with fences, flowers, trees and clinking wine glasses.

Urban Fabric

Urban tissues having sustainable spaces

The ultimate goal of studying the urban fabric is to construct and manage the city sustainably. In order to effectively conduct the research and employ the results into practice, it is necessary to use information technology and tools. It has been a common practice in China that the city has been built and managed disorderly and inefficiently without comprehensive feasibility study. Therefore, it is highly demanded that indicator systems and evaluation criteria should be introduced as the guidelines for the building and managing of the city, so that the city can be developed on the base of sustainable development.



Well designed urban spaces

This paper firstly has systemically discussed the concept and theory of urban fabric, which is as form of a city, especially as the expression of spatial form of a city. After the constituent elements of city are integrated into urban fabric through the structural relationship, they express themselves as the macrocosmic and dynamic “fabric” from spatial aspect. The fabric is a superficial urban shape of “extension of expression” under its mechanism of intension of logic.

Concrete pavement

3.1.3 Urban slums

Slums

- Densely populated area of substandard housing, usually in a city, characterized by unsanitary conditions and social disorganization.
- Slums are neglected parts of cities where housing and living conditions are appallingly lacking. Slums range from high density, squalid central city tenements to spontaneous squatter settlements without legal recognition or rights, sprawling at the edge of cities. Some are more than fifty years old; some are land invasions just underway. Slums may be called by various names, Favelas, Kampungs, Tugurios, yet share the same miserable living conditions.
- An area of poor housing, often characterized by multi-occupance and overcrowding. Schools are poor, items sold in local shops are relatively expensive, and sanitation inadequate. Slum populations often exhibit high concentrations of drug abusers, alcoholics, criminals, and vandals.
- An area within a city characterized by deteriorated buildings, unsanitary conditions, and high population densities
- A **slum**, as defined by the United Nations agency UN-HABITAT, is a run-down area of a city characterized by substandard housing and squalor and lacking in tenure security. According to the United Nat

  Urban dwellers living in slums decreased from 47 percent to 37 percent in the developing world between 1990 and 2005.However, due to rising population, the number of slum dwellers is rising. One billion people worldwide live in slums and the figure will likely grow to 2 billion by 2030.
- The term has traditionally referred to housing areas that were once relatively affluent but which deteriorated as the original dwellers moved on to newer and better parts of the city, but has come to include the vast informal settlements found in cities in the developing world.

3.2. Sustainable developments

3.2.1 Social aspect

Urbanization being twentieth century demographic phenomena, more and more people are changing residence from rural to urban areas. Studies have shown that increasing proportion of

1. The second national population and hosing census was carried out in October 1994.
2. The population prefers large cities, big towns and nearby administrative capitals. The growth of an urban center can take place in different forms: by growth of the existing urban localities, by classification of cities (from rural to urban) and annexations of new territory to existing cities.

   The other main factor which determines the growth of an urban center is the demographic change i.e. natural increase (difference between crude birth rate and crude death rate) and migration effect. Some of the urban centers in Ethiopia have already faced and others eventually will face one of these types of growth or a combination of them. In 1984 the urban population of Ethiopia contributed only 11.2 percent to the total population of the country. Over the ten years between the two censuses, the proportion grew to 13.7 percent.

   According to the second national population and housing census, the population of

Ethiopia was estimated to be 53,477,265 in October 1994. The census also revealed that 86.3 percent of the population resides in the rural areas, while 13.7 percent were urban dwellers. The country is among the high fertility nations with a total fertility rate of 6.9 children per woman. Over 45 percent of the populations are below age 15, indicating that there is a large potential of women in the childbearing age. Because of this potential population momentum, whatever intervention measures are to be taken to reduce fertility, the growth of the population will show a fast increase for a couple of years to come. In fact, assuming the growth rate will decline from the current 2.9 percent per annum to below 2.0 percent by 2030, the Central Statistical Authority of Ethiopia projected the country's population to be over 106 million by 2020 and nearly 130 million by 2030.

3.2.2 Economical aspect

The assessment of housing demand is an important question for all developed or developing economies, for two reasons. The first one is to assure all citizens of the fulfillment of all basic needs - quantitative and qualitative - that makes a decent standard of living possible in the reasonably near future. The importance of this point of view is generally shared. As a matter of fact, the need for an appropriate dwelling is considered a basic need as crucial as alimentary and sanitary needs. The second reason notes the importance of building industry, either as a powerful factor for labor force demand, or as a boost for the industrialization of the country.

It is therefore understandable why every government devotes particular attention to the housing question either on the need and demand side, or on the financing of the supply and demand one.

In order to have an appropriate approach to the housing question, we should first solve a knotty problem: the definition of housing need and housing demand. The concept of housing demand stems from economics, and it concerns not only the wish to own a good, but also the capacity to pay the price.

Because of the backwardness of the agricultural practice and diminishing return of productivity of the arable land population in the rural areas are on the verge of being pushed out of their rural niche. This and the above mentioned factors will trigger faster urbanization in Ethiopia as in any developing country. In fact, according to the United Nations population projection the proportions of urban population in the country will be 26 percent by the year 2015 and 34 percent by 2025.

This unprecedented urbanization unparalleled with the growth of the economy needs some intervention to harmonize the difference. Be it through natural increase or migration effect or area expansion, growth of an urban center definitely demands infrastructural developments. This includes roads, schools, hospitals, health centers, housing, water supply, sanitation, and waste disposal, light…etc. In Ethiopia, especially in urban areas, shortage of housing is one of the major problems that call for immediate action. The majorities of houses in Ethiopia are below qualitative standard and lack adequate space. The extent of provision for water supply, electricity, and drainage is very minimal. The lives and health of people living

in housing of such poor quality and with such inadequate provision for water, sanitation, and drainage are under continuous threat. However in the developing world in general and in least developed countries like Ethiopia in particular the number of people living in such conditions is increasing every year. Studies have shown that without major improvements in housing markets and in the expansion and improved provision of infrastructure and service, it is inevitable that the population living in such environmental expand very rapidly (Engelmann Lovert, 1997).

In order to have an appropriate approach to the housing question, we should first solve a knotty problem: the definition of housing need and housing demand. The concept of housing demand stems from economics, and it concerns not only the wish to own a good, but also the capacity to pay the price. The concept of needs is a social concept that refers to the inherent duality of a dwelling that is, both an economic good, subject to the market laws, as well as a good or social service whose fulfillment depends on the support of the public operator and his resources. In this second meaning it seems plausible to reason in terms of need.

In the analysis, it follows that factors to take into consideration are different depending on the favoring of the supply side or the need side. In the case of the former, purely economic variables such as incomes, prices, rates of interest, etc. come to the forefront. In the case of the latter, population structure and the goals to be pursued in terms of housing standards acquire prevailing importance. Housing standards can be defined in quantitative and qualitative terms. The most elementary quantitative standards consist of establishing a number of rooms (generally one at most) or some amount of housing space per person. Qualitative standards refer to the equipment of certain crucial facilities that define the urban way of life, such as running water, indoor toilet, electricity, but they also refer to elements involved in the structural features of dwellings that distinguish a home from a mere shelter.

Housing standards, either quantitative or qualitative, are considered by some to be “objective.” In reality, the opposite is true: They are criteria that, once established, easily become subject to subjective considerations. Moreover, they are historical criteria in the sense that their validity is temporarily and spatially limited.

3.2.3. Environmental aspect

Environment was ranked highly important as an issue in the province, especially the amount, quality of and access to water. Climate change and biodiversity loss are also key environmental issues that require consideration in sustainable land use planning. Existing environmental policy is weak and does not adequately address the environmental impacts of development or the need for environmentally sustainable land use planning.

With regard to sustainability, the destinies of cities and their expanding hinterlands are inextricably linked, and an increasing number of countries now recognize certain key principles of environmental management. One is that the **environment is not an end in itself - not something to be "protected"** from development - but is a **resource to be carefully man-aged on a sustainable basis**. Secondly, urban development necessarily depends upon the natural resource base available to a city - which in turn has an impact on the state of those resources. It is therefore crucial to improve understanding of the two-way relationship between environment and development.

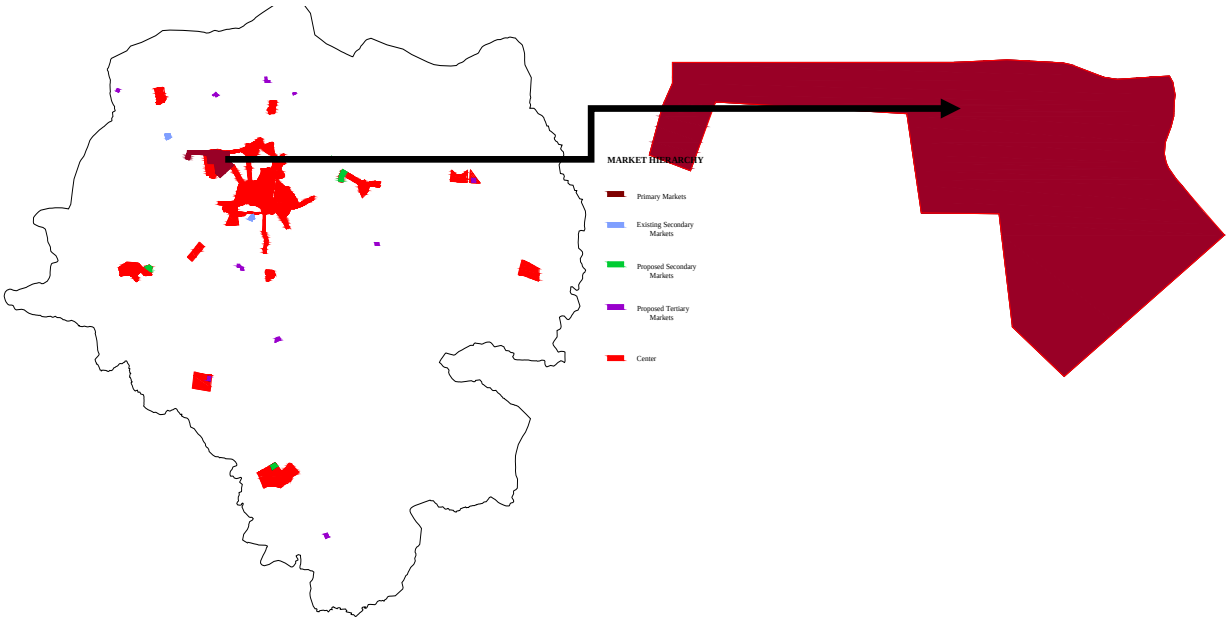
Climate change is likely to have significant environmental, social and economic consequences, such as:

- Change in the extent and range of ecosystems
- increased vulnerability of plants and animals
- increased pressure on watercourses and wetlands
- increasing competition for scarce water resources
- Change in the range and distribution of pests
- Drop in agricultural productivity
- Economic restructuring
- Impact on human health

Chapter Four

CASE-STUDY

4.1 Case study /Mercato/



Addis Merkato (Amharic for "New Market", popularly just Merkato or Mercato, from the Italian for "market") is the name for the large open-air marketplace in the Addis Ketema district of Addis Ababa, Ethiopia, and for the neighborhood in which it is located.

Part from hot activities of mercato

Merkato is the largest open air market in Africa, covering several square miles and employing an estimated 13,000 people in 7,100 business entities. The primary merchandise passing through the Merkato is locally-grown agricultural products — most notabcoffee.

The Addis Merkato was instituted by segregationist policies of the Italian occupational government. They restricted the historic St. George Merkato to Europeans, causing the mostly Arab tradesmen to relocate a half mile to the west. Over time, local shopkeepers displaced the Arab merchants and, since the 1960s, the Addis Merkato has had a mostly local flavor.

- Located in the heart of Addis Ababa

- For all consumer products it is the main market center in whole Ethiopia
- Merkato's area is between 1-2 million meter square (1-2 km2) with very few buildings which has 1 floor (less than 25%)
- There are more than 7,100 business entities in this market
- It may look like a slam, but in terms of economic value per land area, incomparably its number 1 in any part of Ethiopia, How? good question:
- It's land lease value is the highest about 10,000 birr per square meter
- shop rent is also the highest going as far as 500 birr per meter square per month
- Total Daily transaction is in 10s of millions of birr

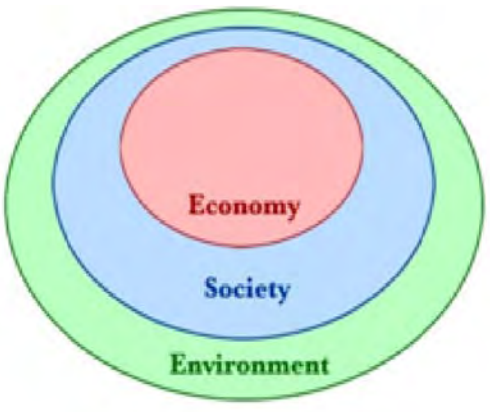
One from the shops around spice shops (kimem tera)

All kinds of merchandise products, services can be found in this market. There is nothing you can't find in this market those primary indoor shops that replaced the outdoor ones, some are covered outdoor shops with new buildings and indoor plumbing, modern buildings, glass and other amenities. It's just a start but most likely a look into what mercato may look like in the future.

Chapter Five

PROJECT PROPOSAL

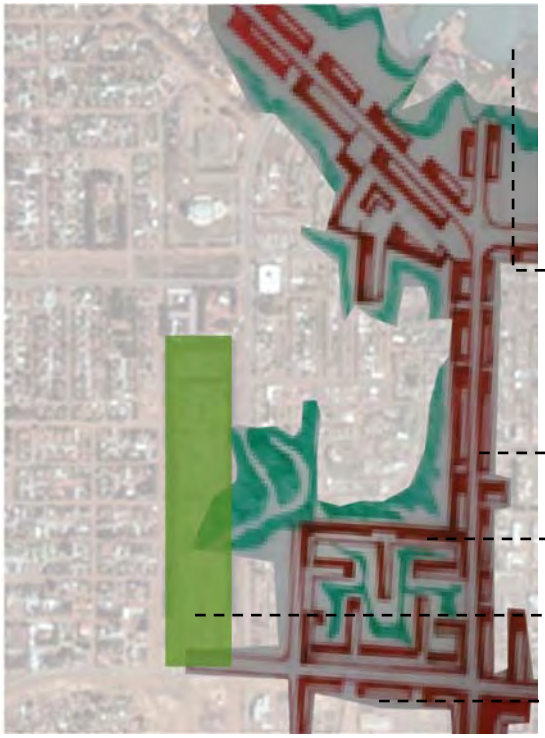
5.1 Concept Development



My idea stands from looking the concept of sustainability to the city fabrics.

Sustainable development is the development that meets the need of the present generation without affecting the ability of the future generation to meet their needs with high reconciliation of environment, economy and social demands.

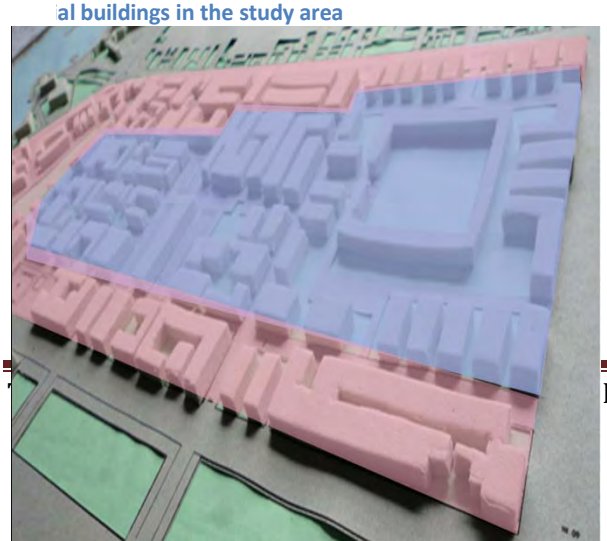
Proposed alternative during concept development on the site



A representation of sustainability showing how both economy and society are constrained by environment

The first option to use Main Street as a commercial corridor throughout and to use the market as it is for trade purpose with only modification of spaces for suitable for commercial activities.

The key corridor al buildings in the study area

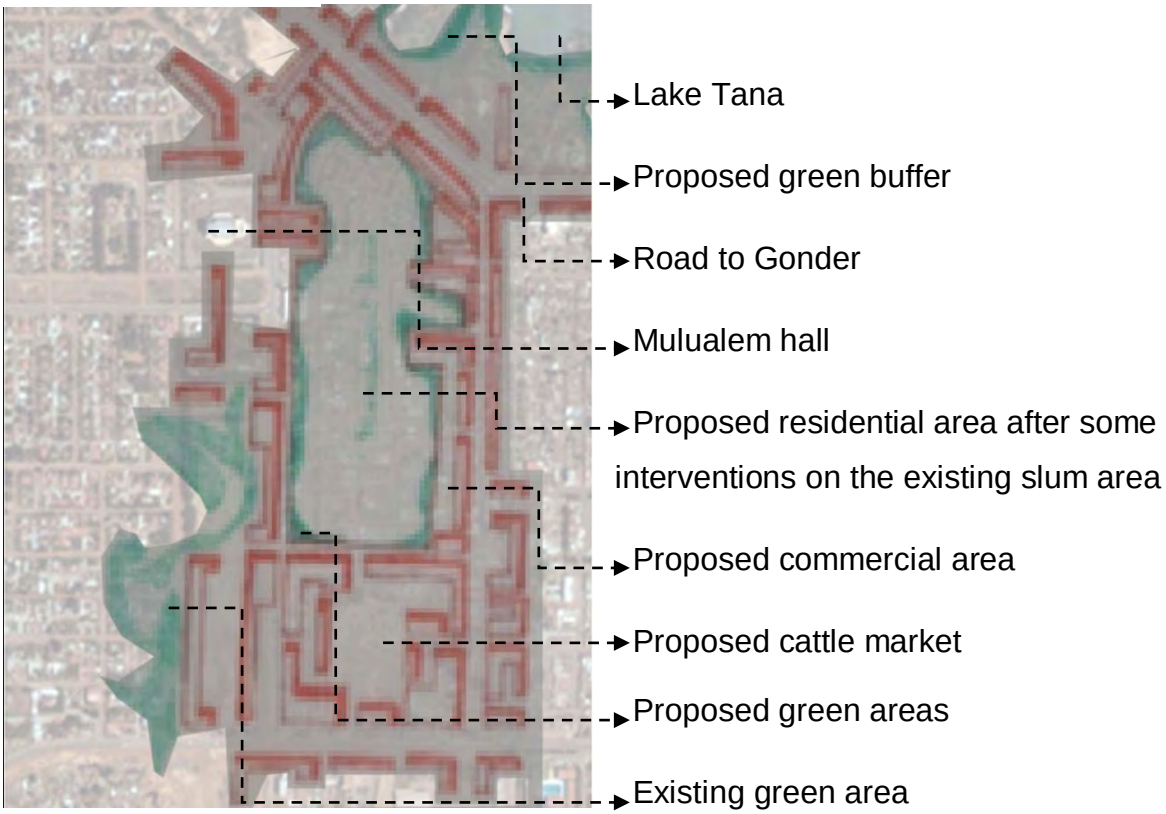


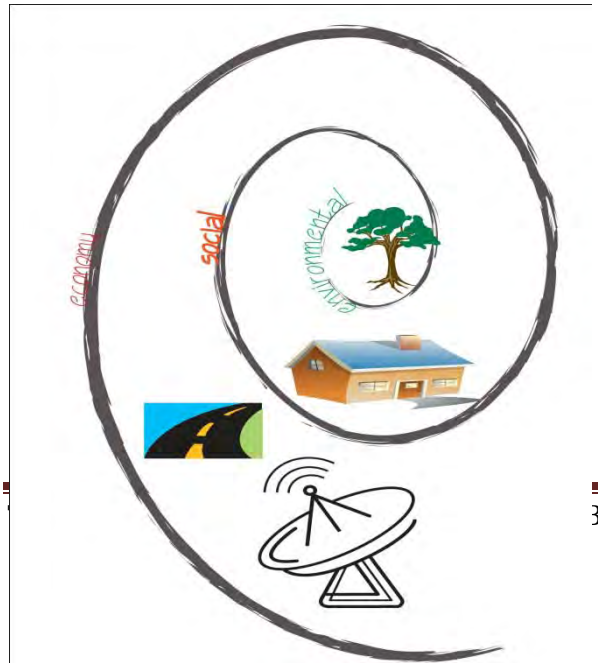
Alternative two

This second option is focused on the center as well as on the surrounding of the study area. The inner part (light blue) is a very slum area of living and mixed

residential but the periphery (light red) has the potential for high commercial building and for some apartments. The green area is also a big issue which I tried to consider for the area even if the city is reach in here greenness.

The morphology of the site

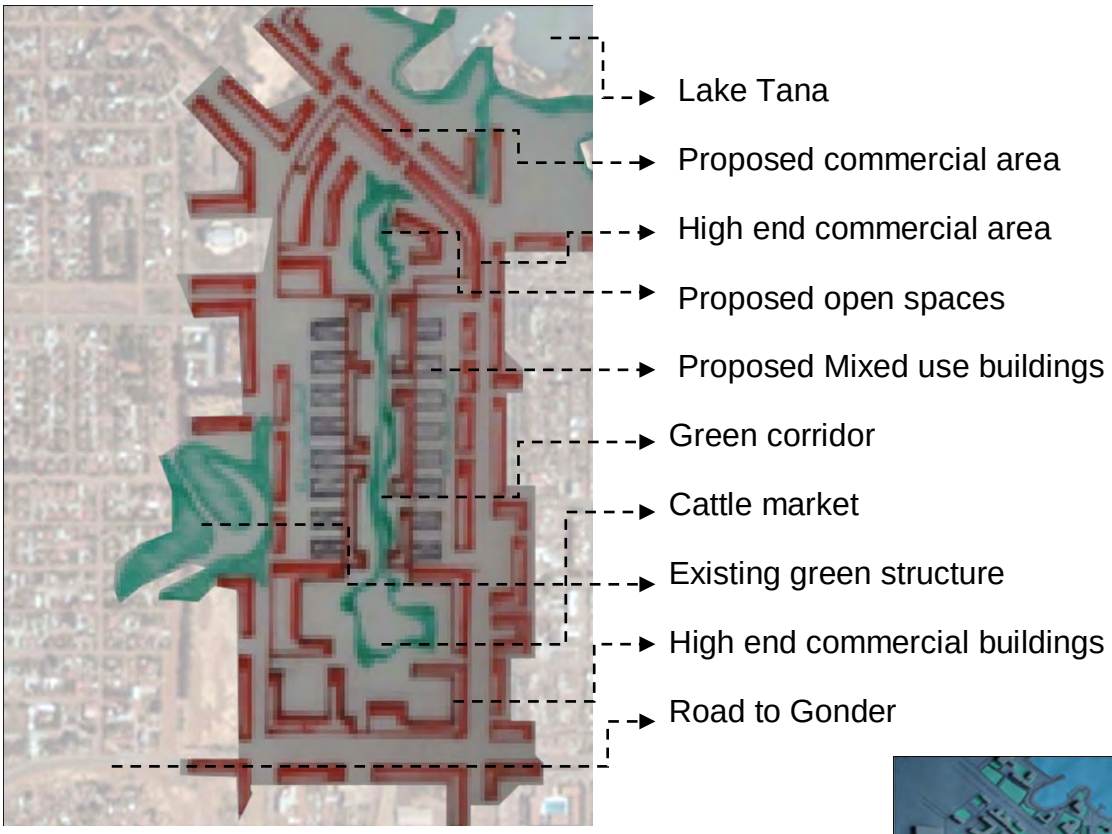


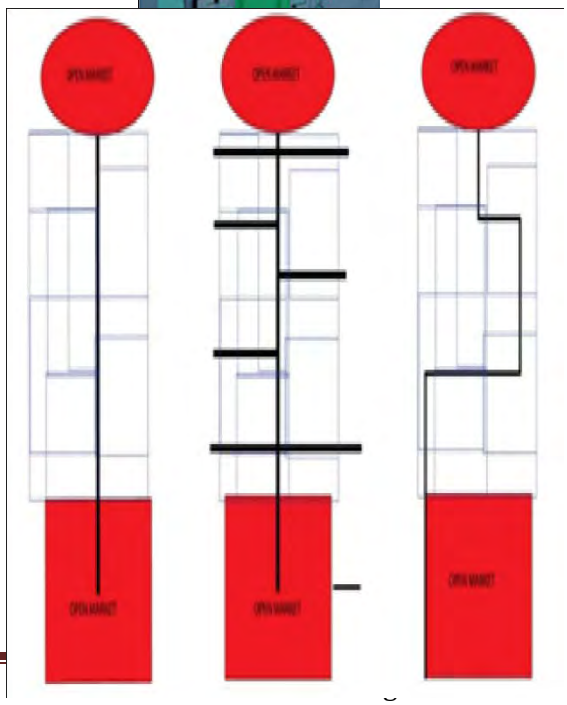


`Alternative thre

The third option is more focused on the sustainable development. Sustainable development is not an option for high profile projects alone: efforts are being made to make it increasingly more feasible for all project types and budgets.

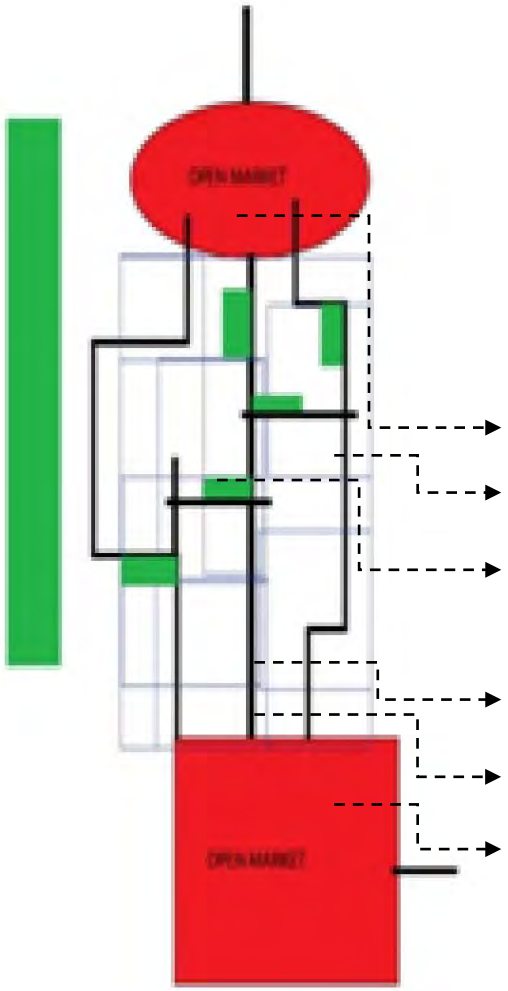
Sustainable development includes the use sustainable materials, resources, design which includes the location, orientation, structures, systems, construction, use and also the eventual disposal of waste.





These figures are just to show how the third concepts are working. The first one is to create direct link between the cattle market and the new open space with a wonderful green corridor. The second one is the same with the first only with the difference of adding branches extending outward to the other city parts. The third one is not the direct link but after some touches of other important spaces of the tissue like open spaces, green areas, market centers, and business areas.

Figures showing the concept development



The final one is the combination of all the above three and is creating the space comfortable, convenient, and friendly for all the functions to be proposed in the study area.

Proposed open spaces

Connecting roads to the open area

Proposed open spaces and green area

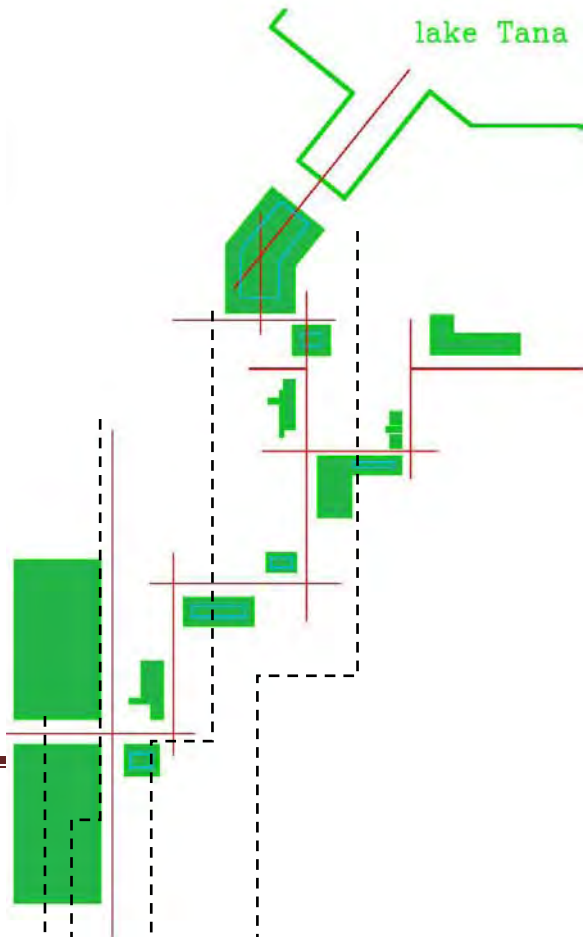
Green corridors for circulation

Existing green structures

Optional paths

Proposed open Cattle market

Figures showing the final concept



5.2 Project Approach

1. Space Integration

As a first project approach it was necessary to think the potential of the lake and additional water bodies that are artificial which will be created at different points of the tissue as an open space, green area, and critical points for business spaces.

Advantages over the first approach

1. Accessibility of the action area
2. The location of the action area near to waterfront and part of the city center

3. Availability of basic infrastructure
4. Center of commerce and other commercial activities
5. Existence of landmark, like standard hotels, bars, cafeteria and restaurants.

Lake Tana

Green buffer

Propose open space

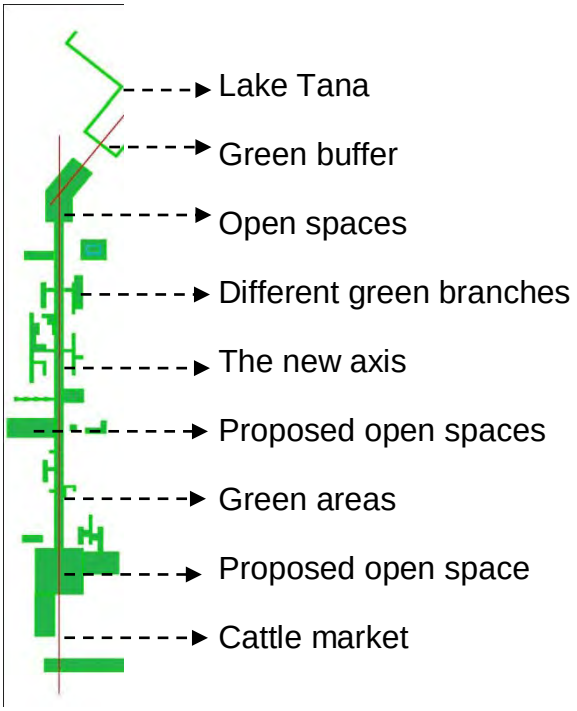
New Integrated green areas

Existing green

Figures showing green integration between the spaces

Existing integrated natural beauty green

2. Creating axis



The second design approach is to create an axis integrated from the cattle market to Lake Tana.

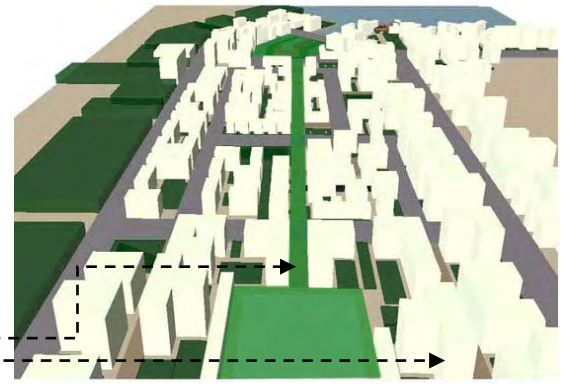
Benefits across approach two

1. Availability of accessing areas
2. Hard axis integration
3. Strong social network
4. Nicely located land marks
5. Financing the local development
6. Changing the life of citizens

Opportunities

- Highly promising intervention area due to its location, and public ownership of economic resources
- City government's attention and commitment to develop the local area.
- Citizens readiness to accept change
- Urban development policies, rules and regulations
- Tourism opportunities of the natural environ
- Private developers eye on the local area.

New axis and mixed residential at side



The proposed street axis

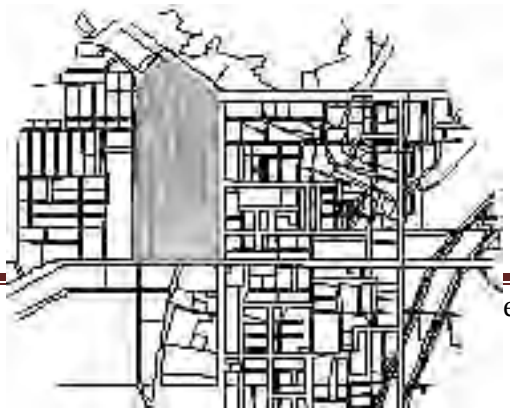
5.3 Design Proposal

Proposed land use considers the impacts, benefits, and costs of different existing structures in the city like the green natural forest is as a big potential for the design in terms of creating ecologically suitable environment, reducing high costs for high cost apartments instead constructing low cost mixed use building at their appropriate location.

SUMMERY /housing/

Block types	Existing	Proposal	Change
Private house	385	34 g+4 blocks	ground space minimized
Kebele house	120	64 g+2 blocks	ground space minimized
Commercial block	60	>100-110 blocks	>50 blocks
Mixed residential	150	70 g+2 blocks	ground space minimized
Recreational center	5	13	8

Blocking arrangement



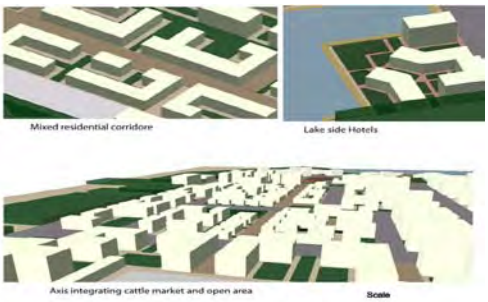
Existing city map

Recreational area

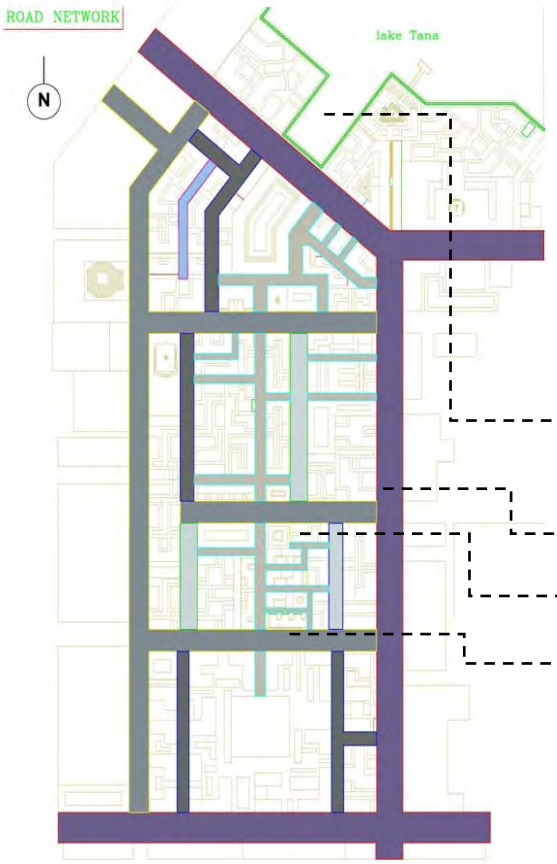
Commercial buildings

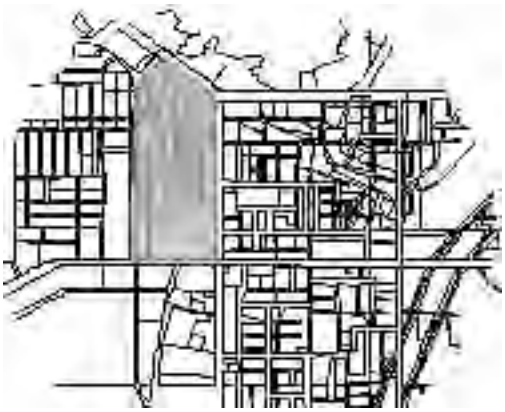
Mixed residential buildings

Apartments



Proposed street pattern





Existing city map

Lake Tana

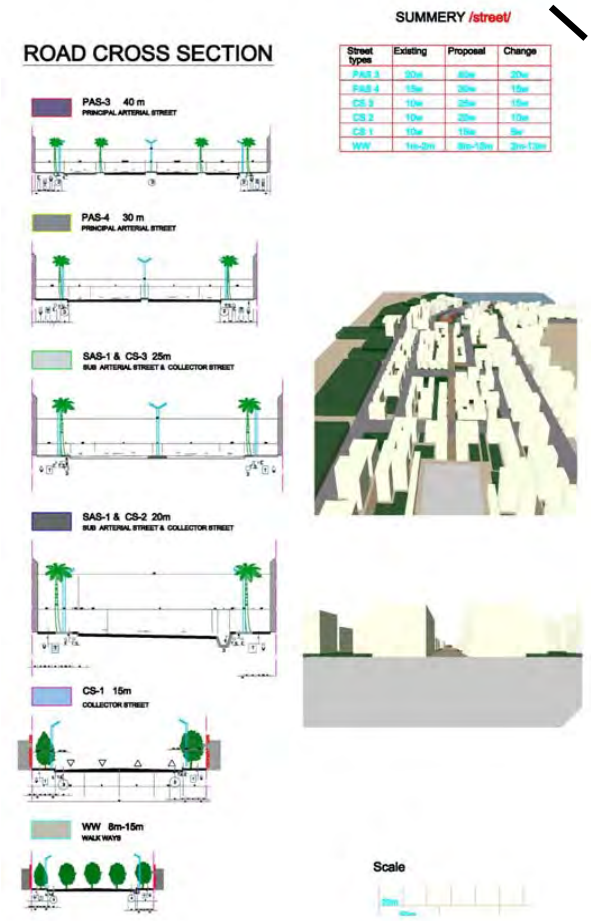
Main Street

Secondary road

Pedestrian road

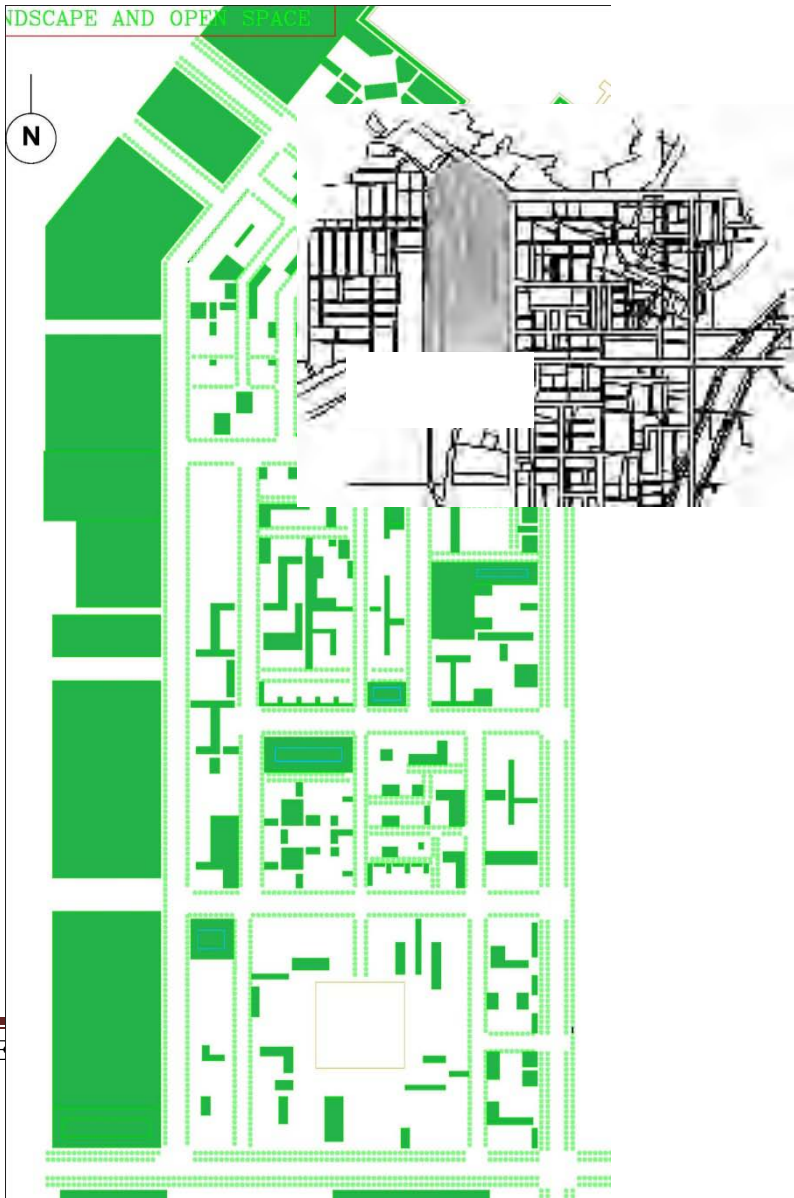
Green axis road

Cattle market



The proposed street pattern is modified from the existing one by some differences because the existing street is grid with no acute angle intersection at the joints and enough width with wonderful palm trees of Bahir Dar city. The interventions are

1. Lengthening from where they were up to addressing points.
2. Creating new green street axis for walking and connecting the existing cattle market and the new open air market and recreational spaces



Proposed green structures

Existing city map

Lake Tana

Green buffer at the shore line

Public parks

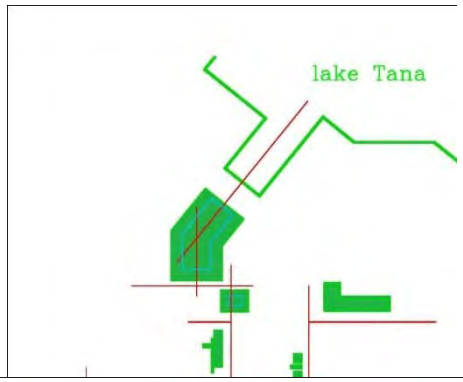
Open green area

Water garden

Semi private gardens

Public parks

Existing natural forest

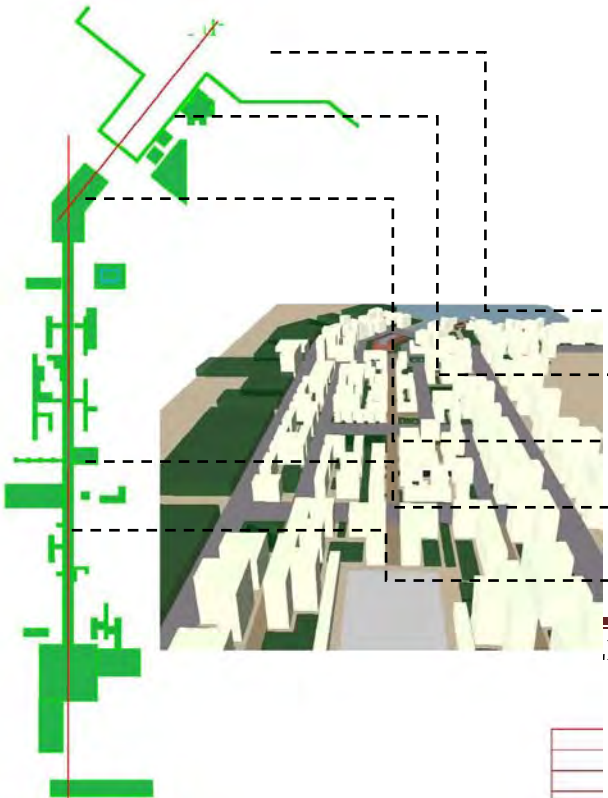


The proposed green areas for integration are the on the existing green parts with some modification and some on the slum area.

Green integration

Green flow throughout the site

Green axis



SUMMERY /Green area/

Green area types	Existing	Proposal	Change
Preserved area	10 hectare.	10 hectare.	No change
water Garden	Not exist	0.6 hectare.	0.6 hectare.
Neighborhood Gardens	0.05 hectare.	8 hectare.	7.5 hectare.
Others	0.01 hectare.	1 hectare.	0.99 hectare.

Lake Tana

Green Buffer for the lake

Open green area

New green branches

New green axis

- - - - - - - - - - - - - ► Public gardens

- - - - - - - - - - - - - ► Cattle market

One part from the integrated water garden

Elevation and sections

The idea behind the building height is the concept of having and achieving different height for different functions as shown below.

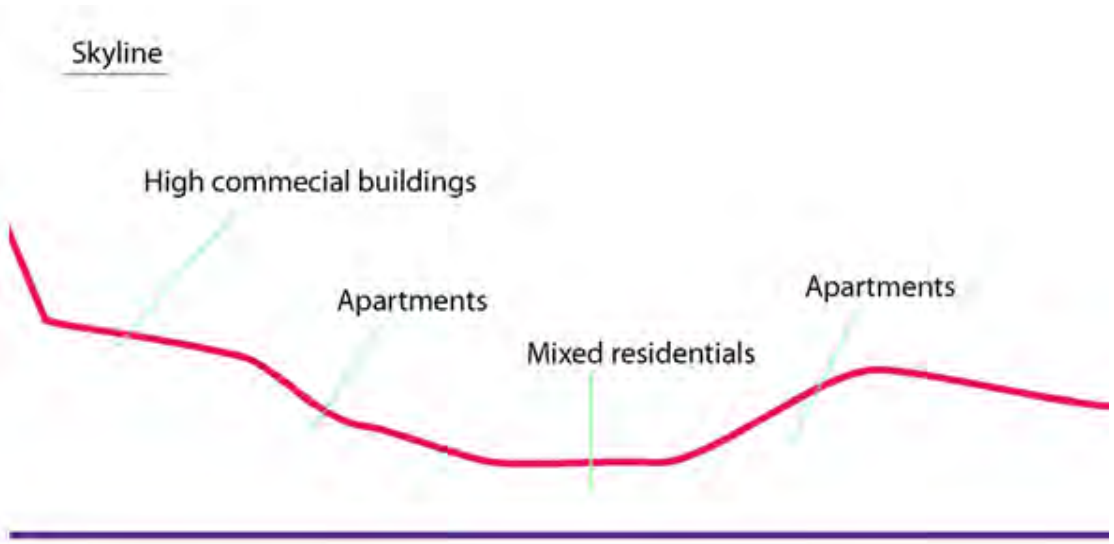


Figure showing the height arrangement of the buildings

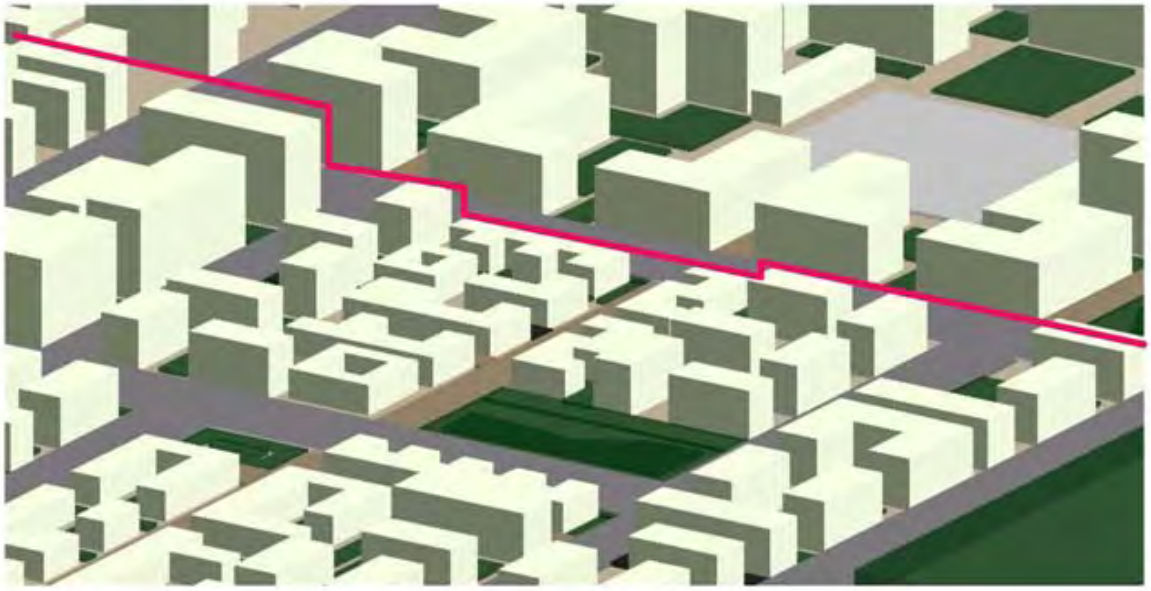
North elevation

East- west Cross section

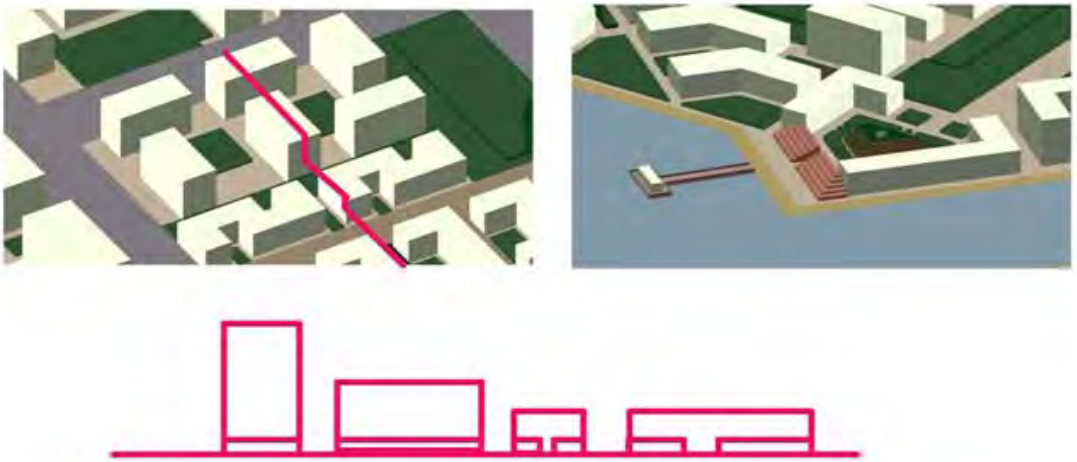
South elevation

East elevation

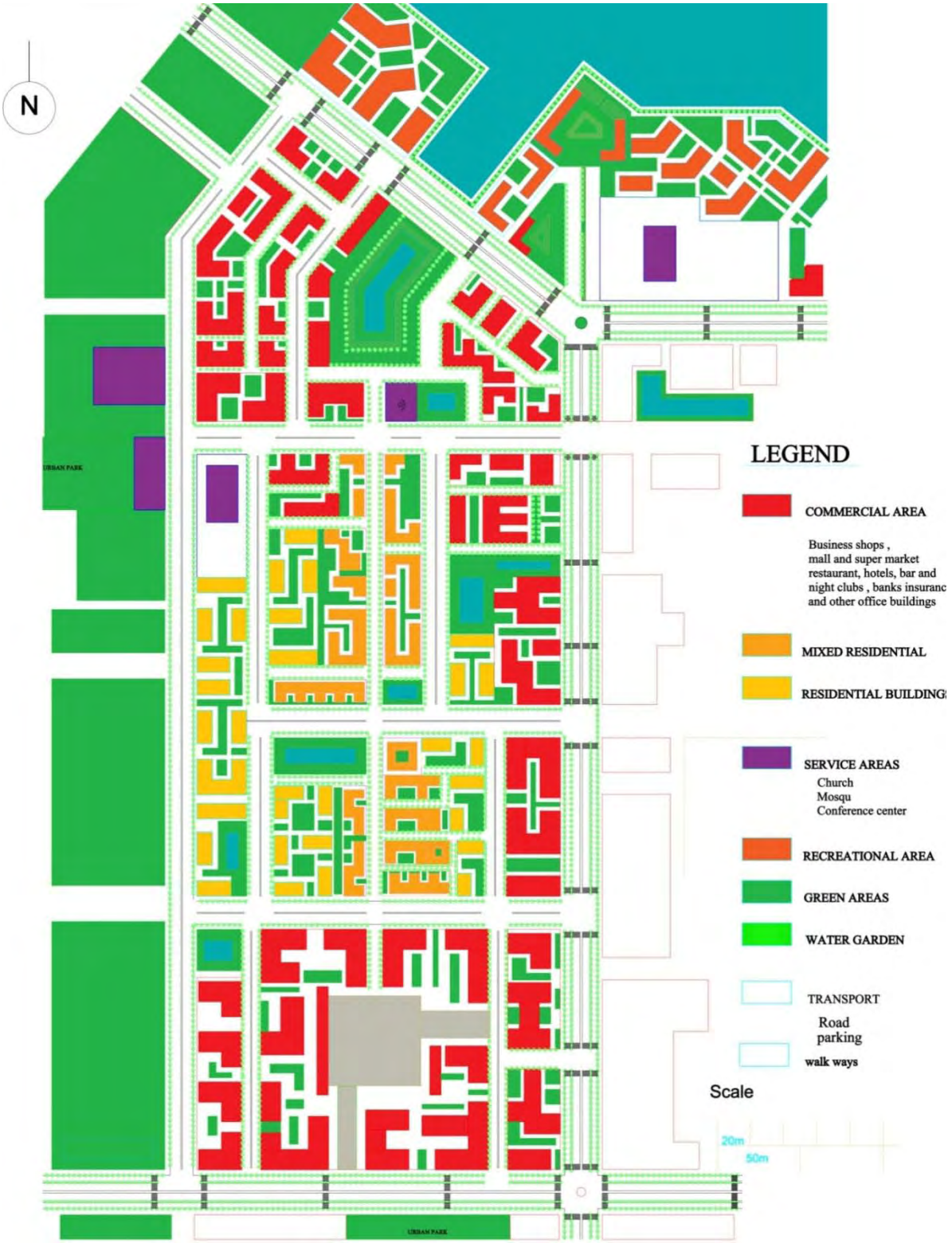
West elevation



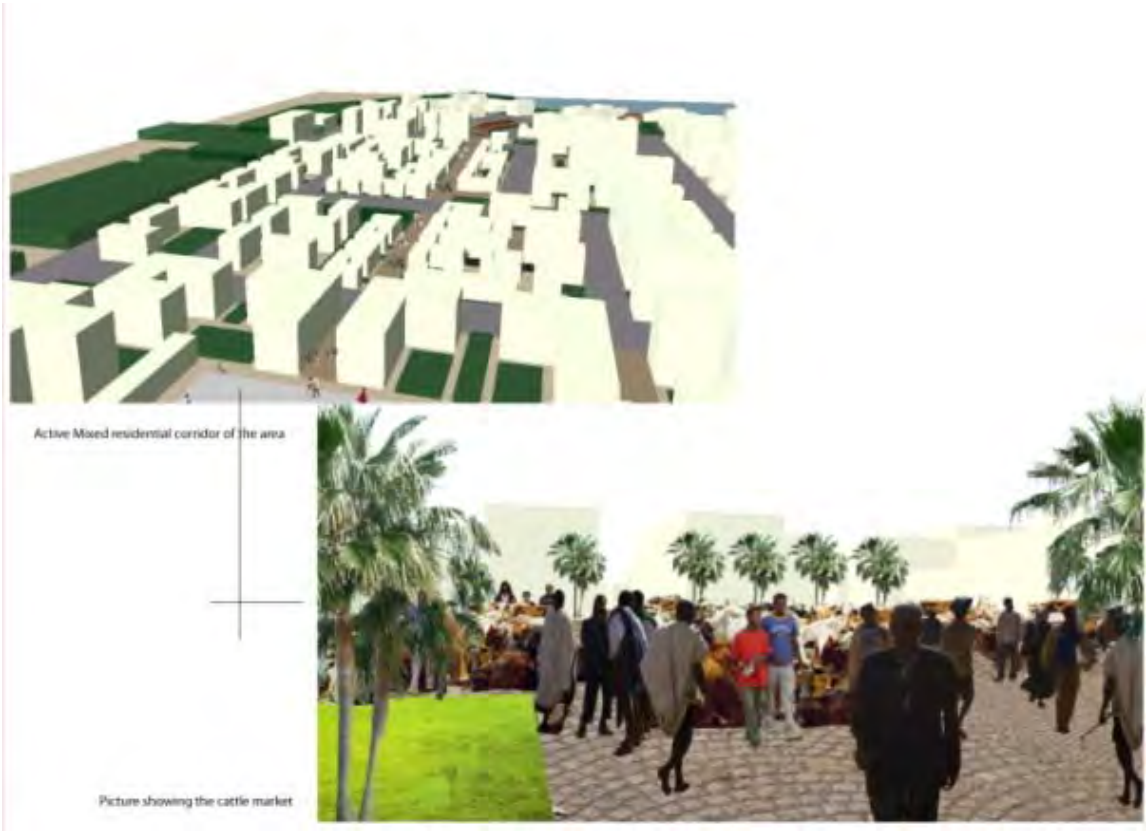
Skyline line arrangement of the building height



Overall design



The new created axis and the mixed residential at side



The newly arranged cattle market

5.4 Implementation Strategy

General

Implementing the project follows different checking points in different local contexts. The approved development proposals are expected to be implemented directly with some modifications according to the project context.

According to the conventional processes of plan implementation, the first step forward is preparatory works. Under this category different activities will be performed; identification of various actors and their roles, action plan preparation and awareness creation, promotion, coordination, and fund raising. In addition, it is important to detail the action plan according to the development proposals. The second step is implementing the physical infrastructure as per the development proposal. This includes construction of buildings, social and economic infrastructures and other related developments. The final step is monitoring and evaluation. This should be done periodically and the necessary plan revision should be done accordingly.

Financial Resource

The LDP project proposals require huge amounts of fund that to come from private investors, government, community and other development partners. The financial need of public and **community based projects**.

Human Resource and Organization

The City Administration of Bahir Dar doesn't have strong urban planning institution. Plans that are different in character and context are being prepared by different team of experts. These include LDP team, CIP team and development planning team. This is costing the city in terms of lacking clear vision and integrated planning and development efforts. Accordingly, this LDP proposes organizing a strong urban planning unit responsible for planning, resource mobilization and monitoring and evaluation. This unit is expected to be the main promoter and coordinator of all LDPs and other plans. In addition, the capacity gap that exists in the city and kebele administrations needs the attention of the Mayor and City Manager. This includes supporting consistent and sustainable capacity development works and creating a viable working environment.

Policy and Strategy Packages

The LDP considers working urban development policies, urban governance packages and the city master plan and strategic plan. Both lead to having a vibrant urban centre that is engine for growth and development. This policy and planning resources are believed to speed up the development process of the local area and the city at large.

Rules and Regulations

In the first place this project should be approved by the City Council and taken as guiding and management tool for the local area. Other rules and regulations stipulated in this project and other plans; strategies and policy documents need to be checked in terms of facilitating and speeding up the implementation process. These include financial, housing, land use, environmental, utility, infrastructure, administrative and other rules and regulations. In addition, re-thinking investment and business laws and the service facilities to genuine investors and developers is detrimental to materialize the development dreams of Bahir Dar.

Monitoring and Evaluation

Monitoring and Evaluation is an important part of the planning process useful to measure performances and make a correction on the slow downs. It especially helps to assess whether the development objectives of the community are met or not.

Basically, monitoring and evaluation frameworks require the following institutional and technical set ups.

- Institutional arrangement responsible for monitoring and evaluation
- Defined working and reporting systems, manuals and guidelines
- Defined time period for monitoring and evaluation
- Defined performance indicators / checklist
- Reports and action plan for corrective measures
- Follow up
- Documentation