

URBAN TOURISM AND WATERFRONT

Exploring The Case of Hawassa Waterfront



Bedane Baneta Odo

A Master's Thesis Submitted to the Department of Architecture

School of Civil Engineering and architecture

Presented in partial fulfillment of the requirement for the Degree of Master's in urban
planning and design

Office of Graduate Studies

Adama Science and Technology University

July, 2021

Adama, Ethiopia

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I, the advisors of the thesis entitled “**Urban Tourism and Waterfront Exploring the case of Hawassa Waterfront**” and developed by **Bedane Baneta Odo**, hereby certify that the recommendation and suggestion made by the board of examiners are appropriately incorporated into the final version of the thesis.

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ACKNOWLEDGEMENTS

I would like first of all to thank my advisor Dr. Fikirte Demissie. She has given me considerable guidance and support throughout my research studies and many subjects.

I would like to thank everyone who participated in this research study by consulting me and guiding me to this research output. I also want to show my gratitude to the Department of Architecture for providing such an opportunity.

I would like to take this opportunity to thank my family for supporting my decision to continue studying and for their continuous encouragement during my study.

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LIST OF ACRONYMS AND ABBREVIATIONS

LUP.....	Land Use Planning
RII.....	Relative Importance Index
CAD.....	Computer-Aided Design
PSS.....	Planning Support System
PPP.....	Public-Private Partnership
LULC.....	Land Use Land Cover
CSA.....	Central Statistics Agency
GIS.....	Geographic Information System
UTM.....	Universal Transverse Mercator
USGS.....	United States Geological Survey

Abstract

Tourism in urban areas and waterfront development are issues, which can influence different aspects of a town directly or indirectly. Different problems may arise if the integration of waterfront and urban tourism is not well controlled in towns. High pollution problems, random existence of service giving activities, uncontrolled flood, uncoordinated layout and planning practices, lack of institutions willing to integrate professional guidelines, and hotels and resorts around the lake have all affected the urban tourism at the waterfront. Hence, the main objective of this research was to redevelop the waterfront of Lake Hawassa to increase urban tourism activity. Different kinds of literature regarding lakefront and urban tourism, challenges and barriers on lakefront development, benefits of lakefront development for inhabitants, and land use and tourism were referred. To achieve the objectives of the research both primary and secondary data have been collected. Hence, questionnaires had been prepared to collect the primary data from different groups that focused on different issues. In addition, interviews and direct observation were also conducted to collect the data. The result of the study reveal that the area is exposed to waste from different sources which is one of the barriers for urban tourism experience at the lakefront, inhabitants at the lakefront mention rainy seasons in Hawassa creates difficult situation for tourists turnout areas at the waterfront because flood coming from upper part of the town brings the waste dumped on the streets and from the drainages through the waterfront areas to the lake, tourist turnout relatively increases during yearly celebration of cultural activities but weak integration of the activity to other lakefront activities is affecting the urban tourism, the number of tourists increases from time to time but in a decreasing rate and boat tour is one of the activities the domestic and foreign tourists enjoy doing but security issues and unorganized spaces are affecting the tourist turnout, the area experienced rapid land-use and land-cover change, and there is unmanaged commercial activity at the waterfront which is one of the barriers for well-organized urban tourism activity. Generally, waste disposal mechanisms, organization of different activities, integration of cultural activities with other lakefront activities to increase tourist turnout, informal activities, over exploitation of resources, lack of strong control of land-use protection and development codes, and the current COVID-19 pandemic are major barriers affecting the urban tourism and tourist turnout at Lake Hawassa. Therefore, preparing a waste management system that is easily applicable, re-structuring of activities at the lakefront, binding land-use plan which can be easily adapted by the local people and tourists coming to the area is essential along with planning and designing different infrastructures, walkable spaces, and using cultural spaces as a potential and systematic integration of cultural activities to other activities at the lakefront will increase the tourist turnout at the waterfront by removing the barriers against it.

Key words: Waterfront development; Urban tourism; Tourist turnout; Waste disposal; Walkable spaces; Barriers

CHAPTER - ONE

1. Introduction

1.1 Background of the study

The urban waterfront can be understood as the part of a town to an area of water such as a lake, river, or the sea or the interface between land and water (Pinto & Kondolf, 2020). In recent centuries, these often-waterside inner-city areas were especially used for harbors and by the industry. Increasingly, since the mid-20th century, these areas became unused and transformed into derelicts in the city center (Yang, 2006). The arising of container shipping and the relocation of harbors to non-urban areas, as well as the structural change in the western industrial nations and the associated deindustrialization simultaneously, new chances and potentials of urban design, are the reasons. In addition, the waterfront is a natural asset that is particularly valuable, but it is a limited and non-renewable resource. Areas near the water also gain a sense of attractiveness and recreational value for people. Therefore, both city dwellers and tourists seek to be close to the water (Niemann & Werner, 2016).

Tourism, one of the main economic activities worldwide, is also closely related to land use and land cover. Many developing countries in the tropics have relied on tourism to generate economic wealth and job opportunities to diversify their economy as well (GsslingS, 2001). As a kind of human activity, tourism development, involving accommodation establishments, transport infrastructure, leisure activities, etc., contributes to changes in land cover and land use dramatically(Dong, 2004).

One of the activities around the waterfront area is eco-tourism, As defined by the International Ecotourism Society, ecotourism refers to “responsible travel that conserves the environment and improves the well-being of local people”. Also called “nature tourism”, the objective of ecotourism is to minimize the impact brought about by tourism on the environment. The idea is to focus on uniting conservation, communities, and sustainable development through the means of travel (Journal & Natural, 2013).

Working waterfront means an area or structure on, over, or, adjacent to navigable waters that provides access to the water and is used for water-dependent commercial, industrial, or,

governmental activities, including commercial and recreational fishing, tourism, aquaculture, boat and ship building, repair and services (Mirsanjari & Gavali, 2007).

Waterfront development has been greeted as a panacea for the newer urban revolution in post-industrial cities for the past 40 years. This was noticed even at the beginning of this phenomenon, during the early transition from the industrial phase of urbanization in the late twentieth century. Many cities have found a new ground for such development among the former industrial complexes and docklands, ideally located along their inner waterfronts (Dong, 2004). In recent years, this type of urban project has become a new “normality” for tracing the future of contemporary cities at the global level. Europe, with many historic industrial cities, has many successful examples of city recovery managed through waterfront-led regeneration, Bilbao in Northern Spain is probably the most famous for its outstanding culture-based waterfront regeneration, considering the new Guggenheim Museum which has influenced the revitalization of the local art and culture scene (Djukić et al., 2020).

Urban tourism, in its modern form, is a relatively recent phenomenon. Although people have traveled to cities and towns for a long time, the acknowledgment of tourism as a major contributor to an urban region's economy has been widely neglected. One of the reasons for this is the difficulty of measuring urban tourism as such because tourism attractions and facilities are most likely used by residents as well as visitors (Misiker, 2018). This creates mixed-use spaces and makes it more difficult to define the borders of urban tourism. One mixed-use space- is the urban waterfront. Waterfronts, as part of many urban areas around the world, have long been an object of interest for various parties in the urban region, whether as a riverside, lakeside, or seaside waterfront (Plan, 2016). A waterfront can incorporate several functions such as a traffic artery, a frontage for industrial and commercial activities, a drain, a reservoir, a residential area, and a recreational resource (Adamietz, 2012).

According to sources, nature-based tourism is one of Africa's fastest-growing industries, with a growth rate of nearly seven percent in international visitor arrivals between 2004 and 2005. Similarly, national parks, wildlife reserves, and lakes provide some of the continent's most important flora and fauna areas and recreation destinations. For instance, Lake Malawi and St. Lucia wetlands are also protected as world heritage sites under the world heritage convention of

1975. Visitors come to these lakes to enjoy boating and water sports as well as to witness the remarkable range of freshwater and inland biodiversity that they support (UNEP/NASA, 1999).

On the other hand, ecotourism has increased environmental conservation as people struggle to maintain Africa's lakes in their natural state to sustain local tourism activities. Many riparians have gazetted conservation areas and enacted strict laws to protect wildlife and plant life around their lakes (Ragheb, 2017). Elephants, which were about to face extinction, have increased around Lake Tanganyika and Lake Kariba as tourists seek them out (UNEP/NASA, 1999). The establishment of game parks around lakes is a strategy that allows tourists to see many different kinds of animals in one location. African lakes also house about 500 different aquatic species, creating the potential for sustainable fishing activities (Pomucz & Csete, 2015). Despite all these opportunities, increasing tourism can have negative impacts. Without proper management and regulation, growing tourist facilities, roads, and other infrastructure can wreak havoc on fragile freshwater environments. A rapid increase in visitor numbers can render lakeside developments environmentally unsound and negatively impact the very creatures that brought people there in the first place (Yassin et al., 2012). A touristic area that can be easily accessible and reachable by a large population is usually under threat. It is also apparently harmless activities such as boating and rafting can pose a threat to fragile lake environments (UNEP/NASA, 1999).

Urban tourism has generated a huge amount of money each year. The majority of tourism activities are undertaken in cities, for example, 60% of the tourism takes place in cities in the UK (Anasimos, 2013). However, there hasn't been clear information regarding urban tourism in Africa cities but tourism in the region is showing a rise. Especially during the FIFA world cup of 2010, tourist arrival to South African cities was about 50% of tourists who visited Africa (Prideaux, 2014). Cities such as Johannesburg, Cape Town, and Cairo were the three top city tourism destinations in Africa by the year 2014 (Gedecho, 2019). Urban tourism is given very little attention than other forms of tourism in developing countries. In Ethiopia, not only it has given less attention but also its concept is new. Government attention to urban development these days is ever greater which is an opportunity for urban tourism development in Ethiopia. As urbanization expands throughout the country, Ethiopia would therefore have urban tourism destinations more in the future (Gedecho, 2019).

On the other hand, according to the ministry of culture and tourism of Ethiopia waterfront tourism in Ethiopia is growing and the number of tourists coming to the country is increasing from time to time. The sector is one of the fundamental elements considered in the country's future economic goals. It is creating jobs and other economic benefits to the community; it is also exposing different cultures to tourists coming and developing interaction with the global community (Ayenew et al., 2008). Tourism activities that focus on lake areas can bring communities to work together and increase the strength of social links among each other. It is also connecting the people living around the lake and tourists from different countries. Tourism activates the markets of the city around the lake, adds sporting activities, and encourages the youth to know about their country (Altes, 2018).

Ethiopian lakes are being used for different purposes by different people living around them as well as the government. For instance, they have been used as a source of food, water, and practice some agricultural activities. Moreover, the common activities around lakes are fisheries, irrigation, tourism, and using the water for watering greeneries. These activities play a major role in supporting many parts of the community in the country (Beshah, 2015). Ethiopia has many lakes, among these Lake Hawassa is one of the lakes that has multiple importance to the public. There are social, economic, eco-tourism, and cultural importance are part of the lakefront activities. Furthermore, the lake is one of the main reasons that attract tourists to come to the city.

There are a lot of attraction points in Hawassa town and Lake Hawassa is one of them with a lot of potentials to increase the benefits from the tourism industry. For instance, the population of the city is increasing from year to year According to the CSA report of 2013, Hawassa is the sixth biggest city in Ethiopia next to Addis Ababa, Mekele, Adama, Dire Dawa, and Gondar with a total population of 225,700. The unplanned waterfront and human activities around it have become a threat to the waterfront. Chemicals from industries and wastes from different households are becoming a danger to the aquatic environment and preventing the tourism industry to get what it deserves (Federal et al., 2012).

The lakefront of Hawassa Lake is also composed of diverse activities like restaurants, bars, agricultural activities, fishery, cultural events field, and educational and research centers. These diverse activities are accessed from three main sides of the lake. One is from Amora gedel side that is used for a fishery, cultural events, and agricultural purposes. The second side is from Fikir

hayk that is used for tourism activities and the third one is through the resorts and hotels side. These all activities play a vital role in bringing together the public, supporting the city's economy, making the city a tourist center and a place to study different types of plants and wildlife. However, worrying about unplanned settlement and development is happening around the lake. Areas of Amora gedel, Fikir Hayk, and areas around resorts give diverse dimensions to the people going there. Resorts and hotels in Hawassa town along the shoreline have multiple impacts on the lake and the fringe zone ecosystem. This problem will be aggravated if there is no planning and management framework for the waterfront (Anasimos, 2013).

According to (Abate, 2013) urbanization and ecotourism development of Hawassa is extremely growing in an undetermined manner causing unexpected ecosystem and biodiversity loss. Pollutions are the major problem of this development subsidizing aquatic natural product which is the foundation of the terrestrial shoreline ecosystem (Abate, 2013). The construction of dikes, roads, and buildings to meet the infrastructural demands of the city has altered the natural land-cover. These intrusions are also affecting vegetation buffers surrounding the lakes which can serve as a habitat for fauna and insulate urban ecology with aquatic ecology (Anasimos, 2013).

However, the problem is that the area, as well as the city, is losing economic, cultural, and social benefits due to the chaos of activities and environmental damage created. These problems are creating damage to the lake front which is a great asset to the community and for the country, Ethiopia at large. The facts, such as lack of coordinated use of land, weak institutional support to the area, lack of relevant professional support, and lack of prepared goals for the future of the area is minimizing the gain from tourism and is becoming the main reason for the environmental damage around the area (Beshah, 2015). Therefore, these challenges should be addressed according to coordinated planning techniques and approaches considering collaboration among different stakeholders to the community, reactivating the activities around the lake front, and creating a walkable area. This way of intervening will lead to addressing the far-reaching consequences of unorganized and unplanned lakefront which is currently a problem to the community around and the city.

1.2. Statement of the problem

According to the ministry of culture and tourism of Ethiopia, Ethiopia has numerous water-based tourist attractions. Major of them are the rift valley lakes, and waterfalls. Lakes Langano, Abijata, and Shalla, Lake Tana, Lake Hawassa, Zeway, and Chamo are also lakes that attract tourists. The hot springs of Sodere and Wondo Genet are also among the other tourist attractions currently being used. Due to these and other water bodies like rivers and streams, Ethiopia is known as the water tower of North-East Africa. Surface water resources in Ethiopia flow in 12 major river basins. It is estimated that an average of 122.19 billion m³ of water is annually discharged from river basins. The country's total ground water resources are estimated to be around 2.6 billion m³. Much of the discharge of Ethiopia's rivers flow into neighboring countries. The amount that remains in the country is not more than 9 percent (Case et al., 2015).

There were some prior studies conducted around the lakefront of Hawassa. The prior studies, such as studies by (Degife et al., 2019) in lake Hawassa assessed findings of Spatio-temporal dynamics of land-use land-cover changes, its drivers, and environmental implications. Another study by (Degife et al., 2021) studied how to quantify and map the spatial variations of soil erosion, sediment export, and sediment retention along with their environmental implications in the lake Hawassa watershed of Ethiopia, and another study by (Gedecho, 2019) assessed the importance of knowing what potentials the town has for the development of tourism and suggested how the town can benefit from tourism. However, in the prior studies, there is a gap in revealing the organization of activities at the waterfront, the planning practice, and the effect of land-use land cover change on urban tourism.

In lake Hawassa, while there is a call for many investment and tourism activities but there has been very little or no attention given to the lake front development except seeing few investment activities are seen. The rate of change of land use land cover has an impact on the ecology of the overall watershed spatially the most fragile aquatic ecosystem and fringe zone. The ecological footprint of urban development hinders the ecology of the Lake Ecosystem by waste release and unwise use of resources. These have decreased the ecosystem value, goods, functions, and services in the present condition or will demolish the natural system in the future (Anasimos, 2013). Consequently, this is highly affecting the returns such as the economic benefits from tourists around the lakefront. The

level of attention given to the lakefront is also affecting the local communities (people suffering from floods, sanitation problems, and low income) whose survivals are dependent on the presence of local and international tourists. Therefore, it is important to give enough attention to maximize the public benefit and reduce the improper usage of the lake.

Furthermore, high pollution problems, random existence of service giving activities, uncontrolled flood, uncoordinated layout and planning practices, lack of institutions willing to integrate professional guidelines, and hotels and resorts around the lake area affecting future developments. These also encourage unplanned development around the lakefront and limit the tourism activity and interaction of people. These all challenges have been affecting the urban tourism at the waterfront of Lake Hawassa. That means, it creates a negative impact especially on the local community around the lake front who depend upon the Lake as their source of income from local and international tourists.

Engagement of different responsible bodies and organizations such as users, planners, architects, and policy makers who are in different responsibilities have a different degree of control on the Lake to use the area sustainability by reducing the challenges that the lake Hawassa is currently facing. Due to the challenges, Lake Hawassa needs an immediate response that considers all of these perspectives, holding economic and social development without affecting the environment. Hence, this study focused on assessing the existing condition of the lakefront of Lake Hawassa, land use and land cover change of the area, and the activities practiced around it by local communities and investors. Moreover, the study also provided planning recommendations to enhance the urban tourism following the lakefront of Hawassa lake.

1.3. Research objectives

1.3.1 General objective of the study

The main objective of this study was to Redevelop the waterfront of Lake Hawassa to increase urban tourism activity.

1.3.2 Specific objectives

The specific objectives of the study are:

- a) To identify barriers related to urban tourism around the waterfront area of Hawassa.
- b) To investigate the reaction of the inhabitants at the lakefront of Hawassa to the tourist turnout at the waterfront of Hawassa.
- c) To identify the effect of land-use land-cover change on urban tourism around the waterfront area of Hawassa.
- d) To propose a plan and design solution to increase the economic benefit from waterfront tourism activity at Lake Hawassa.

1.4. Research questions

- a) What are the barriers related to urban tourism around the waterfront area of Hawassa?
- b) What looks like the reaction of the inhabitants about tourist turnout at the waterfront of Hawassa is investigated?
- c) What are the effects of land-use land-cover change on urban tourism around the waterfront area of Hawassa?
- d) What kind of plan and design approach will increase the economic benefit from waterfront tourism activity at Lake Hawassa?

1.5. Scope of the thesis

Urban tourism around water front is related to many issues like managing activities around the waterfront, creating accessibility, and controlling the overflow of water around the waterfront area. The study focused on increasing the urban tourism activity around the waterfront that involves local and international tourists, a culture experiencing stage for the community, and city image building at Lake Hawassa. The study covers an area starting from Amora gedel to Tikur weha covering major areas like Lewi resort, Gudumale, Fekir Hayk, and Sos school areas which lie on three sub-cities in Hawassa lakefront.

1.6. Significance of the study

Currently, enough attention is not given to issues of urban tourism and waterfront particularly in a fast-developing town like Hawassa, which has an opportunity of using the waterfront. The paper tried to identify and provide design and planning alternatives by taking the waterfront of lake Hawassa into three connected sub-cities to maximize the benefit from urban tourism and the waterfront. Besides, enough attention is not given to urban tourism and waterfront, the findings in this research provided inputs for the development of urban tourism and waterfront in Hawassa town that can also be applicable for Lake Hawassa and other similar towns in the country. The study can also be a base for Further research that can be done in the area.

1.7. Limitations of the study

Some of the limitations doing this research are access to different information due to the COVID-19 pandemic. The research has to visit and collect data from governmental and non-governmental offices but it was difficult to get some of the information needed for the research. However, this limitation did not affect the result of the study.

1.8 Organization of the paper

The study is categorized into five chapters: the first chapter deals with the introduction and background of the study, statement of the problem, research objectives, research questions, limitations, significance, and scope of the study. The second chapter reviews theories regarding waterfront and tourism, challenges, and land-use changes effect to urban tourism around waterfront areas. Chapter three deals with materials and methods used, and chapter four deals with the analysis of land use and land cover, inhabitant's reactions to tourist turnout, barriers related to urban tourism around the waterfront, and proposed plan and design. Chapter five is composed of the conclusion and recommendation of the study.

CHAPTER - TWO

2. Literature review

2.1. Lake front and urban tourism

To gain a clearer understanding of urban tourism it is necessary to define the term “urban”. Several publications offer possible definitions. (J.Adamietz, 2012) presents a fairly simple definition and characterizes urban tourism as tourism in urban areas. This explanation still needs some clarification. (Jansen-verbeke, 1986) defines an inner-city tourist and characterizes this type of tourist “as a visitor coming from outside the service area of the town and visiting the inner-city predominantly for leisure reasons” (p. 83).

According to the United Nations urbanization is the process by which a large number of people become permanently concentrated in relatively small areas, forming cities or towns. The United Nations does not have its definition of “urban” but instead follows the definitions used in each country, which may vary considerably. The United States, for instance, uses “urban place” to mean any locality where more than 2,500 people live. In Peru, the term is applied to population centers with 100 or more dwellings.

Waterfront development can include any combination of different land uses, and waterfront projects can be new projects or redevelopments of existing waterfronts into new places. Some waterfront projects focus on industrial uses, such as industrial ports, and other focus on more recreational and tourism-oriented uses (Dong, 2004).

Waterside areas incorporate several functions within a city environment: It can act as a traffic artery, a location for industrial and commercial activities, a drain or reservoir, a residential area as well as a recreational resource. The diversity in usage indicates several different groups who use the waterfront for various reasons. It can be a place of residence, work, or recreation. These are the major usages of waterfronts which lead to several features within a waterside area such as housing, industry, commerce, transport, and numerous leisure and recreational facilities (Kostopoulou, 2013).

Depending on the primary use different factors are considered crucial in the development stage. However, the characteristic of having a waterfront location makes these sites interesting for tourism uses (Frontiers & Vittori, 2008). Regarding recreational and tourism use of waterfront

areas, accessibility, parking, open-space facilities, water quality, sports areas, etc. may be of high importance (Jansen-verbeke, 1986). Pedestrian access and open spaces offer visitors the opportunity to engage in a variety of activities. Also, if waterfronts provide convenient linkages between their internal parts, it encourages the exploration of that area, in particular for pedestrian tourists (Framework, 2016). In general, tourism precincts such as waterfronts perform several functions for the visitor that can be characterized as facilitating, place connecting, and state-of-mind functions (Ara et al., 2020).

The concept of destination in tourism varies depending on various stakeholders in the tourism business. Every destination is a unique whole, in which physical, historical, cultural, social, administrative, or functional factors mix in a dynamic way producing a spatial and functional tourism reality. A lake as a tourist destination generally is a functionally compact regional whole with clear geographical limits (Braun & Braun, 2014).

A single lake destination is sometimes surrounded by a compact cluster of tourism activities. A lake destination in some cases is a part of a larger region where are several small lakes, and the whole region is connected. A lake resort offers tourists various services. Lakes have an aesthetic significance particularly for attracting tourists. Lakes are well-known tourism destinations at both regional and local levels (Plan, 2016). Lakes and wetlands are included in the list of tourist attractions on tourism portals of respective states/cities. Lakes are popular areas set aside for public recreation and tourists can explore every facet of them. Tourists can enjoy scenic journeys around the lake as well as a boat trip (Length, 2019).

According to (Of et al., 2016) the lakes declared as water bird sanctuaries are like fairylands for birds. The shorelines or banks of lakes attract both people and a diverse community of plants and animals. The biodiversity of lakes makes them important as natural resources for tourism. Lakes all over the world are used as a source for ecotourism, natural tourism, leisure tourism, and conference tourism and are attracting millions of tourists. Lakes contribute significantly to the socio-economic development of the surrounding region (Lakes, 2008).

2.1.1. Lakefront development opportunities

The development of water front can be used by a city to increase the value of the city's most profitable land. For example, in Buffalo, New York, the waterfront was developed to relieve the

housing problem. In Oakland, California, it was done to increase revenues from properties of declining productivity (Braun & Braun, 2014). Because there is now, and there is likely to be in the future, substantial investment in urban waterfront renewal, it is important to learn more about the functioning of newly designed urban waterfront development. The information gained from a careful examination of waterfront use could contribute to the improved design for future urban waterfront development (Prideaux, 2014).

Lakefront development have different advantages like the creation of jobs a place to host commercial activities, transportation boating, also helps in the development of tourism by offering a variety of attractions like water sports, entertainment arenas, parks, shopping areas and provides an economic spin off's like, rise in the value of properties, acting as a catalyst for redevelopment and renewal of nearby places. Lakefront development have also advantages like provide flood control measures, provide the general public with an open space for leisure and recreation, revitalizing the neighborhood, and creates a healthy active urban environment.

2.2 Challenges and barriers on lake front development

Waterfronts are extremely attractive to developers these days, most often this leads to a conflict between the public interest to access the waterfront and the rights of the private owner of the waterfront property. The whole issue of public access both physical and visual is very complex. In cities and neighborhoods, the issue can be resolved in part by using design guidelines and tradeoffs to balance legitimate public interests and private rights (Pinto & Kondolf, 2020).

Similarly, lake Marriot is an underutilized, deteriorated resource of the city of Alexandria, located at its southern edge, extending 80 km along the North West Coast and 30 km to the South. The lakefront is occupied by ill-suited industries, warehouses, and informal housing, polluting the lake and compromising the livelihoods of the fishermen community (Donia & Bahgat, 2015). The area suffers many planning problems. Land use planning (LUP) can help to systematically assess the physical, social and economic conditions of an area to select and adopt the land-use option that increases its productivity and efficiency, whilst meeting the needs of current and future generations (Berke et al., 2006).

The increased demand and competition on land for various purposes and the increase in population in developing countries becomes more pressing every year, which is very true of the study area. It

must be recognized that some groups will be subject to greater stress than others and levels of involvement might vary, yet an efficient LUP would safeguard all users from unacceptable environmental problems and aspire to distribute losses and gains equally to different users of land whilst committing to private and public interests (Leung, 2003). The problems faced in the Lake Marriot study area are explained through the analytical framework of planning support systems (PSS), namely; population and economy; governance system; environment and land use; and transportation and infrastructure, which can track current conditions and trends in the area (Berke et al., 2006).

2.2.1. Tourism around the lake front

Our natural environment often provides the opportunity (Fredman et al., 2012) and attractions for tourism, and in turn, tourism also has notable impacts on the environment, therefore, there is a continuous interaction between them. According to (Fredman et al., 2012) the environmental consequences of tourism can be categorized into the following six groups:

- 1- The changes of land cover and use
- 2- Change in energy use
- 3- Extinction of wild species and the danger of biotic exchange
- 4- Exchange and dispersion of diseases all over the world
- 5- Changes in human-environmental relations
- 6- Consequences connecting to water use

Thus, the preservation of water bodies, such as lakes, which can be the main assets of tourism destinations, is a key element of tourism development. However, the preservation of water assets is not enough to take into consideration during the development of tourism; the process needs integrated approaches to take into consideration hydrological, social, economic, and ecological interdependencies (Doulgeris et al., 2015) so they cause on all the three pillars of sustainability.

2.3. Benefits of lakefront development for inhabitants

Waterfronts are a special class of national resource due to their unique potential in affording society diversified opportunities for economic development, public enjoyment, and civic identity. They have become the focus of many issues created by the changing technologies and the pressures of population and commerce. The nature and uses of waterfronts have changed and left large

sections of waterfront land unused or underused. Therefore, the development of waterfront areas has become a challenge to affect the identity and environmental quality of cities. Waterfronts have been called romantic and used as places for dreaming and recreation, also waterfronts left the feelings of openness and freedom that tend to be everybody's place(Ragheb, 2017).

Spending leisure time on the water, whether for fishing, swimming or quiet contemplation is the recent theme of urban waterfront development around the globe. Also, creating public spaces such as parks, marinas, walkways, and promenades with shade pavilions, distinctive paving, and lighted fountains constitute the biggest change along today's urban waterfront, add a pleasant atmosphere and provide relaxation and enjoyment with being on the waterfront(Ragheb, 2017).

2.3.1. Elements of successful waterfront development

The harmonies of waterfront development could be achieved through combinations of people, nature, and technology (Yassin et al., 2012). In addition, (Yassin et al., 2012.) determined that for any use of waterfront area, a water plan should be developed before the land plan, to maintain an economically viable waterfront. Therefore, he recommended several principles that must be included while developing plans for waterfront areas, as follows:

Accessibility – the waterfront should not be isolated or separated from the development so that the public can access the waterfront easily (convenient means for visitors to access the waterfront area), Integrated – integration of the history, culture, and existing architecture is recommended for new waterfront development, sharing benefits – a balance between public benefit and developer profitability must be found. A public-private partnership is essential for realizing the inspiration of the design, Stakeholder participation – the involvement of multitudes of interested parties is compulsory: government agencies, developers, community organizations, environmental groups, and the public all have a stake in the developments of waterfront property and all must be involved in the process, Construction phase – breaking down a huge project into several phases and allowing all stakeholders and the general public to see this provides a vision for the future.

2.3.2. Financing lake front developments

Waterfront development projects usually require a tremendous “front-end” investment. Most often these projects require special engineering studies to assess the stability of the soil, flood control devices, and many other intangible costs associated with each stage of the development process. To meet these costs Wrenn (1983) suggests the following four types of financing. He also stressed the necessity of commitments for all four types before the construction can begin: Funds for predevelopment activities, short-term loans to finance construction before the permanent or long-term mortgage becomes effective, long-term mortgage loans to provide the basic funds, equity financing for the share of the cost and initial funding not covered by the mortgage

Local governments and some non-profit organizations are taking active roles in initiating private investment rather than depending on federal funds. (Hudspeth, 1985) suggested some of the strategies which have been used by the local government bodies to finance the development of waterfronts for public and private purposes.

The first strategy to be considered is the issuance of local bonds to finance projects” general obligation bonds that are paid back by leasehold or user free revenues (Hudspeth, 1985). The city of San Diego is one of the best examples of this kind in developing a major recreational complex. The city leased part of government land to private investors for various commercial operations and the revenues from the investment were cross-subsidized to support general waterfront recreation at no cost to the San Diego taxpayers.

The second strategy cited by Hudspeth, (1985) is the use of zoning authority along with a technique popularized in the execution of conservation easements the best example according to this technique is the South Street Seaport Museum. The city of New York established a special zoning district in a II – block area in southern Manhattan. Within this II–block area the potential of development rights was sold to the prospective developers through the transfer of development rights, and the resulting revenues were used in developing the waterfront historic district.

The other strategies, according to (Hudspeth, 1985) are through the “manipulation of various types of taxes”. For example, the metropolitan area of Minneapolis -St. Paul has adopted a tax-sharing device through which the “cumulative” area-wide tax increase is shared among all jurisdictions in public improvement projects. A similar approach is the tax increment financing in which bonds

are sold to be repaid with tax increments for redevelopment projects. One other similar approach is through the use of special taxes (parking tax, Hotel tax, etc.) that can be earmarked for specific purposes.

2.4. Land-use land-cover change

Land-use and land-cover (LULC) change have become a fundamental and essential component in current strategies for monitoring environmental changes and managing natural resources. Increasing anthropogenic activities around the biosphere are causing large-scale alterations of the Earth's land surface, which affect the effectiveness of global systems (Ara et al., 2020). LULC and its resources have been used for the social, material, cultural, and spiritual needs of humans, while, in the process, humans have caused significant changes (Twisa & Buchroithner, 2019). The rapid changes of LULC, particularly in developing countries, have resulted in the reduction of different vital resources including water, soil, and vegetation. Furthermore, the actions leading to LULC changes have a local cause. However, because of their speed, extension, and intensity, they have numerous and critical global implications, particularly on natural resources. The increasing change is alarming and can significantly impact the local, regional, national, and worldwide environment (Twisa & Buchroithner, 2019).

In developing countries, the resource bases, such as land, forest, and water, are declining significantly. However, information regarding the rate of reduction is often lacking. Accurate LULC change information is necessary to understand the leading causes and the environmental costs of such changes (UNEP/NASA, 1999). Moreover, analyzing the driving forces causing LULC change is essential to understanding the current changes to forecast future alterations. A study of LULC's changing aspects and its driving forces in space and time provided the basis for the sustainability of natural resource systems because it was used to reflect the state of the watershed. Regardless of the increasing concerns about the impacts of LULC change on global changes of the environment and sustainable development, research on LULC change in Tanzania is minimal. In the Wami River Basin, the magnitude and dynamics of these changes have not been broadly studied (Alawamy et al., 2020). Little is known about the spatiotemporal extents of LULC change, and no information has been evaluated over time to improve land use planning in the basin. Moreover, to understand the aspects of changes in the human environment across space and time, numerous studies are required. To address this, the integrated approach of RS and GIS data was

used for monitoring the LULC change in the Wami River Basin, both upstream and downstream. The outcome of this study is expected to be highly useful to planners, resource managers, and policymakers for the sustainable use of resources in the basin (Alawamy et al., 2020).

2.5. Land-use and Tourism

Strong tourism growth has been accompanied by changes in its form and distribution and its relationships to other land use. These relationships are shaped by demographic and social changes, trends in consumer behavior, technology, and transport shifts along with governance and policy evolution (Tourism, 2009). According to Shaw and Williams, the evolution of tourism land uses has been and will be shaped by five distinctive sectoral characteristics: by strong temporal variations in the intensity of use, activities are spatially diverse, high levels of non-exclusive land use outside a relatively small number of sites, strong presence of public goods and land uses are driven by the blurred nature of much tourism and recreational activities.

The best available assessments of future trends suggest that long-term changes in income (Carchedi, 2011) and disposable time, together with socio-demographic changes, are likely to contribute to a sustained and increasing demand for tourism and recreation. However, how this impacts on land use will be mediated by regulatory and behavioral changes related to climate shifts and risk and uncertainty, and advances in information technology (Hunan, 2016).

In a nut shell, lake fronts can occupy different activities and provide a lot of economic, social, and environmental benefits. Tourism is one of the benefits coming from lakefront activities which promotes the social life of a community as well as a tool to experience and enjoy the natural environment. Development around lakes have also challenges like increased demand, human and environmental factors, competition for land, and population number because of these factors there must be principles to develop the waterfront. This can be achieved through combinations of people, nature, and technology.

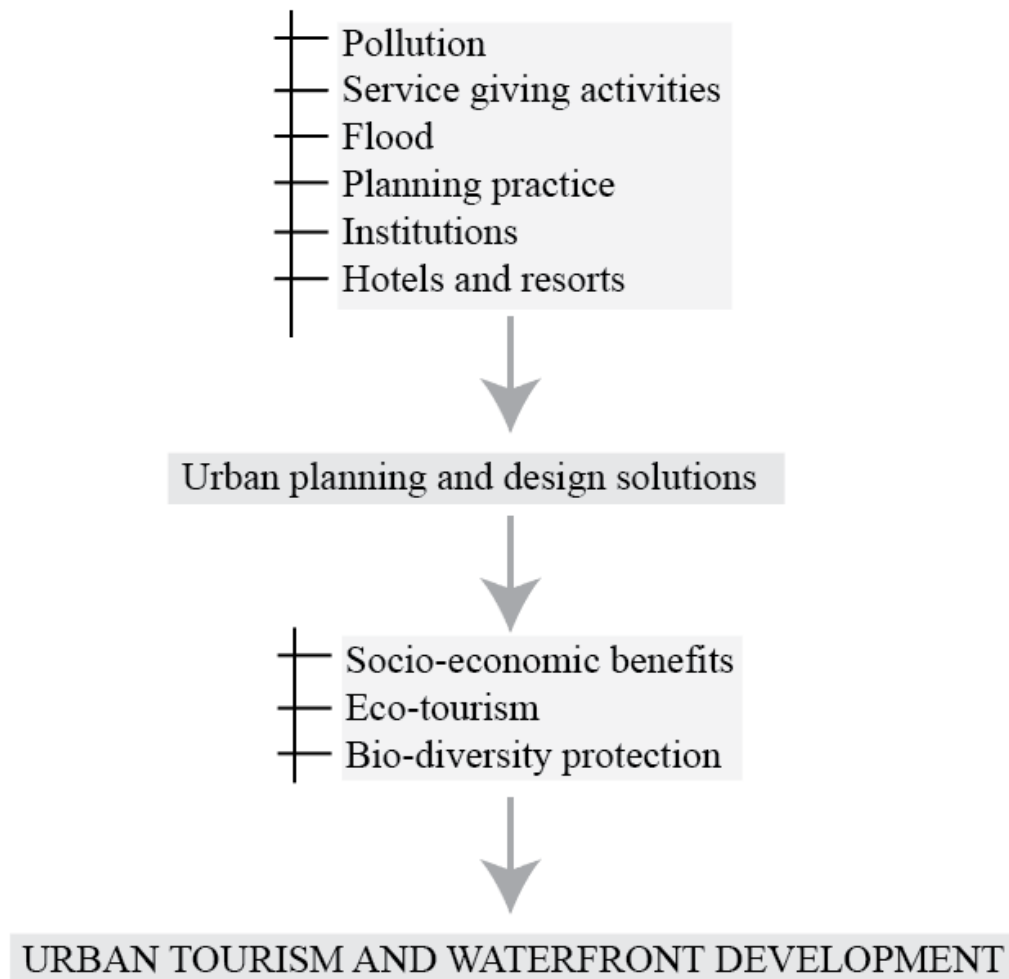
2.6. Empirical literature review: the case of Bahr Dar waterfront planning

In Bahir Dar sustainable waterfront development plan considers public access, green infrastructure, mixed-use of waterfront development, diversified job and housing and urban and rural linkage which are based on the out puts from different stakeholders that include the public, government, and NGOs. Problems endangering Lake Tana are the major source of pollution from agriculture, solid and liquid waste, and industries other problems such as encroachment of the waterfront, environmental hazards like flood, contaminated ponds with urban waste and quarries, threatened wetland with pollution and encroachment, invasive plants like eucalypts grove are mention as a major environmental problem. (krystie .B, Krista H. and Josh T., 2011).

The waterfront plan aims to Move high-density development away from the waterfront by Incorporating public parks and open green spaces into high-density areas to provide residents access to recreation. Regulating building heights and design within the waterfront having Ban on obstruction of water views, balance builds up space ratios and incentives for the use of local architectural styles and materials. Building policies incorporate requirements considering onsite waste management, access for the disabled and elderly, and free and open public access spaces/routes to the waterfront. Other sustainable measures are included such as; Recycling and composting, linking waste management and poverty reduction, establishing Alternative agricultural processing (aqua farming, dry fish export), and creation of awareness (Anasimos, 2013).

The Waterfront land uses are managed by identifying areas for development and areas that should be preserved by promoting mixed-use, green buffers, park spaces, and economic opportunities. Building the green network to frame development by connecting major waterfront corridors, trails and green ways with indigenous forest, wetlands, urban agriculture, and public greeneries is another strategy. Regulate and enforce green buffer zone with a continuous buffer of indigenous species along the waterfront to protect them from development are highly encouraged (Anasimos, 2013).

2.7. Conceptual framework



CHAPTER - THREE

3. Materials and Methods

In this chapter, a description of the study area, sampling technique and sample size for the study, data collection method, and method of data analysis are discussed.

3.1 Description of the study area

The study area is found in Hawassa town around the waterfront of lake Hawassa consisting of different activities like resorts, recreational areas, residential blocks, and fishery. Hawassa is a town in Ethiopia, on the shores of Lake Hawassa in the great Rift Valley. It is located 273 km south of Addis Ababa. The town serves as the capital of the Sidama Region and Southern Nations, Nationalities, and Peoples' Region. The city administration is divided into 8 sub-cities and 32 kebeles (20 Urban and 12 Rural). The administrative land of Hawassa is 15,720 ha, with the municipal boundary (i.e., urban kebeles) covering 65 km²(Misiker, 2018).

Lake Hawassa is the most prominent fresh water lake found in the central Ethiopia Rift Valley located at the highest topographic position. Five independent small and big rivers drain into the lake extending the catchment. Runoff from the eastern wall of the caldera feeds another small Lake called Lake Cheleleka. Overflow from Lake Cheleleka drains into Lake Hawassa through the Bishan Guracha River, which is the only major affluent river (Gedecho & Tensay, 2019).

The waterfront area is found to the west side of the trans-African highway and is located 4 kilometers from the major arterial road passing through Hawassa town. The town lies on the Trans African highways from Cairo to Cape Town, with a latitude and longitude of 7°03'N 38°28'E coordinates and an elevation of 1708 meters. Different languages are spoken in the town but the majority constituting more than 50% of the population speaks Afu Sidama. Hawassa gets an annual average rainfall of 945 mm and has an average temperature of 19.5°C and humidity of 70-80% (Beshah, 2015). The catchment of Lake Hawassa is formed of Pliocene-age volcanic rock. Significant faults and cracks in the rock result in highly permeable soil and unconfined aquifers in the area. The depth of static ground water level varies from a few meters in the low-lying areas to up to 40 m deep elevated areas (Ayenew et al., 2008).

The waterfront area consisting different activities like tourism, agriculture, and cultural events found at the edge of the waterfront. The Lake stretches 16 km from the northeast to the southeast direction having an approximate water volume of 1.3-billion-meter cubes. The maximum depth of the Lake is 21.6 m with a mean depth however is 11 m (Dadebo.2000). Lake Hawassa is one of the smallest rift valley lakes created due to volcanic eruptions (Gebremariam, 2010). This lake is a top attraction site for both international and domestic tourists in the city. Its economic contribution is huge; created many job opportunities; fishing opportunity. Many hotels and resorts have been built along the coastal area of the lake. Informants from academic institutions, government offices, and tour guide associations said: “Lake Hawassa is responsible for the establishment of Hawassa before 53 years and for tourism development in the city” (Gedecho, 2019). Except for services such as boating and hospitality services, entrance is free. There are three ways where visitors can enter freely and have an experience on the lake: Fikir Haik, Amora Gedeland through resorts.

One of the areas cultural activities happen is Gudumale. Officially Amora Gedel is called Gudumale, but locally AmoraGedelis different from Gudumale. Residents and visitors told, “Gudumale is the place where fiche festival is celebrated whereas AmoraGedelis the recreational area every day accessible to anyone”. Areas including the Gudumale recreational area and Amora Gedel pool were used to be the palace of Ras Mengesha Seyoum built in 1969. The building was demolished 40 years ago due to overflowing. Some walls of the palace are still there inside this recreational area. It was built by the order of Ras Mengesha Seyoum who was the fourth grandson of Emperor Yohanis IV, governor of Sidamo province, and developed the master plan of Hawassa 53 years ago (Gedecho, 2019). The remaining walls stand in lakeshore; it was built on the shore at a time when the shore was not covered with water as today. This resource is a very important historical tourism resource located at the strategic place (a place whereby other tourism resources are nearly located; suitable for packaging) (Hussein, 2008).

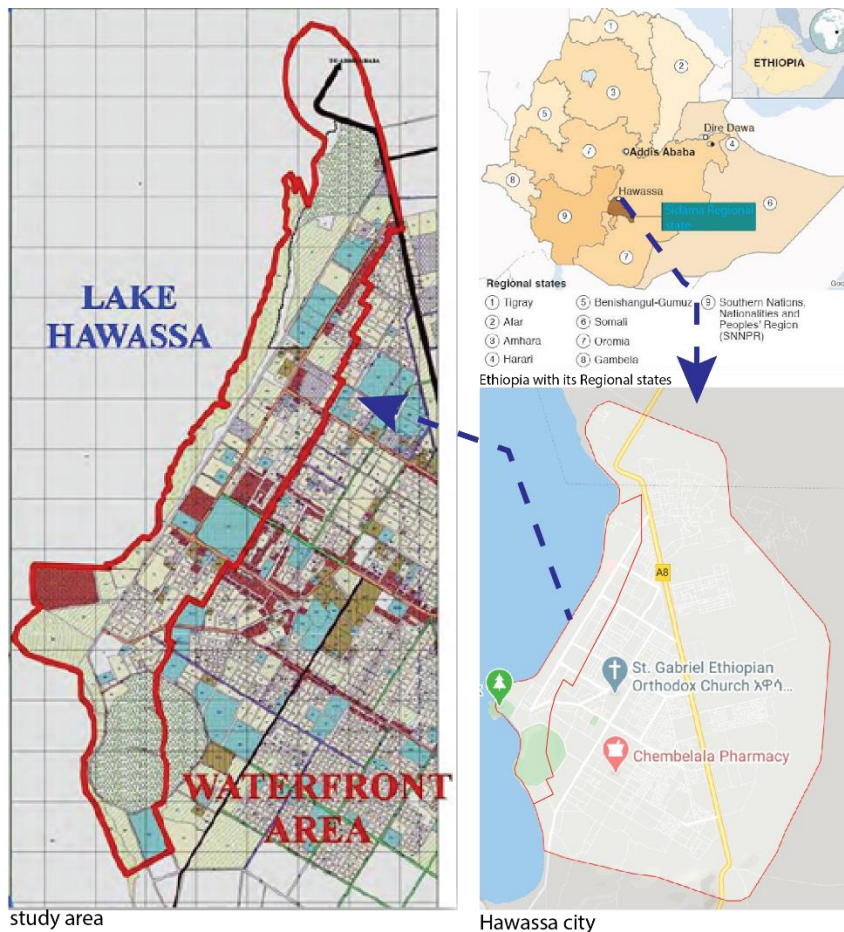
The study area covered three basic sites at the waterfront which are found within three different connected sub-cities. The first one is around the Amora gedel and Gudumale¹, Fikir Hayk ², and around the resort's area. The site is surrounded by the lake and part of the city. People in the area are engaged in different activities like fishery, small fast-food centers, working on boats, and as a tourist guide.

The urban population of Hawassa based on the 2007 census result projection for 2012 is 201,027 which includes 103,646 male and 97,381 female population. The Populations of sub- cities in the study area are 22,297 in Hayek dar sub-city, 22,867 in the Addis Ketema sub-city, and 55,901 in the tabor sub-city. The number of rural populations for males is 59,393 and for females is 56,422 with a total population of 115,576. Therefore, the total urban and rural population of Hawassa is 316,842 (Table 1). The study area covered parts of three sub-cities Haykdar sub-city which have Gudumale and Gebeyadar Kebeles, Tabor sub-city which have Tilte and Hogane wacho Kebeles, and Addis Ketema sub-city which consists of Daka and Philadelphia Kebeles. It is estimated that around 50,000 people live in this area which is around the waterfront of Lake Hawassa. The area under study covers 765 hectares (Figure 3.1).

The study area is among some of the site's tourists prefer to go when they come to Hawassa town. It spans from Tabor Mountain to Tikur weha forest, there are different activities in between like schools, administrative offices, service giving buildings, fishery activities, boat tour services, recreational areas, hotels, and farming activities. The activities in the study area have socio-economic as well as cultural and environmental benefits to the inhabitants there and tourists coming to the area.

¹Amora gedel:a recreational area around the lake hawassa;Gudumale:A place where yearly festival chambalala is celebrated

²Fikir hayk: Recreational area found at the waterfront of Hawassa



Source: Google photos, Hawassa administration office (2015)

Figure 3.1 location map of the selected area.

3.2 Site selection, sampling technique, and sample size for the study

The waterfront of Hawassa constituting some portion of three sub- cities identified. These areas are located in a place where it has a lot of opportunity for Tourism and there are also a lot of people being dependent on the lake in this site. There are different flora and fauna that are an opportunity for the lake but threatened due to lack of better urban planning and design interventions. Therefore, with these criteria, the site is selected.

There are three sub-cities adjacent to lake Hawassa which are Tabor, Hayk-dar, and Addis-ketema. Under the three sub-cities, Tabor sub-city consists of a specific area which is under selected site known as Amora Gedel, Hayk-dar sub-city consists of a specific area which is under selected site

known as Fekir Hayk and Addis Ketema sub-city consists of the specific area under selected site the resorts area (Table 3.1).

Table 3.1 the population of the study area

S/N	Name of sub-city adjacent to the lakefront	the selected area under the sub-city	Population in sub-city adjacent to the lakefront.	The population of the study area selected under the sub-city
1	Tabor	Amora Gedel	55,901	1500
2	Hayk dar	Fekir Hayk	22,297	2250
3	Addis Ketema	Around resorts area	22,867	1070

Source: author 2021

In addition, the places mentioned (Amora Gedel, Fekir Hayk, Shebelle II) were considered appropriate as specific places to be mentioned because they constitute the major activities taking place around the lakefront. Amora Gedel is a place in which different parts of the community as well as tourists from all over the world come and enjoy watching different types of bird species, make social gatherings for their different ceremonies and experience different outcomes of food from fish. Fekir Hayk is a place known for giving the community in the city and Tourists from the country and abroad boat experience in Lake Hawassa; this is done by different groups of the youth from the city making organizations. Resort's area is a place consisting of different birds' life, resorts, a hotel, and a place for different entertainment activities for more than Fifty (50) years. They have been there for several years as a core place for these activities to take place and therefore, they are the best places to consider with the information needed to answer the research question of the study (Anasimos, 2013).

The purposive sampling technique is used to take a sample in the study area. A sample is taken based on who is fit considering what they do and where do they live. To conduct this study different

respondents have taken part from governmental institutions, inhabitants of the area, tourists, private associations, institutions working on environment and tourism, and institutions working on job creation. Interviewees and respondents for questionnaires were selected based on location, the type of job engaged in, and the reason someone is at the lakefront. The number of participants depended on the ratio of the total population from each sub-city adjacent to the lakefront in the selected site and the scale of the geographic area of sub-cities that are adjacent to the lakefront in the selected site.

Based on the criteria mentioned above and considering the total population in each sub-city and population portion in the selected site 110 respondents are selected for the survey 90 for the questionnaire and 20 for the scheduled interview. The number is from each sub-city in the selected site. The total population in the selected site is 4820 (Table 1). From the total population in the selected site Tabor sub-city accommodates 31.1%, Hayk-dar sub-city accommodates 46.7% and Addis ketema sub-city accommodates 22.2%. Based on the ratio of the population and geographic scale of the sub-cities in the selected area 34 respondents are selected from Tabor sub-city around Amora gedel area, 51 respondents are selected from Hayk dar sub-city around Fekir Hayk area and 25 respondents are selected from Addis-ketema sub-city around the resorts area.

3.3. Methods of data collection

The study used primarily as well as secondary data to figure out the determinant factors for urban tourism and waterfront development. Interviews, questionnaires, and observations, are used to collect primary data while different offices were visited to collect secondary data. Additionally, primary sources of data like images from USGS and secondary sources of data from Hawassa city administration are used to study the land use and land cover. The images were obtained from the United States Geological Survey (USGS) Earth Resources Observation Systems (EROS) data center under the Landsat Archive (<http://earthexplorer.usgs.gov/>). From three zones Ethiopia is found (36,37,38) the datasets were projected to Universal Transverse Mercator (UTM) zone 37 adindad datum of World Geodetic System 84 (WGS 84).

This survey aimed to identify whether there are problems due to unplanned and an organized lakefront affecting urban tourism around the lakefront of Hawassa, understanding the perspective

of different people about the issue of urban tourism and waterfront, and structure the research by working on different types of questionnaires. The survey also prepares research instruments to identify core problems and opportunities of the area. To achieve this, different methods are used being divided into specific sections. And a way to test the instrument details is prepared. Then, the data obtained is analyzed using computer programs and other methods.

After studying and pilot testing of the necessary information, the questionnaires were re-evaluated and directed to the sample provided for the study to take place. One hundred copies of the questionnaire were prepared for the selected 90 respondents. All the questionnaires were filled and returned and a scheduled interview is held with 20 respondents from different groups. Data from different sources were used for the research to answer the research questions.

3.3.1. Survey questionnaires:

Survey questionnaires were prepared for different groups. From the total of 90 respondents of the survey questionnaire 3 of them are government workers on the related issue from each sub-city adjacent to the lakefront, 75 people are inhabitants in the selected site (23 from Tabor sub-city, 35 from Hayk dar sub-city, and 17 from Addis ketema sub-city based on the ratio provided in the sampling section), 6 tourists from each sub-city adjacent to the lakefront, 3 from private association each selected from the sub-cities adjacent to the lakefront, and 3 from institutions working on environment and tourism selected from each sub-city adjacent to the lakefront.

3.3.2. Interview schedule:

Interview questions that help address the objectives of the research were held. The interview questions focused on the relationship between urban planning and design to urban tourism and the lakefront of Hawassa, and the importance of integrating and balancing different institutions regarding the issue of urban tourism and lakefront at Hawassa town.

Interview questions which focused on different ways that could be adopted for better-integrated tourism, different challenges at the lakefront, and better waterfront experience were conducted and from the total of 20 people who participated in the interview 3 are government employees working on related issues each from sub-cities adjacent to the lakefront, 8 are inhabitants of the selected site (3 from Tabor sub-city, 4 from Hayk-dar sub-city and 1 from Addis ketema sub-city), 3 from

tourists in each sub-city adjacent to the lakefront, 3 from private associations in each sub-city adjacent to the lakefront and 3 from institutions working on environment and tourism selected from each sub-city adjacent to the lakefront.

3.3.3. Observation:

The observation was made to the lakefront of Hawassa to get firsthand information about the activities, various land uses, residents, and the level of comfort of the area for tourists using the observation checklist.

3.4 Data analysis

After the data collection and preparation, data is entered into MS excel, then analysis was made. In addition, ArcGIS and AutoCAD are some of the software that was used during data analysis. Data obtained were analyzed using percentage and frequency tables. Then it is presented using pie diagrams and bar graphs. Moreover, the open-ended questions are analyzed through quantitative content analysis by the researcher to quantify emerging characteristics and concepts. Concept analysis is the process of analyzing verbal or written communications in a systematic way to measure variables quantitatively (Polit and Hunger 1995:).

Relative Importance Index (RII) analysis: the data generated from the survey on the determinant factors were further analyzed using the relative importance index. It is a type of analysis technique that shows the relative importance of predictors (independent variables) when the independent variables are correlated with each other (Somiah et al., 2015). This study, also showed which variable is most important than others based on a four-point scale (1- strongly disagree, 2- disagree, 3- agree and 4 – strongly agree) based on responses of the interviewees approached to empirically discover the factors accounting for different problems to urban tourism around the waterfront (Table 3.2).

The data obtained undergoes through statically weighted mean in answering the research questions.

Table 3.2 Weighted mean

Strongly agree (SA)	Agree (A)	Disagree (D)	Strongly disagree (SD)
4 points	3 points	2 points	1 point

$$RII = \frac{\sum W}{A * N}$$

Where, W – weighing is given to each statement by respondents and ranges from 1 to 4; A – higher response integer (4); and N – total number of respondents.

The acceptance point for the items is 2.50 and any mean below 2.50 is regarded as rejected, not prevalent, and as an unpopular view.

CHAPTER - FOUR

4. Results and Discussion

4.1. Demographic characteristics of the respondents

Different age groups of respondents have participated. Most of the respondents are 21 years and older. Of the respondents around 57.7% are male and around 54.8% of the respondents are unmarried (Table 4.1). Most of the respondents attended formal school in different levels like university/college, secondary or primary. The employment status of the respondents can be mentioned as: most of the respondents engaged in private works and other than that most of them work in government offices.

Table 4.1 demographic characteristic

Variables		Frequency	%
Sex	Male	60	58
	Female	44	42
	Total	104	100
Age	15-20	7	6
	21-30	47	46
	31-40	29	28
	41-50	18	17
	51-60	3	3
Marital status	Married	47	45
	Single	57	55
	Widowed	-	-
	divorced	-	-

Education level	University/collage	64	63
	Secondary	31	30
	primary	3	2
	Never attended school	6	5

Source: field survey 2021

4.2. Land-use land-cover of Lake Hawassa

The lakefront is composed of different land-use activities like commercial, agricultural, cultural events, administrative, educational, and residential activities. All the activities in the land use are located in all three sub-cities which are adjacent to the lakefront and have different plot sizes, types, and functions. In the study area the land-use land-cover change of the years 1984,1994,2003,2011 and 2020 has been calculated (Table 4.2). The result shows that in 1984 the developed land of the waterfront was 279.9312 Ha, in 1994 it increased to 357.1878 Ha, in 2003 the area of developed land increased to 372.5077 Ha, in 2011 it increased to 417.5420 Ha and finally, in 2020 the developed land of the waterfront increased to 436.5145 Ha (Table 4.2).

Urbanization and ecotourism development of Hawassa is extremely growing in an undetermined manner causing unexpected ecosystem and biodiversity loss. Pollutions are the major problem of this development subsidizing aquatic natural product which is the foundation of the terrestrial shoreline ecosystem (Abate, 2013). According to respondent's construction of roads, infrastructure, buildings, and other recreational needs has also affected the natural land cover. The intrusion scale is also affecting the buffer areas of the lake and tourism on a larger scale.

Land use and land cover are also affected by natural factors like the weather of the geographic location of the area, the precipitation, and cloud cover (Beshah, 2015). These factors contribute by making the people living in the area decide what kind of activity to do, where to live, and what kind of measures to take when seasons change.

According to observations made random existence of activities with uncoordinated land-use planning is one of the main reasons for not having well-organized spaces and programs. So, to enhance urban tourism at the waterfront of Lake Hawassa one of the things to be considered is identifying the effect of land-use land-cover change on urban tourism around the lakefront area.

Tourism is one of the major driving forces behind land use and land cover changes in waterfront areas. Demand for tourism exaggerates the pressure on waterfront areas of high natural and visual value, and it's becoming a major concern in waterfront areas (Atik et al., 2010). Tourism is receiving scrutiny in environmental terms because of its actual and potential impacts on land use, energy consumption, biodiversity loss, climate change, and water consumption (Balk, 2014).

Table 4.2 land-use /land cover of Hawassa (Ha)

No.	Land-use	Area in (Ha)1984	Area in (Ha)1994	Area in (Ha)2003	Area in (Ha)2011	Area in (Ha)2020
1.	Agriculture	169.4162	63.1985	60.4590	85.1517	92.3204
2.	Forest	61.3584	61.4382	142.1105	85.1517	42.6344
3.	Wetland	133.2397	110.1649	103.6599	100.7389	134.7322
4.	Grassland	90.7009	85.8134	2.3840	2.5011	2.4942
5.	Bare land	63.681	12.7361	22.1743	24.4186	23.5726
6.	Water	48.611	55.5351	42.7786	30.5700	32.4202
7.	development	279.9312	357.1878	372.5077	417.5420	436.5145

(Source: author 2021)

It is indicated in Table 4, the change in the land use/ land cover of Hawassa has been calculated. Accordingly, the period of 1984-1994; 1994-2003; 2003-2011; and 2011-2020 have been calculated. In addition, to see the overall change the land use/ land cover of the period 1984-2020 has been calculated. The result in Table 4.2, revealed in 1984-1994 the amount of land for agriculture decreased and developed land increased, in 1994-2003 the agricultural land continued to decrease and developed land of the area increased by 4.2%, from 2003 to 2011 the agricultural land started to increase, in 2011-2020 the agricultural land continued to increase but in a decreasing rate and developed land showed a relative decrease from the past years.

Between the years 1984-1994 flooding occurred in the city which inundated a huge amount of land that had been used for settlement and urban agriculture. This area was changed into wetlands which are perennial and annual. But when gradually as the demand for land increases and the amount of water degraded; people illegally settled into the vacant places by filling the wetland for residential and recreational purposes. 17 % of the land parcels in the Hayk Dar sub-city were unregistered and settled illegally intruding the buffer zone (Anasimos, 2013).

Table 4.3 land-use change of Hawassa, source: author 2021

No.	Land-use	Percentage of area change from 1984-94	Percentage of area change from 1994-2003	Percentage of area change from 2003-2011	Percentage of area change from 2011-2020	Area of change in Ha 1984-2020
1.	Agriculture	-62.6	-4.3	40.8	8.4	-77.0958
2.	Forest	0.1	131	-40	-49.9	-18.7240
3.	Wetland	-17.3	5.9	-2.8	33	1.4925
4.	Grass land	-5.3	-97.2	4.9	-0.3	-88.2067
5.	Bare land	99	74.1	10.1	-3	17.2045
6.	Water	1042	-22.9	-28.5	6	27.5591
7.	development	27.6	4.2	12	-0.05	156.5833

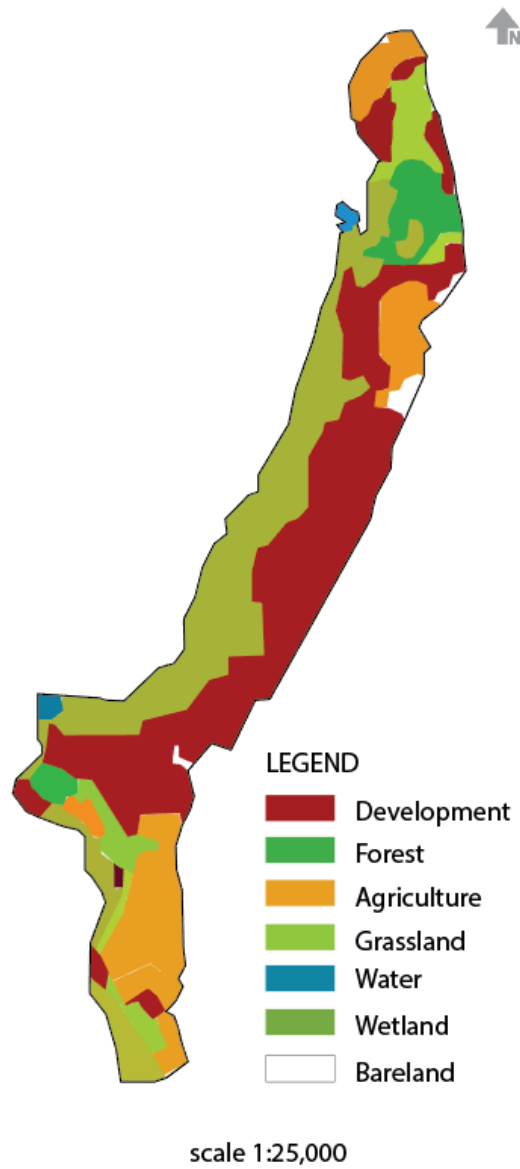


Figure 4.1 land-use land cover change 1984 source: author 2021

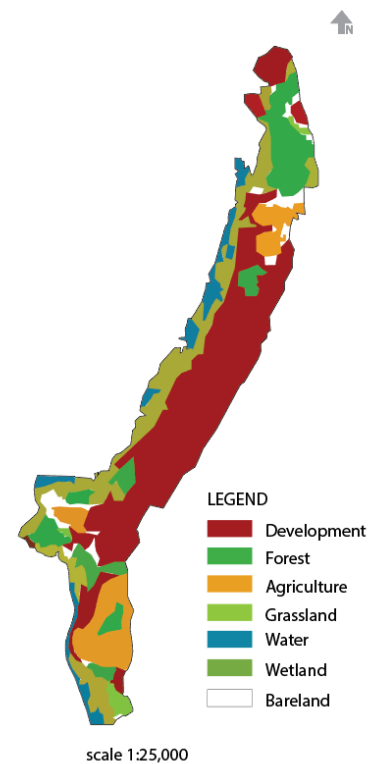
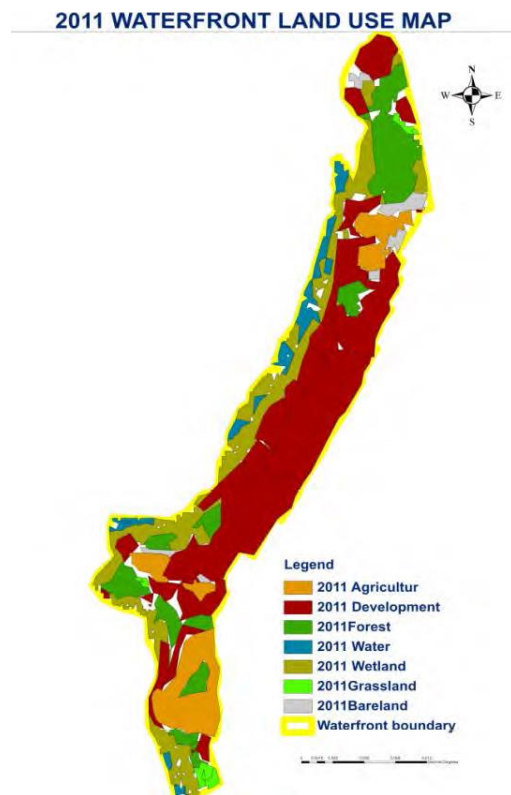
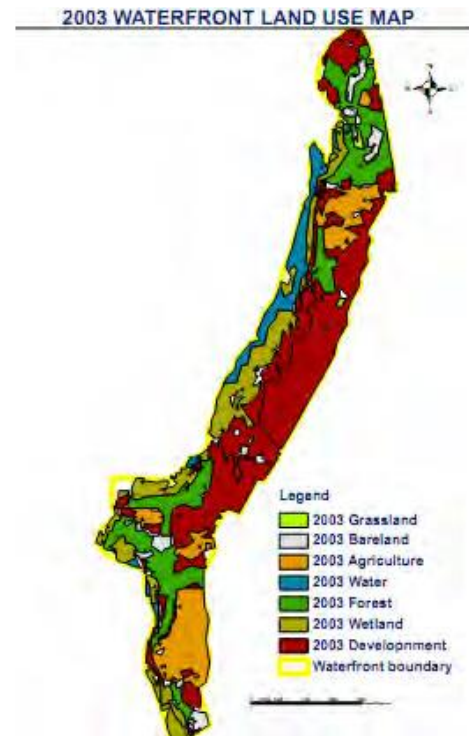
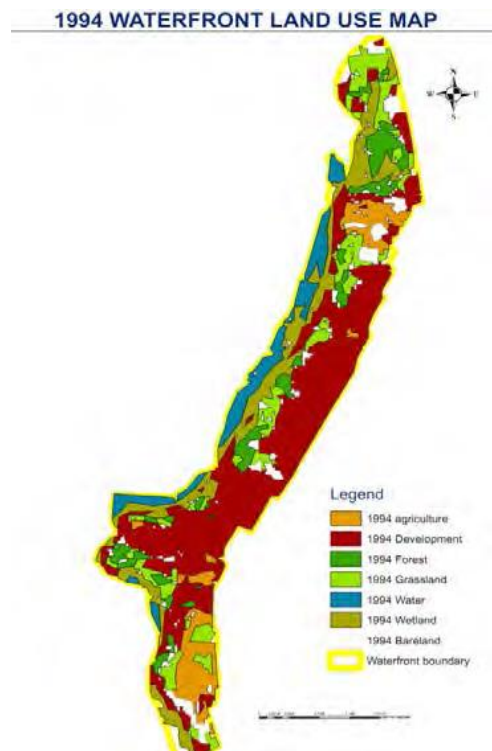


Figure 4.2 land-use land-cover change of the waterfront in years left 1984-2020, source Hawassa city administration

Results in Table 4.3 indicate that the land-use land-cover of Hawassa town keeps changing through the years. The agricultural land of the town was 169.4162 Ha in 1984 it declined in large number in ten years and became 63.1985 Ha. Again, after nine years the agricultural land area declined to 60.4590 Ha. It shows a relative increase after the year 2003 it goes from 85.1517 Ha in 2011 to 92.3204 Ha in 2020. The agricultural land-use decreased by 62.6 percent during the time 1984 to 1994, it decreased in 4.3% during the period starting from 1994 to 2003, increased by 40.8% during the time from 2003 to 2011, and increased by 8.4% starting from 2011 to 2020 (Table 4.3). The agricultural land decreased by 77.0958 Ha from 1984 to 2020 this shows the shifting of activity at the waterfront from agriculture to other activities like residence and commerce.

The urban forest cover of the town also changed through time. In 1984 the forest cover of the waterfront area was 61.3584 Ha in 1994 it showed an increase of 0.1% and became 61.4382 Ha, from 1994 to 2003 it showed an increase in a large amount which is 131% and became 142.1105 Ha, it decreased from 2003 to 2011 by 40% and became 85.1517 Ha and from 2011 to 2020 the forest coverage of the waterfront decreased by 49.9% and became 42.6344 Ha of land. The forest coverage at the waterfront starting from 1984 to 2020 has decreased by 18.7240 Ha again which shows the focus of activities is not to keep the forest coverage (Table 4.3).

The grass-land coverage of the land use also progressed through the years. In 1984 the grass-land coverage of the waterfront was 90.7009 Ha of land it decreased by 5.3% and became 85.8134 Ha, from 1994 to 2003 the grass-land coverage of the waterfront decreased by 97.2% and became 2.3840 square meters, from 2003 to 2011 the grassland coverage of the waterfront area increased by 4.9% and became 2.5011 Ha of land, from 2011 to 2020 it showed a decrease in 0.3% and became 2.4942 Ha of land. The grassland coverage of the selected waterfront area decreased by the amount of 88.2067 Ha from 1984 to 2020 also another implication of clearing the grassland for other activities (Table 4.3).

The water coverage at the waterfront showed an increase in a large amount due to different environmental factors. It increased by 27.5591 Ha of land from 1984 which was 4.8611 Ha to 32.4202 Ha in 2020. From 1984 to 1994 it increased by 1042% and became 55.5351 Ha of land coverage, from 1994 to 2003 it decreased by 22.9% and became 42.7786 Ha of land, from 2003 to 2011 it showed a decrease in 28.5% and became 30.5700 square meters of land and from 2011 to 2020 it showed 6% increase and became 32.4202 Ha of land (Table 4.3).

The development of the waterfront increased in size through different time frames over the years. In the year 1984, the developed area of the selected waterfront area was 279.9312 Ha of land the size increased to 357.1878 Ha of land by the year 1994 which is an increase of 27.6% from that of 1984, from 1994 to 2003 the developed area increased by 4.2% and became 372.5077 Ha of land, from 2003 to 2011 the number increased by 12% from that of 2003 and became 417.5420 Ha of land and from 2011 to 2020 the developed land of the selected waterfront area became 436.5145 Ha which increased by 12% from that of 2011. Through the years the land-use change of the developed land is 156.5833 Ha from that of 1984 to that of 2020 (Table 4.3).

Similarly, tourism, one of the main economic activities worldwide, is also closely related to land use and land cover. Many developing countries in the tropics have relied on tourism to generate economic wealth and job opportunities to diversify their economy as well (Gössling, 2001; Rico-Amoros, Olcina- Cantos, and Sauri, 2009). As a kind of human activity, tourism development, involving accommodation establishments, transport infrastructure, leisure activities, etc., contributes to changes in land cover and land use dramatically (Gössling, 2002).

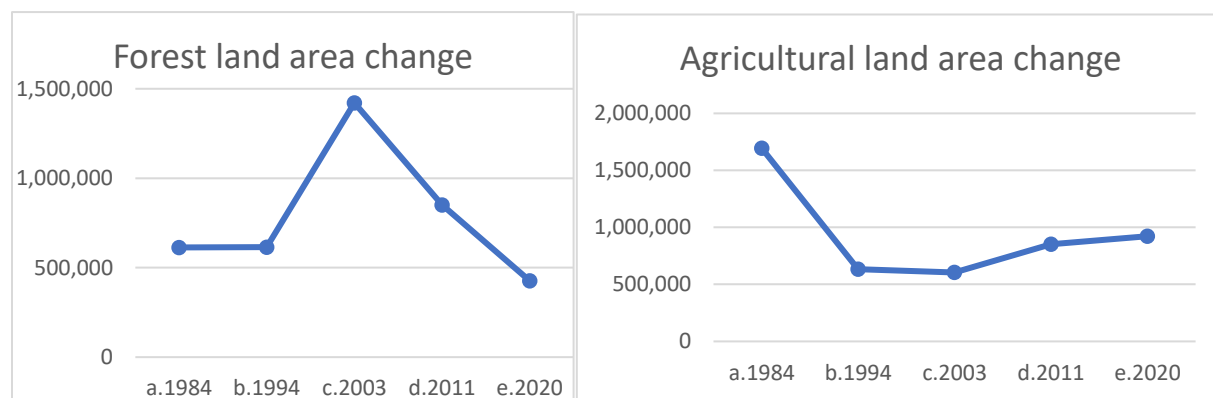


Figure 4.3 forest land area changes left, agricultural land area changes right: source author 2021

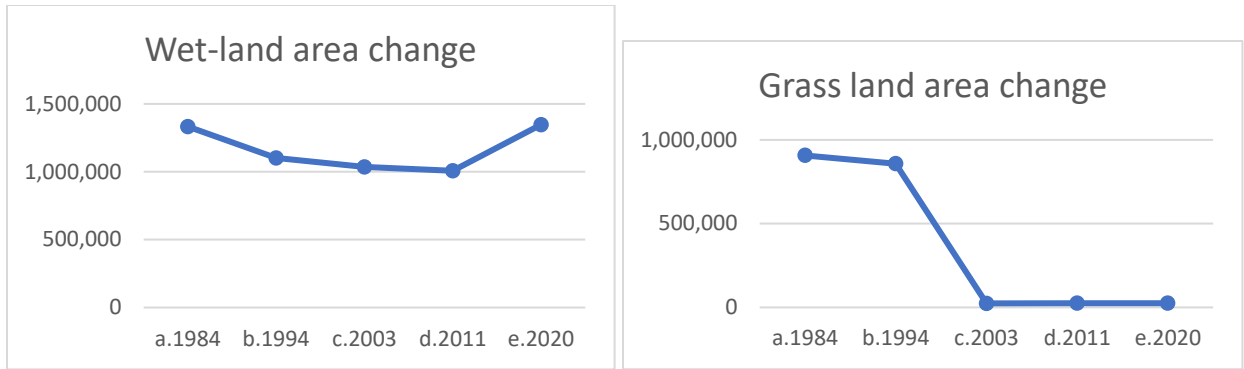


Figure 4.4 wet-land area change left and grass land area change right: source author 2021

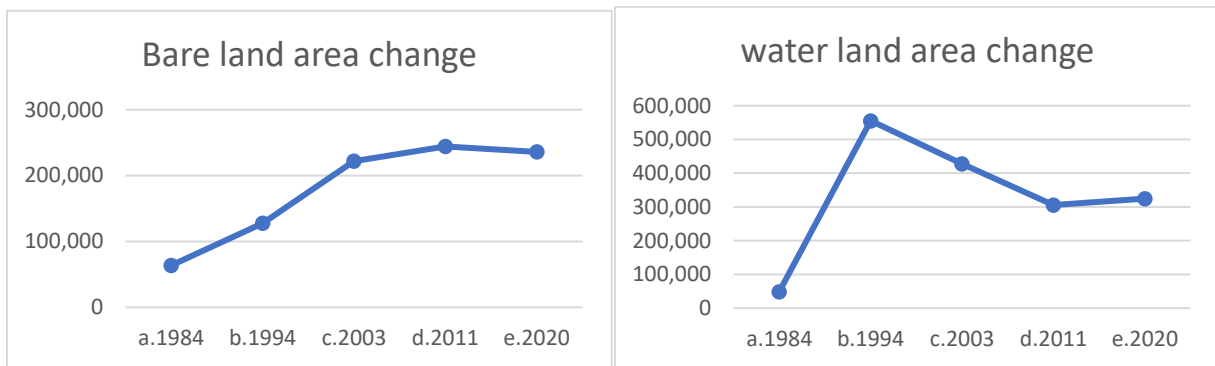


Figure 4.5 bare land area changes left and water land area change right: source author 2021

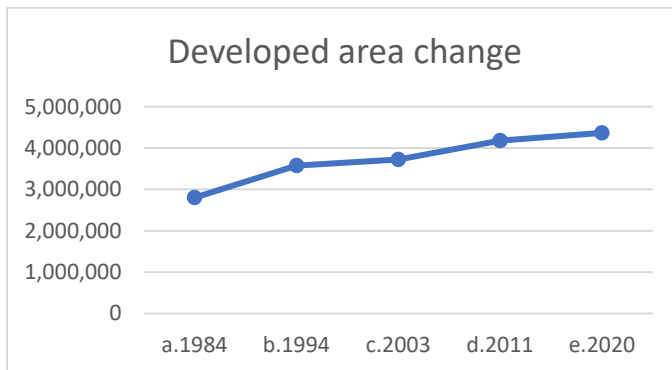


Figure 4.5' developed land around the waterfront: source author 2021

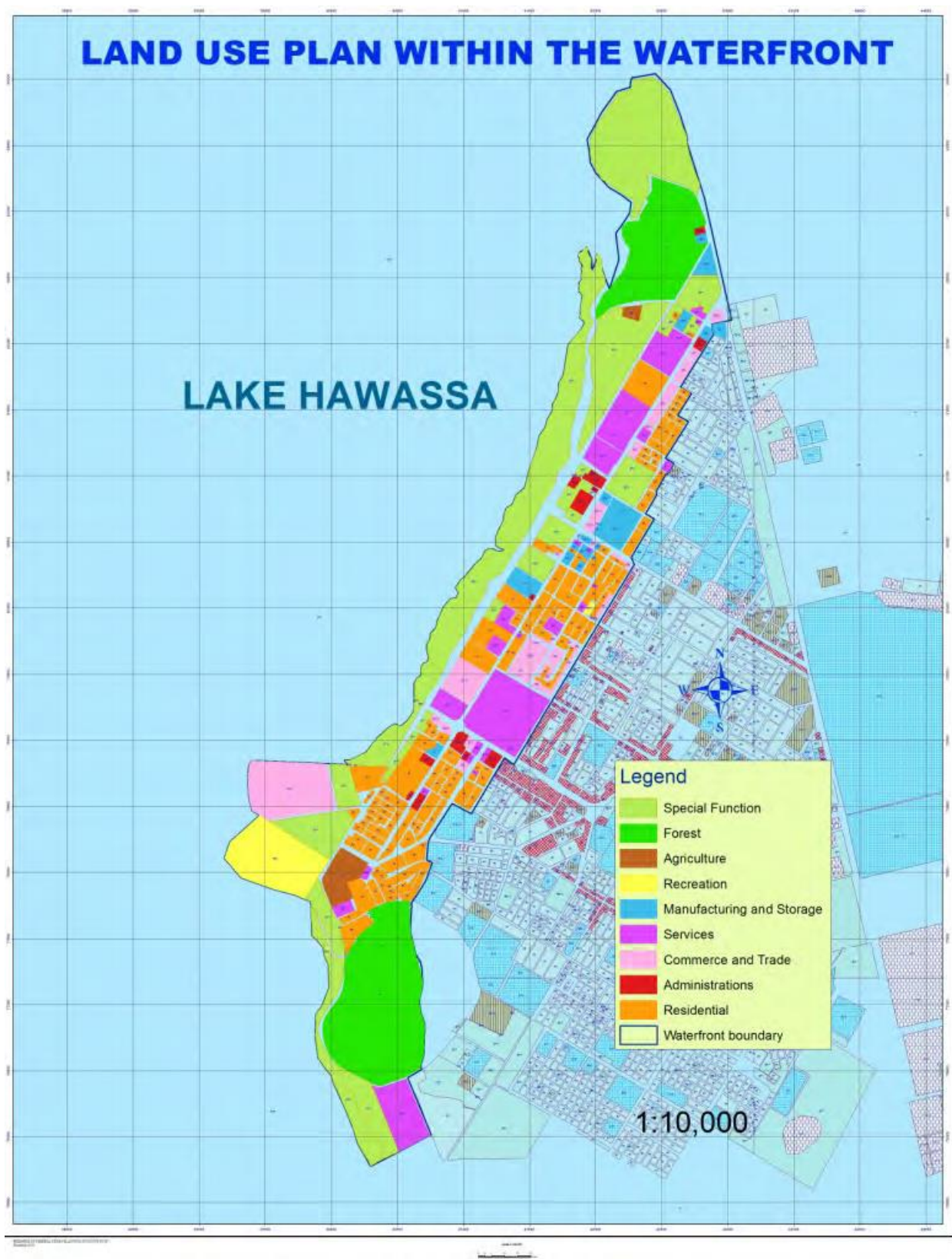


Figure 4.6 land-use plan and the waterfront: source Hawassa city administration 2015

Table 4.4 land-use ratio

No.	Land -use	Area (Ha)	Percent (100%)	Code
1.	Special function	165.8330	21.7	
2.	Forest	42.6344	5.6	
3.	Agriculture	92.3204	12	
4.	Recreation	12.1044	1.6	
5.	Manufacturing and storage	14.4366	1.9	
6.	Services	52.4322	6.9	
7.	Commerce and trade	102.1716	13.3	
8.	Administrations	72.4115	9.4	
9.	Residential	210.3444	27.6	
10	Waterfront boundary	764.6885	100	

Source: Author 2021

Most of the land in the lakefront serves for residential purposes which accommodate 264.6885 Ha of land from the site which is around 27.6% (Table 4.4). most of the households hold more than 500 square meters of land because they hold the land before the current new guidelines for tenure rights of the town are brought to work. Most of the land owned in this area for residential purposes trace back to the Dergue regime so they are more than 30 years old. Other than the residential land-use parcels mentioned above there are also a lot of residential buildings built on the buffer area of the waterfront which covers 10.3503 Ha of land.

On the other hand, a stream buffer is a defined area along a watercourse that is protected from development to preserve the natural benefits of riparian ecosystems and reduce hazards risks of such areas(Dong, 2004). A stream setback is a minimum distance that development maintains between its boundaries and a riparian area to protect a buffer zone, stream buffers function by limiting the amount of development adjacent to riparian and wetland zones to reduce exposure to flood risk (Figure 4.8) and preserve the capacity of the buffer to minimize hazards through ecological processes(Doulgeris et al., 2015). Additionally, such requirements can work by discouraging certain types of uses in these areas that could negatively impact water quality(Timur, 2013).



Figure 4.7 informal settlements at the lake front: source site visit photos

The second-largest land use is a special function that accommodates buffer at the lakefront and other related programs. This area covers around 165.8330 Ha of land which is about 21.7% of land use at the waterfront (Table 4.4). This is an area that is difficult for construction and an area that is attacked by the overflow of the lake during the rainy seasons. Most of the activities established themselves here are informal and have no legal ground to build in this part of the lakefront (Figure 9).



Figure 4.8 flood at the lake buffer zone: source site visit photos, 2021

Commerce and trade also take a large part of the land use without considering the informal commerce and trade activities. The trade and commerce accommodate 102.1716 Ha of land which is about 13.3% of the land use at the waterfront. Immediate to the lake 53% of the land is covered with informal commerce and trade activities mostly in areas like Amora gedel and Fiker Hayk which is an addition to the formal 13.3% of the land (Table 4.4).

Agriculture is another activity in the lakefront area. The agriculture activity is found mostly around the Bishan Guracha (Sidama-Oromia boundary) and the tabor mountain area. The Agricultural land covers 92.3204 Ha of land which is about 12% of the land use (Table 4.4). The land for agriculture is also a land incorporated by the master plan of the town without deeply considering the overflow of the lake during the rainy seasons and the proper use of the buffer to the lake. So, with an increase in the amount of rain will be high damage to the farmlands at the waterfront.

The Administration land also takes a large part of the waterfront land use. The Administration lands are offices like water-works and building by Ethiopian electric corporation building around fekir Hayk area. The administration land covers 72.4115 Ha which is around 9.4% of the total land use at the waterfront. The administration lands owned by the government have a lot of unused open spaces which accommodate around 56% of land owned by them (Table 4.4).

Service giving areas are also found at the waterfront area. The service-giving programs in the area are schools and health institutions. The two schools (kg, primary and secondary) by SOS (non-governmental organization) takes larger land from service land use. Service giving land-use at the lakefront is 52.4322 Ha which is about 6.9% of the total land-use at the lakefront (Table 4.4).

The waterfront area has also forest coverage during different chronological times and as o 2020 it has 42.6344 Ha of land covered with forest which is around 5.6% of the total land use. Most of the land use covered with the forest is found around Bishan-Guaracha and Tabor Mountain area. Manufacturing and storage are also other activities around the waterfront which comprises 14.4366 Ha of land which is around 1.9% of the total land use (Table 4.4). Recreational areas at the waterfront area also take 12.1044 Ha of land which is about 1.6% of the total land use at the waterfront.

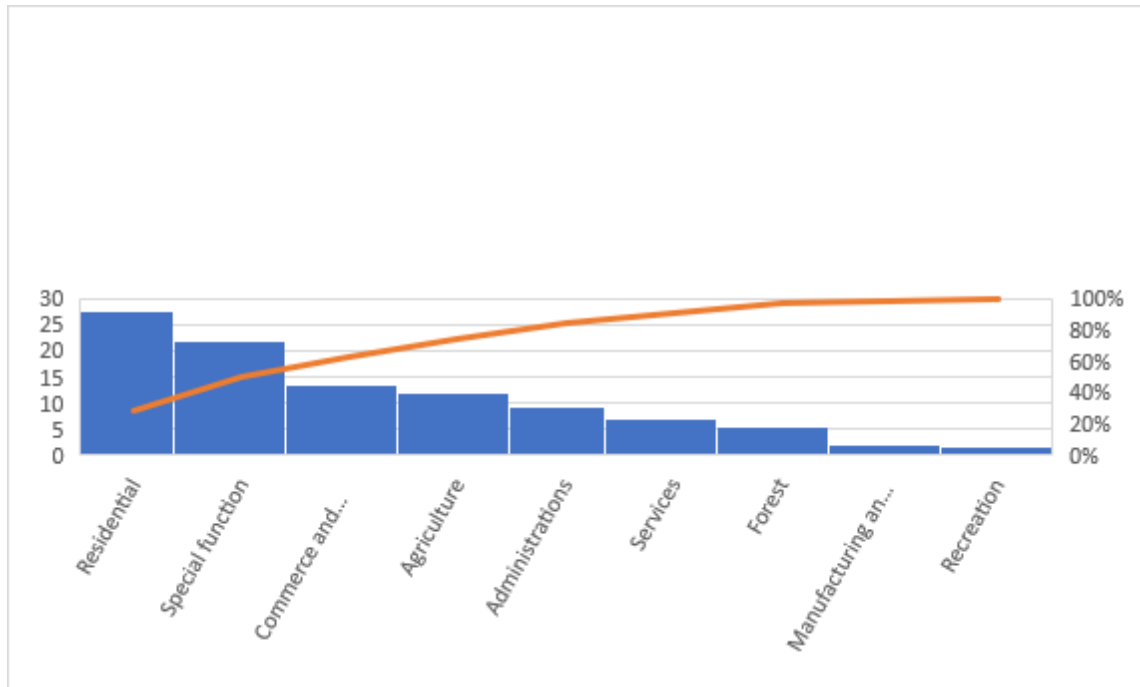


Figure 4.9 land-use proportion: source author 2021

Results regarding land-use land-cover (Table 4.4) of the waterfront of Lake Hawassa show that it is one of the areas where different chronological changes take place. The area experienced rapid land-use and land-cover changes like the transformation of land from a large agricultural area to residential, commercial, manufacturing as well as recreational (Figure 4.9). The land cover of the area is also changing rapidly from high vegetation cover area to manmade developments, small economic activity sites, and too large hotel and resort investment lands. The land-use changes of the lake-front brought also other activities to the area like cultural activities, markets, and institutions.

Similarly, Urban lakes, especially, are quite different from others: they can supply domestic water to residents, provide habitat for fish and waterfowls, and regulate the urban environment (e.g., humidity, temperature, and O₂ – CO₂ exchange). Moreover, urban lakes can enhance a city's flood storage capability. Lake water environment would lead to the spatial differentiation of the urban system. On the other hand, urban lakes are more vulnerable to urbanization and human activities than other natural lakes. These impacts on urban lakes are mainly reflected in problems such as lake area decreasing and water pollution. In recent years, most studies of urban lakes have focused

on the water environment of lakes. In addition, a few studies monitored the changes in lake area due to urban expansion and land-use land-cover changes (Zhu et al., 2015).

The results have also similarities with Fitawok et al.(2020) many of the urban transition processes have resulted in the seemingly uncontrollable expansion of the urban fabric into the surrounding fringes. This, in turn, is often considered to adversely affect the ecosystem and poses major socio-economic challenges for a broad range of actors. In particular, in many African cities, the absence and/or the implementation problem of spatial planning policies worsen the uncontrolled land-use changes, governance complexities, and widening socio-economic gaps across different scales (Fitawok et al., 2020).

4.2.1. Commercial activities at the waterfront

From various land-use changes commercial activity (which is one of developed land use of Hawassa lakefront) is the one which is increasing from time to time (Table 4.5). The commercial land use of the Hawassa town is increasing from time to time and the owners of the activities of commerce prefer the lakefront for their projects. The hotel industry accommodates the larger portion of the land use at the lakefront. From the total of 102.1716 Ha of land for commerce and trade land-use in the area the commercial activities cover 72.2235 Ha of land, the market places cover 13.424 Ha of land, the financial institutions cover 33.231 Ha of land and the rest is covered by other different commercial and trade activities (Figure 4.5).

Table 4.5 commercial area

Commercial and trade activities	Area in Ha	Land coverage in percent
Financial institutions	3.3231	3.25
Market places	1.3424	1.31
Commercial activities	72.2235	70.68
Others	25.2826	24.76
Total	102.1716	100

Source: Author 2021

The hotels at the water mainly depend on local and international tourists which are directly related to the lake. The activity around the lake can affect the hotels positively or negatively and the same works for the hotels that means the activity the hotels perform directly or indirectly can affect the lake.

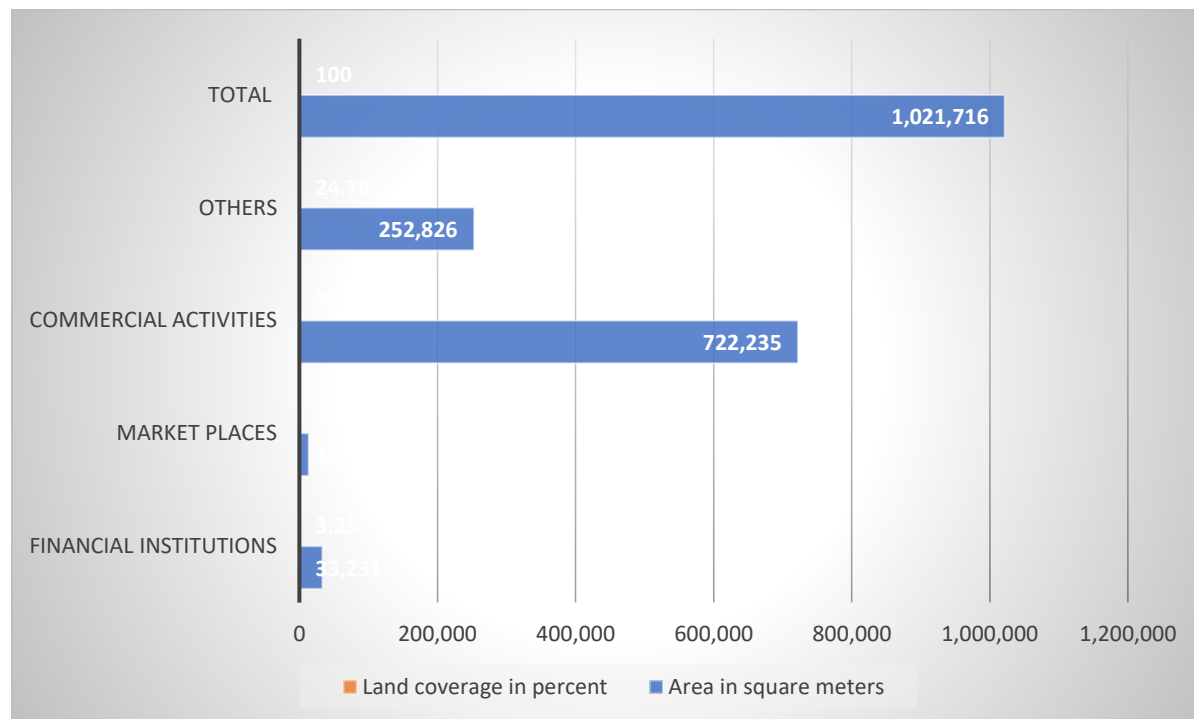


Figure 4.10 commercial activities land-coverage: source author 2021

Similar to the results above, waterfronts consist of mixed uses including residential, recreational, commercial, retail, service, and tourist facilities. Mainly residential, recreational, and tourist-related uses (Timur, 2013).

4.2.2. Cultural activities

Cultural activity is one of the major land-use which takes place at the lakefront area of Hawassa so studying the area can give a lot of information about tourism-related issues. The Sidama nation has its new year so-called Fiche. It will be celebrated for two weeks colorfully every year. The Sidama have their calendar which a week has five days and a month twenty days. Fiche does not fall on the same day every year but it falls on 'Qawado', the first day of the week. The day is determined by the elders who practice astrology and announce it to the communities. Fiche is

commonly celebrated at Gudumale on the shore of the lake Hawassa where thousands of Sidama and people from other ethnic groups gathered and celebrate together. On the evening of Fiche, each fresh family head makes ‘Huluqa’ (arch) from fresh woods Infront of the house and makes every member of the family, even the cattle, pass through it. This is done to symbolize the transition process. During the night of the holiday, people of the village gather around in one of the village’s elder people and have cultural meals together (source: Hawassa city administration culture, tourism and communication affairs department, and self-observation).

The next day after Fiche is called Cambalala. On this day the family head shall wear his traditional custom and shall feed his cattle in ‘Callo’ (protected pasture area) by sparking ‘bole’ salty soil and pass the day feeding and looking after them. This ceremony has healed in the city of Hawassa near to Lewi resort on the place called Gudumale once a year. (Source: Hawassa city administration culture, tourism and communication affairs department, and self-observation).

During the yearly celebration of Cambalala, a lot of tourists from the country and outside the country attend the celebration. The number of tourists increases from time to time but at a decreasing rate. In 1999 the number of domestic tourists came to the celebration is 4230 and the number of foreigners came to the celebration was 46, during the year 2000 the number of domestic tourists came to the celebration was 5420 and the number of foreigners came to the celebration was 53, the year 2001 showed a decrease in number domestic tourists and became 4720 and the number of foreigners was 57, in 2002 the number of domestic tourists was 5570 and the number of foreigners was 76, in 2003 the number of domestic tourists was 9042 and the number of foreigners was 111, during the year 2004 the number of domestic tourists became 22,044 and the number of foreigners was 213, in 2005 the number of domestic tourists was 24,420 and the number of foreigners was 232, in 2006 the number of domestic tourists was 25,203 and the number of foreigners was 197, in 2007 the number of domestic tourists was 32,040 and the number of foreigners was 237, in 2008 the number of domestic tourists was 28,322 and the number of foreigners was 250, in 2009 the number of domestic tourists was 11,122 and the number of foreigners was 16, in 2010 the number of domestic tourists was 12,023 and the number of foreigners was 21, in 2011 the number of domestic tourists was 1500 and the number of foreigners was none, in 2012 the number of domestic tourists was 2050 and the number of foreigners was none (Table 4.6).

Table 4.6 tourist turnout

Visiting year	Domestic tourists	Foreigners	Total	Domestic tourists change in percent	Foreigners change in percent
1999	4230	46	4,276	0	0
2000	5420	53	5,473	28	15.2
2001	4720	57	4,777	-12	7.5
2002	5570	76	5,646	18	33.3
2003	9042	111	9,153	62.3	46
2004	22044	213	22,257	143.7	91.8
2005	24420	232	24,652	10.7	8.9
2006	25,203	197	25,400	3.2	-15
2007	32,040	237	32,277	27.1	20.3
2008	28322	250	28,572	-11.6	5.4
2009	11,122	16	11,138	-60.7	-93.6
2010	12,023	21	12,044	8.1	31.2
2011	1500	0	1500	-87.5	-100
2012	2050	0	2050	36.6	0

Source: author 2021

Starting from 1999 to the year 2012 the number of domestic and foreign tourists is not increasing or decreasing in a constant factor (Table 8). According to Table 8, the number of domestic tourists from 1999 to 2000 has increased by 28% and the number of foreigners increased by 15.2% from that of the year 1999, from 2000 to 2001 the number of domestic tourists decreased by 12% and the number of foreigners increased by 7.5%, from 2001 to 2002 the number of domestic tourists increased by 18% from that of 2001 and the number of foreigners increased by 33.3%, from year 2002 to 2003 the number of domestic tourists increased by 62.3% from that of year 2002 and the number of foreigners increased by 46%, from year 2003 to 2004 the number of domestic tourists increased by 143.7% from that of year 2003 and the number of foreigners increased by 91.8% from that of year 2003, from 2004 to 2005 the number of domestic tourists increased by 10.7% from that of 2004 and the number of foreigners increased by 8.9% from that of year 2004, from the year 2005 to 2006 the number of domestic tourists increased by 3.2% from that of year 2005 and the number of foreigners decreased by 15% from that of year 2005, from year 2006 to 2007 the number of domestic tourists increased by 27.1% and the number of foreigners increased by 20.3% from that of year 2006, from 2007 to 2008 the number of domestic tourists decreased by 11.6% from that of year 2007 and the number of foreigners increased by 5.4% from that of year 2007, from year 2008 to 2009 the number of domestic tourists decreased by 60.7% from the previous year and the number of foreigners decreased by 93.6% from the previous year, from year 2009 to 2010 the number of domestic tourists increased by 8.1% from the previous year and the number of foreigners increased by 31.2% from the previous year, from year 2010 to 2011 the number of domestic tourists decreased by 87.5% from the previous year and the number of foreigners by 100% from the previous year and from year 2011 to 2012 the number of domestic tourists increased by 36.6% from the previous year and the number of foreigners remain the same as the previous year (Figure 4.11,4.12).

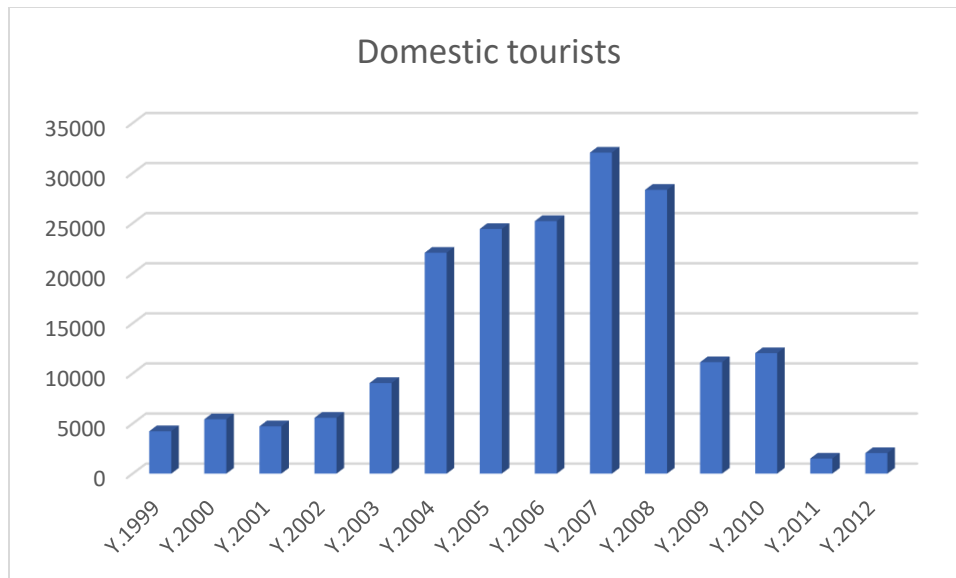


Figure 4.11 number of domestic tourists: source author 2021

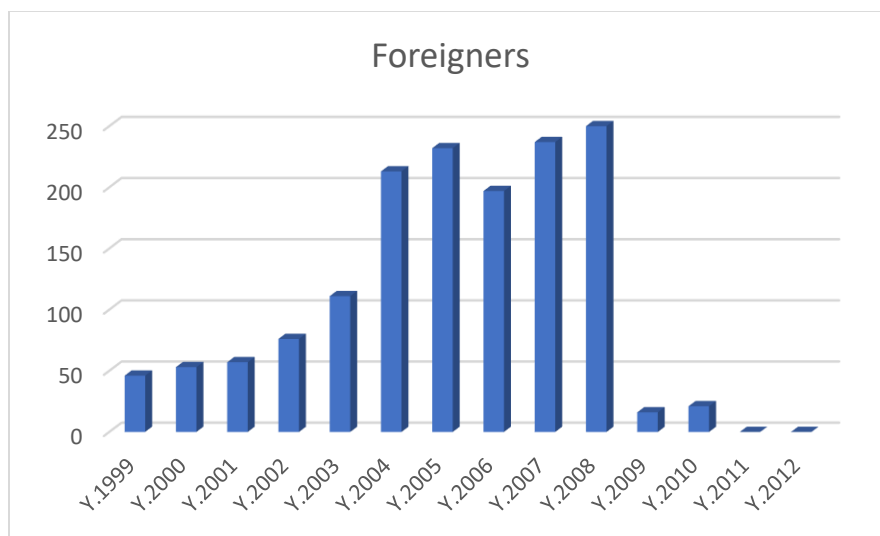


Figure 4.12 number of foreign tourists: source author 2021



Figure 4.13 change in domestic tourists: source author 2021

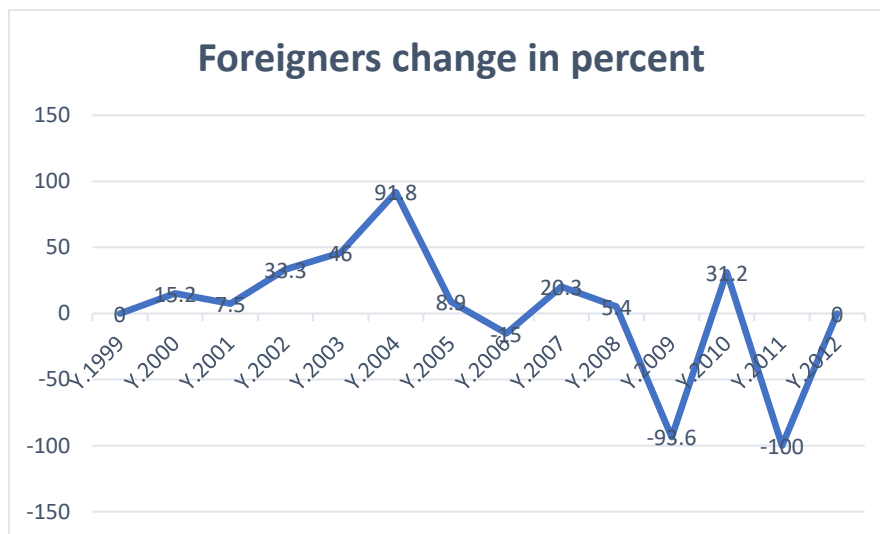


Figure 4.14 change in foreign tourists: source author 2021

At the waterfront, there is also a place that has the activity of selling and buying cultural artifacts, clothes, and other cultural materials. There are known shops that work on these types of products Rohobot association, zufan cultural products, and Abba cultural factory are some of them. There is also a youth association engaged in cultural artifacts and other product work, they are mainly located around Fekir Hayk, Amora Gedel, and Gudumale areas. Six associations are engaged in this work and they have 66 members.

Table 4.7 yearly profit

No.	Type	Yearly net profit in birr
1.	Private shops	1,244,000
2.	Associations	6,670,000

Source: field survey 2021

The private shops get a net profit of 1,244,000 birrs in a year and the associations which are formed by the youth in the area get 6,670,000-birr profit in a year (Table 4.7). The domestic and foreign tourists use either of the two to get cultural artifacts or other cultural products and they are the main source of income for the privately owned shops and the associations formed by the youth in the area.

Similar to the above results, since the late 1980s, public space has been a subject of intense interest. It is the key to urban renewal strategies all over the world. In particular, in the postmodern and post-industrial eras, there has been greater attention to the issue of culture discussed as the ‘cultural turn’ with many disciplines viewing culture as a tool to understand the urban phenomena. Cultural-driven urban developments and rediscovery of the cultural meaning of urban space have addressed the potential role of waterfronts as both new public domains and as places where cultural uses and activities can take place. Obsolete urban waterfronts had experienced spatial agglomeration of industrial facilities and activities in the past. They are now waiting for new functions to supplant the old and abandoned industrial heritage. Effective reuse activities have already occurred in several cities, and many other cities are currently exploring similar opportunities. Realizing these opportunities, however, was a complex and challenging task (Yang, 2006).

Additionally, due to the growing interest in culture and the increased popularity of artistic environments in post-industrial societies, creative milieus, as urban agglomerations of creative and cultural activities, are widely recognized to play an important role in a city’s attractiveness for tourism and inward investment. Worldwide, creative milieu comes into existence usually in deprived, derelict areas, such as harbor abandoned zones and factory complexes that provide ample space to new pioneer, informal uses. The use of waterfront vacant infrastructure by the new hybrid

of artists and entrepreneurs e.g., can affirm a new or different appreciation of the built environment, creating a new product for cultural consumption. Cable Factory in Helsinki and Spike Island in Bristol are two successful examples of how the opening-up of harbor areas to new experimental uses may act as a catalyst to waterfront redevelopment, stimulating the settlement of creative industries that can generate potential positive economic, social, and cultural spin-off effects for the wider urban community (Kostopoulou, 2013).

4.2.3. Boat tour and recreational areas

A boat tour is one of the activities the domestic and foreign tourists enjoy doing it. There are five (5) stakeholders who work on giving boat tour service Alemayehu tour recreation center, Lewi plc boat service, Hawassa green and clean boat service, Haik boat and another service center, and Haile resort boat service (Table 10). Alemayehu boat tour recreation center works around Amora gedel area, Lewi plc boat service is owned by Lewi resort, Hawassa green, and clean boat service work around Fekir Hayk area, Haik boat and another service center also work around Fekir Hayk area and Haile resort boat services are owned by Haile resort.

Form the five-boat service giving organizations Haile resort boat service and Lewi plc boat service are owned by resorts and the rest three Alemayehu boat tour recreation center, Hawassa green and clean boat service, and Haik boat and other service center are owned by associations formed by the youth. Most of the foreign tourists use one of the two boat services owned by the resorts and most domestic tourists use boat tour services given by the associations formed by the youth at the waterfront. Most of the domestic tourists use the tour service owned by the associations formed by the youth because they are cheaper related to the services given by the resorts and foreign tourists use the services given by the resorts because they are comfortable and safe.

Table 4.8 boat service

No.	Boat tour service giving organization	location	type	Users per day	Approximate price in birr per hundred meters
1.	Alemayehu boat tour recreation center	Amora Gedel	Owned by associations	50-75	25
2.	Lewi plc boat service	Lewi resort	Owned by Lewi resort	30-40	150
3.	Hawassa green and clean boat service	Fekir Hayk	Owned by associations	70-90	50
4.	Haik boat and another service center	Fekir Hayk	Owned by associations	80-100	50
5.	Haile resort boat service	Haile resort	Owned by Haile resort	45-60	172

Source: field survey 2021

The boats which give the tour service are made of different materials. Most of the boats owned by the youth associations are made of wood and they are built locally on the on the other hand the resorts use boats made of steel and plastics which are imported from other countries. The youth in the area buy their boats from the youth working informally on the boat producing business which is produced using the Tekur weha forest as a source for wood.

Besides the tour service, there is fifteen (15) association which work on fishery and related businesses these associations have 442 members and 1700 people in related business in Amora gedel and 4300 fishes are taken from the lake by fishing activity each day.

Similar to the results above, waterfront developers should help meet needs for more recreation and open space in inner cities in return for public investments, public access should be built into the design while minimizing impacts and conflicts, recreation and open space inclusion can be cost-effective means of satisfying demands, and currently the recreation and open space component of may project is often marginal (John & Johnson, 1984).

4.3. Barriers related to urban tourism around the waterfront area of Lake Hawassa

Respondents were asked about challenges around Lake Hawassa, 45% of respondents reported that pollution from different sources, 49% of respondents reported that narrow walking spaces block visual experience and the rest 6% of the respondents responded the space given to the hotels and resorts, safety and security, poor drainage system and robbers (Table 4.9).

Table 4.9 challenges in and around lake Hawassa

No.	Challenges	Number of respondents	Frequency	percentage
1	Pollution from different sources	104	46	45
2	The space given to the hotels and resorts	104	4	3
3	Narrow walking spaces which block visual experience	104	50	49
4	Safety and security, low infrastructure and pollution	104	2	1.5
5	Poor drainage system	104	1	1
6	Smokers, robbers, and dirty areas near the waterfront	104	1	1

source: field survey 2021

4.3.1. Waste sources affecting the waterfront

Findings from Hawassa city administration show that rainy seasons in Hawassa creates flood and this brings the waste dumped on the streets, and from the drainages to the waterfront areas of the lake. In addition, the waste will be left all over the streets, and the waterfront which takes a lot of time to clean.

According to Hawassa city administration, In Hawassa town there are different types of youth associations among them one of them is associations that work on the removal of wastes from different areas of the town. At the waterfront area, the youth associations who work on the removal of wastes come to the area early at 6:30 AM and takes solid wastes from different households. The households and commercial buildings which have drainage lines Infront of their houses let the liquid waste to it and it takes the waste to the lake in the areas where there is no drainage line the liquid waste is dumped on the streets Infront of the houses.

From the site observation made, the Hawassa industrial park has also built a drainage line directly to the lake to let liquid wastes from the park to the lake. As of 2020 Hawassa industrial park has 18 global apparel and textile companies from America, China, India, Sri Lanka, and six local companies are working with in the park and it has thirty-seven (37) factory sheds (source IPDC). All the sheds in the industry park remove their liquid wastes through the drainage built to the lake.

Table 4.10 reveals that hotels and resorts around the lakefront of the area also release liquid wastes directly to the lake. According to the Hawassa city administration, the liquid waste is mainly from their swimming pools and septic tanks. The liquid waste removed through the septic tanks covers 87% and the rest will be removed through the drainage lines. Solid and waste proclamation No. 513/2007 states restaurants shall design and implement solid waste management systems following directives issued by the concerned environmental agency (Federal Negarit Gazeta No. 13 12th February 2007: 3528). According to the Hawassa tourism office the hotels and resorts have tried to manage water by treating and re-using ground water, they use 4000 liters to 30,000 liters of ground water per week based on the size of the hotels. Most of the time the ground water is used for cleaning purposes and swimming pools.

Table 4.10 hotel's information

No.	Name of hotels	No. of rooms	No. of beds	Star award	Vicinity to the lake front
1.	Haile resort	112	144	4	<500 m
2.	Ker-awud int. hotel	45	45	4	>500 m
3.	Lewi resort hotel	64	64	4	<500 m
4.	South star int. hotel	114	144	4	>500 m
5.	Central hawassa hotel	84	84	4	>500 m
6.	Gezahegn and elfinesh resort	32	32	3	>500 m
7.	Oasis int. hotel	38	38	3	<500 m
8.	Lewi plaza hotel	39	41	2	<500 m
9.	United African group hotel	21	21	2	>500 m
10.	Tadesse injury	56	63	1	>500 m
11.	Hill side hotel	13	13	1	<500 m
12.	Hawassa view hotel	24	24	1	>500 m

Source: author 2021

From the major hotels in Hawassa town mentioned in Table 4.10, 41.6% of the hotels mentioned are found within the proximity of fewer than 500 meters from the lake and they directly affect the lake in a positive as well as in a negative way.

The other problem is related to visitors. People who come to the waterfront during different times to the area have their advantages and drawbacks. The disadvantage is these visitors are throwing plastic bottles, and other things to the Lake after they used them whereas the advantage of these visitors is they buy different goods and use different services from the area.

On the other hand, all three sub-cities in which part of the study is at the waterfront do not have a properly established waste removal system. On the waterfront, there are a lot of people who are coming to the waterfront for the Fiche Chamballala cultural celebration. The cultural site is just a field with no other infrastructures built on it so 83% of waste will be dumped into the lake according to the Hawassa city administration environmental office. The above results related to visitors, cultural places, hotels, and industries direct to, the established industry park in the town, the hotels and resorts in the town, and people coming to the town for different reasons are contributing to the pollution of the waterfront and leading to an uncomfortable environment. These results have similarities with Mensah(2020), the hotel industry is the largest sub-sector of the tourism industry, and, thus, has, undeniably, the widest impacts on the environment. It has also been estimated that a typical guest produces more than one kilogram of waste per day Mensah(2020).

According to a WHO report in 2012, The amount of waste generated is said to double on checkout days. However, the amount of waste generated is dependent upon the size and type of hotel, as well as the existence of waste management facilities. The solid waste generated by hotels is one of the most adverse environmental impacts of hotels. Despite this, hotels often pay little attention to their environmental responsibilities and predominantly undertake landfills as a primary waste disposal method. The lack of attention to solid waste management by hotels has been attributed to a lack of funds and knowledge as well as poor decision-making. Because hotels contribute to the waste problem in cities, any attempt to arrest the problem in cities is bound to fail if hotels are not included in such a plan. As one of the main generators of wastes, hotels must champion waste management at the destination. Wastes generated by hotels, if not properly managed, could have a debilitating effect on the environment. Dumping of waste in random sites often results in leaching and, thereby, pollutes underground water sources. It also leads to the emission of greenhouse gases such as methane and creates unsightly conditions with health consequences (Mensah, 2020).

4.3.2. Fuel choices of the households

The fuel choice of the household is also a challenge for the waterfront development of Lake Hawassa. From the response of the respondents, 72% of the people living at the lakefront of Hawassa rely on fuel wood for their energy sources. The main sources for this energy are forest resources located in the two main areas. These are forest areas in the Tikur what area and Tabor Mountain. From the total amount of fuel wood collected the Tikur weha forest comprises the larger amount which is 29% of the total amount of fuel wood collected, 13.4% is collected from mount tabor and the rest is from other nearby rural areas (Hawassa city administration environment office).

Next to charcoal wood usage is high both for cooking as well as for all other energy purposes. Results also show that the land covered by forests is decreased by 18.7240 Ha when it is compared to the year 2020. The decrease in land use of the forest is because of different reasons fuel wood is one of the major ones. This implies that the usage of energy for fueling the forests is the main source, which leads to the decline in land cover with forests. This results in the deterioration of the ecosystem as well. Usage of fuelwood, however, differs significantly between urban and suburban areas. While 90% of households from suburban areas still rely on fuelwood, fuelwood is the primary energy source for cooking in only a quarter of urban households. However, fuelwood is also used as a secondary fuel for cooking in another 10% of urban households. Most of the fuelwood is purchased in local markets and shopping centers, and 16% of households still rely on wood collected in wood lots and natural forests. Dependence on fuelwood is not only associated with adverse health effects, but it may escalate the problem of wood scarcity. 65% of households think that fuelwood is scarce and 57% perceive this problem as severe or highly severe. The best mitigation strategy is considered to be planting trees (39%) but also investing in alternative energy (44%), while only 5% consider charcoal production to be a good strategy for coping with the scarcity problem (Tarekegn, 2020).

Similarly, deforestation results in a change in the local ecosystem, loss of biodiversity, and increased incidence of drought and flooding. It also leads to a decline in food security due to a reduction of agricultural yields associated with the loss of valuable ecosystem services, especially loss of soil fertility resulting from forest degradation. Households depend on various kinds of energies for cooking, heating (or cooling), and ironing among other things, broadly categorized as

traditional (biomass) fuel which includes firewood, charcoal and stocks, and modern (clean) fuel which includes kerosene, liquefied petroleum gas (LPG) and electricity (Feyisa et al., 2017).

4.4. Reaction of inhabitants on the tourist turnout at the lakefront of Hawassa

4.4.1. Tourist facilities and tourist turn out of hawassa town and waterfront

Based on the observation made at Lake Hawassa, every morning fisher men arrive at Amora gedel with wooden rowing boats loaded with tilapia and other fish species. Fish market (is an in-late to Lake Hawassa, about 1km from Oasis hotel. The long row of boats full of fresh fishes, the nets losing and fish filleting boys, vendors of plastic tents and bread, fish soup cooking women, marabouts, pelicans, and other birds who feed on the leftover of fishes and other features attract visitors to the area.

Amora Gedel is a park, which is found near the main fishing center along the lake. It bears its name after the flock of pelicans, marabou's stork, hammer kop, king fisher, and other birds soaring over the ground of the lake in search of fish left over. Paying some amount of entrance fee one can visit the fish market and have an access to the walking area about 26.19105 Ha.



Figure 4.15 total number of tourists: author 2021

The number of domestic tourists increases at a decreasing rate starting from 1999 to 2012 (Figure 4.16). The total number of tourists also increases at a decreasing rate, the same way the revenue also increases at a decreasing rate (Figure 4.15, 4.16, 4.17). According to the Hawassa tourism

office, there are different reasons for this pollution, planning issues, security, and political instability are the main reasons for it.

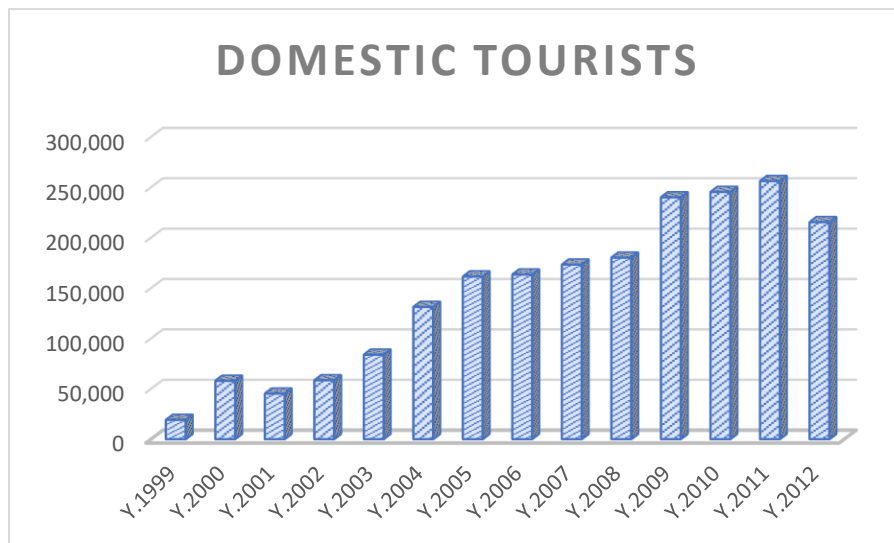


Figure 4.16 number of domestic tourists: source, author 2021

It is indicated in Figure 4.17; the number of foreign tourists starts at an increasing rate and changes its type from increasing rate to increase in a decreasing rate then decreases in 2012.

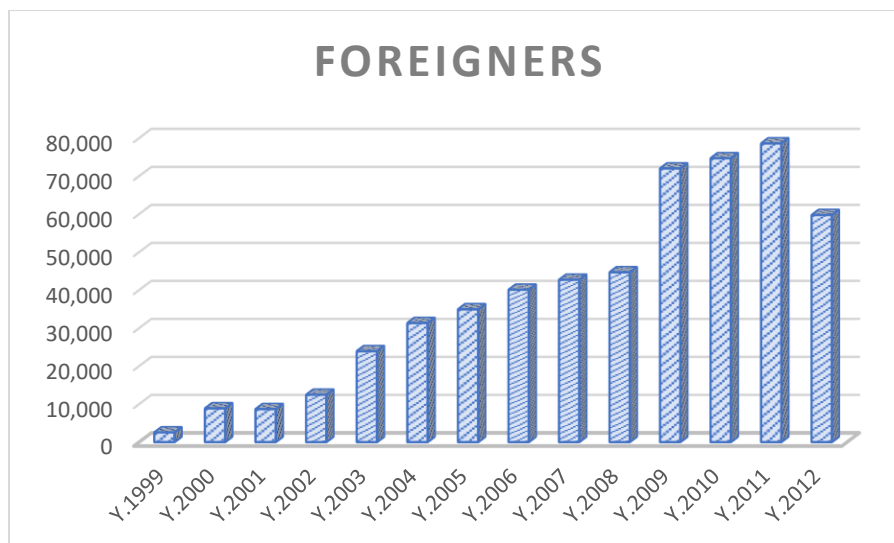


Figure 4.17 number of foreign tourists: source, author 2021

According to Figure 4.18, the total revenue from domestic and foreign tourists increases increasingly up to the year 2009 and then starts to decrease due to different reasons like political

instability in the country and Hawassa town, the unusual weather condition in the area which created damage to the lakefront area and unplanned waterfront which became a challenge to maximize benefits from tourism. Lakes are a major tourism resource providing spectacular settings, recreational opportunities, waterfront landscapes in many centers of tourism interest, a means of transport, and an essential source of water for human consumption. The world's great lakes have long intrigued users and even in ancient times provided the backdrop for travel

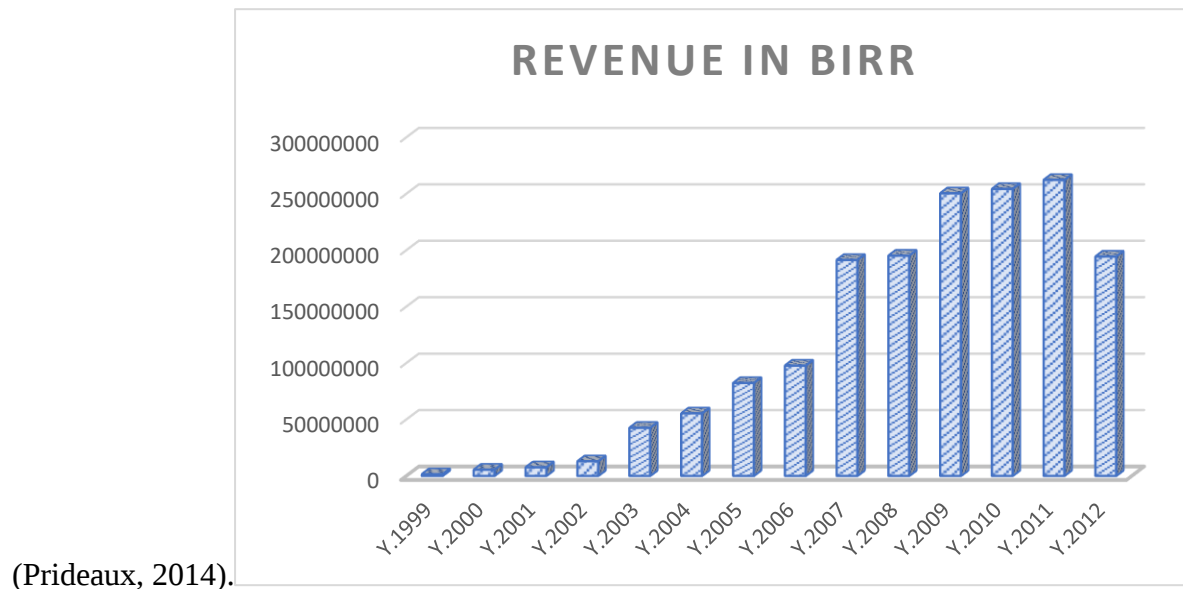


Figure 4.18 total revenue, source: author 2021

4.4.2. Frequency of visit by Inhabitant at the lakefront of Hawassa

Different groups of people have taken part in interviews and questionnaires from the total of 104 people 61.5% of people come to the lakefront some times during the weekend, 17.3% of people come at the time of public holidays, 9.6% of people come yearly and the rest will be working there or live there. 81.7% of people who came to the lakefront are very interested to come to the lakefront area, 12.5% of people not interested but came for work reasons, 4% of them are just interested to be there, 1% of people are not interested but do not have anywhere else to go, and another 1% of the people are not sure why they are even there. For 52.9% of people taking part in the questionnaire and interview the place is attractive to them and for 32.7% of people it is not attractive and for the other 14.4% of people maybe it is attractive.

Most of the people come to the area during the hottest months of the year February, March, and April. Additionally, the yearly festival of chembelala is celebrated in April so, this timing of the year is ideal to visit the lakefront area of Hawassa.

Findings show that 43.3% of people responded the waterfront is aesthetically pleasing and the other 56.7% responded it is not aesthetically pleasing. 52.7% of people responded pleasing because the lake interested them, 23.6% because of cultural activities around the waterfront, and 12.7% because of other activities around the waterfront. 39.7% of people did not think it is pleasing because the place is not clean, 27.9% of people responded not pleasing because the place does not serve every group of the community, another 26.5% people responded not pleasing because there is no sign to develop the area at all.

Table 4.11 features people are interested in

No.	Features	Frequency	Percent
1	The lake	55	52.7
2	The cultural activities	25	23.6
3	The activities around the lakefront	13	12.7
4	Both the lake and cultural activities	11	11

Source: field survey 2021

Out of 104 people, 9% of people's work is related to the tourists coming to the area, 84% of people responded their work is not related to the tourists coming to the area and for other 2% of people answered maybe it is related. 5% of people responded they work as a local tourist guide and 9% people responded their daily life is based on it because they get economic benefits by selling different goods to domestic or foreign tourists (Table 4.12).

Table 4.12 relation of work of inhabitants and tourists

No.	Work	Frequency	percent
1	Not related to the tourists coming to the area	88	84
2	Maybe it is related	2	2
3	Local tourist guide	6	5
4	Daily life is based on tourists coming to the area	8	9

Source: field survey 2021

Respondents have been asked about the turnout of Out of 104 people 80% of people responded low to the tourist turn out of the area and 20% of people responded high (Table 4.13). The people who responded low mentioned different factors for that like, pollution (19.5% of people), lack of techniques related to knowledge of the urban tourism (47.6% of people), lack of safety and security (29.3% of people), and other as the low infrastructure around the public areas, security problems and lack of local community integration (Table 4.14). 72% of people responded areas around the hotels and resorts are relatively suitable for tourists, 13% of people responded the areas which are near to yearly cultural festivals are relatively suitable for tourists and 15% of people responded areas with fishery activity are suitable for tourists (Table 4.15).

Table 4.13 tourist turnout at the waterfront of Hawassa

No.	Assessment	frequency	percent
1	High	21	20
2	low	83	80

Source: field survey 2021

Table 4.14 causes for low tourist turnout

No.	Causes	Frequency	Percent
1	Pollution	20	19.5
2	Lack of techniques related to knowledge of the urban tourism	49	47.6
3	Lack of safety and security	30	29.3
4	Low infrastructure around the public areas, security problems	5	3.6

Source: field survey 2021

Table 4.15 suitable areas for tourists

No.	Suitable areas for tourists	Frequency	percent
1	Around hotels and resorts	75	72
2	Areas near to cultural activities	14	13
3	Areas with fishery activities	15	15

Source: field survey 2021

From the total of 104 respondents, 19% of people responded tourists come weekly to the area, 3% of people responded daily, 28% of people monthly, 34% of people responded yearly and 16% of people are not sure about it (Table 4.16). 98% of people responded the coming of tourists to the waterfront is very important and the other 2% did not think so. People who responded ‘important’ to the coming of tourists to the waterfront mentioned reasons like job opportunities for the local people (responded by 58% of people) and the community will benefit economically (46% responded (Table 4.17).

Table 4.16 tourists coming to the lakefront

No.	Tourists coming to the lakefront	Frequency	percent
1	Daily	3	3
2	weekly	20	19
3	Monthly	29	28
4	Yearly	36	34
5	Not sure	16	16

Source: field survey 2021

Table 4.17 importance of coming of tourists

No.	Importance of tourists coming to the area	Frequency	percent
1	Job opportunities for the local people	58	54
2	The community will benefit economically	46	46

Source: field survey 2021

Regarding preference of spaces 51% of people responded they prefer visually pleasing spaces 49% of people responded places that are interactive and others responded safe, secured, and inclusive spaces (Table 4.18). Most of the people responded they are not satisfied with the organization of programs around the waterfront (74% of people) and 26% of people responded they are satisfied with the organization of programs around the waterfront (Table 4.19). People responded not satisfied mentioned reasons like there is no specific area assigned for a program they are just

arranged randomly (35% of people) and there is an undesired mix of programs (75% of respondents) (Table 4.20).

Table 4.18 preference of space

No.	Preference of space	Frequency	percent
1	Visually pleasing space	53	51
2	Safe, secured and inclusive spaces	51	49

Source: field survey 2021

Table 4.19 satisfaction with the organization of programs

No.	Satisfaction with the organization of programs	Frequency	percent
1	Not satisfied	77	74
2	satisfied	27	26

Source: field survey 2021

Table 4.20 reasons for not satisfied

No.	Reasons for not satisfied	Frequency	percent
1	Random arrangement of programs	27	35
2	Undesired mix of programs	50	75

Source: field survey 2021

From the total of 104 respondents, 63% of people have been to the place where the yearly cultural festival is held and 37% of people do not have experienced it yet. The people who have been to the area define the relationship of the area with the waterfront in different ways 6% of people responded they are well integrated and 94% of people responded they are not integrated well they are two separate elements of the town. Regarding the spaces given to the resorts in terms of spatial

relationship with other programs at the waterfront 57 people responded saying the area given to the resorts is highly contributing to segregation of people, activities, and class, 24 people responded the resorts are the main defining elements of the waterfront, 18 people responded the resorts are a source of pollution and 1 person responded there is no spatial relationship at all (Table 4.21).

Table 4.21 land given to the resorts

No.	Space given to the resorts	Frequency	Percent
1	The land given to the resorts is highly contributing to segregation of people activities and class	57	54
2	The resorts are the main defining elements of the waterfront	24	23
3	The resorts are a source of pollution	18	17
4	There is no spatial relationship at all	5	6

Source: field survey 2021

More than 96% of the respondents reported that the COVID-19 pandemic affected the waterfront development activities whereas 4% of the respondents reported that the pandemic does not affect the waterfront development activities. Respondents who reported that the COVID-19 pandemic affected the waterfront development activities were asked about how the pandemic affected it. Hence, 69.2% of the respondents reported the decrease in tourist flow to the area, 24% reported that the pandemic affected the waterfront by affecting the planned investment and the rest are not sure about it respectively (Table 4.22).

Table 4.22 pandemic effects

No.	Pandemic	Frequency	percent
1	Affected the waterfront by decreasing the number of tourists flow	66	69.2
2	Affecting the planned investment	23	24
3	Not sure	7	6.8

Source: field survey 2021

4.5. Proposed plan and design of waterfront development at Hawassa

To propose a plan and design for the waterfront development of Lake Hawassa, the result of this study has been used as a base. Hence, the result of the study revealed that the results mentioned above like pollution problems, lack of integration of activities, proper land-use for a specific activity, and segregation issues which are mentioned under different titles shows that, the development level of waterfront benefits or harms different related sectors to the waterfront. Poor development level at lake Hawassa has affected many interconnected things to the tourism and spatial arrangements of the area. Additionally, Poor implementation of urban planning and design techniques is leading to uncontrolled waterfront and is becoming difficult to manage. The town administration and different stakeholders are not giving enough attention to the area this, in turn, is creating random spatial plans and designs which will affect the waterfront and the town in general.

4.5.1. Location map and Existing land-use

To propose a plan and design for the waterfront development, it is important to know the existing land use of the area. Hence, Figure 4.19 and Table 4.23 indicate the majority of the land use at the waterfront is a pure residence and mixed in an uncontrolled manner.

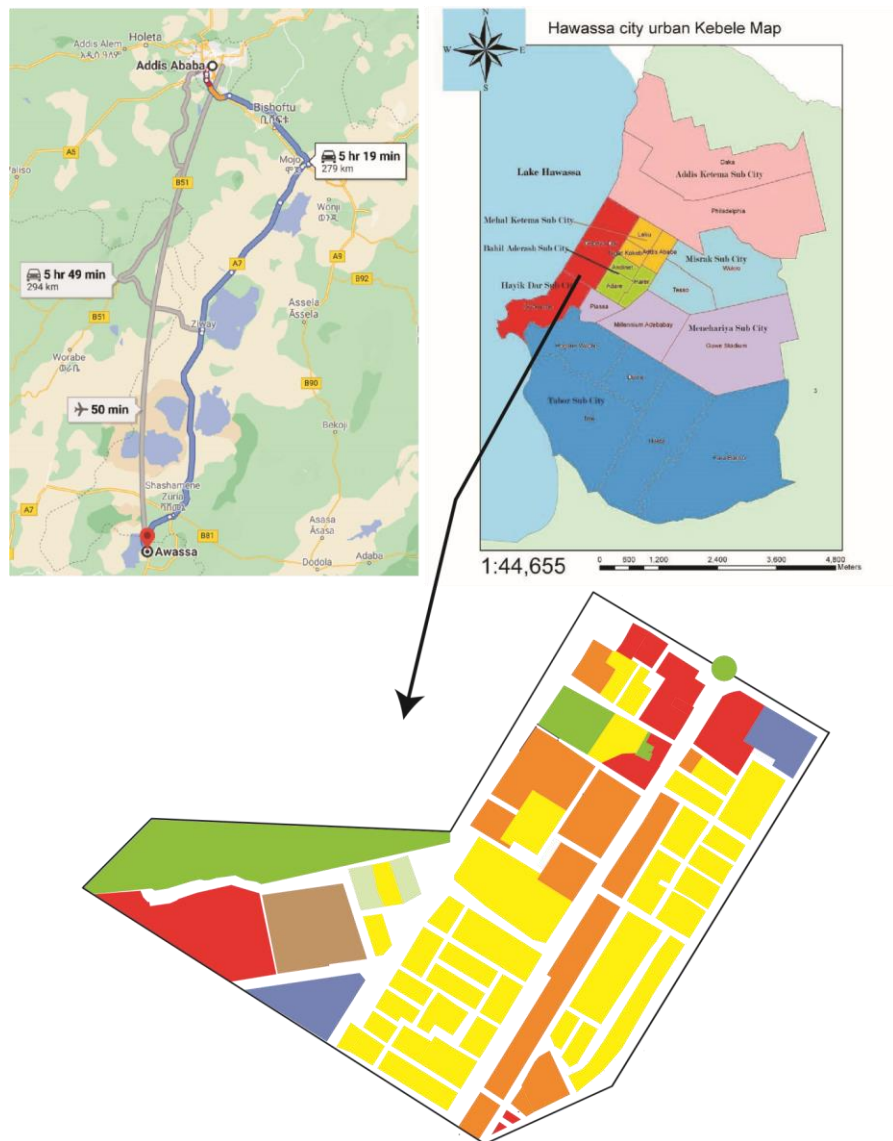


Figure 4.19 Existing location and land-use waterfront of Lake Hawassa, year

Table 4.23 existing land-use of waterfront at Hawassa Lake

No.	Land-use	Code	Coverage
1	Residential		Covers most of the land use and is found mainly above and below the sub-arterial street.
2	Commercial		Mainly found around the node of the Fekir Hayk area.
3	Mixed		Found following the sub-arterial corridor to Gudumale.
4	Open space		Exists adjacent to the lake and around the node of Fekir Hayk.
5	Farm		Located around the resort's area.
6	Service		Located in Infront of Hawassa university Agriculture college.

Source: author, 2021

4.5.2. Swot analysis for waterfront development of lake Hawassa

The swot analysis tries to clarify the main issues to be considered in designing the waterfront area (Table 4.24).

Table 4.24 swot analysis

SWOT	
Strength - Situated directly by the lake and water. - Directly connected to the urban area - Several viewpoints with visual access over the area and lake. - Small scale activities. - A rich amount of greenery. - Popular tourist destination.	Weakness - Lack of public spaces. - Lack of planned places to sit and rest. - Rain water runoffs causing erosion and flooding. - Over fishing and pollution causing decreased fish and affecting tourism. - Lack and interrupted connections within the area and town. - Security issues.
Opportunities - International connections related to globalization, innovative ideas, spread by social media to attract a wider range of visitors, which can bring further income possibilities. - Activities and environment that have major potential to attract international tourists and eco-tourism. - Amount of land available and its location.	Threats - Pollution from industries and hotels. - Increased pressure on the available land due to urbanization. - Risk of flooding due to climate change. - Risks of gentrification. - A homogeneous crowd, with too expensive and luxurious development.

- Activities that can be kept as a potential for future development. - Lack of and interrupted connections within the area and the town.	
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4.5.3. Existing street hierarchy of water front of Lake Hawassa



Figure 4.20 street hierarchy

Table 4.25 street code

No.	Street Type	Code	Direction
1	Sub-arterial		Heads to the Fekir Hayk from the piazza and Hawassa university agriculture college to Gudumale.
2	collector		Connects the inner part of the site to the sub-arterial road heading to Gudumale.
3	Local		Connects inner parts of the site with each other.

Source: author 2021

4.5.4. Existing vegetation cover

Based on the observation made by the researcher, the lake front vegetation cover is degraded and this degradation exposed the site to wind, and the flow of wind in the site has to be naturally blocked by elements like trees.



4.5.5. Conceptual development of waterfront development design

The conceptual diagram (Figure 4.21) shows how different elements of the site can be integrated to form a comfortable environment for tourists and inhabitants of the area. Integrating different elements in the site like the lake, the activities, and accesses are essential in forming a site that is easily accessed by any individual. The integration of these elements can increase the tourist's turnout as well as the socio-economic benefits of the area.



Figure 4.21 conceptual development

4.5.6. Proposed land-use plan

Figure 4.22 shows different land-use arrangements used in the site the low-density mixed residence holds a different kind of people and encourages mixed development. The proposed land use has good access to the lakefront. The activities have been arranged hierarchically. They are arranged based on based the need of the area. The land-use also encourages tourist movement in the area. Open spaces are also integrated into the land use proportionally. The land-use also integrates service-giving activities. Waste disposal system and buffer area is also designed

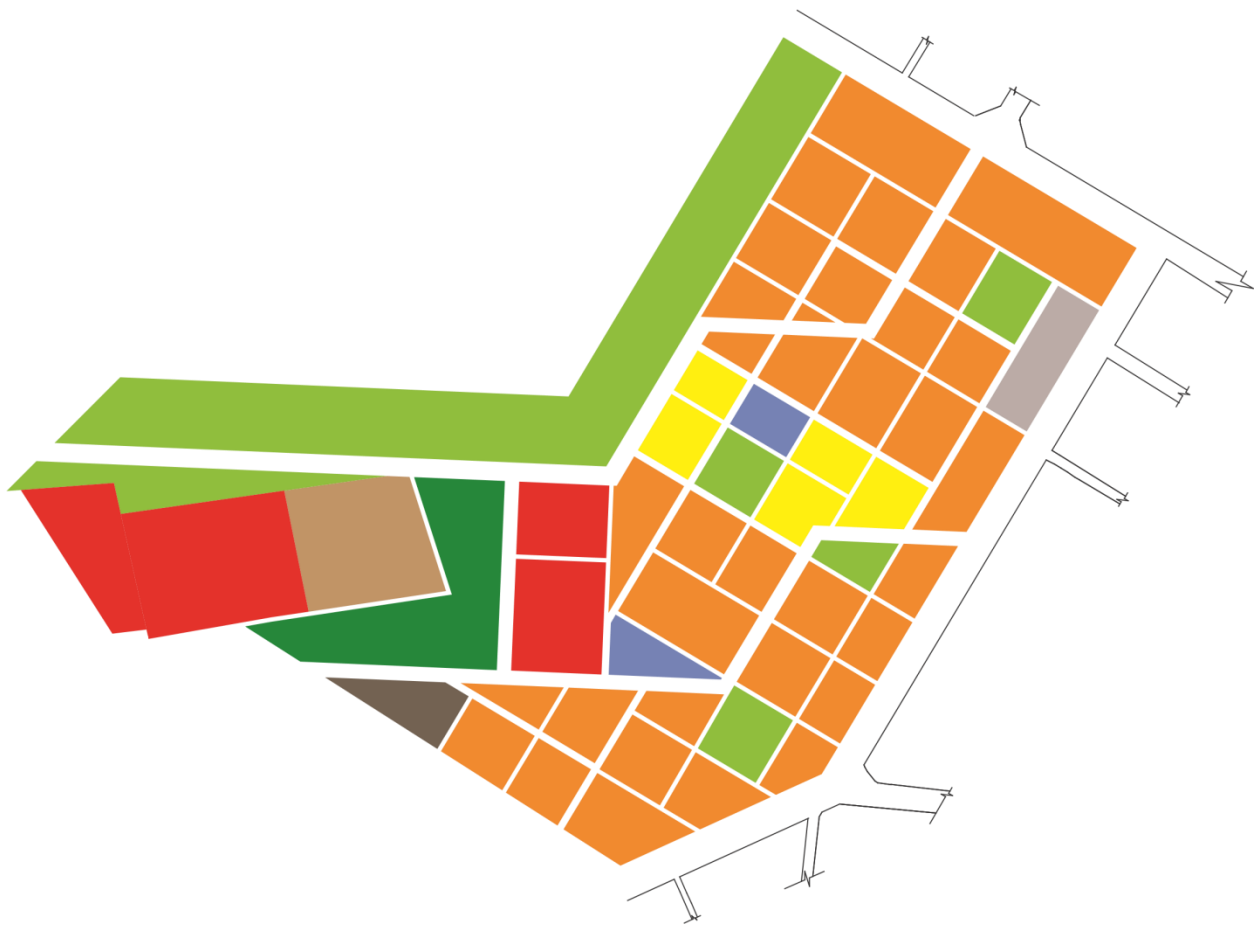


Figure 4.22 proposed land-use

4.5.7. Proposed street network

Figure 4.23 shows how the streets connect different parts of the site by allowing visual access to people, discourage vehicular movement, give larger spaces for pedestrians, provide space for street furniture, integrates greeneries, and allow different activities to happen on them. The width of the streets differs based on their type.

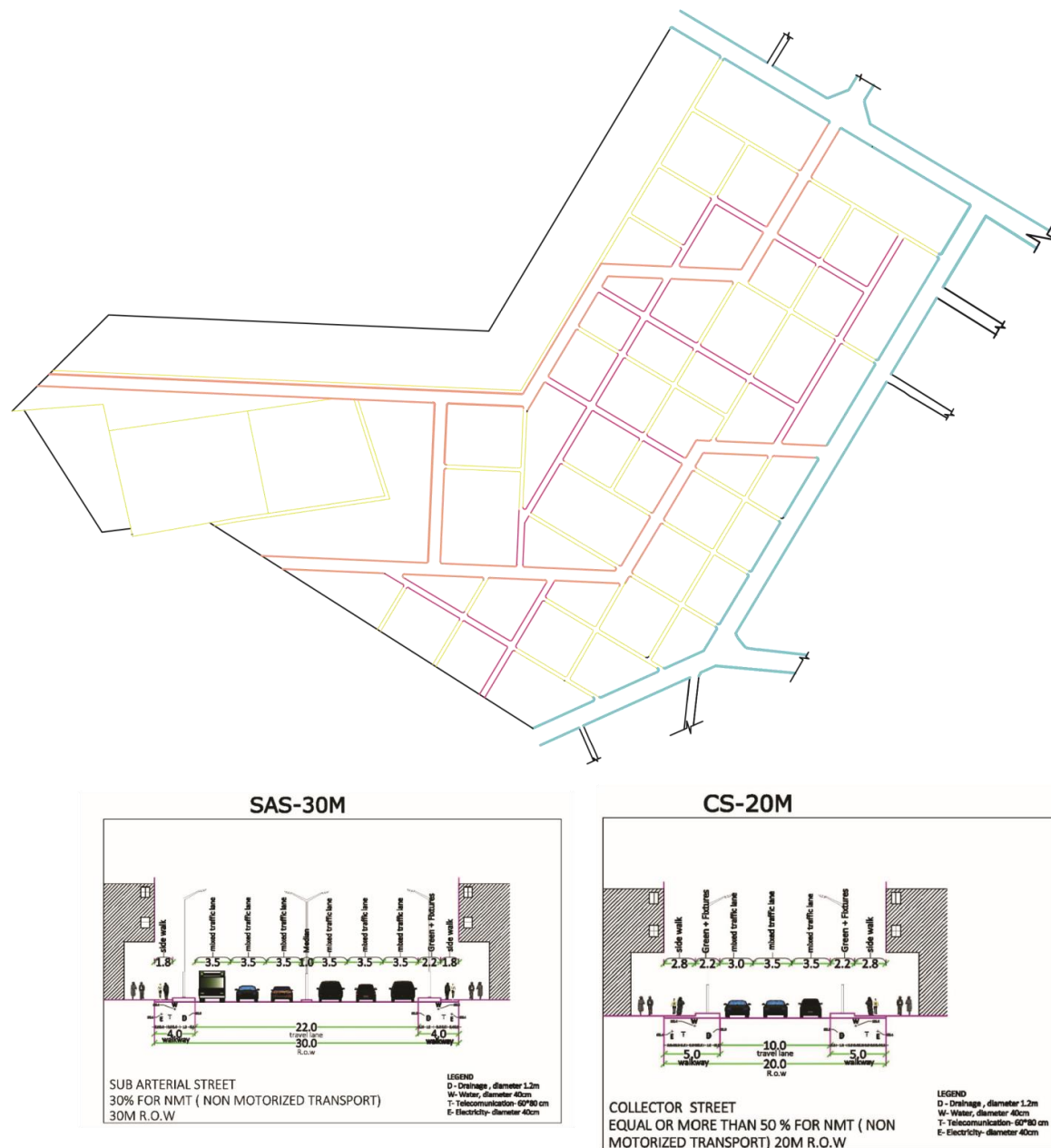


Figure 4.23 proposed street

Table 17 street code

No.	Street Type	Code	Direction
1	Sub-arterial		Heads to the Fekir Hayk from the piazza and Hawassa university agriculture college to Gudumale.
2	collector		Connects the inner part of the site to the sub-arterial road heading to Gudumale and the sub-arterial road heading to the main area of Fekir Hayk.
3	Local		Connects inner parts of the site using the collector road as a linking point.
4	Access		Found in the inner parts of the site and connects to the local roads.

Source: author 2021

4.5.8. Proposed block type

Many kinds of block arrangement and shapes are used, the block arrangement and shape differ based on income groups of people, style of living, type of activity, and density they can accommodate. The arrangement of blocks also considers enhancing social integration among the community (Figure 4.24).



Figure 4.24 proposed block type

4.5.9. Building height regulation

Figure 4.25 shows different types of building height regulation. The building height regulation is based on criteria like visual connection, density, and type of activity.

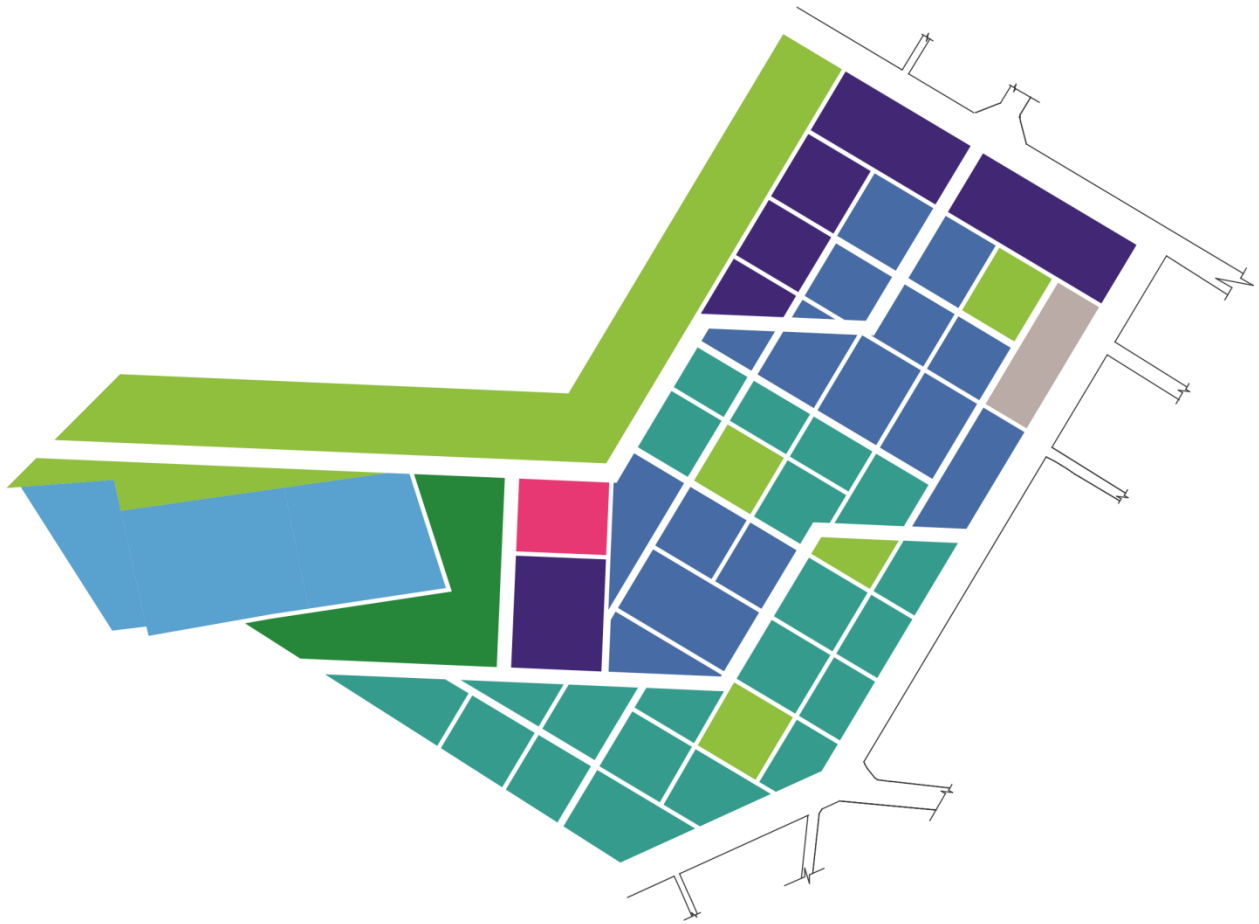


Figure 4.25 building height

Table 4.26 regulation

No.	code	description
1		G+5 buildings are mostly for resorts and hotels.
2		Farming area, with G+0 regulated building if there is any in the site.
3		G+15 buildings at the left end of the site near Tabor Mountain.
4		G+7 buildings to achieve mixed-use development.
5		G+10 buildings Hierarchically around the G+15 buildings and at the edge of the sub-arterial street.
6		Open spaces and buffer with no permanent building structure.
7		Outdoor parking space and car wash area. G+0 building if there is any.

Source: author 2021

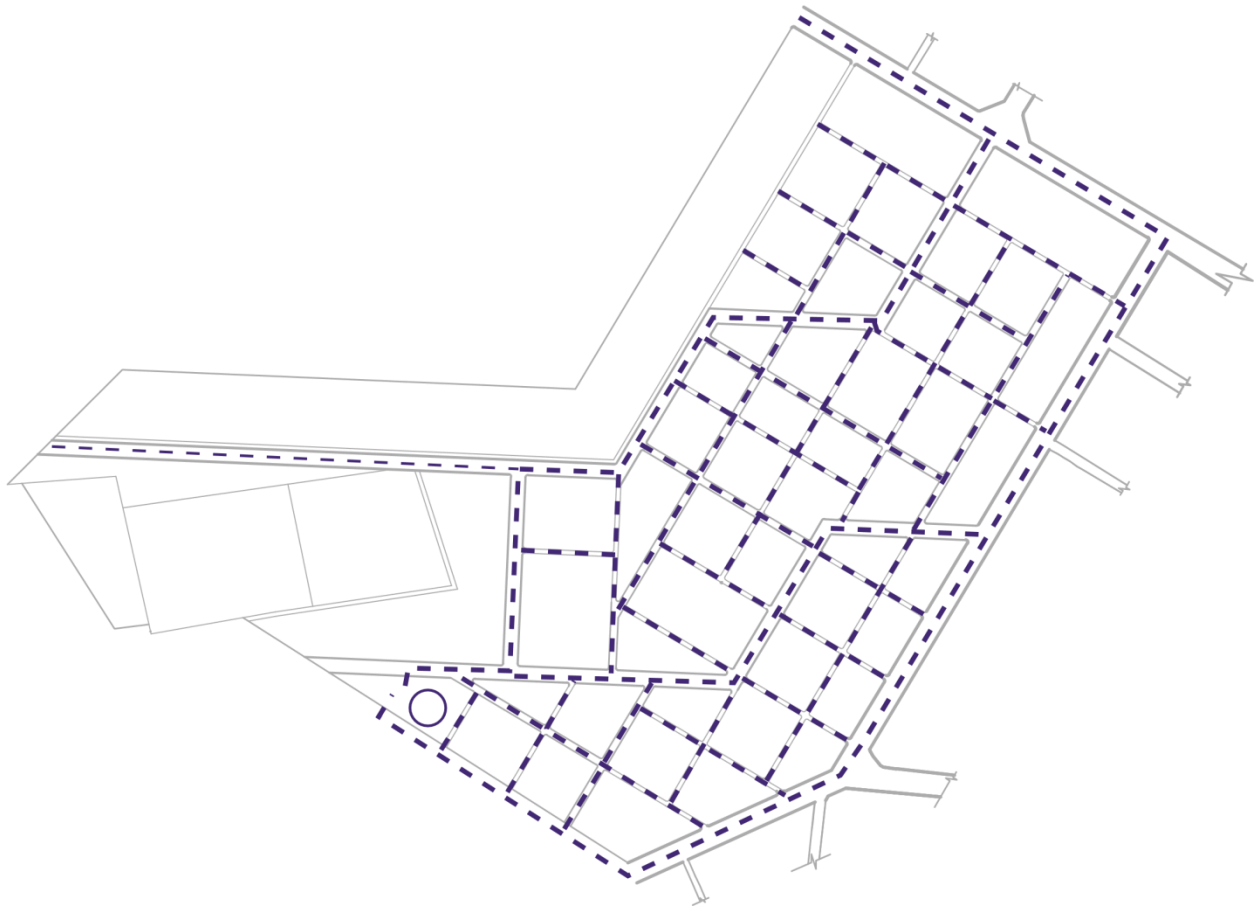


Figure 4.26 liquid waste

The liquid waste entering the site from the town and the selected site is collected and re-used for farming activity in the selected site and to water greeneries in the site and other parts of the town. By collecting the liquid waste from the town and the selected site the biodiversity and aquatic life of the area can be kept in a good condition because the waste is prevented from entering the lake.

Conclusion and Recommendation

5. Conclusions

The redevelopment of Lake Hawassa is the general aim of this study. To do this study considers different perspectives of the waterfront and the town in general. Studying the land use and land cover of the area in chronological order, the lifestyle of the community around, and the general tourist turn out of the area has been studied. Conclusions are listed based on the observations and the analysis that took place.

Un-controlled land-use land cover change of the area through the years, the environment and planning of the waterfront, the informal commercial and residential programs which clear the forest land and using them for fuel wood and building houses, and boats are affecting the urban tourism. This is affecting the biodiversity and the ecosystem which is one of the attraction elements.

The developed land of the waterfront is also increasing from time to time in a large number. The planning and design methods, weak control of the land-use protection, and development codes are becoming factors to discouraging program arrangement at the waterfront. The existing plan and design of the area do not consider socio-economic benefits of the community, the long-term relationship which can be created with tourists, and increasing the number of tourists from time to time.

The land-use proportion given to the activities at the waterfront is also a challenge to tourists. There is a large proportion of residential buildings there and the focus given to other land-use activities is minimum. This creates a difficult environment for tourists to walk around. The land-use proportion for activities is discouraging tourists to come to the area because of minimum spaces planned for their outdoor stay, unplanned lakefront walkways, and secured spaces through different design interventions.

The land supposed to be a buffer area is used for different activities and it is affecting the people settled in the area during the wet seasons and affecting also the aquatic life of the lake. Improper use of the buffer area and informal constructions on the buffer zone is creating undesired density

and congestion. The congestion created at the buffer area and the human activity affecting the aquatic life is one of the challenges to urban tourism.

Most of the inhabitants at the lakefront described the tourist turn out of to the lakefront in the past few years as a low relating it to the income they generate. The income they generate through the years related to tourist turn-out is decreasing. One of the reasons for the decrease in number is the lack of changes in different sectors related to tourism.

Waste disposal of different sources is also another big challenge for the waterfront. Lack of drainage lines, leakage of septic tanks from the hotels, and liquid wastes from the industry park are affecting the waterfront as well as the lake. The proximity of many hotels at the waterfront is contributing to the pollution of the area. Disposing of waste from tourists coming to the area and people working there is also another challenge. The wastes disposed of by people in the area is minimizing the attractiveness of the area and in turn, also affects the number of tourists coming to the area.

Invasive weeds are also affecting the waterfront by minimizing the accessible area of the waterfront buffer and making the area visually and aesthetically uncomfortable. This problem also affects the number of tourists coming to the area. It will be difficult to tour by boat since the invasive weeds are blocking access to the lake.

There is no proper organization of programs like financial institutions, marketplaces, commercial activities, and other commercial and trade activities. This is exposing the area for the chaos created by un-proper program arrangements. The level of attention given to planning these activities is contributing to the amount of income generated from the lakefront, easy access to different needs, and the number of tourists coming to the area.

Well-integrated cultural spaces are needed. There are many cultural experiencing spaces and spaces which give service of selling and buying cultural products in the area but the integration of these activities and spaces to the waterfront area is minimum. And it is leading to create abandoned cultural spaces which can be used as a potential for tourism activity. There is also a lot to be done to the cultural spaces. There are a lot of people in the town and tourists who are not encouraged to those cultural spaces due to different reasons like security issues, promotion of the spaces, integration of the spaces to the other waterfront activities and lack of attention to link it to tourism.

The needs of domestic and foreign tourists regarding spaces like walking, sitting, and recreational spaces which are blended with the local experience of the area are not visible in most of the waterfront area which is becoming another barrier to the tourist turnout to the area. Most of the walking areas at the waterfront are very narrow and block visual experiences and encouraging crime in the area.

Informally organized service-giving groups are also contributing to the decline in the number of tourists. These organizations block movement around the waterfront, stress tourists to buy something from them, and create chaos all over the area. The local and foreign tourists coming to the area will have also trust issues regarding where to go, where to stay, and how far to go with these organizations. So, these and related factors are also contributing to the number of tourists visiting the waterfront.

Over exploitation of fish, the resource is also another challenge that is affecting the aquatic life which in turn affects the number of tourist turnout to the area. There is the use of undesired net size for fishing which affects the number of fish and endangers the existence of fishes. There is the use of nets sizes less than 8 cm which catches smaller fishes and affects the existence of aquatic life. Since the fish market and food products of fish are one of the activities known by tourists at the lakefront so, endangering it is affecting tourism.

Many people defined the design of spaces and the waterfront in general negatively and suggested it needs a lot of work. Techniques related to urban tourism planning the area, job creation, and cultural exposure are not experienced at the waterfront. Lack of these things is minimizing the number of tourists and discouraging them to come to the area. Besides the pollution and segregation, the hotels and resorts in the area are much suitable for tourists because they are safe, well designed, and fulfill the needs of tourists.

The waterfront area is also affected economically and socially due to the COVID-19. The number of tourists coming to the lakefront decreased in large numbers which in turn affected the economic benefits of the lakefront. The pandemic also affected the socio-economic benefits of the community. Most people are unable to move freely from place to place and do their job. It also made most of the community members to be stressed.

6. Recommendations

Considering the analysis after making observations and questionnaires recommendations are prepared based on them to improve the planning of the area, to increase tourist turnout to the waterfront, and minimize barriers contributing to it.

- Focusing on the land-use land cover it is possible to protect the biodiversity of the waterfront. To achieve this the two forest areas of the Tikur what and Tabor Mountain are the main focus areas because it needs to protect these forests and making guidelines in the land-use plan which take the forests as a huge advantage. The protection of the forests physically and in prepared land-use paves way for tourists to enjoy their stay relating it to another dimension of the environment around the waterfront and increases the number of tourists interested in the area.
- Preparing binding land-use plans which can easily be adapted by the local people and tourists coming to the area. The land use which will be prepared must consider the proportion of activities based on the land value of the area and the opportunities it brings to the area. This will solve one of the challenges of the lakefront which is a random arrangement of activities and someone can easily understand what to find where.
- Keeping proper buffer distance from the main lake. Providing buffer minimizes the natural hazards at the waterfront and makes the waterfront accessible easily by people. This also creates good visual access to people coming to the waterfront area. And it also makes tourists feel comfortable because wider space gives them visual control over the area and also minimizes chaos and congestion at the lakefront.
- Modernizing the agricultural activities and making them part of the tourism sector. This requires creating a linkage between agricultural products and other commercial activities and nearby hotels. This can be achieved by making the agricultural spaces attractive to the tourists and creating linkage to the nearby markets and hotels to make people engaged in those activities to sustain their work.
- Planning and designing proper drainage lines, designing areas which liquid wastes are cleaned, designing also spaces where solid wastes are going to be disposed of, and applying different eco-system valuation rules (polluter must pay and be required to clean the area he

polluted). Also developing a system that performs waste management in a modern and reusable way.

- Designing walkable spaces around the waterfront which consider every age group and which have different activities for everyone coming to the area. This requires creating well-designed access to the waterfront. Making the spaces walkable let tourists and the community walk freely around the lakefront feeling secure because walkable spaces let many people walk around and minimize ghost areas around the lakefront.
- Taking the informally organized youth groups in the area and making them part of the tourism activity and increasing trust between them and tourists. They have to be also integrated into the formal markets at the lakefront. The integration of different types of markets will contribute to creating a secured waterfront and comfortable environment for tourists.
- Taking the cultural spaces as a potential to the growth of tourism of the area. Minimizing segregation of different programs in the area will contribute to bringing the cultural space and other activities using planning and design as a tool. Creating economic linkage to the cultural area and adding activities related to the culture around the cultural spaces brings a lot of interested people to cultural activities to the lakefront.
- Designing to tackle pandemics like COVID-19 in the future. To tackle such kinds of problems designing spaces must consider proper ventilation of spaces, creating which clean themselves and minimize pollution and also considering to provide different types of spaces starting from individual level to group.
- Let the community engage in every decision which will be made regarding the lakefront. Such tradition keeps tangible and intangible assets of the area and keeps the socio-economic interaction and culture flow in a good path.

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APPENDIX

INTERVIEW SCHEDULE

Dear Respondents,

The questionnaire is prepared to conduct a study on ‘**Urban tourism and waterfront development: the case of Hawassa lake**’ for the partial fulfillment of MSc degree in Urban Planning and Design that is given by Adama Science and Technology University. So, you are selected to give your answer and opinion for the questions.

Please, note that the information you provided is only used for academic purposes and is confidential. Besides, no reference will be made to you in particular. Therefore, feel free to respond to the questions to the best of your knowledge to realize the objective of this study.

Thank you in advance for your cooperation

Bedane Baneta

MSc Candidate in Urban Planning and Design

Adama Science and Technology University, Adama, Ethiopia

1. Date _____
2. Name of interviewer _____

Demography and socio-economic data of respondent

3. Name of respondent (optional) _____
4. Place (where they are from) _____
5. Age?
A. 15-20 B. 21-30 C. 31-40 D. 41-50 E. 51-60 F. 61 and above
6. Gender

A. Male B. Female

7. Kebele _____

8. Marital status

A. Married B. single C. Widowed D. Divorced

9. Did you attend formal school?

A. Yes B. No

10. Educational level

A. University/college B. secondary C. primary D. Never attended school

11. What do you do?

A. Government worker

B. Private

C. NGO

D. Student

E. Nothing

F. other

1.	How often do you come to visit lake Hawassa?	A. I come sometimes during the weekend B. I come at the time of public holidays C. I come yearly D. It is my first time here E. other
2.	How can you assess your interest at the waterfront?	A. I am very interested to come here B. I am not interested I just come here for work reasons C. other
3.	Is the place attractive to you?	A. Yes B. No

4.	In your opinion what are the challenges in and around Lake Hawassa?	A. Pollution from different sources B. The space given to the Hotels and resorts C. Narrow walking spaces which block visual experience D. other
5.	Are the Lake Hawassa and its waterfront aesthetically pleasing?	A. Yes B. No
6.	If yes, what are features interested you?	A. The lake B. The culture around the waterfront C. The activities around the waterfront D. other
7.	If no, what do you think are the main problems with that?	A. The place is not clean B. The place does not serve every group of the community C. There is no sign to develop the area D. other
8.	Is your work related to tourists coming to the area?	A. Yes B. No
9.	If yes, how it is related?	A. My daily life is based on it I get economic benefits by selling different goods. B. I work as a local tourist guide. C. Other D. none
10.	How do you assess tourist turnout at the waterfront of Hawassa lake.?	A. High B. Low

11.	If low, what are the factors?	A. Pollution B. Lack of techniques related to knowledge of the urban-tourism C. Lack of safety and security D. Other
12.	Which parts of the site do you think are relatively suitable for tourists?	A. The areas around the hotels and resorts B. The areas which are near to yearly cultural festivals C. The areas which have fishery activity D. Other E. none
13.	How often do many tourists come to the waterfront area?	A. Daily B. Weekly C. Monthly D. Yearly E. other
14.	Do you think the coming of tourists to the waterfront is relevant?	A. Yes B. No
15.	If yes, how it is relevant?	A. The community will benefit economically B. It creates job opportunities for the local people C. other
16.	What kind of spaces do you prefer when you come to the waterfront?	A. Visually pleasing spaces. B. Interactive places. C. Other
17.	Are you satisfied with the organization of programs around the waterfront?	A. yes B. No

18.	If no, what do you think the program organization lacks?	A. There is no specific area assigned for a program they are just arranged randomly B. There is an undesired mix of programs C. other
19.	How do you express the spaces at the waterfront in three (3) words?	
20.	Have you been to the place where the yearly cultural festival is held around the waterfront?	A. Yes B. No
21.	If yes, how would you define the relationship between the place with the waterfront?	A. They are well integrated B. They are not integrated well they are two separate elements of the town C. other
22.	How do you express the area given to the resorts in terms of the spatial relationship between other programs at the waterfront?	A. The area given to the resorts is highly contributing to the segregation of people, activities, and class. B. The resorts are the main defining elements of the waterfront C. The resorts are being a source of pollution D. other
23.	Do you think that the current pandemic (COVID-19) affected the waterfront development activities?	A. Yes B. No

24.	If yes, how it affects you?	A. The number of tourist flow decrease B. Planned investment has been delayed C. other
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THREE DIMENSIONAL VIEWS





