REDEVELOPMENT OF CULTURAL LANDSCAPE: THE CASE OF HORA ARSADI CRATER LAKE FRONT, BISHOFTU, OROMIA

Asmara Gadisa Dugasa

A 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

Adama

July, 2020

REDEVELOPMENT OF CULTURAL LANDSCAPE: THE CASE OF HORA ARSADI CRATER LAKE FRONT, BISHOFTU, OROMIA

Asmara Gadisa Dugasa

Advisor: Daniel Lirebo Sokido (Ph.D.)

A 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

Adama

July, 2020

Approval of Board of Examiners

We, the undersigned, members of the Board of Examiners of the final open defense by Asmara Gadisa Dugasa have read and evaluated his/her thesis entitled "REDEVELOPMENT OF CULTURAL LANDSCAPE: The Case of Hora Arsadi Crater Lake Front, Bishoftu, Oromia National Regional State, Ethiopia" and examined the candidate. This is, therefore, to certify that the thesis has been accepted in partial fulfillment of the requirement of the Degree of MSc in Urban planning and Design.

_____	_____	_____
Supervisor /Advisor	Signature	Date
_____	_____	_____
Chairperson	Signature	Date
_____	_____	_____
Internal Examiner	Signature	Date
_____	_____	_____
External Examiner	Signature	Date

Declaration

I hereby declare that this MSc Thesis is my original work and has not been presented for a degree in any other university, and all sources of material used for this thesis have been duly acknowledged.

Name: Asmara Gadisa Dugasa

Signature: _____

This MSc Thesis has been submitted for examination with my approval as thesis advisor.

Name: Daniel Lirebo Sokido (Ph.D.)

Signature: _____

Date of submission: July 10, 2020

ACKNOWLEDGEMENT

First and foremost, gratitude for the Lord all mighty whose mercy accompanies all creations. Secondly, I would like to thank my advisor, Dr. Daniel Lirebo Sokido, for his genuine and vital guidance, immense contribution and inputs of the paper. Truly this research would not have been a life full paper without his great valuable contribution. Next, my interviewees and respondents of Bishoftu city Administration different offices are among those I grant my acknowledgement, who gave me intense information during my study with the background information on the study area and Hora Arsadi in general at this challenging time.

Finally, I want to express my special thanks to my family who was there for me in every situation, especially my wife Burane Oljira, who moral support, has taking care for my two daughters and praying for my success.

Table of Contents

List of Tables

List of Figures and Illustrations

List of Acronyms and Abbreviations

ASTU = Adama Science and Technology University

BAR = Building Area Ratio

CSA = Central Statistical Agency

FAR = Floor Area Ratio

FDRE = Federal Democratic Republic of Ethiopia

GIS= Geographic Information System

LDP = Local Development Plan

MDG= Millennium Development Goals

SDG=Sustainable Development Goals

SP=Structural Plan

SRB = Single Regeneration Budget

UNESCO: United Nations Education, Science and cultural Organization

UNWCED = United Nations World Commission on Environment and Development

Abstract

Cultural aspects will play a key role in the overall the world 2030 Sustainable Development Goal agenda to be successful. Hora Arsadi Cultural waterfront landscape found in Bishoftu city, where people celebrate in mass annually. However, since the site is near to the capital of the country, it gets concern and attracts millions of celebrator and tourists. It confronted problem since unplanned development has negative impact on the site. In order to identify the problems and enhance the cultural identity the general objective was to evaluate urban cultural landscape of Hora (lake) Arsadi. With this regard the thesis tried to address research questions to achieve the objectives. The research was conducted using both descriptive and explanatory methods using primary and secondary data used comparison to measure points listed with public opinion and urban planning and design for its success. The primary data were collected using interview of local government officials, site survey using prepared checklist and questionnaires while secondary data were collected from different source. The major findings of the thesis were the study area was not well planned, dilapidated, poor development, but the residence use the site because of the site is cultural, waterfront and have good sight; low density and horizontal development, poor road networks, roundabout and street scape design problems and dead-end road; most land allocation was done by previous regimes of federal governmental officials with no policies, standards and guidelines set by the city; existing development and natural relief of the site need adjustment to enhance the identity of the site and design for greenery of the site; the walkway was not properly constructed specially at the time of Irreechaa festival; the waterfront is blocked at different points along the Hora Arsadi; no planned as well as existing parking thus every person will walk long distance; on the development of Hora Arsadi Government is waiting for people and people are waiting for government; no proper use of natural terrain and land allocation of waterfront, specially existing land use. hence, the study proposed landscape design solutions for the Hora Arsadi waterfront cultural landscape in order to enhance vitality, identity, imeageablity, livability alleviation of major problems and findings that tackle the proper functioning of the study area. The major planning and design solutions forwarded are planning to pedestrian friendly roads and land use integrated to planning area.

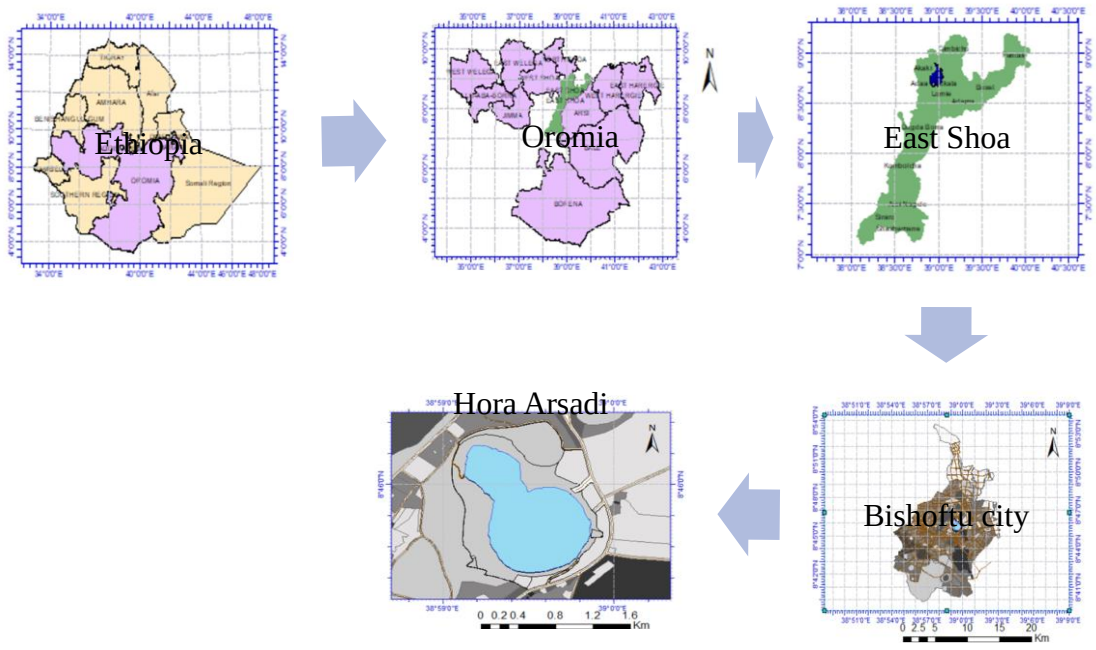
Key words: Bishoftu, Crater Lake, Cultural Landscape, Redevelopment

CHAPTER ONE

1. INTRODUCTION

The study town Bishoftu is located at the western edge of the rift valley, 47 km from Addis Ababa and 39 km from Adama, seat of East Shoa zone administration office. It possessed a long history becoming a center of Cultural services and currently serving as a capital of Ada'a Chukala Wereda administration. It is situated at a center or midpoint from Addis Ababa to Adama. This possession had yielded and strengthen an opportunity to become center of industry, tourism, trade, and conference(meeting) just provider for the whole surrounding numerous towns, villages and rural areas. Bishoftu town is found at the center of East Shoa zone political administration map and bounded by Gimbichu wereda from its north part, Akaki wereda from west, Dugda Bora Wereda from south, and Lomie Wereda from east. It is located at altitude range from 1900-1995 meters above sea level and practices gorgeous weather. Bishoftu is home to five cater lakes and three crater Hora (Afaan oromoo word equivalent to *lake* but somewhat different meaning and function but it was used interchangeably in this study to minimize confusion), and surrounded by eight mountains, unique cultural events like Irreechaa festival celebrated at Hora Arsadi-one of the three Hora and location of some of the country's finest resorts.

Figure 1: Location Map of the Study Area.



Source: Edited and modified from SP 2019 of bishoftu city, 2020

The construction industry is developing. The condition of existing infrastructure and context to the environment is poor and functionally the characteristics of the site. Based on the this the researcher has motivated to undertake thesis on waterfront cultural landscape along Hora Arsadi. The lake lacks properly defined and paved roads and even not opened according to plan and design proposals, and the town residents are suffering from the problem of movement. Land management, administration and inventory system together with implementation of the already authorized land use and development plan is inefficient. Currently the image of the city and the quality of life inside the city face many problems. These problems are discussed in next sections. Understanding the current trend in the issues of urban design and planning Cultural waterfront landscape is a first step in the planning and designing of efficient spaces in the future.

The aim of this research is to formulate a research around the past and current use of urban cultural landscape, specifically by taking a Cultural Landscape Around 'Hora (Lake) public waterfront in Bishoftu as a case area for the study. Knowing the existing culture of the people in using the waterfront landscape will give an input for future planning and design of cultural waterfront landscape and other related public spaces in the city.

1.1.Background of Study

The world population is rapidly becoming urbanized, and urban centers are in a state of expansion particularly Africa and Asia are characterized by rapid rate of urbanization (ILO, 1987). From Bishoftu city's seven lakes, three of them are Hora (equivalent to lake but different in function and characteristics; salty mineral water) (Milkessa Edae et el, 2017). As a cultural and religious site, Lake Arsadi is located in a region which, actually, was a holy land for the Oromo (Mekuria Bulcha, 2015). According to him Odaa Nabee, one of the oldest and most historic and ritually significant sites of the Gadaa assemblies, is located about 15 km north of the lake. Debela, S. (2019), identified Tulluu (Mount) Cuqqaalaa (Ziquala in Amharic), Tulluu Erer, Tulluu Bosati, Tulluu Furii, Tulluu Eegduu, Tulluu Foyataa, Tulluu Galaan and Tulluu Waatoo Daalachaa which were called Saddettan Tulluu Waaqayyoo (the eight mountains of God) in Oromo tradition are also located in the district within less than 30 km distance from the lake.

Adopted by the General Assembly of the United Nations in September 2015, Transforming Our World: the 2030 Agenda for Sustainable Development is the global agenda on sustainable development until 2030. Building on the Millennium Development Goals

(MDGs), the global agenda that was pursued from 2000 to 2015, the new 2030 Agenda includes 17 Sustainable Development Goals (SDGs) and 169 specific targets. This is, indeed, a global agenda, the aims, and themes of which should be considered in all world regions, countries and cities. Slightly, the 2030 agenda amounts to a significant step forward in the consideration of cultural aspects in sustainable development (UCLG, 2018). Even if none of the 17 SDGs focuses fully on culture, the resulting Agenda includes several explicit references to cultural aspects. From this perspective, cultural aspects will play a key role in the overall 2030 Agenda to be successful. From the time when UNESCO was formed in the consequences of the World War II, it has developed and adopted several international strategies for the identification and protection of heritage resources, forming the framework of the international doctrine as related to protection of the cultural heritage. These strategies deal with various types of heritage resources, including landscapes and historic urban areas. In 1972, the General Conference adopted the International Convention concerning the Protection of the World Cultural and Natural Heritage, the World Heritage Convention, which has since become one of the most efficient tools at the international level for the promotion of conservation policies and strategies for cultural as well as natural heritage resources (Martini, 2013). In Similar to this, Gadaa System is registered as Ethiopian intangible cultural heritage in UNESCO world heritage; as Irreechaa festival is one of the celebratory festivals in Gadaa system.

Irreechaa, the Oromo equivalent of Thanksgiving, was traditionally celebrated biannually in different parts of the Oromo country (Mekuria Bulcha, 2015). According to him the Irreechaa Birra festival is celebrated in the month of September while Irreechaa Arfaasaa in the month of April. Debela, S. (2019) discussed at the regional level, it is an event in which millions of Oromos and other peoples from all over the Oromia and non-Oromo visitors from other parts of the world to the shores of Hora Arsadi in the city of Bishoftu in central Oromia, Ethiopia celebrate together.

The research has taken as its topic by taking these backgrounds from different scholars to explore the application of the impression of Cultural Urban Landscape, referred to case of Hora Arsadi, the historic towns of Bishoftu, in Oromia Region, Ethiopia represents of different type of problem with the increasing number of populations attending this festival.

1.2.Statement of The Problem

Nowadays cities are continuously expanding in the world. The Populations is also increased time to time, day to day. At the same time, the environmental problem is getting worse. Cities are confronting unprecedented demographic, environmental, economic, social and spatial challenges. Bishoftu city is one of the cities found in Ethiopia having seven lakes and eight mountains inside and around the city. Hora (Lake) Arsadi, the site is historically cultural waterfront landscape used for cultural and religious as yet is one of the tourists attracting area from seven lakes found in Bishoftu city. But with the increase of no of people participate in the Irreechaa festival, celebrated around this lake, it was noticed that the area is in risk because of the roads and landscape condition cannot accommodate these amounts of people on festivity. The poor image of the sites has often been an even more serious problem. Beside this future environmental issue is another problem need attention in order to attain environmental sustainability. This situation calls for urban planners, which aims at improving the environment of the site to help it adequately perform its economic and social functions.

Luckily, very little application of planning and some development is done. However, as the site is the special and increasing concern of participant's year to year; even the roads, landscape, different buildings, and structures still need to redevelopment in order to increase the image of the city and make the site safe so far.

The street pattern of the site, similar to that of the lake, is clearly facing a problem of too much risky landscape treatment. Not in manmade problem, the integrated road is even not safe for these amounts of people attending festivity. Along with this, it is important to state that even some of the places are not used to their potential. This cultural landscape should get emphasis again in order to attain sustainable, enjoyable and comfortable public spirit. Consequently, an intervention on such area is vital to improve these all problems and for better development. As Cliff (2003) advises, it is dangerous to try to transfer design concepts that worked at one place or time or one culture to a different place and culture through time. So, identifying basic problems by planning and designing principles of the particular site, providing sustainable appropriate solutions to address these problems and protecting the cultural image of the place is the main focal point of this thesis.

Therefore, since people are suffering about safety of the site at the time of irreecha festival and development along crater lake front need urban designer and planner response on the basis of cultural use and public space, the research selected the thesis entitled

"REDEVELOPMENT OF CULTURAL LANDSCAPE: The Case of Hora Arsadi Crater Lake Front, Bishoftu, Oromia National Regional State, Ethiopia" to study the problems and forward possible response to using urban design and planning waterfront development principles.

1.3.General and Specific Objective

1.5.1. General Objective

The general objective of this research is to evaluate urban cultural landscape of Hora (lake) Arsadi.

1.5.2. The specific objectives

The specific objectives of this research are:

- To analyze the functional characteristics of the physical forms of the waterfront so as to create a more culturally sustainable landscape through waterfront redevelopment.
- To identify the factors contributing for the design of sustainable Landscape in the study area.
- To identify the ways in which stakeholders are supposed to be involved in the decision-making process in order to share the benefits of Hora Arsadi development.
- To propose planning and Design solution regarding functional composition of built environment interfaces for generating cultural activities.

1.4.Research Question

With the aim to achieve the objectives, the research tries to answer the following questions.

1. What are the functional characteristics of the physical forms of the Hora Arsadi waterfront create a more culturally sustainable landscape?
2. What are factors contributing for the design of sustainable Landscape in the study area?
3. In which ways stakeholders are supposed to be involved in the decision-making process in order to share the benefits of Hora Arsadi development?
4. What urban planning and design solution required regarding the functional composition of built environment interfaces for generating cultural activities?

1.5.Significance of the Study

The findings of this research would be beneficial by helping all stakeholders in yielding and providing clear and comprehensive understanding of what is going on within what situation

and extent regarding the implementation of plan and design in relation with expecting goals, outputs and outcomes. The high environmental value created by water features will result in the increased price of land, housing, offices, shops for cultural use and for other public spaces. In the case of Hora Arsadi, since the site have been used for Irreechaa festivals, proper designing and redeveloping of the site will increase the safety while celebratory, increase attraction for tourists, and social, economic and environmental sustainability. The findings and recommendations will be beneficial to the country, Bishoftu city administration, and all Irreechaa celebrators by improving safety and increase the income generated from tourists and visitors. It will contribute useful recommendations to create quality and sustainable urban environment.

Generally, identified factors, observed planning and implementation gaps and problems helps to engage pro-active measures in the future planning preparation, formulation of means and strategies for implementation, and plan implementation process of the study area.

1.6.Scope

The boundary of the case study area was drawn based on physical, social, and economic analysis of the site and preparation of a proposal for the site. The study covers Hora (Lake) Arsadi waterfront cultural landscape which was about 13 Hectares waterfront land. It covers investigating applicability and compatibility of the land use and road network integration with surrounding streets in economic, social and environmental purpose is also considered. The study covers physical characteristics and environmental analysis of the study area through urban planning and design principles.

1.7.Operational Definition

A number of generic objectives can be identified in urban design. The built environment should be efficient in the way it handles the variables in the environment. It should be designed to encourage economic growth. It should provide a sense of cultural continuity to enhance self-images. It should help sustain the moral and social order of a society and should be designed with a sense of justice for all to the extent that these are physical design concerns (Jon Lang, 2005). Generally, the main ideas of this research to evaluate urban cultural landscape environment of Hora Arsadi.

The operational terms and their respective definitions that I am going to use in this research can be listed as follow.

"**Hora**" is Afaan Oromoo term which has equivalent meaning to lake or river; salty mineral water where irreecha celebrated. (Mekuria Bulcha, 2013 and Milkessa Edae et el. ,2017).

Abbaa Gadaa: Oromo traditional leader (Milkessa Edae et el. ,2017).

Odaa: the holy sycamore tree; honored as symbolically the most important of all trees; the general assemblies in Gadaa system for socio-political and religious purposes are held at the Caffee under the shade of this tree (Hinew, 2013).

Landscape: the term «landscape» in the European Landscape Convention (ratified in Florence on October 20th 2000) is an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors (Zárate, M.A., 2001).

Cultural Landscape: The term "cultural landscape" comes from the German word "Kulturlandschaft". The word "landscape" similarly has its origin in Anglo-German language dating back to 500AD in Europe (Taylor, 2011).

1.8.Delimitations and limitations of the study

The limitations in which the research confronted is that the research took more time to acquire the important data particularly from the primary sources and secondary sources since they were busy to reply as per the schedule. Beside this because of the COVID-19 epidemic some respondents had no willing to answer questionnaires and interviews.

CHAPTER TWO

2. LITERATURE REVIEW

2.1.Introduction

In this chapter, literature is reviewed and discussed in order to provide a theoretical context for the research. Definitions, concepts, issues, trends and principles of waterfront development, characteristics of waterfront development, waterfront redevelopment for cultural use and empirical review of local and across the world are covered. Waterfront cultural landscape literatures are examined in general in order to identify research achievements and gaps in knowledge.

2.2.Definition and Concepts of Terms

Culture is expressed in the ways people communicate, in the way they perceive and exploit their resources, and in the way they organize that part of the earth that is theirs (De Blij, 1977).

Landscape is the topography we see and the terrain we travel through and it includes the fields, the cities and the mountains (Wylie, 2007). It is also a unified synthesis and arrangement of material forms and objects (De Blij, 1977).

Cultural landscape: Cultural landscapes are defined ‘as combined works of nature and of man’ (UNESCO, 1992) and representations of interactions between human society and settlement over time (CE, 2000). Cultural landscapes are literally an imprint of human history; inextricable and coherent part of our intellectual and cultural background; represent evidence of material culture manifested in the landscape and thereby reflect human relationships with our su0rrounds (Taylor, 2011). Cultural landscape, regarding the cultural geography, it is the composite of human imprints on the surface and consists of buildings, roads, agricultural fields and other development with tangible and intangible characteristics: such as Smells, sights and sounds, for which create an atmosphere - personality of a place (De Blij, 1977). Cultural landscape is the outcome of interactions between cultural and natural forces; it is fashioned from a natural landscape by a cultural group; it is the agent; the natural area is the medium; the cultural landscape is the result (Sauer, 1963).

Many geographical scholars proposed that the cultural landscape concept reveals visible, material evidence of culture in the landscape - the type and spatial distribution of built forms

and artifacts (Wagner and Mikesell, 1962). Cultural landscape is the shape, form and structure of a given landscape which reveal characteristics, trace, distribution and affectivity of the human culture that had inhabited and molded it can be described (Wylie, 2007). Cultural landscape is therefore critically at the interface between nature and culture, tangible and intangible heritage, biological and cultural diversity-they represent a closely woven net of relationships, the essence of culture and people's identity ... they are a symbol of the growing recognition of the fundamental links between local communities and their heritage, humankind and its natural environment (Rossler, M., 2006).

Waterfronts are the most attractive water features for human settlement and defined as the zone of interaction between urban development and the water where the needs of the city and its inhabitants blend together (Breen, A.; Rigby, D, 1996). While Zhang (2002) envisaged waterfront as a place integrating water with land and having a natural attraction to people. Even the word waterfront itself is clear; some researchers prefer to use several different words replacing the term waterfront with those such as harbor front, city port, lakeside, lakefront and lake edge (Hussein, 2006; Hoyle, 2002; Roy Watson, 1986; Mann, 1973). As cited in Dong (2004), a more detailed definition by Guo (1998) defined the waterfront as the interface point where land and water meet, between approximately 200 to 300 meters from the water line and 1 to 2 km to the land site and also takes in land within 20 minutes walking distance.

Waterfront development refers to any development in front of water bodies; river, lake, ocean, bay, creek or canal (Breen & Rigby, 1994).

Urbanization is the process of physical expansion of already existing urban Centre's and the growth in the proportion of a population living in urban areas due to economic growth and development, rural-urban migration, technological change and rapid population growth (Pay & Stefan, 2010).

Development: With "development" we mean the process improving the quality of the place and aiming at a better quality of life (Martini, 2013). Indeed, development can be understood as the act of unveiling the potential (cultural, social, and economic) of the territory, and bringing forth something that continues to retain its qualities and significance.

Redevelopment: redevelopment is used to differentiate between the improvement of previously built-up areas and new developments that are undertaken on development site (Yasin, 2018).

2.3.Waterfront Urbanization and development

With the acceleration of urbanization process, water bodies have been gradually enhanced from simple use in the initial stage to development and utilization at present (Sun, 2016). Beside this, water is a part of the urban landscape and should be used for specific functions such as waterborne transport, recreation, culture and aesthetic etc. (Giovinazzi & Moretti, 2010). Based on Akköse (2007), three factors are more important in forming the cities. The first of these is the natural structure of the city, the second of these is physical structure of the city, and the other one is social structure of the city. These three factors constituted system of the city in interaction with each other. In the natural structure of the city, the water element of presence or absence influences the process and the image of the city. Water resources such as sea, river or lake are added value in different ways. Urban waterfront is a dynamic area where cities engage their shorelines as Hussein (2006). According to Morena (2011), "the urban waterfront development is widely regarded as a frontier on contemporary urban development, attracting investment and publicity. But, Goodwin (1999) argued that waterfront boundaries are difficult to determine because they are contained between relatively homogeneous land uses (such as housing, large-scale industrial plants or waterfront parks) and in some cases the boundaries may be indistinct, especially when industrial waterfronts have been abandoned with only a small part remaining, which might form the nucleus for revitalization planning efforts.

2.4.Culture and Sustainable waterfront development

According to United Nations World Commission on Environment and Development (1987), Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. 2030 SDGs agenda to be successful culture plays a pivotal role; cultural infrastructures, providing affordable and equitable access to and opportunities to participate in cultural life, are part of the quality, reliable, sustainable and resilient infrastructure that should be available to everyone (UCLG, 2018). Toronto Waterfront Revitalization Cooperation (2005) explains a sustainable waterfront as "a place where people from all backgrounds and ages can live, work, play, visit, and learn in a way that strengthens and celebrates the beauty, the diversity, the

economic vitality, the opportunities, the creativity, the heritage, and the natural environment of the city".

2.5. Waterfront Redevelopment for Cultural Landscape

Urban waterfront redevelopment is already a well-established phenomenon internationally. Following the decline of old harbor sites and waterfront industrial areas in many cities all over the world in the second half of the 20th century, urban waterfront redevelopment started in North America, most notably with Baltimore's Inner Harbor in the 1970s, and has gradually spread to Europe and elsewhere since the 1980s (Gospodina, 2001). Breen & Rigby (1996) states, "Waterfront redevelopment and expansion is, in short, the best current example globally of the resilience of cities, of their ability to adapt to changed circumstances, to adjust to new technological impacts, to seize opportunities and to forgo new images for themselves, as well as to create new or altered neighborhoods for them in habitants

An urban area so far as it is defined as 'cultural landscape' could be either intentionally designed, or organically evolved (Martini, 2013). The shape, form and structure of a given landscape which reveal characteristics, trace, distribution and affectivity of the human culture that had inhabited and molded it can be described (Wylie, 2007).

2.6.The characteristics of waterfront landscape

Content of waterfront development varies greatly with respect to the characteristics of sites and cities (Dong, 2004). Hou (2009) identified five characteristics of waterfront landscape. These are: natural biological aspect, public aspect, historical cultural aspect, diversity characteristics and characteristic aspect. Space have five elements of Lynch (1960) are: path- such as the streets, sidewalks, trails, and some other channels; edge, Districts- perceived boundaries such as walls, buildings, and shorelines; Nodes- relatively large sections of the city distinguished by some identity or character; Landmarks- readily identifiable objects which serve as reference points. Niemann & Werner (2016) stated that, due to the main characteristics of the projects, they largely emphasize the influence of sustainable criteria in the strategic conception of a sustainable waterfront. According to them the criteria are: protection of the environment, the waterfront as an integral part of the cities' urban structure, preservation of the historical identity and character, a mix of different uses, public space, active citizenship in the planning process, long-term planning and the flexibility of master plans.

2.7.Landscape and Cultural Landscape

Concerning the concept of landscape, the UNESCO (1962) Recommendation states that landscape as the safeguarding of the beauty and character of landscapes and sites is taken to mean the preservation and, where possible, the restoration of the aspect of natural, rural and urban landscapes and sites, whether natural or man-made, which have a cultural or aesthetic interest or form typical natural surroundings.

The term "cultural landscape" comes from the German term "Kulturlandschaft". The word "landscape" similarly has its origin in Anglo-German language dating back to 500AD in Europe (Taylor, 2011). "Hora" is Afaan Oromoo term which has equivalent but not equal meaning to lake or waterfront. In the preamble of the European Landscape Convention of 2000, it is noted that the landscape has an important public interest role in the cultural, ecological, environmental and social fields, and constitutes a resource favorable to economic activity and whose protection, management and planning can contribute to job creation. It is also noted that the landscape is an important part of the quality of life for people everywhere in urban areas and in the countryside, in degrading areas as well as in areas of high quality, in areas recognized as being of outstanding beauty as well as everyday areas. Furthermore, the Convention offers the following definition: Landscape means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors.

The idea of Cultural Landscape has found expression both in the World Heritage context and in the European (1995) Recommendation. Taking the latter, article 1 of European (1995) Recommendation offers definitions both for landscape and for cultural landscape area. Here Landscape is defined as 'formal expression of the numerous relationships existing in a given period between the individual or society and a topographically defined territory, the appearance of which is the result of the action, over time, of natural and human factors and of a combination of both.'

Cultural landscape areas, instead, are defined as: 'specific topographically delimited parts of the landscape, formed by various combinations of human and natural agencies, which illustrate the evolution of human society, its settlement and character in time and space and which have acquired socially and culturally recognized values at various territorial levels, because of the presence of physical remains reflecting past land use and activities, skills or distinctive traditions, or depiction in literary and artistic works, or the fact that historic events

took place there.' As per the UNESCO definition of Cultural Landscape was adopted by the World Heritage Committee in 1992, and brought into the Operational Guidelines for the Implementation of the World Heritage Convention, in 1994: 'Cultural landscapes represent the "combined works of nature and of man" designated in Article 1 of the Convention. They are illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal' (OG 1994, art. 36). Furthermore, Cultural Landscapes can fall under different categories, such as designed and intentionally created by man, organically developed, and associative cultural landscapes. An urban area so far as it is defined as 'cultural landscape' could be either intentionally designed, or organically evolved.

As martini (2013), the difference between landscape and cultural landscape, as given in the above definitions. Based on his discussion the landscape` is formed in the mind of an individual in the present moment while Cultural landscape, instead, is referred to evolution over time and expressed in the historical stratigraphy as a testimony for the relationship of man and nature in the past; therefore, it is basically archaeological in character. Furthermore, a cultural landscape can be continuing and therefore subject to change in the future as identified in his study.

2.8.Principles of waterfront development

Pekin (2008), identified ten principles for a sustainable development of urban waterfront from September 2000, the International Centre Cities on Water conference, Venice, under the aegis of the United Nations Urban 21 developed for Sustainable Urban Waterfront Development. These are: secure the quality of water and the environment, waterfronts are part of the existing urban fabric, the historic identity gives character, mixed use is a priority, public access is a prerequisite, planning in public private partnerships speeds the process, public participation is an element of sustainability, waterfronts are long-term projects, revitalization is an ongoing process and waterfronts profit from international networking.

2.9.Land Use and Water Quality

It has been widely accepted that there is a close relationship between the land use type and water quality (Juan H. et al, 2013). He also identified as the land use within the watershed has great impacts on the water quality of rivers. The water quality of rivers may degrade due

to the changes in the land cover patterns within the watershed as human activities increase (Ngoye,E& Machiwa F., 2004).

The location of different types of land use within a catchment is the focus of considerable research, primarily driven by the buffer strip concept. However, the impact of buffer strips (riparian zones, land-water ecotones) on water quality appears unclear (Johnson et al., 1997; Jones et al., 2001; Sliva and Williams, 2001; Griffith, 2002). Changes in the land cover and land management practices have been regarded as the key influencing factors behind the alteration of the hydrological system, which lead to the change in runoff as well as the water quality (Yong, Y. and Chen, W.2002). But, As Nurisyah, 2004 the harmony between water quantity and quality must be accordance to the amount of water usage, especially the use of water by humans.

2.10. Public Realm and publicness

Public space relates to all those parts of the built and natural environment where the public have free access. It encompasses- all the streets, squares and other right of way, whether predominantly in residential, commercial or community/civic uses; the open spaces and parks, and the "public/private" spaces where public access in unrestricted (at least during daylight hours). It includes the interfaces with key internal and private spaces to which the public normally has free access." (Carmona et al 2004: 10)

Lynch and Carr (1979) identified four key public space management tasks: Distinguishing between harmful and harmless activities, controlling the former without constraining the latter, Increasing the general tolerance towards free use, while stabilizing a broad consensus of what is permissible, separating in time and space the activities of groups with a low tolerance for each other. Providing marginal spaces where extremely free behavior can go with little damage. Dear & Wolch (1989) argued that social relations can be Constituted through space where site characteristics influence settlement form, constrained by space where the physical environment facilitated or obstructs human activity, mediated by space where the friction-of-distance facilitates or inhibits the development of various practices.

With gender blindness concept Cavanagh (1998) stated as Women frequently experience inconvenience and obstruction in the designed environment, inadequate solutions are imposed on them and they encounter a widespread lack of knowledge and understanding among professionals about how they use space. Beside this identified there is a general

under-provision of female public toilets. Whereas women, who for biological reasons need to use toilets more often and for a longer time as stated by him/her.

As Akker's (2005) explanation, the extent of publicness will depend on the degree to which it is controlled and managed by public players and used by the public and the point to which it serves the public interest. Five different ways of interpreting public spaces are Memories of places, Places of escape, Places of social interaction, Places of inter-ethnic interaction, and Vibrant social arenas (Oosthuizen, 2009).

2.11. Green Designs for Green Infrastructures

Urban environments in the world are increasingly facing the triple effects of pollution, congestion and environmental degradation (Blanco et al., 2009). Urban green space provides a wide range of ecosystem services that could help combat many urban ills and improve life for city dwellers - especially their health (Fogwe, 2017). Green space is diverse, varying in size, vegetation cover, species richness, environmental quality, and proximity to public transport facilities and services (Dahmann et al., 2010; Fuller & Gaston, 2009). Green infrastructure is defined as an interconnected network of green space that conserves natural ecosystem values and functions and provides associated benefits to human populations (Anismos, 2013).

According to Donald et el. (2003), the "green infrastructure" of a city is comprised of natural and designed systems and elements of the city that function in ways analogous to natural processes in managing air, water, microclimatic and energy resources.

2.12. Threats and challenges of urban lakes

Land planning and de sign are the primary methods of runoff and pollution control f or lake protection. There are four major zones to be considered in lake protection: the actual shoreline, a forested shoreline buffer extending landward, a shore land protection area extending further, and a watershed zone used to control pollutant loadings to the lake.Cappiella and Schueler 2001) listed the following primary considerations in lake protection. They demonstrate that lake areas, especially shorelines, are unique in terms of their ecology, intensity of use, property values, and management.

Riparian buffers are perhaps the most important. These areas of trees and shrubs next to streams, lakes, and wetlands protect water bodies by intercepting surface runoff and the

sediment and pollutants it carries. In addition, buffers provide food and cover for wildlife, shade to lower shoreline water temperatures, slow flood flows, stabilize stream banks and shorelines, and provide litter and woody debris for aquatic organisms (Randolph. J, 2003). Beside this the increasing of sedimentation in the riverbed would also affect the water discharge of the river became unstable.

2.13. Spatial and Temporal Study of waterfront development

Spatial data are data that define location. Spatially-referenced genetic data are commonly used to study functional connectivity (e.g., Cushman et al. (2006), Durand et al. (2009), Guillot et al. (2005), McRae (2006), Slatkin (1987)). Interaction between the spatial and temporal characteristics of land-use systems can lead to changes in the extent and intensity of human impacts on the landscape, and thus affect the vulnerability of ecosystems.

There have been many attempts by different scholars to identify the desirable qualities of successful urban places. Lynch (1981) identified five elements that make a good city: the first one is *Vitality*, the extent to which the form of places supports the functions. The second element is *Sense*, the clarity with which it can be perceived and identified and the ease with which its elements can be structured in time and space by inhabitants. the third element is *fit*, refers to the degree of matching of spatial and temporal pattern with the customary behavior of its users. The fourth is *access*, the ability to reach other people, areas, resources, services, or activities. The fifth element is *control*, the extent to which those who use the space can create and manage access to spaces and activities.

2.14. Stakeholders in waterfront development

There are a variety of stakeholders involved in the waterfront development process, playing different roles. They include provincial, regional, and local governments, as well as local residents, recreationists, and environmentalists (Yarnell, 1999). A variety of studies exist shedding light on different stakeholders' roles.

2.14.1. Governments, institutions and agencies

Waterfront revitalization has been considered largely to be the business of cities (Goodwin, 1999) and it is subject to a multitude of governmental regulations and permit requirements (Wrenn, 1983). Higher level government may be involved through coastal zone management programs and enactment of marine/coastal management acts (e.g. Canada Marine Act, see Yarnell, 1999; American Coastal Zone Management Act, see Goodwin, 1999). During the

planning and design process, the role of government is critical for success (Craig-Smith, 1995). This role includes establishing the preconditions necessary to attract private investment. Public investment to replace or upgrade infrastructure serving the waterfront and to develop public spaces will re-establish investors' confidence in these high-risk areas.

Government, through its planning and adoption of regulations and inducements, can establish a development theme for the waterfront; set the scale, quality, and sequence of projects; and assure that the long-range perspective prevails over the course of sequential and independent development decisions. There is approaching consensus on the use of special-purpose agencies as reflected cross-national trends in urban development politics and as described by several observers (Keating, 1991, 1993; Savitch, 1988; Peterson, 1981). More often than not, municipal governments team up with ports and public development corporations and private sector interests to take on large city waterfront projects (Goodwin, 1999). Port authorities in North America and around the world are feeling the effects of an overall trend toward sustainable development and corporate environmental responsibility. They were originally assigned a mandate to administer harbour developments to ensure the movement of goods and to maximize economic benefits, but are facing additional demands of non-trade objectives, such as maintaining public access to port lands, waters, and views, and preserving the health of the natural environment (Yarnell, 1999). Though such special-purpose agencies have played indispensable roles in waterfront developments, a number of disadvantages have also been discerned.

Pressman and Wildavsky (1984) observed that implementation becomes more time-consuming as the number of participants and critical decisions increases. Wrenn (1983) also recognized the fragmented and complex structure of jurisdictional involvement as waterfront development obstacles. Waterfront redevelopment projects often take decades to complete and may span several electoral cycles. Gordon (1997b) adopted the perspective of the redevelopment agency when considering techniques for managing the changing political environment over the decades that it takes to implement waterfront redevelopment projects. The specific issues which are addressed include start-up politics, managing changes in political leadership, allocation of benefits and managing relations with residents and local government. It is maintained that effective waterfront redevelopment agencies take a long-term approach towards management of their political environment. On the other hand, if the public sector wishes to remain engaged in implementation, rather than retreating to a purely

regulatory role, it must increase the effectiveness and accountability of the agencies it entrusts with the task of rebuilding the city.

2.14.2. Private investors

Although governments are expected to continue to play important leadership, policy-setting and regulatory roles, it is clear from numerous examples that more and more important initiatives are coming from non-governmental organizations and that partnerships between public and private sectors, and between private and non-governmental sectors have significant potential to clarify issues, to establish common ground and to galvanize constructive action (Patton & Witzling, 1989). An integral part of the urban regeneration process is the role performed by the private sector in terms of stimulating property development and investment.

Adair et al. (1999) based their research on focus group discussions with private actors involved in the regeneration process. Qualitative investigations were undertaken on four main themes, namely the rationale for private sector investment in urban regeneration; policy mechanisms to lever private sector investment; the financing of urban regeneration; and the alleviation of risk. A number of new financing arrangements for public and private partnerships were also suggested. All of these new financing vehicles were based on the central premise that the most effective use of public money in urban regeneration is to access greater investment from the private sector. The use of capital within regeneration raises the question of access to and availability of finance; indeed, the more extensive the scale of the development, the greater the dependence on private investment. However, from the private sector perspective, there is a perception that urban regeneration projects are risky. Lack of information about the value of the assets often enhances the need for financial prudence and can lead to the by-passing of potential opportunities (Adair et al., 1999). The attraction of significant private-sector financing for urban regeneration is a major challenge for government given the barriers perceived by institutional and other non-investors in urban regeneration. Urban Task Force Report (in Yarnell, 1999) highlighted the market's failure to provide medium and long-term risk capital for complex area-renewal projects. It also considered the importance of public finance in facilitating the private sector to spread their property investment risk more effectively.

2.14.3. Communities, tourists and recreationists

Communities, tourists and recreationists are three not necessarily mutually exclusive kinds of users of the waterfront. There is a world-wide trend in democratic societies for a great degree of neighborhood control over decision making (Yamashita, Motonaga & Hirano, 1989; Hoyle, 2000; Campo, 2002). The relationship between community groups and government agencies clearly involves a multi-directional process of interaction and understanding. Sometimes this appears to work well, and to be generally positive, while at other times there is an air of uncertainty and perhaps mistrust. Sometimes there may be confrontation. The Port of Vancouver was criticized in the late 1980s for its insensitivity to local interests (Yarnell, 1999). Since that time, the Vancouver Port Corporation has developed a leading-edge land-use plan. Such plans are now required of Canadian port authorities under the new Canada Marine Act. In addition to land-use planning, this new legislation restructures the boards of directors of port authorities to reflect regional interests and requires annual public meetings.

A community group has been defined as an unofficial gathering of people with a particular perspective or opinion that is not necessarily represented by their government, either at municipal, provincial or federal levels (Hoyle, 2000). In a waterfront development context where "top-down" approaches are prevalent, Hoyle conducted research into a "member-driven, bottom-up, community-development focus". The primary characteristic of this kind of waterfront development was found to be the common fundamental objective to enhance the quality of life. Thus, community groups are seen as "one of the few ways that we have now of getting local issues and concerns onto a government agenda". The refocusing of urban policy in the 1990s is associated with shift in emphasis from property-led regeneration towards a broader-based partnership agenda with a focus upon community interest as exemplified by City Challenge and the Single Regeneration Budget (SRB) programs (Adair et al., 2000). Krausse (1995) examined the perceptions of harbour residents on tourism and waterfront developments in Newport, Rhode Island. The results indicate that, by and large, the waterfront community perceived the current traffic conditions, inadequate parking, lack of privacy, and commercial intrusion into neighborhoods to be the consequences of increased tourism. Negative attitudes towards waterfront renewal were associated with perceived difficulties in having access to the water, lack of affordable housing, continued marine pollution, and the proliferation of non-water-dependent uses in the harbour. Conversely,

several favorable reactions raised by residents included increased property values, successful historic preservation, and the participation in tourist-related events and amenities. Despite their geographic proximity to the business district, the development activities on the waterfront and the opportunities generated by tourism, few residents felt they have benefited economically from these advantages.

2.15. Growth of waterfront development

Since waterfront redevelopment emerged in the 1970s as Yassin, et el (2018), numerous waterfront areas went through transitions from abandoned spaces to commercial, residential and recreational areas. There are several changes in the latest urban development that can be connected to the return to waterfronts, such as the need to reinvest the capital to the areas of falling profits in inner cities, the rising of entrepreneurialism in urban governance, the role of urban planning that has become closer to developers' needs, the globalization of redevelopment enterprises, etc. (Knox, 1993).

However, high-value housing, heritage-related activities, water-based leisure opportunities, retailing, office development, and hotels catering for the leisure business and conference markets have become the most popular functions for land uses in the redevelopment of European waterfronts (Van der Knaap & Pinder, 1992).

2.16. Empirical literature reviews

2.16.1. Local waterfront developments

As cited by Anismos (2013) reviewed Bahir Dar sustainable waterfront development plan considers public access, green infrastructure, mixed use of waterfront development, di versified job and ho using an d urban and rural linkage which are based on the out puts from different stakeholders that includes the public, government and NGOs. Problems endangering Lake Tana are 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 major environmental problem.

Jantirar (2012) study about Bahir Dar waterfront development also reveals the developments going on along the lakeside did not assure publicness and most of the accesses was blocked and the sizes of public spaces found along the lake are getting reduced. Additionally, the

future of the rest of the public spaces has become uncertain. His study suggests that, the local government should develop rules and regulations to properly prepare and implement a lakefront plan. In addition to this genuine public participation is mainly recommended at different level to address equitability for the natural resource and the blocked public spaces should be opened.

Anismos T. (2013) study on Lake Hawassa Waterfront reveals developing Lake Hawassa waterfront in a sustainable approach considering the unique value of Lake Hawassa has multiple significances of supporting the ecology, benefiting the society, enhancing the economy and conserving the culture. However, the study revealed that there are and have been several problems of waterfront development deteriorating the natural aquatic and the most important and fragile littoral zone ecology. Furthermore, the study must not be any pause in taking action for the protection and conservation of Lake especially in sustaining of the waterfront.

2.16.2. Successful waterfront development across the world.

To study successful waterfront cultural landscape redevelopment, it is necessary to explore different redevelopment of waterfront across the world based from different scholars works. A consideration of the practice and redevelopment patterns of waterfronts is shown to provide an in depth understanding of the waterfront phenomenon in the light of the planning, architecture and urban design of the waterfront, according to historic periods and geographic areas. To realize this, it is required to investigate how waterfront space is shaped by development patterns, geographical location and cultural context. Furthermore, this holistic study of waterfront space offers a vital foundation for the clarification of the fruitful elements which can be related to the empirical data. But, because of the number of waterfront developments around the world, it is impossible to comprise all cases. Moreover, different scales of redevelopment have taken place along the different types of waterfront.

The availability of waterside locations has opened the competition for redevelopment in some of the most advantageous locations, both in land based interests (residential complexes, commercial shopping Centre's) in addition to maritime concerns (marinas facilities, recreation water-based facilities) (Hoyle, 1988). The term waterfront revitalization was coined in North America in the 1960s, namely in Baltimore, Toronto and San Francisco, and spread to European port cities such as London, and to Australia in Sydney and Melbourne, then to Japan (Hoyle, 2000). Baltimore has set itself as a model that can be followed, in 1945

the city lost 30% of population and suffered from all of the urban crises in the twentieth century, nevertheless, Millspaugh (2001) argued that Baltimore rekindled its spirit and through systematic, entrepreneurial and beautiful makeover of its older inner harbor has created a unique global image.

The uniqueness of Baltimore Inner Harbour Redevelopment is that it was created by one of the first generic public-private partnership of the post-industrial age of the US (Figure 2.3) (Breen and Rigby, 1994). The project started in 1960 and completed by 1995, more than a hundred large and small projects were constructed, ranging from recreational, museums, residential, business headquarters …etc. in 1991, the International Waterfront Centre listed the project as one of the top ten waterfront projects in the world. Toronto and San Francisco have also experienced mega transformation projects in their waterfronts with some individuality in each context; both waterfronts have been transformed from underutilized resource to an area teeming with pedestrian and redevelopment activity (Cook et al., 2001). However, American waterfront regeneration has concerned with rehabilitation and redevelopment, comprising a wide range of development mixes including residential, recreational, commercial, shopping, services, etc. Jones (1998) argues, this largely became the typical development model within the US and formed the 'export model' that was characterized many waterfront developments projects in other parts of the world including Asia, Australia, Europe and the UK.

Although defining success varies depending on redevelopment patterns, time and location, the literature review of the worldwide redevelopment provides information to formulate common criteria that led eventually to successful waterfront redevelopment.

Table 1 successful waterfront redevelopment across world

Development period	Harbour (Seaside)	Waterfront types	
		Rivers	**Canals (Docks)**
1960s	-Baltimore inner Harbour (USA,1963) -Boston harbourfront (USA,1965)		

1970s	-The rocks (New south wales,Sydney, 1970 - Sydney Opera House (Sydney, 1973) -Swansea Maritime Quarter (Wales, 1975) -Granville Island (Vancouver, 1979) -Harbourfront (Toronto, 1972)	Battery Park City (New York, 1979-2000) -San Antonio (USA)	Parc De La Villette (1979, Paris)
1980s	-Aker Brygge (Oslo, 1980), -Minato Mirai 21(Yokohama, 1983), -Queen's Quay Terminal (Toronto, 1983) -Teleport City (Tokyo, n/a), -Ruoholahti (Helsinki, 1986), -Renewal of the old port (Genoa, 1988-2000) -Groninger Museum (Groningen, 1988-94) -Darling Harbour (Sydney, 1988) -Victoria & Albert (Cape Town, 1989) -OJ Havengebied (Amsterdam, 1989) -Tegel Harbour (Berlin, 1987), -Fish Market Hamburg-Altona (Hamburg, 1989). -Cardiff Bay (1987) -South Street Seaport (New York,)	Huang Pu riverfront (Shanghai) -Bilbao (Spain, 1988) -Willamette Riverplace (Portland, 1987) -River Relocation Project (Rhode Island, 1987) -Forks Renewal and Assiniboine Riverwalk (Winnipeg, Canada, 1987), -Kop van Zuid (Rotterdam, 1987-2010) -Boat Quay (Singapore, 1987)	London Docklands (London, 1981), - Brindleyplace waterfront (Birmingham, 1984)

1990s	-Ring of Fire Aquarium (Osaka, 1990) -Harumi Passenger Ship Terminal (Tokyo, 1991) -Pacifico Yokohama (Yokohama, 1991) -Entrepot West (Amsterdam, 1993) -Xochimilco Ecological park (Mexico City, 1993) -Kuching Waterfront (Sarawak, Malaysia, 1993) -Puerto Madero (Buenos Aires, 1993) -Santory Museum (Osaka, 1994) -Navy Pier (Chicago, 1995) -Duisburg Inner Harbour (Germany, 1991) -Tenerife Link Quay (Santa Cruz, 1998)	-Sumidagawa River Walkway (1990, Tokyo) -Quayside on River Tyne (Newcastle upon Tyne, 1990) -Temple Bar (Dublin, 1991-2000) -Southgate (Melbourne, 1994) -Seine River-Gauche (Paris, 1991-2010) -Hyogo waterfront plaza (1997-2003),	-Salford Quays (Manchester, 1990)
2000s	-The Palm waterfront project in Dubai	Chunggae waterfront redevelopment in Seoul -Haihe River in Tianjin in China	

Source: Yang (2006)

2.17. Lessons drawn from the literature review.

Cultural landscape is referred to evolution over time and expressed in the historical stratigraphy as a testimony for the relationship of man and nature in the past; therefore, it is basically archaeological in character. An urban area so far as it is defined as cultural landscape could be either intentionally designed, or organically evolved. On the other hand, a cultural landscape can be continuing and therefore subject to change in the future.

Waterfront is referred as land fronting on to water or the interface between land, water, air, sun and productive plants. Waterfront sites are meaningful and they have unique and varying pasts, and thus it is important that their development is considered from multiple perspective, lest monotonic option is repeated into the future. Waterfront area should have multiple features which incorporate each other and surrounded by structural and nonstructural objects to form a focal point.

Content of waterfront development varies greatly with respect to the characteristics of sites and cities. Due to the main characteristics of the projects, they largely emphasize the influence of sustainable criteria in the strategic conception of a sustainable waterfront. According to the literatures the criteria are: Protection of the environment, The waterfront as an integral part of the cities' urban structure, Preservation of the historical identity and character, A mix of different uses, Public space, Active citizenship in the planning process, Long-term planning and the flexibility of master plans. The extent of publicness will depend on the degree to which it is managed and controlled by public actors and used by the public and the degree to which it serves the public interest. Different ways of interpreting public spaces while waterfront developments are Memories of places, Places of escape, Places of social interaction, Places of inter-ethnic interaction, and Vibrant social arenas.

Furthermore, this holistic study of waterfront space offers a vital foundation for the clarification of the fruitful elements which can be related to the empirical data. There are a variety of stakeholders involved in the waterfront development process, playing different roles. They include provincial, regional, and local governments, as well as local residents, recreationists, and environmentalists. These Empirical literatures show that successful waterfront development need genuine public participation, investigation how waterfront space is shaped by development patterns, geographical location and cultural context. Beside this success varies depending on redevelopment patterns, time and location and successful waterfront development should ignore any pause in taking action for the protection and conservation. Moreover, the main objective of most waterfront redevelopment projects is to bring back vitality and viability to earliest sites. Urban waterfront redevelopment is already a well-established phenomenon internationally.

Therefore, to develop waterfront development successfully follow Waterfront development principles needed are: secure the quality of water and the environment, waterfronts are part of the existing urban fabric, the historic identity gives character ,mixed use is a priority,

public access is a prerequisite, planning in public private partnerships speeds the process, public participation is an element of sustainability, waterfronts are long-term projects, revitalization is an ongoing process and waterfronts profit from international networking.

2.18. Research Gaps

The literature review and discussion in this document address the current knowledge and status of studies on the definition, issues, and trends of waterfront cultural landscape redevelopment. Literature concerning Cultural landscape of Hora (Lake) Arsadi waterfront (both in English, Amharic, and Afaan Oromoo words languages) are particularly examined, indicating a scarcity of theories and lack of a systematic approach, waterfront guidelines and policies for waterfront developments particularly for waterfront cultural use in Ethiopia especially when compared with the research done in the developed countries. Given Ethiopia's specific political and economic system and relatively mature waterfront development theories in the western world, there exists slight opportunity to apply what has been learned in other parts of the world to the Ethiopian context. But it is very dangerous to apply directly the principles and context worked in one country to another country as to the culture, context & characteristics of site & ceremony like along Hora Arsadi crater lakefront is not similar to the western world. Therefore, conducting study of the specific characteristics and context of the site will fill the gap.

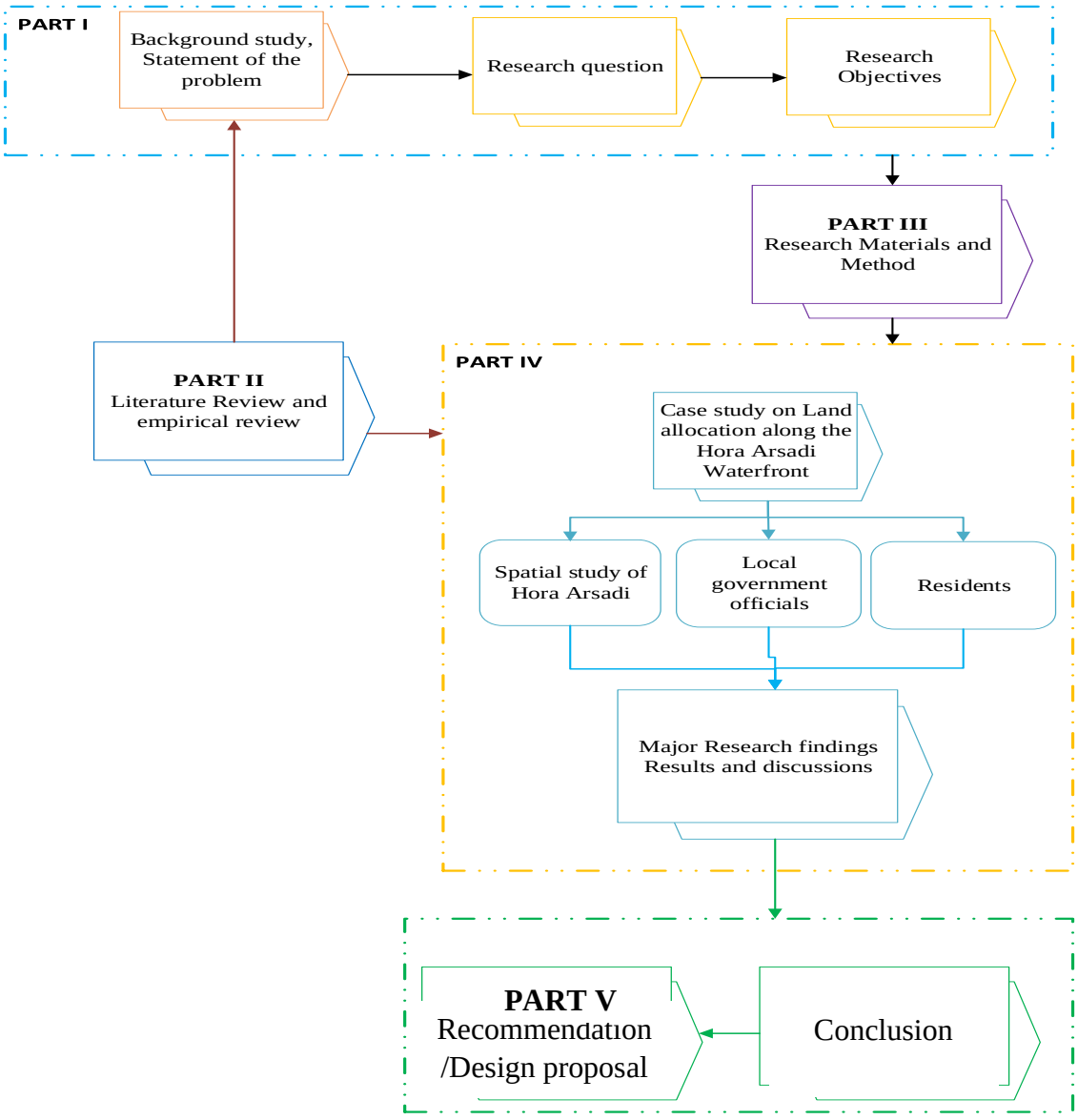
CHAPTER THREE

3. RESEARCH METHODS

3.1. Research Design

As per Durrheim (2004:29), research design is a strategic framework for action that serves as a bridge between research questions and the execution, or implementation of the research strategy. Accordingly, the schematic diagram of the research design was as illustrated follows.

Figure 2: Schematic Diagram of the Research Design



Source: Author, 2020

The research was designed in five part as shown figure 2 above. The first part contains background of the study, statement of the problems, research question and objectives of the

study addressed. On the second part literatures were reviewed and research material and methods were identified on the third part. Based on these methods and Literatures, field observation checklist, Questionnaires and interview question were drawn and analyzed to get findings in part four. Under the fifth part conclusion, recommendation and design proposal were proposed.

3.2.Data Types

A mixed methods approach takes advantage of the strengths of applying both quantitative and qualitative methods in a sequential, concurrent, and transformative manner (Creswell 2011). Therefore, the study employed mixed research method. The qualitative method is chosen because of its flexibility to identify the existing problematic situations of the study area. Furthermore, the qualitative approach allows the detailed interaction of the research and the stakeholders of the study area by allowing in depth description of the research problem.

The quantitative method also used, since it allows the implementation of the descriptive and numerical data for the study. This method is also chosen in order to compare and describe the current analysis of existing urban structures and its comfort ability to the participants and the standard of urban forms that should have been provided to the study area. Combining the two into an integrated spatial and mixed method approach can provide a full analysis and understanding of the cultural waterfront landscape.

3.3.Data Sources

3.3.1. Document review

Documents from local government offices, researches, books, journals, land use plan, structural plan, road network plan and other supporting documents were used.

3.3.2. Digital images and maps Review

To examine the spatial data along the waterfront digital images and Bishoftu area Areal map are collected from Bishoftu city. In addition to this Open Street Map images, Google earth and other free digital satellite images with different resolution also collected from online free satellite data source.

3.4.Sample and Sampling Frame

The sample of this study is selected based on purposive and random sampling. The purposive samples were contained of employees of Bishoftu city administration and local concerned

officials. The major targeted source of information for this thesis was the municipality of Bishoftu city, Bishoftu city administration culture and tourism office and Bishoftu land administration office. Moreover, except Bishoftu land administration, the other targeted in-depth interviews were successful performed.

In this study, a sample size of randomly selected residents was calculated using formula that Yamane (1967) as cited in (Singh and Masuku, 2014) provides a simplified formula to estimate sample sizes. This formula was: $n = N/[1+N(e)^2]$ residents in Bishoftu city whom directly or in directly affected. Where n is the sample size, N is the population size equal to 178,808, the population size projected from Ethiopian statistical population projection, and e is the level of precision or confidence interval (0.05) (95% confidence level). Therefore, since it was difficult to conduct the whole census of population, according to the formula the sample size was 391 from 178,808 population of the city in order to generalize from sample to population opinion.

3.5.Methods of Data Collection and Instruments

3.5.1. Field Survey

Observation is useful for the researcher to get first-hand information on the participants and to record information as it is revealed (Creswell, 2011). Based on this the researcher used on-site evaluation by observation of selected sites within principles of sustainable waterfront landscape development to get firsthand information and record them as reveled. Some of the information collected through site observation include: type of point source pollution, draining pump, terrestrial exotic species, swamp vegetation line or water mark or other indicator code, type of land use intrusions within the buffer and type of access to the lake based on prepared checklist.

3.5.2. In-depth Interview

Information which could not be reached through observation was collected using interview and questionnaire. In-depth interview had been employed for two local government officials who were directly and indirectly involved on the Hora Arsadi cultural waterfront landscape development and decision making. This employed to make sure how far it is reliable the study conducted in depth key informant and to assess the suggestion and level of satisfaction of existing site condition. The officials were from the city administrator culture and tourism office and Bishoftu city municipality infrastructure development team leader. The key informants were selected based on their involvement on development along the study area.

The interviews made with the key informants was more valuable and provides numerous data about the Hora Arsadi cultural waterfront landscape. The semi structured interview questions prepared includes issues like status and nature of the study area.

3.5.3. Questionnaires

Questionnaires were employed for randomly selected Residents and local tourist along waterfront who live in Bishoftu city. Closed ended questionnaires are prepared from written literature review based on research question and objectives in order to get residents perception and opinion about Hora Arsadi to save time taken to accomplish the thesis successfully within time frame.

3.6.Methods of Data Analysis

Both qualitative and quantitative techniques were employed to analyzed the data. Data gathered through field surveys, questionnaires and interview was interpreted and analyzed using software's like MS-excel, GIS, etc. Analyses of the primary data have made for measuring the community awareness which is important to determine the impact on the waterfront and the natural waterfront. AutoCAD, Archi CAD, GIS, MS-Excel, Remote sensing software and Autodesk Infraworks computer programs used to analysis documents, digital images, mapping and other data sources.

In doing qualitative analysis based on evidences of data sources, literatures review and empirical literature review, efforts were made to understand and correctly interpret the contents of the data. Wherever appropriate the data sources have been incited and mentioned footnote to indicate its origin. Furthermore, the observatory notes and pictures express personal academic view of the research based and knowledge gained from literature review. In-depth interview made on local government officials about their own views, concerning their opinions was analyzed using principles gained from literature review.

3.7.Data Presentation

The data collected from primary source was presented through text, maps, tables, graphs, photographs and charts. On the other hand, the data collected from secondary sources is presented in graphics, texts and maps. The results of those data presented using software like Arch cad, Autodesk Infraworks, AutoCAD, GIS, Lumion and other software. The design proposal also presented as 2D and 3D map, animation video and drawings.

CHAPTER FOUR

4. ANALYSIS AND DISCUSSIONS

4.1.Demographic Characteristics of Respondents

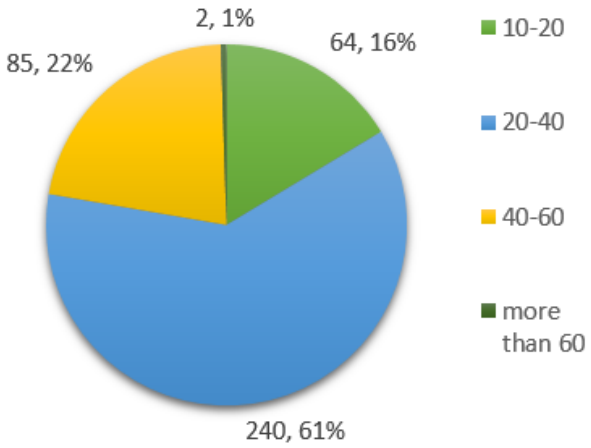
Table 2: Respondents' sample and its coverage with sex distribution

NO	SEX	FREQUENCY	PERCENT	CUMULATIVE PERCENT
1	FEMALE	76	19.44%	19.44%
2	MALE	315	80.56%	100.00%
3	TOTAL	391	100.00%	

Source: Own Survey Data

As presented below in figure 3, 391 respondents of the selected sample or 61 % of them fail under age group /20-40 years old/ and the second highest coverage are 40-60 and 10-20 age group and its coverage are 22 % and 16 % respectively out of the total respondent. The rest 1% are above 60 years of age. The figure indicates providing recreational center response about the study area can reply the youth request.

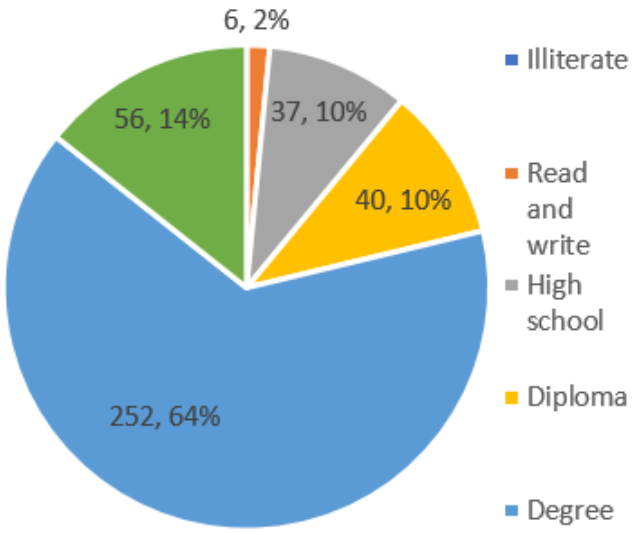
Figure 3: Age distribution of the sample



Source: Own Survey Data, 2020

Among the total selected sample respondents presented in figure 4 below, 64 % was degree holder, the next education status was above first degree which is 14%. Respondents with diploma holder and high school students were both 10%. The rest 2% can read and write. The figure shows that most respondents under the current study was not difficult for them to respond.

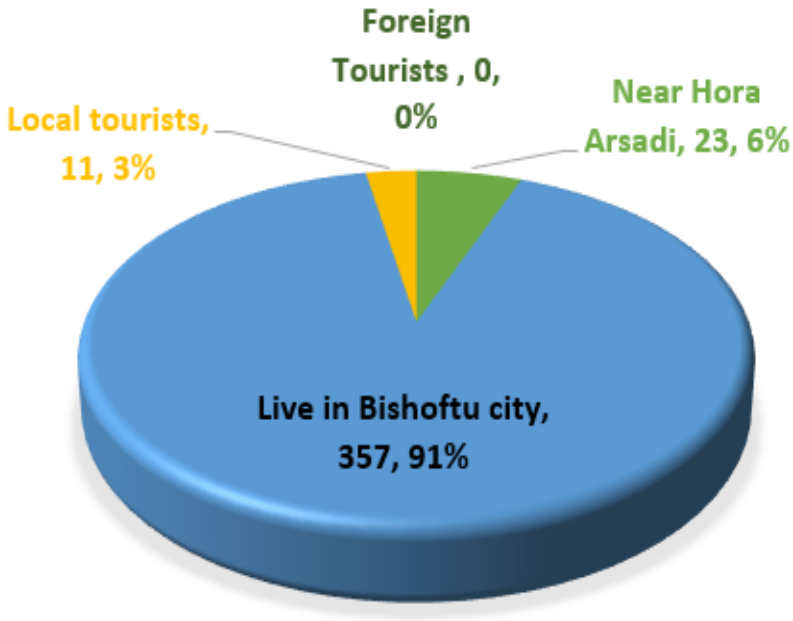
Figure 4: Education status distribution of the sample



Source: Own Survey Data, 2020

In the same way, finding as per figure 5 indicates looking into the duration of stay in the area that from the selected samples 97% or 381 respondents were in Bishoftu city resident in which 6% or 23 respondents were living near Hora Arsadi. The figure also shows that responding about the current study was not difficult for them.

Figure 5: Respondents type-based on residence distribution of the sample



Source: Own Survey Data, 2020

4.2.Functional Characteristics of Hora Arsadi Cultural Landscape

I. Characteristics of the site

As Hou (2009) identified five characteristics of waterfront landscape. These are: natural biological aspect, public aspect, historical cultural aspect, diversity characteristics and characteristic aspect. Accordingly, one of the interviewee, the Bishoftu city Administration culture and tourism bureau head, responded that the Hora Arsadi waterfront is known by Irreechaa Festival. He discussed the detail background of the Hora Arsadi and Irreechaa ceremony and mentioned Hora from Haroo (Afan Oromo word to equivalent to lake but not equal meaning). According to the interviewee Hora is the type of waterbody where cattle drink at least annually for healing purpose and Oromo celebrate Irreechaa once a year and known by its property heal the cattle because of salty property while haroo, afan oromo word equivalent the word lake. According to interviewee Bishoftu, Oromia region including the country get many benefits from the Irreechaa festival which large people celebrate at Hora Arsadi and source of income from tourists.

Beside this field observation tried to identify characteristics of waterfront. Except Odaa tree no structures show the identity of the site with respect to Irreechaa as the site is the place of Irreechaa Festival. Field observation found a tree called “Odaa”, as per the figure 6 below which is one of trees show the identity of Oromo and exotic. Odaa tree is a big tree functionally characterized by the its shade is where Oromo elders have meeting under and celebrate Irreechaa where it is waterfront. The tree is somehow protected by small retaining wall. This indicates further structures and plants needed to enhance the identity of the site.

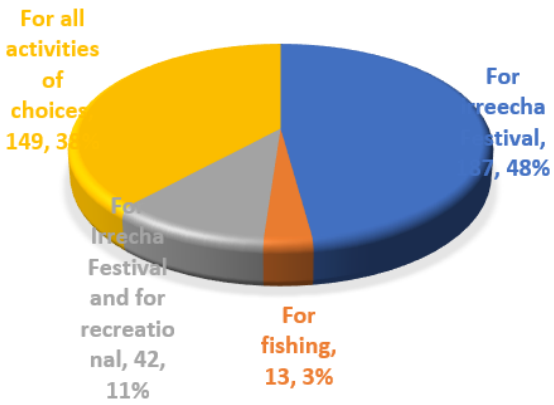
Figure 6: Odaa tree near Hora Arsadi

Source: Photograph taken by reasercher, 2020

4.2.1. Respondents Opinion about the functional characteristics of the site Hora Arsadi.

According to the surveyed sample showed as figure 7, 48% uses the site for Irreechaa festival only while 11% use for both Irreechaa and recreational. The second highest percent (38%) uses for Irreechaa festival, recreational and fishing purpose.3% of the respondent only use for fishing only. This figure shows almost half of the city residence use only for Irreechaa festival or 97% use for cultural and other purpose.

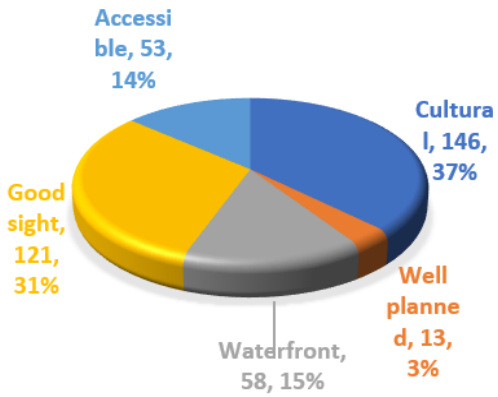
Figure 7: Respondents sample response about the usage of the Hora Arsadi.



Source: Own Survey Data, 2020

The figure 8 below indicates 37% of respondents prefer Hora Arsadi instead of other lakes and Hora because of the site place for cultural festive place whereas 31%, the next largest percent use the site since the sight have good sight. Furthermore 15% of respondents use Hora Arsadi since the site waterfront and 3% only use the site since the site is well planned as their opinion than other lakes and Hora.

Figure 8: Cause of respondent prefers Hora Arsadi than other water front.



Source: Own Survey Data, 2020

4.3.Factors Contributing for Design of Sustainable Landscape of Hora Arsadi cultural crater lake front

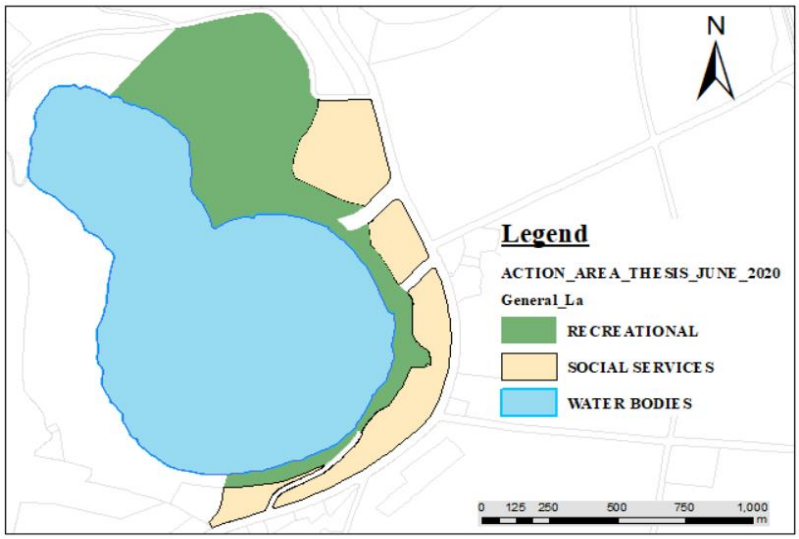
4.3.1. Document Review and Spatial Analysis of the Study Area

I. Document review

The study tried to gather data regarding the accessibility of waterfront urban land allocation strategies and policies but Ethiopia did not prepare a special investment policy, strategies and guidelines concerning waterfront until this study conducted. According to the data obtained, from the shores of land of Bishoftu city was allocated based on the regional and national land policy and investment policy. According to the Land Administration and Preparation Work Process of Bishoftu municipality the waterfront land was allocated in previous regimes. According to one of the first interviewee also that Hora Arsadi side was largely allocated for governmental institutions. He mentioned that there was no a policy regarding the waterfront development and how to use the lakeside for cultural use or open for public. According to the him there was no local development plan prepared particularly for Hora Arsadi side but now they are on the process to undertake local development plan with Bishoftu city land administration particularly along the sides of Hora Arsadi. He also responded that the city administration is highly concerned to retain the waterfront for cultural use and open for the society by defining the buffer zone of the waterfront. Since there was no clear boundary, proper land use zoning the and clear buffer zone of the Hora (the waterfront) only the waterbody and natural landscape show the identity of the site and along waterfront some area is now not accessible for cattle to drink the Hora. The site with a natural distinctive character of salty water and image or a lake with unclear identity have no any constructed landmarks or any structure show the identity of the waterfront.

As shown on figure 9 below, Proposed Bishoftu city SP 2019, the General and specific land use was allocated for recreational and social services only while the road is only 1% from the total area. But as per Pekin (2008) identified the mixed use is a priority next the as historic identity gives character for waterfront development while Public access is a prerequisite. Moreover, the document review result indicates no separate urban waterfront policy specially for cultural waterfront land use so that it partially considers some waterfront development principle and need to consider the other principles to be culturally sustainable waterfront landscape with historic identity.

Figure 9 : Bishoftu city land use of SP 2019 in Study area. (Edited and modified from Bishoftu city SP 2019)



Source: Edited and modified form SP 2019 of Bishoftu city,2020

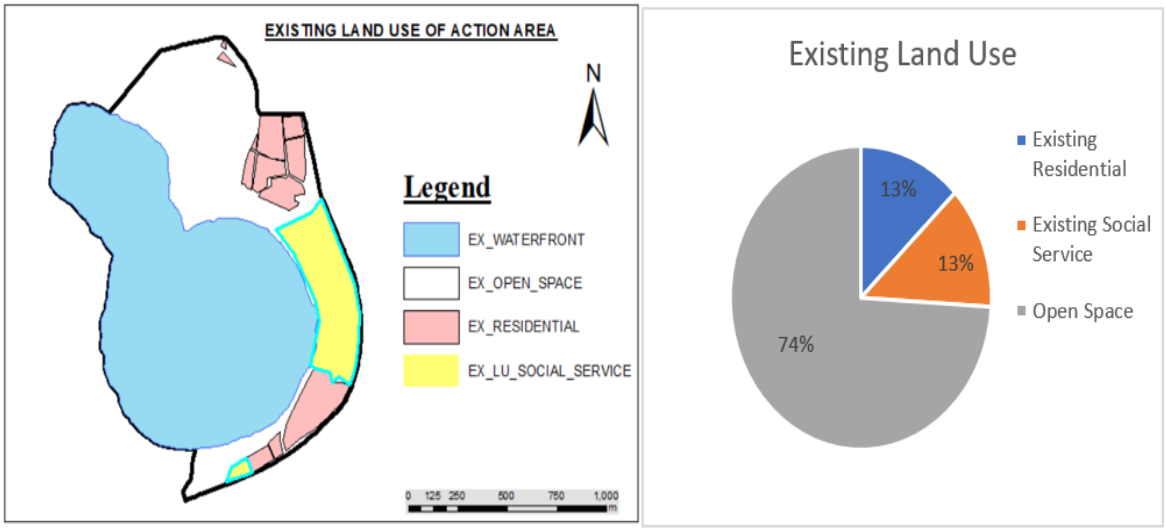
II. *Spatial Analysis of Study Area*

The emphasis of Spatial Analysis is to measure properties and relationships, taking into account the spatial localization of the phenomenon under study in a direct way (Camara et el, 2001). That is, the central idea is to incorporate space into the analysis to be made. 2019 Structural Plan (SP 2019) of Bishoftu city, Autodesk Infraworks terrain, Remote Sensing and GIS techniques was used to analyses the georeferenced land use. The aims are to evaluate the field-based approach for the classification of land cover. More over helps to evaluate the land cover part use for Irreechaa festival and areas show Identity of the site.

A. Existing Land use

As illustrated on Map and chart of figure 10 below, the land use of existing study area is computed using Arc GIS software using 2016 aerial photo of Bishoftu city. The existing land use as calculated and illustrates about 74% of land use is allocated for open space either intentionally or purposely, while Residential and social Services are each 13% from the total in study area without including waterbodies. Most of open spaces are not well designed while some of them are partially developed. This shows the study area as analyzed under document review, the land allocation was not based on the principles of waterfront development as waterfront development gives priority for mixed use building.

Figure 10: Hora Arsadi waterfront SP of Bishoftu City existing land use and road.

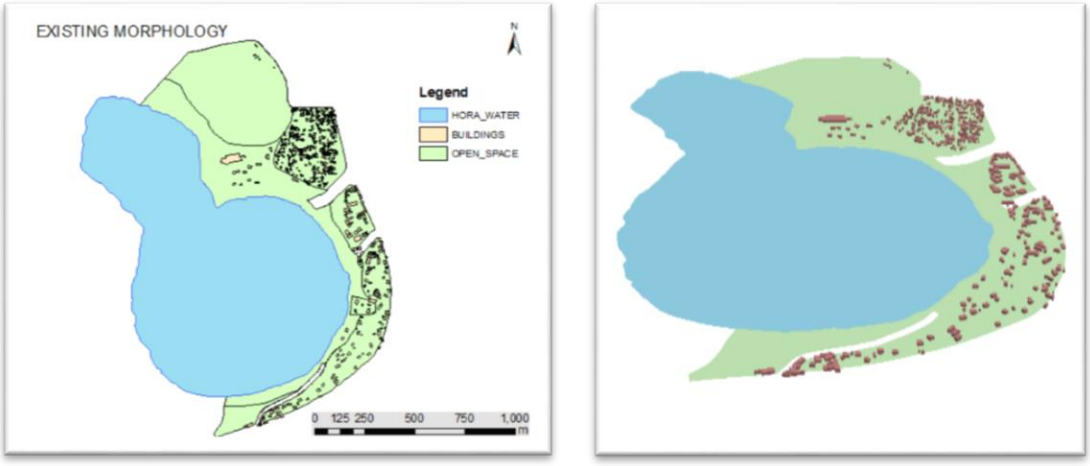


Source: Own Computation, 2020

B. Existing Morphology

The morphological properties existing feature in this study area used to analyze the building land ratio or Solid-void ratio of study area. This attempt revealed gradations of morphological properties of blocks in feature spaces and the geographical space, which has potentials to enable quantitative comparisons.

Figure 11: Existing 2D and 3D Morphology Map of Action area



Source: Own computation, 2020

Table 3: Solid-Void Ratio of Action Area

SOLID -VOID RATIO (INCLUDING WATERBODY)			
TYPE	AREA(M2)	AREA (%)	CUMULATIVE (%)
SOLID	46232.19	2%	2%
SOFT	2404387.927	98%	100.00%
TOTAL	2450620.117	100.00%	

SOLID -VOID RATIO (ONLY WATERFRONT LAND)			
TYPE	AREA(M2)	AREA (%)	CUMULATIVE (%)
SOLID	46232.19	4%	4%
SOFT	1245641.023	96%	100.00%
TOTAL	1291873.213	100.00%	

Source: Own Survey Data, 2020

From table 3 above the solid-void ratio of the Action area are 2% Solid and 98% Void including waterbody while 4% solid and 96% void when only waterfront land is considered. Density of the area is calculated including road and openspaces. Most existing buildings are G+0. There is no building setback consideration from the existing morphology. There is no block plan used as sprawl taken place. This figure11 also indicates the area is has low density and if the land properly allocated, it is not this much significant number of building in existing action area. Moreover, balance should be realized between the two parameters.

C. Existing Road

Table 4: existing Road Network Width and type of Surfacing materials.

ID	Land use type	Width (m)	Remark
R1	Asphalt	5	CR
R2	Asphalt	10	CR
R3	Asphalt	17.5	SAS
R4	Cobble Stone	20	LR
R5	Gravel	30	LR
R6	Cobble Stone	3	LR

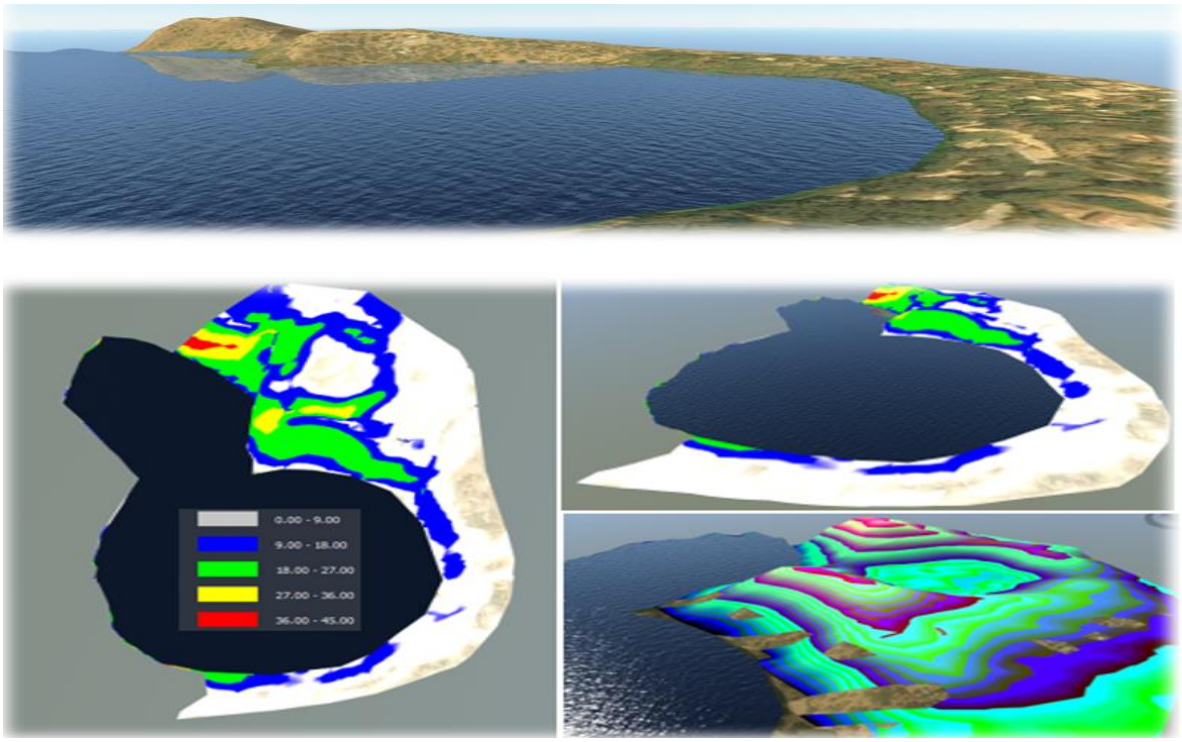
Source: Modified and Edited from SP 2019 of Bishoftu city, 2020

As shown in Table 4 above the existing road network exposed no well-designed road along lakeshore. Some existing road network lacks standard width, parking, walkway, roundabout, drainage and street furniture. The main road near the action area has no median and not defined while other poor in road hierarchy.

D. Topography

The topographic analysis of the study area is conducted using Autodesk Infraworks 2021 student version. Based on online open street map DEM model and slope analysis performed is revealed as indicated on figure 12 below.

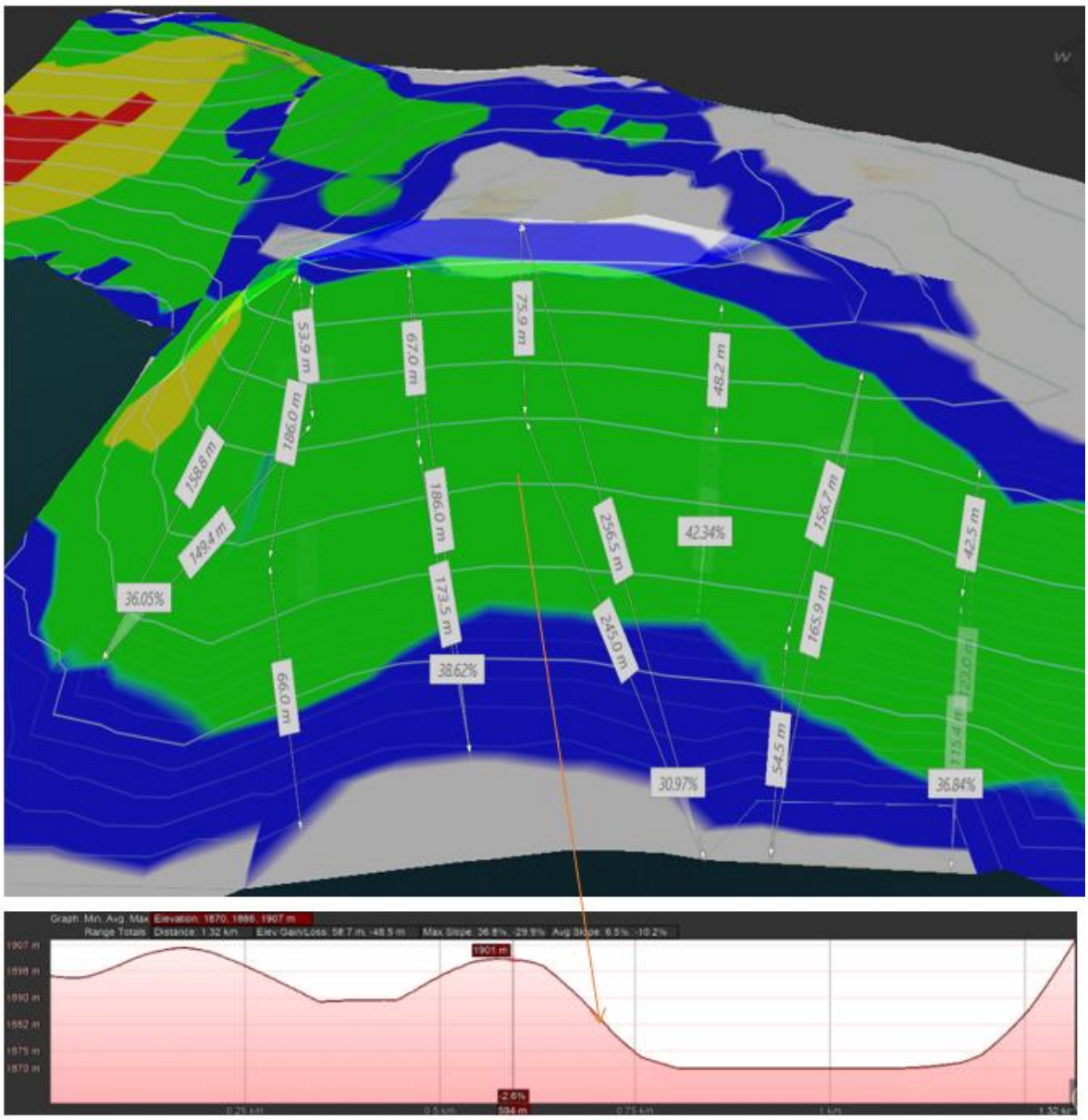
Figure 12: DEM and Slope analysis of study area.



Source: Own computation using Autodesk Infraworks 2021 version, 2020.

Beside this as illustrated under figure 13 below on the to right side of existing main get of site side of the place, marked with green color facing to the place at Irreechaa festival celebrated the terrain slope varries from 30% to 42.34% and vertical elevation difference from waterbody 54m to 245m and 42.5m to 156.7m. This Figure indicates the natural terrain of the site can be used for auditrium or and other public space, which may increase the identity of the site as it is ceremonial place at the time of Irreechaa if some development is implemented.

Figure 13: DEM and slope analysis of Irreechaa Festive location in study area.



Source: Own computation using Autodesk Infraworks 2021 from Open Street Map and Google earth, 2020

4.3.2. Problems along Hora Arsadi Waterfront

According to this thesis author, to get first hand concerning the impacts on the waterfront are described as follows:

Pollution

As the site is not accessible at different place, it also difficult to investigate further different source of pollution since the waterfront is blocked by different organization. But with as Shown on figure 14 below different people fishing around the Hora Arsadi. This could be

deteriorated of left bodies of fishes around the lake is one of source of pollution from observation. In addition to this people left plastic bottles near the lake after use. This affects the waterbodies and organisms in the water. Beside this according to one of the interviewees different small association and youth association were organized before for running business around the Hora Arsadi, but they were not successful since different people use the water for washing car, horse and other and throwing wastes around the waterfront.

Figure 14: People fishing along Hora Arsadi

Source: Photograph taken by researcher, 2020

Solid waste management System

Figure 15: Solid waste management problem

Source: Photograph taken by researcher, 2020

While field observation no any trash bin for solid waste management. As explained before, the left bodies of fishes are one of solid waste observed. Beside as in figure 15 above this waterfront users left plastic bottles near the waterbody which is not environmental friendly. This indicates proper solid waste management is needed.

Drainage of the site

Most the drainage system along the waterfront is not properly handled while the constructed drainage system is not safe specially while Irreechaa ceremony since the celebrators walk in mass. As shown on Figure 16 below the drainage ditch broken and the drainage system needs even remedial action or other proper development by considering mass walk at the time of Irreechaa.

Figure 16: Existing drainage of along Hora Arsadi

Source: Photograph taken by researcher, 2020

Plants, Delineation and Buffer Management

Plants always play as a platform in sustaining the aquatic and terrestrial ecosystem through production, regulation and waste prevention. Buffers provide food and cover for wildlife, shade to lower shoreline water temperatures, slow flood flows, stabilize stream shorelines and banks, and provide litter and woody debris for aquatic organisms. Waterfront Delineation is made based on Dong (2004) described the waterfront as the interface point where land and water meet, bet ween approximately 200 to 300 meters from the water line and 1 to 2 km to the land site and also takes in land within 20 minutes walking distance. In this study 200-250 meters from the waterline and 500 meters to the land site are delineated as waterfront based on Bishoftu city SP 2019 and world Imagery using GIS based software as Figure 17.

Figure 17: Waterfront delineation of study area.

Source: Edited and modified from google earth and SP Bishoftu city, 2020

Disturbance on tourism industry

As illustrates on figure 18 below there are some small boats used for recreational purpose around the waterbody. This creates an opportunity for pulling tourist to the site beside the cultural identity of the site. But near the crater lake no other facilities that can attract and they can stay long time along the waterfront. As Cavanagh (1998) stated with gender blindness concept; Women frequently experience inconvenience and obstruction in the designed environment, inadequate solutions are imposed on them and they encounter a widespread lack of knowledge and understanding among professionals about how they use space. Hence the site has problem on tourism attraction.

Figure 18: Boats around Hora Arsadi

Source: Photograph taken by researcher,2020

Based on action area observation made since there is no public amenities and facilities along waterfront it may disturb the tourism industry of the site. Furthermore, along the waterfront it is not easily accessible this it is block at different place and topography of some area is not comfortable. Therefore, to increase the tourism industry of the site is better to open blocked waterfront area up to delineated study area and make the site usable using different design intervention like revitalization of waterfront or redevelopment based on other analysis.

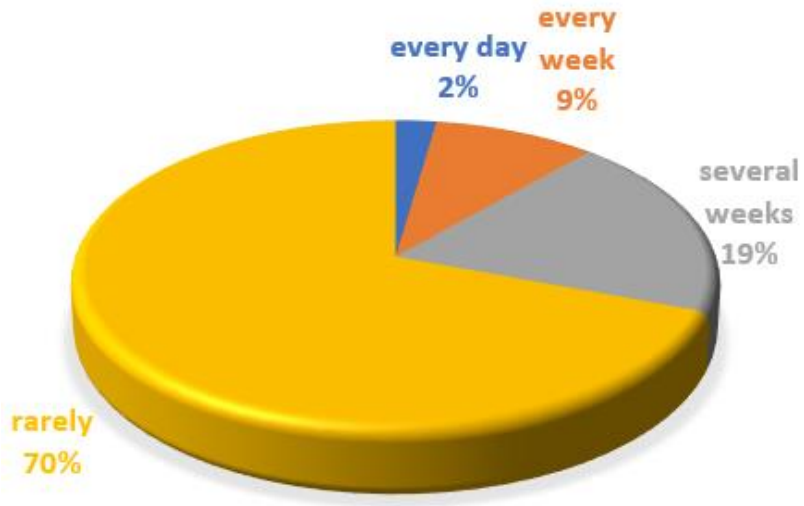
Stage and Auditorium

According to one of the interviewee municipality is participating in managing and conserving the Hora Arsadi in various aspects by planting trees and hiring guards around the waterfront. He argued that even if the early constructed development shows good start it was not successful development since the stages was face back to the waterfront with the audience not seeing the place where festivity was going on.

4.3.3. Respondents Opinion about the waterfront and the Current Development along Hora Arsadi.

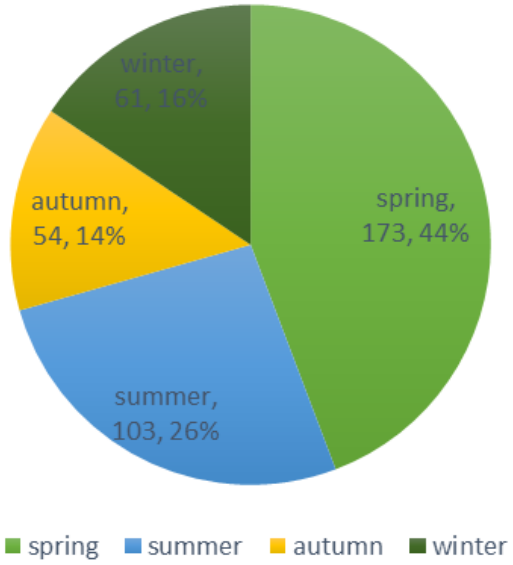
Figure 19 indicates about 70% rarely walk along Hora Arsadi while 19 % of surveyed sample show they were walking several weeks. Beside this 9% of them walk every week while only 2% of residence walk daily along the waterfront. This figure indicates that because of the site is not well planes as in figure 14 more than half percent of the residence was not walk along the waterfront.

Figure 19:Frequency of respondents walk along the Hora Arsadi



Source: Own Survey Data, 2020

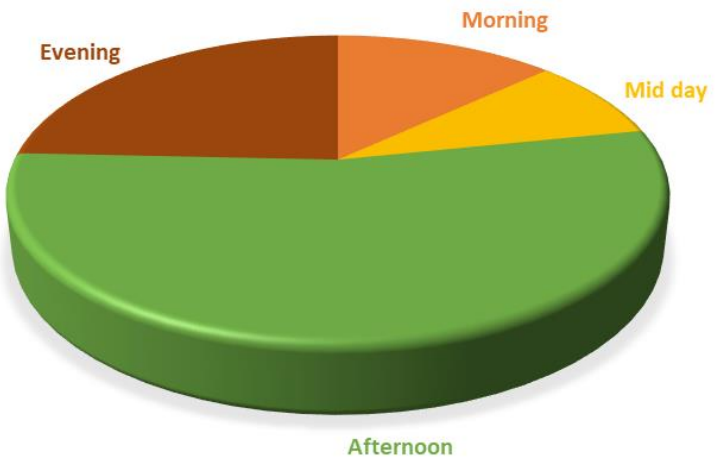
Figure 20:Season the respondent like to walk along hora Arsadi from sample data



Source: Own Survey Data, 2020

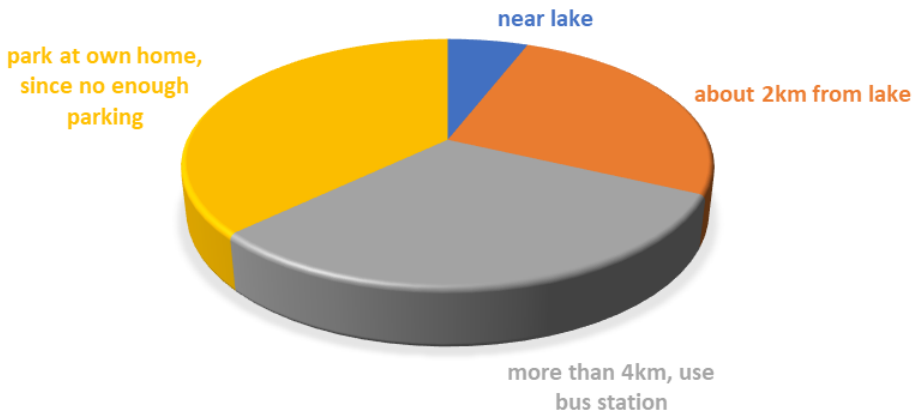
About 44% of the residence like to walk along Hora Arsadi in spring as presented in figure 20 whereas second largest number, 26% show they walk in summer. However, they the surveyed sample shows 16% and 14% walk along hora Arsadi in winter and autumn. Similarly, as per figure 21 below 54% prefer to walk afternoon or 24% evening. In the same way Morning and mid-day only 13% and 9% prefer to walk along Hora Arsadi. These two figures specify large amount of people not prefer to walk mid-day along Hora Arsadi which gives clue about appropriate greenery and no enough shade at the time of sunny season.

Figure 21: Respondents preference time to walk in day from surveyed sample



Source: Own Survey Data, 2020

Figure 22: Place of possible parking at the time of irreechaa festival as surveyed sample

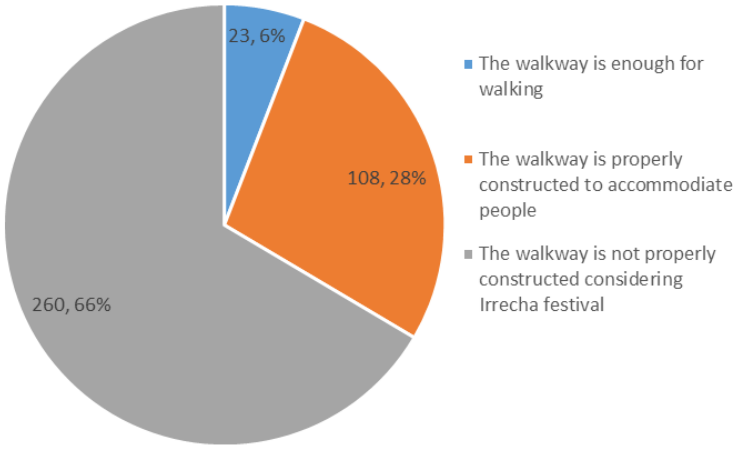


Source: Own Survey Data, 2020

As presented in Figure 22 above, large percent of respondent agree people park at his own home (37%), 31% park more than 4km and 26% of them park about 2km from Hora Arsadi and only 6% of them park near lake. This shows further investigation for need of parking and if necessary, design accordingly near the lake.

From figure 23 below reveals the walkway at the time of Irreechaa festivals is not properly constructed specially at the time of Irreechaa festival as 206 or 66% of respondents. Beside this about 108 or 28% of respondent's belief the walkway at the time of Irreechaa festivals is properly constructed specially at the time of Irreechaa festival as their opinion while 23 or 6% of respondents the walkway is way enough for walking.

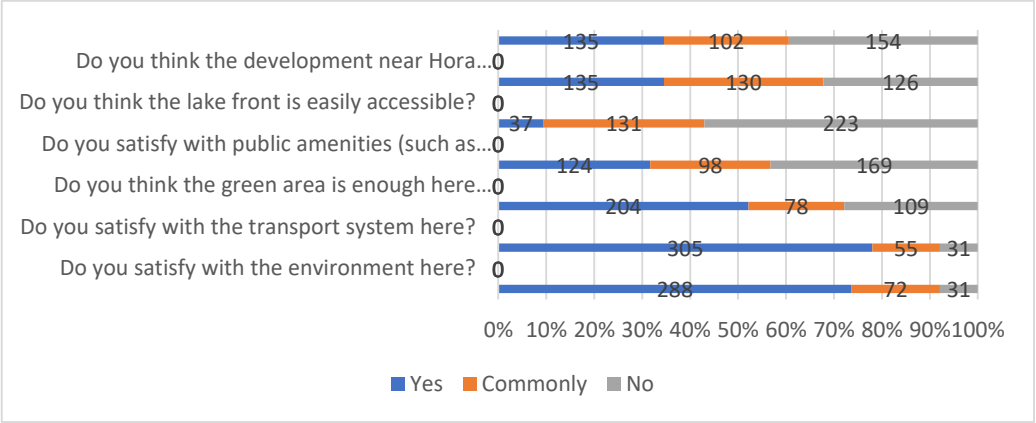
Figure 23: Respondents opinion about the walkway at the time of Irreechaa



Source: Own Survey Data, 2020

As represented on Figure 24 respondent's opinion around sight along Hora Arsadi is 74% (288 person) per respondents likes the sight around Hora Arsadi. In other words, 18% (74 person) per respondent is not enough sight while 8% (31 person) per respondent totally don't like the sight at the waterfront. In addition, 78% (305 person) per respondent and 14% (55 person) per respondent opinion is the environment near Hora Arsadi is not adequate while 8% (31 person) per respondents responds the environment near waterfront is not totally good. Consequently, the site here needs some development near the waterfront which may not change much the sight and environment.

Figure 24: Respondents Perception about Hora Arsadi waterfront



Source: Own Survey Data, 2020

The figure 24 similarly shows the transport system to the waterfront is presented that 52% (204 person) per respondents satisfied to transportation system to the site is good. 20% or 78 respondents notifying the transportation around the lake is not enough or only 28% or 109 respondents are mentioning the transportation system is not good. In addition, 135 of respondents or 35% belief the Hora Arsadi waterfront is easily Accessible while 130 of respondents or 33% belief the site commonly accessible while 126 of respondent or 32% belief the water front is not easily accessible. The figure shows although there is transport system to near waterfront need some adjustment while as per two third of respondent's belief the need of further redevelopment near to make the water front accessible to public.

43% or 169 of respondents' opinion about the greenery near the Hora Arsadi is enough and show the identity of the waterfront. Contrarily 32% or 124 respondents feel the greenery near the waterfront or the Identity near the site is not good as well as 25% or 98 respondents are feeling the greenery and identity near the site not enough. More than half respondent

belief as figure 24 shown, on existing development and natural relief of the site the need for adjustment to enhance the identity of the site and greenery of the site.

Figure 24 of the above also presented 223 of respondents or 57% belief the no public amenities near the site while 131 or 34% of respondent's beliefs there is some public amenities near the waterfront. In other word 37 or 9% of the respondent's belief only common need of public amenities around Hora Arsadi waterfront. The figure above further presented 35% (135 person) of respondent responded the development near Hora Arsadi is Enough for people and safe while Irreechaa festival. However, the development near Hora Arsadi is not Enough for people and not safe while Irreechaa festivals as per 154 or 39% of respondents as well as 26% of respondents, the development near Hora Arsadi is commonly not good for people and not safe while Irreechaa festival. The figure shows more than half of the result shows need for redevelopment as per surveyed data to make the development near Hora Arsadi is good for people and safe while Irreechaa festival.

4.4.Stakeholders Involvement in Decision Making Process of Hora Arsadi

According to one of the interviewees, although no public participatory development before, but now they planned new development near the waterfront for cultural use. Beside this there may be big challenge if no appropriate concern of the identity as city level, society as well as government level on behalf of greeneries and plants planted around the waterfront shall comply the site and sustainable as respondent perception. He enlightened this as "*the people are waiting for government; the government is waiting for people."* The respondent criticizes about the private and public sectors those were using along the waterfront with proper handling and use of the waterbody while flourishing economically they didn't consider the identity as they were closed the accessibility and publicness of the waterbody. Moreover, different small association and youth association were organized before for running business around the Hora Arsadi. But as discussed under literature review there are a variety of stakeholders involved in the waterfront development process, playing different roles. They include provincial, regional, and local governments, as well as local residents, recreationists, and environmentalists (Yarnell, 1999).

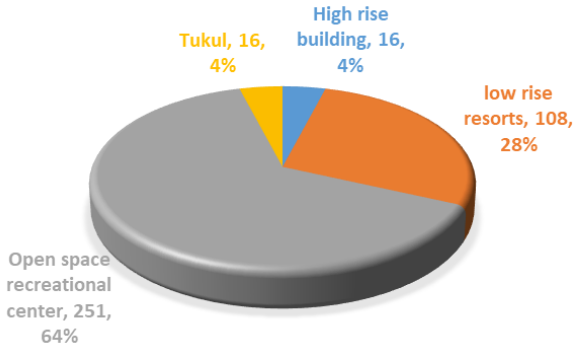
Moreover, there are different stakeholders in decision making process like Abbaa Gadaa as they are the owners of the Irreechaa festivals and they expect development needed from municipality ought to be constructed for the time of Irreechaa ceremony as Interviewers. The municipality discuss with Abbaa Gadaa what they proposed to develop along Hora Arsadi.

According to the one of the interviewee the role of traditional leaders, he responded that the group of the Abbaa Gadaa are the owner of the festive site. Thus, they participate in decision making and suitability of development proposed. The relationship between community groups and government agencies clearly involves a multi-directional process of interaction and understanding. Nevertheless, since some office are federal governmental institution there was some problem while implementation as per the other area. He also mentioned although no public participatory development before, but now they planned new development near the waterfront for cultural use and different stakeholders including *Abbaa Gadaa*-traditional leader are participating on design and implementation. But during the planning and design process, the role of government is critical for success (Craig-Smith, 1995) and as (Hoyle 2000) in a waterfront development context where "top-down" approaches are prevalent.

4.5. Planning and Design Solution required for Hora Arsadi cultural waterfront landscape to Generate Cultural Activities

From previous sections and interviewees noticed that the waterfront may face big challenge if no proper land use with clear identity in addition to clear buffer zone is not planned. Based on different scholars discussed under literature review Land use planning is an important tool to guide development and to bring social, economic and environmental development. But, waterfront development varies based on characteristics of site and cities (Dong, 2004). As cliff (2003) advises it is dangerous to try to transfer design concepts that worked at one place or time or one culture to a different place and culture through time. Based on identified characteristics and identified problems planning and design responses needed are analyzed as follows.

Figure 25: Opinions respondents' future development to be along Hora Arsadi



Source: Own Survey Data, 2020

Development Preference as respondents in figure 25 above, out of the total respondents 64% preferred that the kind of development along the lake should be well if the land is allocated for open recreational centers. The second digit 28% is those who gave their opinion about the lakeside development to be low rise building like resorts and other reflecting cultural use have importance for ecotourism of the city. Contrary 4% preferred the kind of development to be is high rise and 4% tukul building reflecting the cultural identity of the city for tourism and other. From graphical analysis figure above the study find out that the current land allocation for high raising building is not supported by the since they gave their opinions and preferences as evaluated above.

Furthermore, according to one of the interviewee response about the sustainability the cultural landscape development and trust publicness by proper land use planning and design with appropriate buffer zoning with physical characteristics of the study area which can accommodate the development of cultural related buildings such as horse ride, museum, guest house, cultural restaurant, weeding place, library cultural cloth retail buildings and well-designed landscape with development needed for performing proper Irreechaa ceremony. Lastly, he also recommended esplanade should have designed so that every celebrator of Irreechaa ceremony shall turn to the right (Afaan oromoo word "Mirgaan Galuu") after thanks giving along waterside which have equivalent meaning to trust Supernatural being good ambition or good chance. This shows that since the site is ritual site characterized different cultural use with functional characteristics of water used for drinking for cattle and as discussed under literature review directly applying western waterfront trend is dangerous for Hora Arsadi. Consequently, as stated under literature review part culture play a vital role in successful implementation of SDG 2030 agenda (UCLG, 2018) since the different waterfront cultural landscape sites differ in characteristics adopting the cultural characteristics of the study area can enhance design and planning response. Therefore, design and planning solution required shall base on waterfront landscape principles integrated with the characteristics of the study area to generate cultural activities.

4.5. Major Findings, Results and Discussion

4.5.1 Major Findings from the analysis

The research found out that:

Although the site is not well planned the residence use the site because of the site is cultural, waterfront and have good sight. The kind of developments that exist now are somewhat supported by the residents but one from two interviewers did not agree particularly the projects encroachment to Hora Arsadi and closing of public access. Hora Arsadi Cultural landscape is waterfront that interconnect suburbs and urban centers in function; thus consideration should be given especially to cattle while planning and design. Existing development and natural relief of the site need adjustment to enhance the identity of the site and design for greenery of the site as per respondents, spatial Analysis. The walkway was not properly constructed specially at the time of Irreechaa festival, two third of respondent's belief the need of further redevelopment along waterfront to make the water front accessible for public. Most land allocation was done through negotiation and some by previous regimes of federal governmental officials with no policies, standards and guidelines set by the city administration particularly from the access perspective along the waterfront for public as the interviewers. According to the survey, recreational facilities like green areas or parks, library, cinema, plaza, etc.

The access /walkway/ towards and along the waterfront is blocked at different points along the Horaa the integration of waterfront to city is needed. As the site is used for cultural ritual place it gets emphasis from municipality and they are about to define the buffer zone and to start development near the waterfront which may enhance the identity of the site as per two interviews. No planned as well as existing parking area for car near Hora Arsadi at the time of Irreechaa festival and every person will walk long distance. As per one of interviewers on the development of Hora Arsadi Government is waiting for people and people are waiting for government. Dilapidation-urban center decay; Poor development of Mixed use, service buildings and residence units; Low density and horizontal development. Poor road networks, roundabout and street scape design problems and dead-end road. Finally, no proper use of Natural terrain, land allocation and design for cattle which use of waterfront as per found from analysis.

4.5.2. Findings against Research Questions

What are the functional characteristics of the physical forms of the Hora Arsadi waterfront create a more culturally sustainable landscape?

Content of waterfront development varies greatly with respect to the characteristics of sites and cities; many waterfronts are rich in resources of historical and cultural significance (Dong 2004). Hora Arsadi is one of waterfront found at the center of Bishoftu city with this type of characteristics. The waterfront landscape is the place where large group of people celebrate Irreecha annually. The functional cultural characteristics of the waterfront make the site to get emphasize nowadays. The proximity of the site, the presence of water and the character of the festivity and transportation near by the waterfront in particular add to the opportunity for new plan and development study in the area. But without the natural characteristics of the site, the waterfront didn't get much attention towards making culturally sustainable environment in previous administrations. But this does not mean the waterfront have no functional character of physical forms in attracting tourists and other residents in the city. Tree planted near the crater lake like "Odaa" have functional characteristics in addition to the identity of the site. Odaa is a tree where Gadaa Assembly and *muuda,* institution maintained the moral unity of the Oromo as Mekuria Bulcha (2015), is executed underneath in addition to the function as other any big plants.

Dear & Wolch (1989) identified that social relations can be constituted through space where site characteristics influence settlement form, constrained by space where the physical environment facilitated or obstructs human activity, mediated by space where the friction-of-distance facilitates or inhibits the development of various practices as discussed before in literature review. The another functional character of the site is that it is one of Horaa, the crater lakes in Bishoftu city, that cattle and people can proximate to the waterbodies relatively. This gave opportunity to be a place for the ceremony for Irreecha festival and a waterbodies interconnect suburbs to urban. Furthermore, this turn the attentions of local government, urban designers and planners as well as other stakeholders towards making the site culturally sustainable site.

What are factors contributing for the design of sustainable Landscape in the study area?

Land policy is not expected to be quite similar throughout the world. Previous land allocation along Hora Arsadi gave the chance of the waterfront to be blocked and not accessible. As

Akker (2005) reviewed in the literature, public spaces should be open to all, accessible to or shared by all members of the community. As discussed in the literature part, the theory additionally qualifies that public spaces should have a quality of visibility and easily identifiable. Based on principles of waterfront development discussed in literature review, Waterfronts are part of the existing urban fabric which means new waterfronts should be conceived as an integral part of the existing city and contribute to its vitality (Pekin ,2008). But most of the current development patterns blocks the accessibility of the waterfront at different places.

Beside this is Public access is a prerequisite as per principles of waterfront development principles which many local respondents agreed in this study. Waterfronts should be both physically and visually accessible for locals and tourists of all ages and income. Public spaces should construct in high quality to allow intensive use as it was discussed in literature part. Public spaces have many advantages for the community as a whole and for individuals in particular to get relief from work, to feel sense of freedom to entertain with peer group etc. Having an access for public spaces and natural resource is therefore not questionable.

Getting an access should not be through searching of the resource rather it should be readable and easily acquired with respect to time and affordable costs. Since the Hora Arsadi is located at center of the city keeping equal access for this natural resource as a public space on the crater lake should not be controversial. According to the data collected from the interviewers as well as respondents of the selected sample, analyzed in the field findings part, public spaces like waterside in Hora Arsadi currently are not easily accessible due to directly allocated for private and governmental institution. However, since private and governmental institutions are closing the access as indicated in the analysis part, the municipality is trying to reopen the waterfront by paying back compensation to investors as per interviewers in this study discussed in analysis part.

The other thing as per site observation and one of the interviewers the newly constructed auditorium stage around Hora Arsadi even against the intended purpose. Hence, the current patterns of development are directly or indirectly affecting the fate of sustainability of cultural waterfront development as in needs further redevelopment with proper design and plan. As most of respondents' opinion it will be well if the land is allocated for open recreational centers.

In which ways stakeholders are supposed to be involved in the decision-making process in order to share the benefits of Hora Arsadi development?

As discussed under literature review there are a variety of stakeholders involved in the waterfront development process, playing different roles. They include provincial, regional, and local governments, as well as local residents, recreationists, and environmentalists (Yarnell, 1999). As Pekin (2008) identified the principles of waterfront development from September 2000, the International Centre Cities on Water conference, Venice, under the aegis of the United Nations Urban 21 developed for Sustainable Urban Waterfront Development, one of the principles is public participation is an element of sustainability. Accordingly, cities should benefit from sustainable waterfront development not only in ecological and economical terms but also socially. Furthermore, based on one of interviewer discussed under analysis part, the government is waiting for people and people also waiting for government to develop Hora Arsadi. This indicates it is expected from governmental official participation of public as the people are waiting for start from government officials to develop the Hora Arsadi.

Moreover, there are different stakeholders in decision making process like Abbaa Gadaa as they are the owners of the Irreechaa festivals and they expect development needed from municipality ought to be constructed for the time of Irreechaa ceremony as Interviewers. Beside this the municipality will discuss with Abbaa Gadaa what they proposed to develop along Hora Arsadi. The relationship between community groups and government agencies clearly involves a multi-directional process of interaction and understanding. But during the planning and design process, the role of government is critical for success (Craig-Smith, 1995) and as (Hoyle 2000) in a waterfront development context where "top-down" approaches are prevalent.

As discussed in empirical literature review, genuine public participation is mainly advised at different level to address equitability for the natural resource and the blocked public spaces should be opened (Jantirar,2012). As a result, cities should benefit from sustainable waterfront development not only in ecological and economical terms but also socially as discussed above and from interviews response the Bishoftu city, Oromia region and in turn the country will get benefit from ecotourism of the cultural waterfront landscape and while Irreechaa festival since people celebrate at the site in mass.

What urban planning and design solution required regarding the functional composition of built environment interfaces for generating cultural activities?

Land use planning is an important tool to guide development and to bring social, economic and environmental development. As discussed under literature review waterfront development varies based on characteristics of site and cities (Dong, 2004). Secure the quality of water and the environment is the first principles of waterfront development. The quality of water in the system of streams, rivers, canals, lakes, bays and the sea are a prerequisite for all waterfront developments. The municipalities are responsible for the sustainable recovery of derelict banks and contaminated water (Pekin,2008).

As identified under empirical reviews of Bahir Dar waterfront development from Jantirar (2012), 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 major environmental problem. As respondent opinion in this study, there need to improve the Hora Arsadi without further changing image of the site. As Pekin (2008) marked principles of Waterfront development, principles eight and nine are: waterfronts are long-term projects and Revitalization is an ongoing process. Which means the redevelopment of waterfronts is a highly complex task that involves professionals of many disciplines and Waterfronts need to be redeveloped step by step so the entire city can benefit from their potentials as discussed before. According to those principles all master planning must be based on the detailed analysis of the principle functions and meanings of the waterfront concerned.

Therefore, literatures reviews, empirical review, spatial analysis and respondents as per analysis indicated the need of redevelopment considering different functional characteristics and environmental impacts since the site was waterfront based on identified problems, terrain type, functional requirement and composition. In general, the built environment and forthcoming developments need attention of urban designer and planner for generating sustainable cultural landscape.

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATION

5.1.Conclusion

Bishoftu is one of the currently rapidly growing cities in Ethiopia and Oromia region. Its growth made the demand of land to grow simultaneously. The increment of demands for land in the Bishoftu city is mainly associated with its proximity to country capital and advantage for tourism and recreation. The presence of crater lakes natural and manmade resources attracts local and foreign tourist. Beside this Hora Arsadi, one of the crater lakes or the three Hora at where Irreechaa celebrated national wide in mass annually gave another advantage for attract celebrators and tourist. Following the increment of celebrators and tourists from time to time the local government of Bishoftu city has a responsibility to accommodate the interests of guests who come to visit and celebrate in the city.

Along Hora Arsadi waterfront some Land allocation in was done by the federal government to governmental institution in previous regimes. Hence, most of the waterfront land is by now fenced up by those governmental institutions. Moreover, the public spaces along waterfront and waterside of the allocated land blocked and not easily accessible. Besides based on the principles of sustainable waterfront development the city administration did not develop policies and standards for waterfront development and other block size and parcel size standards yet, rather the land was allocated only for social services and recreational.

As the site get emphasize the municipality constructed some development and is now about trying to create accesses for public and construct waterfront development that may show the identity and show image of the place with respect to as a site is a ritual place. However, some development was against intended purpose while some was desirable. The existing auditorium developed at the back of the place where Irreechaa celebrated and it was blocking the access road while some trees like Odaa planted was suitable and show the identity of the place and environmentally friendly but need some development to treat leaves falling into lake. The walkway as a public space has various problems due to different factors affecting it and not based on standards of Irreechaa ceremonial. These are: open ditches are not safe as people cannot easily observe while walking in mass thus can be fall inside, after thanksgiving people ought to turn to right hand in another road to minimize crowded and show good chance, the walkway was nor well defined, lack of connectivity and integration at different places and to the main street, lack of solid waste management, etc. are the challenges which was not considered by the city administration on the walkway.

Although the city administration concerned about the waterfront development in the city and plan to develop Hora Arsadi cultural landscape in order to enhance the imigeablity of the site, the clear land use plan and detail plan of the area are not based on policy and strategy.

Consequently, the land allocation along Hora Arsadi is not addressing the issue of cultural use, did not allow comfortable access for all and the city administration does not yet clearly delineate the waterfront buffer zone, the existing development was against the purpose intended and did not magnify the identity of the site so that redevelopment of the waterfront is needed.

Based on findings and principles of waterfront development found from different scholars I proposed the possible design suitable for the site so that the waterfront landscape become a more enjoyable urban cultural landscape environment at Hora Arsadi for local city life, celebrator as well as a means of attracting tourist. The concept behind the proposed design was based on cultural norms and standards of the Irreecha festivals which enhance the safety and identity of the site.

In general, the proposed design along the waterside create sustainable cultural waterfront landscape and attract tourists and celebrators of Irreecha ceremony so that it has a great role in means of income generate for the city, region and the country.

5.2.Recommendation

The findings of this study reveals that the land allocation is not based on principles of waterfront development and the public spaces found along Hora Arsadi waterfront are not properly managed, not well connected to the nearest main street, lack of sanitation, not easily accessible, etc. The waterside is blocked by the private and governmental institution and they don’t allow the public in their compound to pass towards the waterside.

It is advisable for city administration prepare policy and guidelines for waterfront development and to enter immediately to work as they plan to prepare waterfront ritual place plan before further developments are implemented by private and governmental institution. Prepare structural plan alone is not enough unless proper implementation strategies are set. As the study identified the problem along Hora Arsadi is not availability of structural plan rather it lacks land use plan as per principles of waterfront development. Hence the city administration should revise the plan, protect and monitor how policy, guidelines, strategies and plan is prepared and implemented.

Genuine public participation and other stakeholders is required especially sensitive issues like allocating Hora Arsadi waterfront land before any decision is conducted by the local government. Therefore, The Municipality and the city administration should make discussions with the whole residents, Aba Gadaa or with their representatives before any land allocation and development activity has been done.

The city administrator should develop implementation policies, rules and regulations especially building height block size, and building facade to guide the development interests along Hora Arsadi and strategies should be outlined to monitor and evaluate implementations of the rules and regulations. The municipality of the city should redesign the walkway, esplanade and roads so that widen it to accommodate more people at a time Irreecha and to allow accessibility for all. Beside this as proposed on this study design and development of auditorium near the waterfront enhance the celebrity and safeguard the sustainable cultural landscape. Therefore, while designing and development of this type auditorium the municipality should consider the terrain type as opportunity and cost effective. Since vegetation around hora arsadi is not well planned the city administration should select the vegetation type, consider environmental impact of the site, prepare protections.

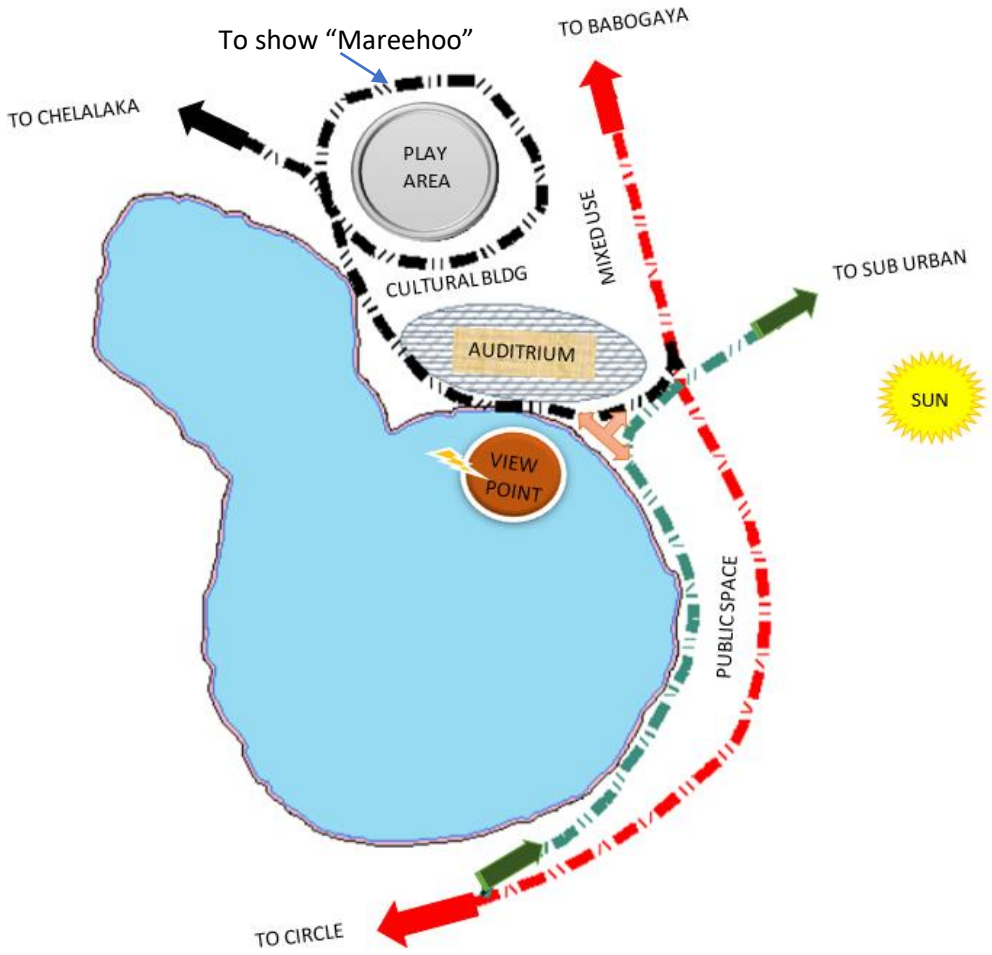
In general, I recommend the city administrations and different stakeholders should participate to create a more enjoyable urban cultural landscape environment at Hora Arsadi for local city life, celebrator as well as a means of attracting tourist based on prepared design proposal.

5.3.Design Proposals

5.3.1. Conceptual Development

Based on the findings of this study the design is proposed as follows. The concept of this proposal is intensifying standards for Irreechaa ceremony Which is known as in Afaan Oromoo, "***Mirgaan Nugalchi",*** *equivalent to let we back to home right hand after thanks giving, to show good chance,* integrate with ***"Mareehoo"*** meaning *Irreechaa comes again and again in cycle or sequence*. This shows after Irreechaa celebration every person ought to back to home turning to right after ceremony or thanks giving. This concept leads to opening waterfront so that every person expected to turn to right and use road with options after celebration which enhancing publicness and Integrity through designing along the waterfront with suitable amenities composed of pedestrian responsive designing esplanade and waterfront public spaces with enhancing celebrity.

Figure 26: Concept map of the study area



Source: Author, 2020

5.3.2. Main program of design proposal

The program of the design proposal are integration of the Arsadi Lake with its surrounding Bishoftu city; Upgrading the identity of the waterfront by proposing auditorium, gallery, buildings for cultural use (cultural retail, cultural restaurant), playground, Art gallery and display area, parking area for bicylcle users and car users, additional walkway to right side of the site, children playing area, and interlocking each access to each other and the main street.

Widening the existing walkway along the waterfront and designing public amenities along the waterbody for public. Beside this made the accessable and visible from main street. Creating existing public spaces attractive and further accesses towards the waterfront based on analysis on this study with urban design and planning standards.

Revitalizing the public places and waterfront blocked by governmental institutions and the private investors and creating additional public spaces. Proposing the accesses proposed towards the watefront to reinforce visual contact of the public on the way to the Hora Arsadi. Furthermore, make environmentaly friendly greenary the road midians and near the street towards the waterfront and the pedestrian rest area. Designing an access for physically disabled persons and designing separate lane for bicycle users proposing dust bin and mobile toilet. Finally, designing urban and County interconnection.i.e. Marriage between urban and countryside.

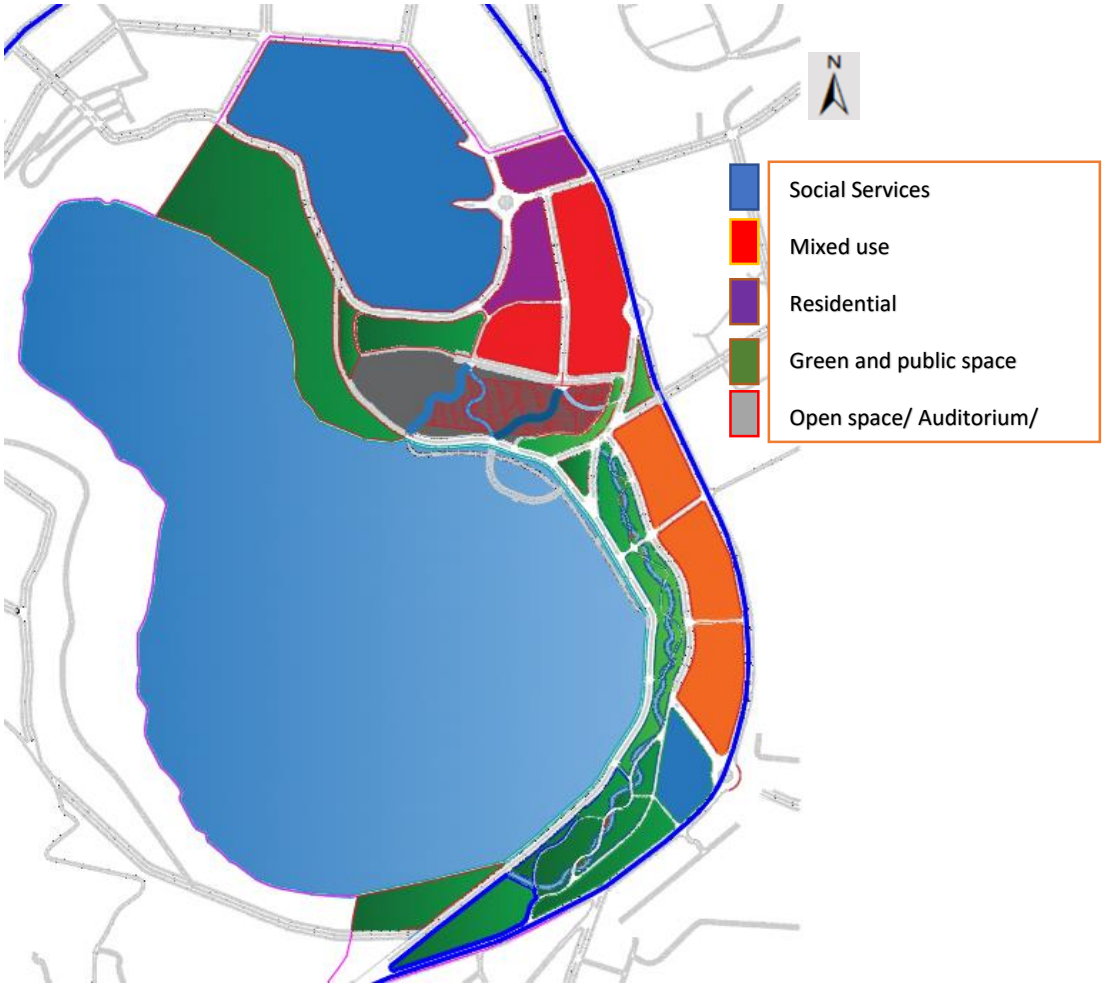
5.3.3. Proposed Land Use

In this proposal significant changes in mixed land use have been made. This is done based on the land use requirements of each component. Among the type of land uses present, mixed use development, open spaces, social services and recreation centers have been shown a remarkable increase in the land use area share because of the type of service intended to be used on the project area.

To increase the recreational activity of the area and to accommodate the annual irrecha and other public holydays, commercial land use and condominium houses have been proposed adequately in order to utilize the commercial ability of the area effectively. The proposal of land use plan is strongly linked with towns structural plans, strategies, policies, development trend of the area, surrounding kebeles Local Development Plans and Integrated

Infrastructure Plan. Therefore, the land use plan should be linked with the surrounding neighborhood existing development trend and future prospect.

Figure 27: Proposed Land Use Map



Source: Author, 2020

Table 5: Proposed Land Use by Type and Area (hectare)

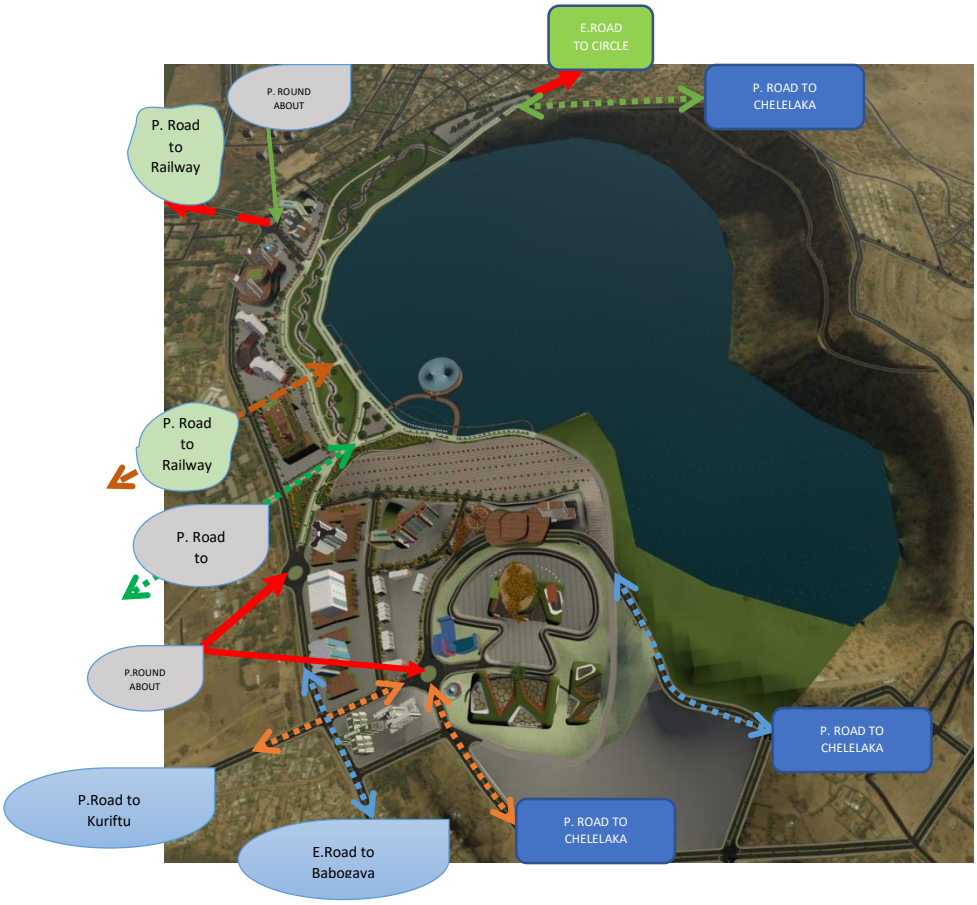
No_	Land use type	Area (hec.)	Percent
1	Green and public spaces	5.8	44.6
2	Mixed use	1.6	12.3
3	High density mixed residence	0.4	3.1
4	Social Services	1.3	10
5	Roads	**3.9**	30
Total		**13**	**100.0**

Source: Author, 2020

5.3.4. Proposed road network

Issues considered in proposing road network are: Linkage, Traffic Flow, Linear Expansion, Topography, Densification of uses and activities, Traffic Flow from Nearby neighborhoods, Through Traffic, Permeability and Accessibility, Junctions, Parking Facilities and Hierarchal Integration. Two approaches used are Approaches Used are new Provision and Up grading approaches.New provision (road and parking) are: Bicycle Lane, Collector Streets which adjust street hierarchy,Parking (off street Parking (both on ground and vertical parking) and basement Parking) whileUpgrading Surface material treatment, Realignment of Width and Spacing, Improving utility Lines, On street Parking, Pedestrian Walk way, Street Plantation along Pedestrian Walk way.

Figure 28: proposed road network (edited using Autodesk Infraworks 2021 version)



Source: Author, 2020

5.3.5. Proposed Morphology

The morphology of the study area is proposed to bring a proportional built up area with solid void ratio (25% and 75%) and characterized by irregular geometry of blocks by creating enclosure space in the inner part of buildings. The computed solid void ratio doesn't consider

setbacks and redline spaces of 60% built up area which enhance the solid void ratio to 10% and 90%.

Figure 29: Proposed morphology of the study area

Source: Author, 2020

Table 6: Proposed solid void ratio

No	SOLID -VOID	Area (Hec.)	Percent
1	Solid	3.3	25%
2	Void	9.7	75%
Total		**13**	**100.0**

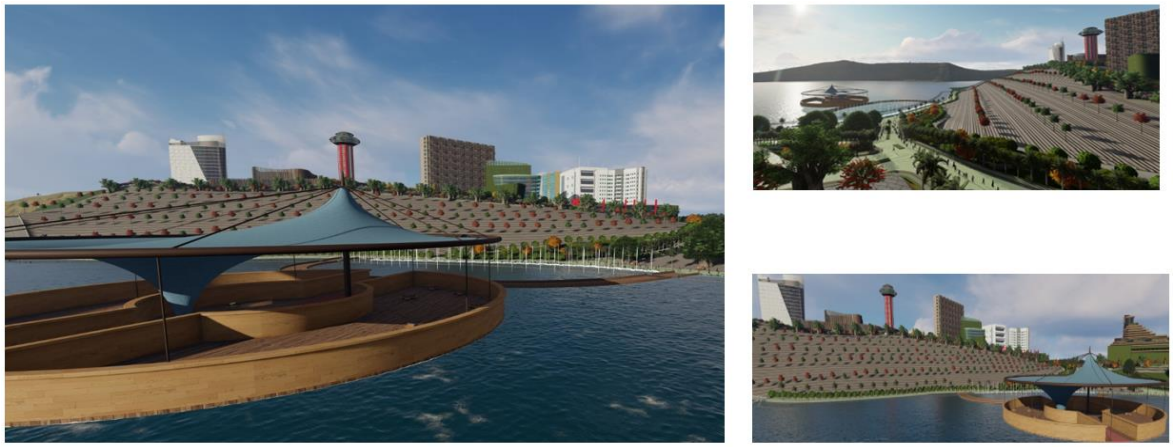
Source: Author, 2020

5.3.6. Different Detail design

A. Auditrium and Multipurpose stage

At the time of irreechaa festival, while Abbaa Gadaa open the ceremony the rest of people expected to visit him and they will take blessing from Abbaa Gadaa and Giving thanks for almighty God. Therefore, the need of stage and audtrium which will not disturb the terrain and physical characteristics of the site. Based on this the proposed stage has different purpose except at the time of irreecha like as recreational area, tourist distination and as boating station. Beside this the audtrium will be the place where people sit and enjoy near the lake.

Figure 30: Auditorium and multipurpose Stage



Source: Author, 2020

B. Cultural Art Gallery And Diplay Buildings

After people celebrate the irreechaa festival some tourist and people expected to visit cultural art and other related materials. Hence cultural deisplay places and buildings are proposed for these type of purpose**.** This place used for public plaza, library, cinema, public cafterias museum, etc.

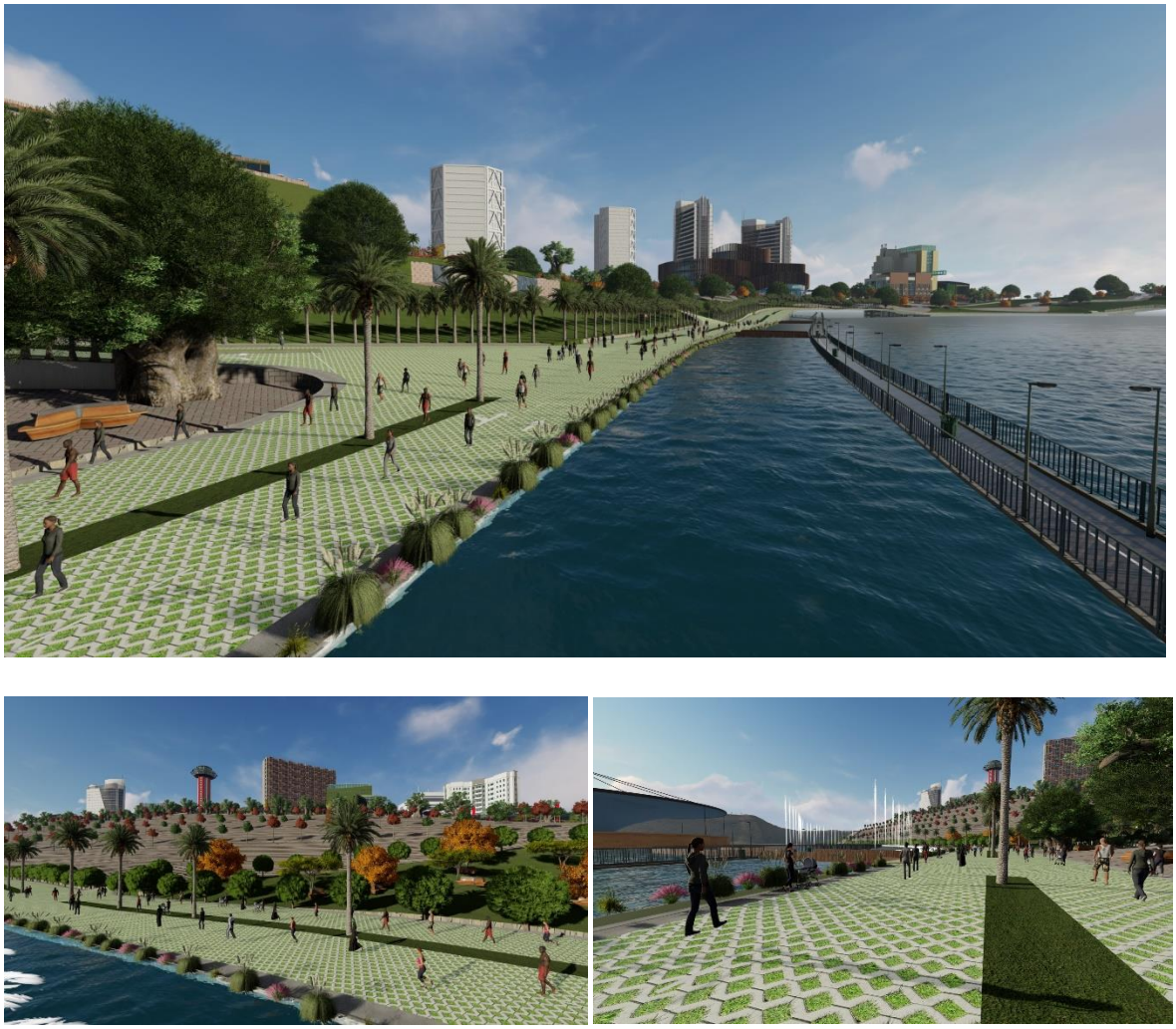
Figure 31: Cultural art gallery and display

Source: Author, 2020

C. Esplanade, walkway along waterfront.

Esplane are the fresh place were people breath near the water. Therefore, wide waterside have many purposes in this proposed design. These are: is a place where celebrate Irreechaa ceremony, a place where people walk and a place where cattle drink the Hora. Therefore, the proposed waterside walkway is designed considering these purposes. The road material is permeable lattice type of material comfortable for people and another animals so that structurally stable to sustain motor free vehicles, considered disabled person and people in any age as shown in figure 33.

Figure 32: Esplanade, walkway along waterside and in front of auditorium.



Source: Author, 2020

D. Public Space And Amenities

The proposed design public spaces are designed integrated with other landuse of the action area. Beside the open spaces the proposed building is expected to have public spaces permeable and interconnected. Since based on principles of waterfront development public spaces are prerequisite, waterfront are opened for public at any time. For those places public amenities are considered so that people enjoy along the waterfront at all events.

Figure 33: Public place and Amenities

Source: Author, 2020

E. Permeable mixed use building along waterfront.

As discussed on literature review part, principles of waterfront development mixed use is a priority (Pekin, 2008). Waterfronts should celebrate the water by offering a diversity of cultural, commercial and housing uses. Those that require access to water should have priority. Housing neighborhoods should be mixed both functionally and socially. Based on this principle the both horizontal and vertical permeable mixed use building is proposed.

Figure 34: Permeable mixed use building along waterfront

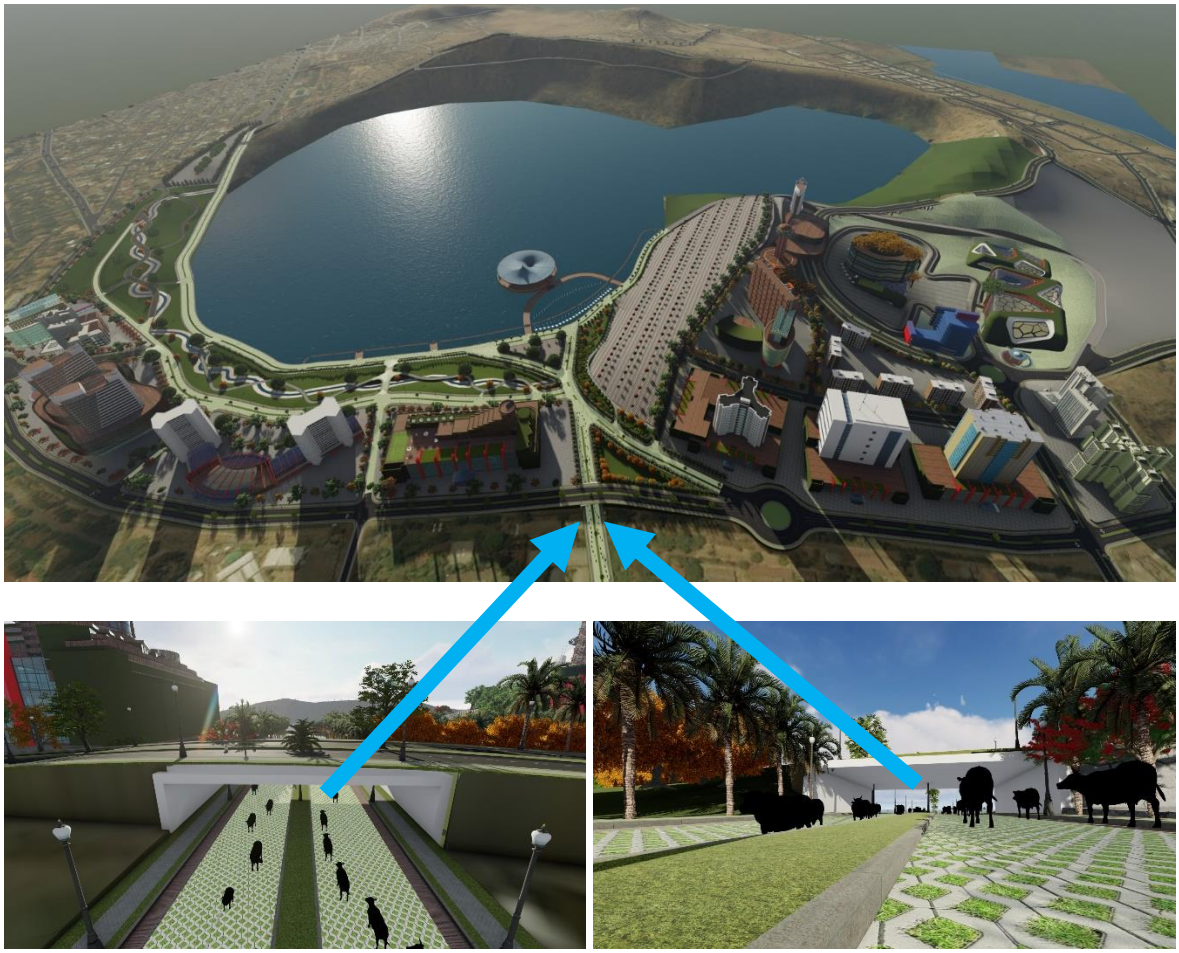
Source: Author, 2020

F. Multi purpose road

As discussed in previous chapter, Hora Arsadi's function is not only for irreechaa ritual purpose but also the water is healing for cattles. Cattles drink the Hora atleast once annually. Therefore, linking those animals to Hora is necessary. Based on this functional unit, multipurpose proposed road is designed to interconnect the county to Hora is a marriage between urban centre and suburbs so that creating sustainable landscape using under pass culvert at existing main enterance of Hora Arsadi as shown on figure 35 below.

The proposed road is designed and expected structurally safe and also can be used at the time of irreecha as walkway and another time for other necessary purpose. The pavement material for this kind of road is permeable lattice road and it will not be guest for animals and have important role in balancing the underground water since the water penetrate the road surface without affecting the pavement.

Figure 35: Multipurpose road to Hora Arsadi: for cattle and people.



Source: Author, 2020

G. Vegetable type

As a result, the proposed design recommends to develop Open space and greenery at every interior part of blocks, road medians, public spaces at the frontage of every building blocks, at the top of buildings as much as possible etc. Street plantation along in both side pedestrian walkway and median plantations are selected based on considerations of appropriate plant species in their ornamental, foliage, shade and Aesthetic value and keeping standard spacing between plants. Furthermore, the proposal has recommended to use a vertically developed forests on top of building parts and hanging crawling type of plants on sides of walls to achieve a maximum ration of green space area and to decrease a greenhouse gas effects. In addition to Odaa plant, plant species recommended are Senegal Date Palm, Acacia, Flame tree (DireDawa zaf), etc. are among them. Beside this some plants may be a food for organisms in water, therefore, it is better to conserve them and select proper plants.

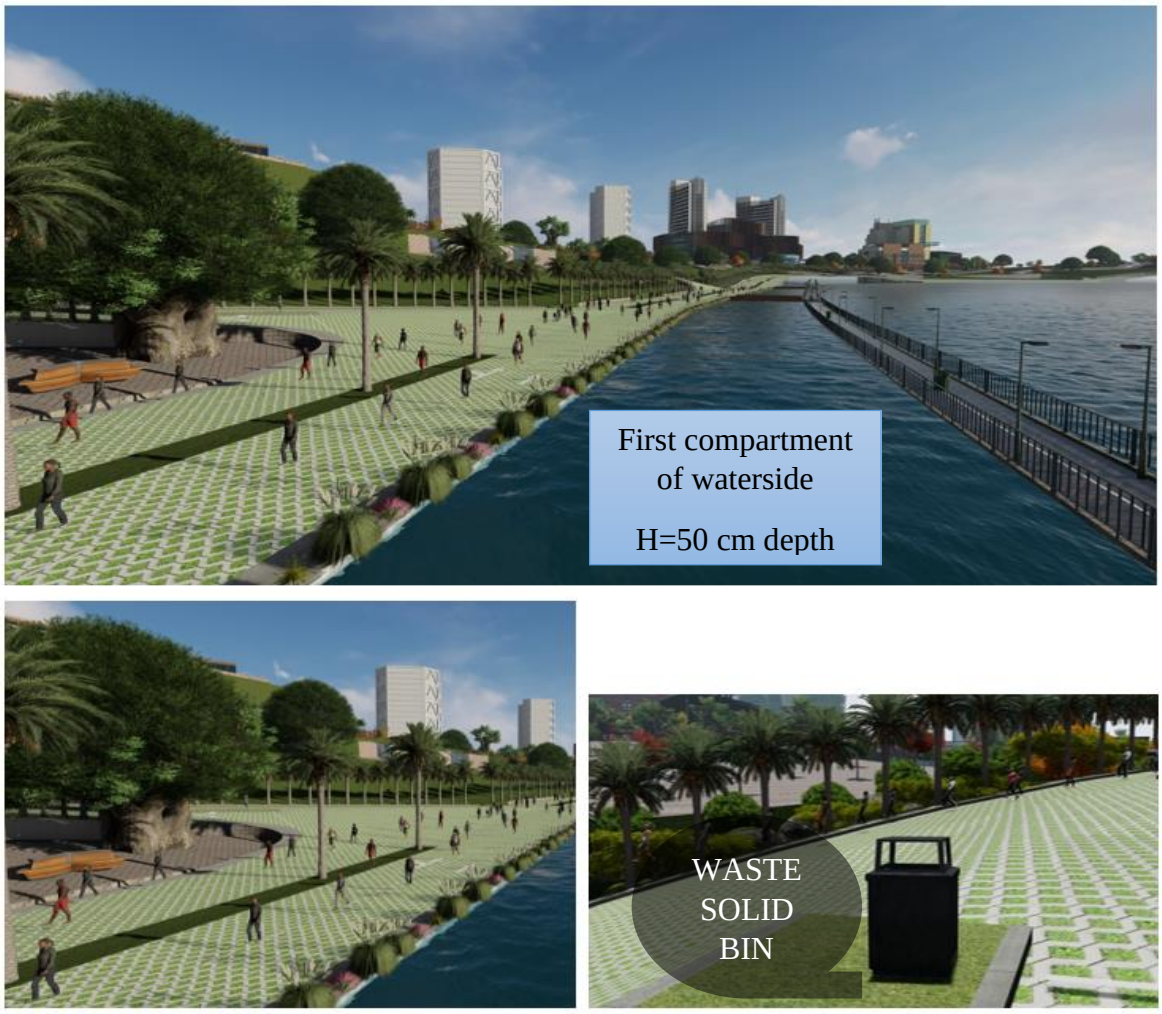
Figure 36: Vegetation along the waterfront

Source: Author, 2020

H. Waste solid management

Under proposed design waste solid management is design so that waste basket placed at different places in order to collect the solid waste. In addition to this while irreechaa ceremony there is grasses used for thanksgiving by putting in the hora and left decayed inside. Therefore, the proposed design will solve this type of waste by screening in first compartment of waterside since the along waterside near the proposed stage the first compartment water part is shallow and cleanable. Furthermore, the grasses shown on figure 37 below along waterside can screen solid waste.

Figure 37: Waterside plants and solid waste management



Source: Author, 2020

REFERENCES

Adair, A.S. et el (1999): Evaluation of investor behavior in urban regeneration. *Urban Studies*, 36 (12), 2031-2045.

Akker, M. (2005): Questioning the "Publicness" of Public Spaces in Postindustrial Cities Newcastle, England. Higher Education Council (HEC) of Turkey and University of Newcastle.

Akköse, A. C. (2007): The Analysis of Istinye Shipyard Area Within the Context of Redevelopment of Urban Waterfront Areas. Master Thesis, Istanbul Technical University, Institute of Science and Technology, 131 p., İstanbul.

Anismos T., (2013): The Impact of Unplanned Urban Waterfront Development On Lake Hawassa, Ethiopia. MSc Thesis Addis Ababa University.

Blanco, H., et el (2009): Hot, congested, crowded and diverse: Emerging research agendas in planning. *Progress in Planning,* 71(4), 153-205. https://doi.org/10.1016/j.progress.2009.03.001

Breen, A. & Rigby, D. (1994): Waterfronts: Cities Reclaim Their Edge, New York, McGraw-Hill Inc.

Breen, A. & Rigby, D. (1996): The New Waterfront: A worldwide urban success story, London, Thames and Hudson.

Butuner, B. (2006): *Waterfront revitalization as a challenging urban issue, 42nd ISoCaRP Congress*. Retrieved from http://www.isocarp.net/Data/case_studies/792.pdf

Câmara et al. (2001): Introdução à Ciência da Geoinformação. São José dos Campos, INPE, (www.dpi.inpe.br/gilberto/livro).

Campo, D. (2002): Brooklyn's Vernacular Waterfront. *Journal of Urban Design.* 7(2), 171-199.

Cappiella K. and Schueler T., (2001): Crafting a Lake Protection Ordinance. *Water Protection Techniques* 3(4): 751-768.

Cappiella, T. and Schueler, K. (2000): Crafting a Lake Protection Ordinance. Lakeside management. America. Unpublished material.

Carmona M., et el (2003): Public Places – Urban Spaces: The Dimensions of Urban Design. Oxford: Architecture press.

Carmona, M. *et al (2004): Living Places*: caring for quality. Office of the Deputy Prime Minister, London Lynch, K. (1960), The Image of the City, MIT Press, Cambridge, Mass.

Carmona, M., et el (2011): Public Places-Urban Spaces: the dimensions of urban design, Routledge.

Cavanagh, S., (1998): Women and the urban environment in Greed C and Roberts M, (1998) (editors) *Introducing Urban Design*: Interventions and Responses, Longman, Harlow.

CE. (2000): *European landscape convention*. Retrieved from: http://www.heritagecouncil.ie/fileadmin/userupload/Publications/Landscape/European_Landscape.pdf.

Cliff, M. (2003): *Urban Design: Streets and Squares*. Oxford: Architectural Press.

Cook, A., et el (2001): Port and City Relations; San Francisco and Boston. In: MARSHALL, R. (ed.) *Waterfronts in Post-Industrial Cities.* London: Taylor & Francis Group.

Craig-Smith, S. J., (1995): The importance and problems of city waterside regions. In Craig-Smith, S. J. & Fagence, M. (eds.), Recreation and Tourism as a Catalyst for Urban Waterfront Redevelopment (pp.117-126). *Westport: Praeger.*

Creswell, J. W., (2011): Research Design: Qualitative, Quantitative, and Methods Approach. Thousand Oaks: SAGE Publications.

Cushman, S. A., et el (2006): Gene flow in complex landscapes: Testing multiple hypotheses with causal modeling. *Amer. Nat.* 168 486–499

Dahmann, N., et el (2010): The active city? Disparities in provision of urban public recreation resources. *Health and Place,* 16(3), 431–445.

De Blij, H. J. (1977): *Human Geography*: Culture, Society, and Space, New York: John Wiley & Sons.

Dear, M. and Walch, J. (1 989): How territory shapes social life, in Walch, J. and Dear, M. (eds) (1 989), *The Power of Geography*: How territory shapes social life, Unwin Hyman, Boston.

Donald W., et el (2003): Time-Saver Standards for Urban Design by The McGraw-Hill Companies, Inc.

Dong, L. (2004): Waterfront development: A case study of Dalian. (Master Thesis, University of Waterloo. Ontario, Canada).

Durand, E., et el (2009): Spatial inference of admixture proportions and secondary contact zones. *Mol. Biol. Evol*. 26 1963–1973.

Durrheim, K. (2002): Research design. In Terre Blance, M. & Durrheim, K. (2002). Research in practice. Applied methods for the social sciences. UCT Press (Pty) Ltd.

Fogwe, Z.N., (2017): Urban Green Development Planning Opportunities and Challenges in Sub-Saharan Africa: Lessons from Bamenda City, Cameroon, *International Journal of Global Sustainability*, Vol. 1, No.1 Retrieved from: http://doi.org/10.5296/ijgs.v1i1.11440.

Fuller, R. A., & Gaston, K. J. (2009): The scaling of green space coverage in European cities. *Biology Letters*, 5(3), 352–355.

Giovinazzi, O. & Moretti, M. (2010): Port Cities and Urban Waterfront: *Transformations and Opportunities*. TeMALab Journal, Date of Access: 01.02.2013, Available from: www.tema.unina.it ISSN 1970-9870 Vol 3 - SP - March (57 - 64).

Goodwin, R. F. (1999): Redeveloping deteriorated urban waterfronts: the effectiveness of U.S. Coastal Management Programs. Coastal Management, 27, 239-269.

Gordon, D. L. A. (1997b): Managing the changing political environment in urban waterfront redevelopment. *Urban Studies*, 34(1), 61-83.

Gospodina, A. (2001): Urban waterfront redevelopment in Greek cities. Cities, 18(5), 285-295.

Griffith J.A. (2002): Geographic techniques and recent applications of remote sensing to landscape-water quality studies. Water, Air and Soil Pollution, 138, 181 – 197.

Guillot, G., et el. (2005): A spatial statistical model for landscape genetics. *Genetics* 170 1261–1280.

Guo, H. (1998): Research on landscape designing of urban waterfronts. Middle China Architecture, (3), 9-12. (in Chinese)

Hinew, D. (2013): Historical Significances of Odaa with Special Reference to Walaabuu. *Science, Technology and Arts Research Journal*. 1. 81. 10.4314/star.v1i2.98788.

Hoyle, B. S. (1999): Scale and sustainability: the role of community groups in Canadian port-city waterfront change. *Journal of Transport Geography*, 7, 65-78.

Hoyle, B. S. (2000): Confrontation, consultation, cooperation? Community groups and urban change in Canadian port-city waterfronts. *The Canadian Geographer*, 44(3), 228-243.

Hoyle, B. S. (2002): Urban waterfront revitalization in developing countries: the example of Zanzibar's Stone Town. The Geographical Journal, 168, 141-162.

Hussein, H. (2006): Urban recreational riverfronts: Successful revitalization elements. Journal of Design and the Built Environment, 1(2)

Jantirar A., (2012): Land Allocation and the Publicness of Lake Tana Area in Bahir Dar City, Ethiopia. MSc Thesis Addis Ababa University. Unpublished Material

Johnson L., *et al.* (1997): Landscape influences on water chemistry in Midwestern stream ecosystems. *Freshwater Biology*, 37, 193 – 208.

Jones K.B., *et al.* (2001): Predicting nutrient and sediment loadings to streams from landscape metrics: a multiple watershed study from the United States Mid-Atlantic Region. *Landscape Ecology*, 16, 310 – 312.

Juan Huang *et al.* (2013): Evaluation of the Impacts of Land Use on Water Quality: A Case Study in The Chaohu Lake Basin, Beijing, China.

Keating, M., (1991): *Comparative Urban Politics*: Power and the City in the United States, Canada, Britain and France. Aldershot: Edward Elgar.

Keating, M., (1993): The politics of economic development: political change and local development policies in the United States, Britain, and France. *Urban Affairs Quarterly*, 28(3), 373-396.

Knox, P., (1993): Capital, material culture and socio-spatial differentiation, in P. Knox (Ed.) The Restless Urban Landscape, pp. 1-32. New Jersey: Prentice-Hall.

Krausse, G. H. (1995): *Tourism and waterfront renewal*: assessing residential perception in Newport, Rhode Island, USA. Ocean & Coastal Management, 26(3), 179-203.

Krystie B., (2011): Upgrading the city of Bahir Dar, 20 years' sustainable waterfront plan, Canadian Urban institute.

Lynch, K. and Carr, S., (1 979): *Open Space*: Freedom and Control, in Banerjee, T. and Southworth, M., (1991) (eds): City Sense and City Design: Writings and Projects of Kevin Lynch, MIT Press, Cambridge, Mass, pp. 41 3-1 7.

Lynch, K., (1960): The Image of the City, Harvard U.P.; Oxford U.P.

Lynch, K., (1981): Good City Form, MIT Press.

Mann, R.B., (1988): Ten Trends in the Continuing Renaissance of Urban Waterfronts. Landscape and Urban Planning, 16: 177-199.

Martini, V., (2013): The *conservation of historic urban landscapes: An approach: Vol. 1-Urban conservation theories and history of the cities.* (Master Thesis, University of Nova Gorica, Venice).

McRae, B. H., (2006): Isolation by resistance. *Evolution* 60 1551–1561.

Mekuria Bulcha, M. (2013): Oromia's Irreechaa festival - A revival of an ancient African culture: *An Attempt to understand and explain*. Paper presented at the 27th Annual Oromo Studies Association (OSA) Conference, Howard University, Washington D.C., USA.

Milkessa Edae et el. (2017): Hora and Cattle Owners of Maccaa Oromo in Ethiopia: An Analysis from Folkloric Perspective. Jimma University, Ethiopia

Millspaugh, M. L., (2001): Waterfronts as Catalyst for City Renewal In: MARSHALL, R. (ed.) *Waterfronts in Post-Industrial Cities*. London: Taylor & Francis Group.

Morena, M., (2011): Morphological, Technological and Functional Characteristics of Infrastructures as a Vital Sector for The Competitiveness of a Country System. ISBN: 8838760772,195 p., Milano.

Ngoye, E. and Machiwa, J.F., (2004): "The influence of land-use patterns in the Ruvu river watershed on water quality in the river system," Physics and Chemistry of the Earth A, B, C, vol. 29, no. 15–18, pp. 1161–1166, 2004.

Niemann, B. & Werner, T., (2016): *Strategies for the sustainable urban waterfront*. Proceedings of the 11th International Conference on Urban Regeneration and Sustainability.

Faculty of Architecture and Design, Wismar University of Applied Sciences, Germany, 204, 1-23.

Nurisyah, S., (2004): Hydrology Aspects in Site Analysis. *Landscape Architecture IPB*, Bogor.

Oosthuizen, M., (2009): The Victoria and Alfred Waterfront: Evaluating the Public Space University of Stellenbosch Department of Geography and Environmental Studies. Maitland

Patton, C. V. & Witzling, L. P., (1989, July): *Urban design as public policy*: integrating planning, design, programming and fundraising. Paper presented at the 5th International Conference on Making Cities Livable, Venice, Italy.

Pay, D. & Stefan, D., (2010): Dynamics and Sustainability of urban Agriculture example from sub-Saharan Africa.

Pekin, U., (2008): *Urban waterfronts regeneration*, Çankırı Karatekin University, Çankırı, Turkey.

Peterson, P.E., (1981): City Limits. Chicago: University of Chicago Press.

Pressman, J. L., & Wildavsky, A., (1984): *Implementation:* How great expectations in Washington are dashed in Oakland: Or, why it's amazing that federal programs work at all, this being a saga of the economic development administration as told by two sympathetic observers who seek to build morals on a foundation of ruined hopes (3rd ed.). Berkeley, CA: University of California Press.

Randolph, John, (2003): Environmental and use planning and management. Island press, USA. 99,520,549,550,551.

Rössler, M., (2006): World heritage cultural landscapes: A UNESCO flagship programme 1992-2006. *Landscape Research* 31:333-353. http://dx.doi.org/10.1080/01426390601004210

Sauer, Carl O., (1963): "The Morphology of Landscape" in Sauer, C., Land and Life, Berkeley: University of California Press.

Savitch, H.V., (1988): *Post-industrial Cities*: Politics and Planning in New York, London and Paris. Princeton: Princeton University Press.

Serawit Bekele (2019): "Irreecha at Hora Arsadi". In *Locating Politics in Ethiopia's Irreecha Ritual*. Leiden, The Netherlands: Brill. doi: https://doi.org/10.1163/9789004410145_003

Singh, A.S. & Masuku, M.B., (2014): Sampling Techniques & Determination of Sample Size in Applied Statistics Research: An Overview. International Journal of Economics, Commerce and Management, 2(11), 12-14.

Slatkin, M., (1987): Gene flow and the geographic structure of natural populations. *Science* 236 787–792.

Sliva L. and Williams D.D., (2001): Buffer zones versus whole catchment approaches to studying land use impact on river water quality. *Water research*, 35, 3462-3472

Sun, H., (2016): *A research on the design strategy of urban waterfront landscape: A case study of the surrounding cities of south Dongting Lake*. (Master Thesis, Hunan City University, Yiyang Hunan, 413000, China). Retrieved from: https://download.atlantis-press.com/article/25861215.pdf

Taylor, K., (2011): *Cultural landscapes: A bridge between culture and nature*. International Journal of Heritage Studies.

Toronto Waterfront Revitalization Cooperation, (2005): Sustainability Framework,Online. http://www.waterfrontoronto.ca/dbdocs/4a1fe4722fcae.pdf

UCLG., (2018): *Culture in the sustainable development goals*: A guide for local action. Barcelona: UCLG

UNESCO., (1992): *Guidelines on the inscription of specific types of properties on The World Heritage List*. Retrieved from http://whc.unesco.org/archive/opguide05-annex3en.pdf.

United Nations World Commission on Environment and Development, (1987): Our Common Future, Oxford University Press, Oxford,

Van der knaap, G. A. and PINDER, D., (1992): Revitalizing the European waterfront: policy evaluation and planning issues, in B. HOYLE and D. PINDER (Eds) European Port Cities in Transition, pp. 155-182. London: Belhaven Press.

Wagner, P.L. and Mikesell, M. (eds) (1962): *Readings in Cultural Geography*, Chicago, IL: University of Chicago Press.

Watson, J. S., (1986): *Ross's landing*: A river edge park opportunity. Paper presented at the 2nd International Conference on Making Cities Liable, retrieved 10th June, 2008, from www.livablecities.org/documentationsets/15-waterfront-design.

Wrenn, D. M., (1983): *Urban Waterfront Development* (1st Edition). Washington DC: Urban Land Institute.

Wu, Y. & Gao, J., (2002): A discussion of design models of waterfront spatial morphology in urban Centre. Planners, 18(12), 21-25.

Wylie, J., (2007): Landscape, Oxon: *Routledge*.

Yamane, T., (1967): Statistics, *An Introductory Analysis*, 2nd Ed., New York: Harper and Row.

Yamashita, S. et al., (1989): Analyses of residents' consciousness of the river environment from the view-point of their past experiences and social attribute (in Japanese). *Infrastructure Planning Review*, 7, 195-202.

Yang, D., (2006): *Waterfronts: Spatial composition and cultural use*. (Doctoral dissertation, The Bartlett School of Planning, University College London). Retrieved from http://discovery.ucl.ac.uk/1445190/1/U592507.pdf

Yarnell, P., (1999): Port administration and integrated coastal management under the Canada Marine Act in Vancouver, British Columbia, Canada. *Coastal Management*, 27, 343-354.

Yassin, A. Md. et al. (2018): Policy Available and Sustainable Waterfront Development. Volume 16. University Malaya, Malaysia

Yong Y. and Chen W., (2002): "Modeling the relationship between land use and surface water quality," *Journal of Environmental Management*, vol. 66, no. 4, pp. 377–393, 2002.

Zarate, M.A., (2011): *Urban cultural landscapes, between protection and destruction*. Boletín de la Asociación de Geógrafos Españoles, 57, 427-432. Retrieved from https://dialnet.unirioja.es/descarga/articulo/3814237/2.pdf

Zhang, L., (2002): A n evaluation an urban riverfront park, Riverfront park, Spokane, Washington experience an d lessons f or designer., Washington State University, USA.

Appendices

i. Observation /survey check list

1. Identify areas and structures which show identity of the lake with respect to the cultural use and practice.
2. What are point source pollutions?

No.	Type of point source pollution	GPS points		Photo number	Remark
		X	Y		

3. Observe for solid waste management system.
4. Identify water draining sites and its specific use.

No.	Draining pump	GPS points		Photo number	Remark
		X	**Y**		

5. Identifying interesting species

No.	Terrestrial exotic species	Abundance	Remark

6. Delineate wetland using GPS points

No.	Wetland vegetation line or water mark or another indicator code	GPS points		Remark
		X	Y	

7. Buffer zone intrusion and management

7.1.

No.	Type of Land us e intrusions within the buffer	GPS points		Land use type	Remark
		X	**Y**		

7.2. how is general buffer zone management?

Identify waterfront access points their use

No.	Type of access to the lake	GPS points		Remark
		X	Y	

8. What kind of disturbance caused by tourism industry?

ii. INTERVIEW QUESTIONS

Part I Self introduction and introduction of the research topic

Dear Sir, thank you for taking time to do this interview with me. I am a postgraduate student from the Adama Science and Technology University. Now I am doing my master's thesis on the **Redevelopment of Cultural Landscape: Case of 'Hora (Lake) Arsadi' (Bishoftu)**. Waterfront refers to areas on the edge of the downtown area and the sea, lake and river such as the Hora Arsadi, Bishoftu Lake area and the Kuriftu Lake area. Hora Arsadi is chosen as the case of my study. In my study, I will look at formation, physical and functional characteristics of the physical forms of the waterfront create a more culturally sustainable environment**.** *The purpose of this questionnaire is to obtain data for a research project*

Part II document review and Interview Questions prepared for Selected Key Informants (Bishoftu City Administration, Municipal, Land use and Cultural office)

1. Historical background of Hora Arsadi with respect to cultural use?
2. How do you think the relationship between the lake and the Bishoftu city? Benefits of the lake for city and region as well as to the country?
3. What are the property types and measure of the waterfront land use? Is it private or? public?
4. How do you see the existing urban identity of Hora Arsadi? Is it a lake with a distinctive character and image or a lake with unclear identity?
5. The future of the lake and the waterfront is facing big challenges regarding its identity and landscape transformation? How do you see that future? In your opinion what is the best way to balance between the contradicting desires of the private and the public sectors and achieving a flourishing economy while maintaining strong identity?
6. Which associations are there currently registered and get in to business?

    - Fisheries/ Hotel tourism/Youth association working along the lake side/Boating associations
    - other_____

7. Fetch master plans and LDPs that the city has towards cultural waterfront landscape?
8. Evaluate the concern given to waterfront development and environmental sustainability by the master plan especially the existing?
9. Is there any policy concerning waterfront development and cultural waterfront landscape policy? Evaluate cultural waterfront landscape land use policy and investment policy?
10. Is there any ordinance or legislation for conservation and management of the cultural waterfront landscape? If there what kind?
11. What is the role of traditional leaders and governmental offices on the development of the Hora Arsadi?
12. How is the land use land cover of Hora Arsadi waterfront made and managed?
13. How do the municipality and other government body protect and conserve Hora Arsadi and the surrounding ecosystem including bio-diversity?
14. Is there any parking space for celebrators at the time of Irrecha Festival near the Lake?
15. There are usually several phases involved in the whole process of waterfront development. What development phases has the Hora Arsadi waterfront gone through? What happened in each of the phases?
16. Would you evaluate Hora Arsadi waterfront development was participatory?
17. Would you evaluate Hora Arsadi waterfront development as successful or unsuccessful? Do you think that the river side current development assured sustainability? Why?

Thanks for your cooperation.

iii. Questionnaire for Urban Residents

Part I Self introduction and introduction of the research topic

Dear Sir, thank you for taking time to do this interview with me. I am a postgraduate student from the Adama Science and Technology University. Now I am doing my master's thesis on the **Redevelopment of Cultural Landscape: Case of 'Hora (Lake) Arsadi' (Bishoftu)**. Waterfront refers to areas on the edge of the downtown area and the sea, lake and river such as the Hora Arsadi, Bishoftu Lake area and the Kuriftu Lake area. Hora Arsadi is chosen as the case of my study. In my study, I will look at formation, physical and functional characteristics of the physical forms of the waterfront create a more culturally sustainable environment**.** *The purpose of this questionnaire is to obtain data for a research project.*

Please answer all questions by ticking (√) in the space provided.

Part II questionnaires for residents and tourists

1. How old are you

☐ 10-20 ☐ 20-40 ☐ 40-60 ☐ More than 60

2. You are

Male_____ Female_____

3. Educational status

Illiterate_____ Read and write_____ High school_____ Diploma_____

Degree_____ Above first degree_____

4. You are Residence in

Near Hora Arsadi_____ Live in Bishoftu city_____

Local tourists_____ Foreign Tourists _____

5. For what purpose do you use the lake?

_____for Irrecha Festival

_____ for recreation

_____ for fishing

_____for all described activities of the choices

Describe if Others _____

6. Why you come here than another waterfront? Since the site is (you can select more than one)

Cultural_____ Well planned_____Waterfront_____

Good sight_____Accessible_____

7. How often do you have a walk in Hora Arsadi?

Every day_____ Every week_____Several weeks _____Rarely_____

8. Which season do you like best in Hora Arsadi?

Spring_____ Summer_____ Autumn_____Winter_____

9. When do you have a walk outside in a day?

Morning_____ Mid-day_____Afternoon_____Evening_____

10. Do you like the sight here? Yes_____Commonly_____ No_____
11. Do you satisfy with the environment here? Yes_____Commonly_____ No_____
12. Do you satisfy with the transport system here? Yes_____Commonly_____ No_____
13. Do you think the green area is enough here and show the identity of the site? Yes_____Commonly_____ No_____
14. Do you satisfy with the public amenities (such as chair) here? Yes___Commonly___ No____
15. Do you think the lake front is easily accessible? Yes___Commonly___ No____
16. Do you think the development near Hora Arsadi is enough for people and safe while Irrecha Festival? Yes_____Commonly_____ No_____
17. Where people park their car while irrecha festival?

_____Near lake

_____About than 2Km from lake

_____More than 4Km, use bus station

_____Park at own home, since no enough parking

18. What the problem you noticed on the walkway at the time of Irrecha Festival?

_____The walkway is enough for walking

_____ The walkway is properly constructed to accommodate people

_____ The walkway is not properly constructed considering Irrecha festival

19. What type of development do you think is good to assure publicness and cultural identity along the lake side according to your perception?

_____High rise building

_____low rise resorts

_____Open space recreational center

_____ Tukul

_____other

Thanks for your cooperation.