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REVITALIZATION OF JUGAL THROUGH PUBLIC OPEN SPACE, HARAR

MSc Thesis in Environmental Planning and Landscape Design

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Declaration

I, the undersigned, declare that this thesis is my own and original work and has not been presented for a degree in any other university, and that all sources of material used for the thesis have been duly acknowledged, following the scientific guidelines of the Institute.

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Acronyms

GM: Green Manual

ICOMOS: International Council for Monuments and Sites

IDP: Integrated Development Plan

JICA: Japan International Cooperation Agency

m: meter

cm: centimeter

m.a.s.l: meter above sea level

MDG: millennium Development Goal

MoUD: Ministry of Urban Development

MPR: Manual for Public Realm

MUUR: Manual of Urban Upgrading and Renewal

NUPI: National Urban Planning Institute

p.b.u.h: peace be upon him

UNCHS: United Nations Commission for Human Settlement

UNESCO: United Nations Education, Science and cultural Organization

UGTS: London's urban green task force

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Abstract

The ancient city of Jugal is the only one of its kind Ethiopia has contributed to the world among other eight heritages. However, lack of public open spaces and traffic congestion in addition to dilapidated structures, huge population pressure and inadequate environmental services are damaging its image. To curb these problems Harari Regional State Government has launched revitalization program focusing on three strategies – infrastructure development, housing development, and heritage conservation- starting from 2008. But, public open space has gained no significant attention in this program.

Thus, the general objective of this research is to forward options for strengthening this program through incorporation of public open space enhancement which is vital for the city's livability. As a result, "Andegna Mednged" and "Chelenqo" square were primarily chosen to work on due to the central role these places have in the life of residents of Jugal.

With this regard, the thesis tried to address questions such as: how does this spaces operate and what kind of facilities the area provide for its users in order to enable various activities? What is the perception of the public with regard to the spaces? And finally, what kind of environmental planning and landscape design solutions can be provided to enhance the image of Jugal and its livability with focus on the above spaces.

The methodology followed for fulfilling this study was case study method. The selection of the case areas were in consideration of its inclusiveness, reachability to wider community, and having larger impact on Jugal during practicing proposed solutions. And, these aforementioned places were treated as a single case area due to its strong relation and link. Then, the area was investigated for its service to the three kinds of outdoor activities: Optional, Necessary and Social activities comparison to measure points listed for its success such as: Comfort and Image; Use and Activity; Access and Linkage and finally Sociability. In due process, the study tried to point out the major reasons for malfunctioning of these spaces - in terms of its operation and facilities it provide; users current and future demand from it; level of satisfaction among users and others - using various primary and secondary data collection methods such as interview, questionnaire, field excursion and structural plan and various related documents .

The major findings of the research were the study area serves three types of outdoor activities though these spaces do not have proper facilities to host these activities. Beside lack of facilities, the conditions of the spaces are worsened by high traffic congestion resulting from lack of: environmental quality; transportation planning and management. As a result, almost all users of the space do not have positive attachment to the place in relation to direct experience. Therefore, they recommended enhancement of the place with regard to types of activities it serve and its environmental quality.

Hence, the study proposed environmental planning and landscape design solutions for the public open space in order to enhance livability of Jugal through alleviation of major problems and findings that tackle the proper functioning of the case areas. The major planning and design solutions forwarded are planning to pedestrianize the study area together with designing it to meet the current and future generations demand.

1. INTRODUCTION

Cities are expressed metaphorically as living organism which emerge, grow older and then ultimately decays or dies if no proper care is taken. Similarly, Eliel Saarinen (1943) attributed the decay of inner city areas with extreme growth and expansion of city. In his book 'the city' he metaphorically express cities like “any living organism which are born or established, grow in all of the aspects they need to grow and if proper care is not taken to control and guide their development they are doomed to decay and ultimately to die which require a mechanism of development to tackle this problem.”

In response to this decay, various tackling measure have been taken. Since the World War II, the process of urban regeneration implemented in western countries for alleviating urban decay can be generally divided into three stages. The first was from physical improvement stage lasted till 1970s. The second stage starting from 1970s to 1990s was known for its use of combination between physical renovation and human behavior rehabilitation strategies. Although billions of dollars were invested in the first two stages, the promised new era did not come. The third stage (since 1990s) realized that urban regeneration should meet the social objectives of the people by improving their quality of life and enhancing the image of the city.

Following this approach, different types of development and redevelopment approaches for dilapidated areas are followed from country to country. And, creating public open space has been used as a tool to improve the urban environment to enhance urban images and improve the quality of life of urban residents. Thus, as it cited from (Li, 2003) public open space construction has become an indispensable part of many of the successful urban regeneration policies of many cities. Beside the importance of public space for revitalization of dilapidated city centers, its significance for revitalization of historic urban areas have also been recognized by UNESCO - who recommended shift of approach from mere consideration of architectural monuments to urban landscape approach for conservation and revitalization of historic area. This importance of landscape approach is expressed by UNESCO's Recommendation on Historic Urban Landscape, 2011 as “The historic urban landscape approach is aimed at preserving the quality of the human environment, enhancing the productive and sustainable use of urban spaces, while recognizing their dynamic character, and promoting social and functional diversity. It integrates the goals of urban heritage conservation and those of social and economic development. It is rooted in a balanced and sustainable

relationship between the urban and natural environment, between the needs of present and future generations and the legacy from the past.”

Conversely, according to Salih A., (2009, p3) “Harari regional state is one of our country’s city with high percentage of dilapidated area occupying about 75% of the city’s coverage. Thus, it have chosen revitalization program in 2008 for improving the quality of life and urban environment. As a result, operation of the program started mainly focusing in three different issues to revitalize the city, especially Jugal.” These issues are:

- Infrastructural improvement of the city through which walk way improvement and waste water conveying facilities are under construction
- Heritage conservation and tourism development: which tries to conserve and preserve the existing heritage of the city in order to keep it alive and available for tourist visit
- Housing Development: for the new city part in order to topple the existing congestion of the old portion of the city, Jugal.

But, this urban revitalization program has not given due consideration to public open spaces even though Harar has severe shortage of public spaces, especially the old city portion of Jugal.

1.2 Problem statement

Jugal is over a thousand years old walled city which has not experienced significant change in its heritage except for the introduction of the Harar gate and its radial street (which connect the new gate with the other four gates). This heritage portion of the city was built to fulfill the then population demand, who were partially long distance traders and partially agrarians. Though the city had fulfilled and served the need of previous generation, it is obviously understandable that it has fallen back from satisfying the living condition of the current generation.

Modern generations require different types of activities from city spaces, rather than merely necessary activities. And, outdoor activities had undergone evolving functions in accordance to the population they serve with the advancement of the period. In modern terms, according to Gehl et al, 2007 “outdoor activities in public open spaces can be grouped in to three simplified categories: Necessary activities, Optional Activities and

Social Activities.” But, Harar has still very limited public open spaces to support optional and social activities. According to IIDP, 2006 report “The sport facilities are limited to 2 stadiums, 2 football field and neither of the schools have any of this. The city in general has no public park except for the one park which has been proposed (and yet to be realized) by the Development Plan of the city’s Municipality.”

The main public open spaces in Jugal are only: the radial streets, Chelenqo square and traditional market places beside other spaces such as religious areas and the buffer zone. And “The historical heritages of Jugal are deteriorating and the place is becoming less attractive mainly due to heavy traffic flow and lack of tourist facilities on the main street and the square that resulted in loosing of tourist revenue” (IDP, 2006). With regard to the traditional market, it serves as *Gullyt* with no additional facility for the interests of the peoples working there.

On the other hand, the Integrated Development Plan of Harar, 2006, P175 discussed that lack of green infrastructure with in private and public spaces create higher heat Iceland; and also the landscape of the city and its visual beauty is affected negatively in addition to deterioration of the quality of the environment. Moreover, the noise and the traffic congestions with in the streets of Jugal are creating nuisance for the public and tourists.

In general, it is agreeable that the combined effect of the urban environmental problems and lack of propoer landscape design combined with other types of setbacks in the city and its old portion have resulted in urban decay. This decay has resulted in lack of belonging stated as “This urban decay is causing lack of belongingness, lack of initiative and lack of attention on the populations behaviour” (IDP, 2006).

Similarly, the IDP program and urban ordinance prepared for revitalizing city of Harar and Jugal respectively, have not given due consideration for public utilization and enhancement of urban public open spaces. Though not rectified by relevant government office, Jugal’s urban ordinance which is the elaboration of urban ordinance prepared by UNESCO tries to control all of the activities that may take place inside the world heritage site.

Among its seven chapters, the chapter of guideline for urban environment of Jugal deals with public open spaces under sub-titles: open space, greening, streetscape and parking and some other related subtitles. The subtitle which deals with the streetscape recognizes the need for streetscaping by allowing harmonization of streets with conservation of heritage using plants and some other infrastructures. Unfortunately, this recognition lacks holistic approach due to absence of transportation planning, one of the major problem of the old town which was also identified in the IDP report as a problem that requires urgent solution.

As to land cover, the ordinance mainly deals with private and semi private open spaces to cover it with a tree and to left a certain fraction of these spaces permeable so as to enable storm water infiltration. In general, this chapter does not have specific subtitle which deals with public open space and making it livable in relation to various activities except rough statement which state greening open spaces found in old city portion.

But, as to UNCHS's Habitat Report, (1986) "human settlement is not simply housing, or for that matter, merely the physical structure of a city, town or village, but an integrated combination of all human activity processes including residence, work, education, health, culture, leisure, etc. as well as the structures needed to support them."

Likewise, for a given city's development to be suitable, it is mentioned that consideration of environmental amenities and social realm are also need to be addressed which is stated as "Sustainable human settlement development should ensure economic growth, employment opportunities, and social progress in harmony with the environment" (Habitat report; 1986).

In conclusion, lack of public open space and its malfunctioning are costing livability of Jugal which is the vision of its revitalization¹. And, these predicaments have arisen mainly due to:

- noise nuisance and congestion caused by traffic;
- urban heat Island as a result of lack of green plants;
- lack of solid waste collection and drainage; and
- Absence of different infrastructure for proper functioning of these spaces.

¹ Vision of revitalization "**Comfortable for its residents, and a city that preserves its historical assets and to be a center for trade and tourism**"

Therefore, this research aims to provide environmental planning and landscape solutions for the public open spaces of Jugal which are one of the main tools for livability.

1.3 Research Questions

In order to give solution for the problems stated with regard to environmental planning and landscape design within Jugal, this thesis will try to answer the following research questions:

- How do public open spaces of Jugal operate and what facilities does it provide for its functionality?
- What is the public perception on experiences of these public open spaces?
- What environmental planning and landscape design solutions can be provided to revitalize the habitability and livability of these spaces?

1.4 Major objective: - major objective of this research is to investigate ways in which livability of Jugal can be enhanced through revitalization and provision of public open spaces.

1.4.1 Specific objectives of the paper are:

- To identify major factors and facilities that affect Jugal's public open space operation and functionality.
- To identify the current perception of the society on experiencing public open spaces of Jugal.
- To propose environmental planning and landscape design solution for revitalizing of these spaces.

1.5 Thematic Scope: - the theme of the paper is limited to environmental issues such as transportation and its consequent impact - chaos, pollution, parking, and congestion of specific public open spaces found in Jugal. With respect to landscape design, its scope is limited to functionality of public open spaces such as comfort and quality, use an activity, access and linkage and its sociability together with the perception and experience of users of the space.

1.6 Spatial scope: - the spatial scope of the paper is limited within public open spaces found in Jugal and to some extent to its surrounding buffer zone which is part of the heritage.

1.7 Significance of the study: - This paper tried to single out some of the limitations and gaps identified with regard to functionality of public open spaces in Jugal. Therefore, it tried to propose solutions in order to increase livability of Jugal through public open spaces to synergize efforts of fulfilling the goal of revitalization program. Hence, the result of the study could be useful for the city's Beautification Office, Environmental Protection Authority, Heritage Conservation and Protection Office and other related government bodies. And, it gives an optional view and ways for provision of vibrant public open spaces and enhancement of livability of Jugal through public open spaces.

On the other hand, this dissertation may also serve as source of information for further study on related subject matter in Jugal and could also provide background information with regard to the study area.

1.8 Limitation of the paper: on the process of forwarding potential option for revitalization program of Harar for enhancing its livability using public open spaces, different limitations have been encountered. Among which, lack of data sources, recent books and research publications were some of the main limitations that impacted the extensiveness of the research.

1.9 Organization of the paper

The first chapter of the paper contains an introductory part of the thesis. It highlights the historical background on development of ideological paradigm to use public open spaces for revitalization of old city parts. In addition, it briefs the objective, the scope, and limitation of the paper.

The second chapter demonstrates methods of the research followed to achieve the required objective and to respond to research questions arose respectively. Under this chapter, the analytical framework of the paper and terms followed during evaluation, and examination of the current situation of the case study area is also described.

The third chapter is literature review. This chapter contains four sections out of which the first section defines different concepts related with the topic of the research. The second section reviews role of urban open space under different perspectives, while the third one reviews some of the best experiences related to urban public open space enhancement. Finally, the fourth section discusses legal instruments considering the importance of public open space for the conservation and well being of heritage areas.

The fourth chapter forwards background information of Harar, Jugal and the case area.

The fifth chapter provides investigation on different situations of the case study area based on the criteria set in the methodological part of the research. The chapter also discusses and analyzes the results obtained from questionnaires gathered for the purpose of acquiring perceptions of users of the study area.

The sixth chapter concludes the findings and analysis part of the paper.

The last chapter delivers planning and design solutions of the research. It also offers policy and program recommendation for synergizing the planning and design solutions proposed to fill the gaps identified in due process. This chapter also points implementation strategy for the proposed design and plan.

2.0 RESEARCH METHODOLOGIES

In order to enable deeper investigation of the subject matter, the research methodology found convenient for the objective of this paper is case study. To obtain required information, both quantitative and qualitative data were collected. Primary data were obtained through: interview, questionnaire, field excursion, observation, and photographs. Secondary data were gathered from different relevant data sources such as structural map of Harar, published studies, records and other available research and journal papers within the city's Municipality, Beautification Office, Bureau of urban development and heritage conservation and protection. Finally, the result was analyzed according to different theories on utilization of urban public open spaces.

2.1 Research design

The type of research design followed in this thesis is descriptive study. And, out of descriptive study, case study is chosen specifically for this research. Case study is chosen for this study to enable extensive investigation and exploration using both qualitative and quantitative information available without which the real setting of the study area would be shortened.

2.2 Selection criteria

According to Roe and Benson (2007) urban public open spaces are classified into two parts which are termed as grey space and green space according to their cover material and services. Grey spaces are land that consist predominantly of sealed impermeable hard surface such as concrete, paving or tarmac. These are further subdivided into functional spaces such as roads, pavements and car park, and civic spaces which are publicly accessible areas designed for public enjoyment such as town square, plazas, pedestrianized streets. And green spaces are those lands mainly of green corridors, parks and linear corridors such as river buffer, etc. As to aforementioned classification this study was made on civic spaces of grey public open spaces found in Jugal.

In considering the functional and historical significance within Jugal, a civic public open space was selected as a case study. This grey public open space was chosen according to its level of importance in building city image, serving majority of its population, impact to wider community of Jugal and its significance for different type of economic and social activity. According to the criteria set above, the site was selected in

order to propose solutions for improving habitability, user friendliness, and quality of the spaces.

As a result, the space selected is the street of *Andegna Menged* with its extension of *Chelenqo square* to be treated as a single case study area. This area was selected because of its significance such as: being the Main Street and tourist corridor of Jugal; its role of centrality to Jugal and its reachability to wider public of Jugal. This selection can be strengthened by Watson's heritage city development strategy. Watson donald (2003) also noted value of main street stated as "Main Street programs are a natural part of the heritage development strategy, since historic downtowns are an ideal setting for such visitor services as specialty shopping, restaurants, and lodging."



Picture 1: Birds eye view of the study area /*Andegna Menged* and *Chelenqo square* (source Google Earth)

2.3. Methods of Data collection and sources of data

In order to collect the required data on the case area, both primary and secondary data sources were used. A field excursion was made for one week to observe and acquire behavioral map on how the spaces were being utilized and what type of different functions were undergoing within weekdays and weekend. The other primary data sources used were unstructured interview, photograph, and questionnaire for the users of the space. Secondary data sources used include various journals, books, researches and other publications such as various sector bureau data, plans and implementations and other relevant sources. In addition, structural plan of Harar and Google earth image are utilized and adapted with various maps of the city.

2.2.1. Observation techniques

As to Anne Beers and Higgins (1990), “for site planning most importantly, it is necessary to ensure that people will experience the place as being a satisfactory setting for their activity or activities. Partly, this involves using the characteristics of the existing place and understanding their role in how people experience place; and in part it also involves developing new places with new characteristics.”

Therefore, field excursion was made to grasp the physical information on the operation of the spaces and how the public use these spaces in terms of the three different activities obtained through observation. These results are presented in two forms which are behavioral mapping and photographs captured on spatial and temporal distribution of activities and functions through the day.

Behavioral mapping was utilized in order to identify the activity settings undergone on the study area so as to identify the holistic spatial and temporal distribution of activities and functions throughout a day. With this technique, both Active and Passive activities; and facilities to serve these activities on the study areas were identified in temporal and spatial distribution. But, as a result of overlapping activities on the case area, the behavioral mapping was produced as a form of indicative figure. This figure shows the temporal distributions of activities along y-axis and spatial distributions of activities along x- axis (see figure 3).

2.2.2. Interviews and questionnaires

Information which could not be reached through observation was collected using interview and questionnaire. With these methods of data collection, open and close type of questionnaires was utilized in order to obtain the perception, attitude, and feeling of users of the space. The questionnaire prepared for the study area was first examined by pilot testing for a number of respondents. Out of the results obtained from this pilot testing, questions difficult for understanding and some form of questions which are repeated in different forms were avoided and/or amended for the last distribution of the questionnaire (see annex 1).

For collection of these questionnaires 8 vocational school students were involved. A half day training was given for these students on three type of issues related to the aim of

the dissertation and questionnaire collection. The first training was synthesizing data collectors to the purpose of the study so that they can be more logical for questioning and accepting the answer in addition to developing sense of ownership in due process. The second training was to inform them how to make dialogue with respondents of the questionnaire. This include respecting certain behaviors such as respondent's right not to answer questions he/she don't feel okay with. Thirdly, to make them practice the questionnaire among each other. Then, a different part of the study area was classified accordingly with the data collectors' number. These collectors were assigned according to their will and a place they know more. Then, monitoring of process of collecting questionnaires was done by the researcher in a regular and irregular visit for onsite checking. Finally, after the questionnaires were collected, it was checked for regularity of its answers. Questionnaires which were not filled more than 50% were avoided and for the sake of the number another questionnaires had been replaced in place of the avoided ones.

2.4 Sampling and sample size

Sampling method followed for this paper was stratified sampling and also purposive sampling. The stratified sampling was used for those populations who are less than the age classification of retired (age classification used in this thesis) and using the space, while purposive sampling was used for age group of retired.

Fossey et al (2002, p 726) argues, "Sampling in qualitative research continues until themes emerging from the research are fully developed, in the sense that diverse instances have been explored, and further sampling is redundant." Accordingly the sample sizes used to identify the perception of users of the study area were one hundred twenty. The number of samples ceased at this number due to redundancy of responses coming from this point on as noted previously.

2.5 Sample Analysis

The collected 120 questionnaires analysis was made with the aid of SPSS statistical software program with aid of charts, tables, and pictures. The responses were grouped according to different age groups and types of activities with respect to the analytical framework listed for evaluation of success of the study area as discussed below. Answers for open ended questionnaires were also grouped and analyzed similarly for clarity of perception of respondents.

2.6. Analytical Framework

The relationship between public open spaces and perception of its users is the result of two way communications between the space itself and the person using the space as stated in (Carmona; et al, 2003) “the relationship is best conceived as a continuous two-way process in which people (and societies) create and modify spaces while at the same time being influenced by them in various ways”. This implies that the attitudes of individuals towards a given space may vary according to the culture, belief on one hand and on the other hand these experiences will be limited to the design and functions these spaces render to users. And, as to Kumilachew Tsegaye, (2007) “People influence the use and function of a given space according to their demand if shaping it is possible. If not then the people themselves will be pressured to adapt to the environment.” Thus, in scenarios where spaces should be modified to fit the demand required from it, the demand of the population should be analyzed in terms of understanding how it serve different social groups using the spaces. And, what is the public demand from these public open spaces. In addition, the study area amendment needs to be watched with notification of cultural and heritage amelioration or deterioration Jugal.

With this respect, Carmona et al, (2003) points out generally four key attributes for a successful public place which are: Comfort and Image, Access and Linkage, Use and Activity and Sociability. Gehl, (2010) also referred this attributes as key factors for the occurrence of three types of outdoor activities he classified as necessary, optional and social activities. Among these activities only optional and social activities require comfort and socialization, and use and activity of the place. But, necessary activities almost take place without requiring such attributes.

Therefore, besides gathering the type of activity that take place on the focus area, it is also important to find out the attribute of the place in relation to these four factors of successful place.

To collect information on these key attributes, different type of observation and measure points were developed for each of the attributes which were indicated by Carmona et al, 2003 in table 1. These developed measure points are organized as follow.

Comfort and Image: in order to identify the comfort of the study area the following points were taken under consideration during analysis of the study area.

- Availability of greeneries on the space.
- Whether the space can give service in different seasons through the year,
- Its cleanness and preference of the user to spend their time in these spaces relative to outside Jugal.
- In addition, to identify the qualitative information which is the perception of the space users were asked for immediate image they have on the space.

Access and Linkage: to identify the accessibility of the place for residents of Jugal, for those outside Jugal and other visitors to the site, the following points were considered.

- Connectedness and accessibility of the place to different part of Jugal.
- And also connectivity and accessibility to other sites such as new city portion and historically important places.

Use and Activity: types of activities that were performed on the place can be used for understanding the potential demand of the population from the site. And the relationship these sites have with the preservation and enhancement of the image of the heritage.

- This can be obtained through identification of type of outdoor activities the case area serves. Functions it provide for different demands of users of the space. Type of businesses undergoing on the site wither it complement the efforts of preserving heritage and enhancement of the public utilization of the site with regard to activity performed on the place and demanded on the site.
- In addition to the human activities, traffic condition was also recognized to be considered in this portion of the attribute due to its importance as one of the place's attribute and factors of its functioning.

Sociability: refers to identification of sociability of the place with regard to the activities which take place on the spaces since socialization is the result of optional activity. The variety of the age group that inhabits the place, presence of women and purpose of use of the case area are all termed as indicators of socialization.

In general, the analysis of the study area was made using analytical points and services of the place which was expressed in the aforementioned frame work, plus perceptions of the users of the space and the quality of the case area.

3.0 LITERATURE REVIEW

3.1 Definition of terms

In defining revitalization of inner city Steinberg, 2008 cited Holcomb and Beauregard, 1981 as “seeking to bring back investment, employment, and consumption and to enhance the quality of life with in urban areas....”

It is also defined as “urban revitalization is no longer only a problem of a decaying physical fabric or decaying environment, or a conflict between economic regeneration on the one hand and, social and physical rehabilitation on the other. Revitalization has to meet the social objectives of the people by improving their quality of life and enhancing the image of the city” (Li, 2003).

Public open space: “is the stage upon which the drama of communal life unfolds. The streets, squares, and parks of city give form to the ebb and flow of human exchange. These dynamic spaces are an essential counterpart to the more settled places and routines of work and home life, providing the channels for movement, nodes for communication and common grounds for play and relaxation” (Mimi Li, Urban Regeneration, 2003).

“Livability: refers to an urban system that contributes to the physical, social, mental well being and personal development of all its inhabitants. It is about delightful and desirable urban spaces that offer and reflect cultural and sacred enrichment” (Seymoar and Timmer, 2006)

A livable city: is a city that invites its inhabitants to stay in its public space through different activities as explained by Gehl, (2011) as “A potential for a lively city is when more people are invited to walk, bike and stay in city space.”

A livable city: is “a city where common spaces are the centers of social life and the foci of the entire community. They also metaphorically express city as living organism out of which its heart is the common values and public space of a city that define its essential identity” (Seymoar and Timmer, 2006).

Livable Street: “A livable street should provide those environmental conditions that support independence and freedom of choice, provide orientation, safety and comfort. Encourage a sense of community yet provide sufficient privacy. Foster a sense of neighborly ownership and responsibility. Avoid disturbing nuisances and enhance the economic value of adjacent property” (Metro, 1997).

Necessary activities: “are those activities that are more or less compulsory under all condition such as going to school or work, shopping, waiting for a bus or person, running errands, distributing mail. In general, everyday tasks belong to this group. Among other activities, this group includes the great majority of those related to walking” (Gehl, 2010).

Optional activities: “are those activities that are participated in if there is a wish to do so, and if time and place make it possible. This category includes such activities as taking a walk to get a breath of fresh air, standing around and enjoying life, or sitting and sun bathing” (Gehl, 2010).

Social Activities: “are all activities that depend on the presence of other types of activities on public spaces. Types of social activities include: children play, greeting and conversation, communal activities of various kind. And passive contacts such as seeing and hearing can also be termed as resultant activity. This activity occurs spontaneously as direct consequence of people moving about and being in same place” (Gehl, 2010).

3.2 Concept on relations between public open spaces; livability and sustainability of a city

“Cities are places where people meet to exchange ideas, trade, or simply relax and enjoy themselves” (Gehl, 2010). Among these city lives, lives in public open spaces are an integral part of it which is explained by Tibbald, 2007 as “City spaces have teamed with people and functions throughout history. Life in city space was an integral and utterly essential part of society.” Similarly, the importance of public space for city life is noted by ICOMOS in Valletta charter as “public space in historic towns is not just as essential resource for circulation, but it is also a place for contemplation, learning, and enjoyment of town.”

This life in public open space is also termed as Life between buildings (outdoor activities) by Gehl which is stated as “ Life between buildings comprises the entire spectrum of activities, which combine to make communal spaces in cities and residential areas meaningful and attractive” (Gehl, 2010). Likewise, Lynch was also quoted by Beer and Higgins, 1990 who state public open space life as an important factor for habitability of city like “the factors which affect habitability of a city are often governed by what happens outside a site”.

Public open spaces are also seen as an important entity for sustainability of urban environment which is explained by Benson and Roe, 2007 as public open spaces are an essential component of Hall's and Ward's vision of the sustainable city region which was the provision of a high quality public realm with in towns and cities with an accessible and well managed open space networks. Similarly, the benefit of public open space for social equity and sustainability are stated as inclusive access to high-quality public spaces is a corner stone of democracy and social equity, a fundamental condition for social and political participation, and a key element with potential to enhance Wellbeing and quality of life. And, its benefit is also expressed as it is urgent to strengthen the social function of city space as a meeting place that contributes toward the aims of social sustainability.

The relation between heritage and livable city is also identified as “the livable city as a link between the past and the future, it respects the imprint of history (our roots) and respects those who are not born yet (our posterity). A livable city is a city that preserves the signs (the sites, the buildings, the layouts) of history...” (Seymoar and Timmer, 2006). They also stated “livable city is a sustainable city: a city that satisfies the needs of the present inhabitants without reducing the capacity of the future generation to satisfy their needs....In the livable city both social and physical elements must collaborate for the well being and progress of the community, and of the individual persons as members of the community”.

Likewise, the relation of health with livable city is indicated as “Open-air recreation and access to outdoor spaces is an important part of many people's daily lives, and research has shown that outdoor activity provides scope for relaxation, refreshment, escape from the everyday and a chance to form social relationships” (Gehl, 2010).

Generally, livability of a city can be termed as a holistic approach through which the heritages can be conserved and revitalized, social and economic demand of the society can be answered with its vision through its balanced approach towards sustainability by means of improving public open spaces using multidirectional approach in order to answer the various demand of populations.

3.3 Relations between type of activity, quality and, identity of public open space

City life does not happen by itself or develop automatically simply in response to high density. Liveliness in the city is not limited to quantity..... It is not numbers, crowds and city prizes that matters but the sense that city space is inviting and popular that creates a meaningful places.² The number of people or events does not in itself give a real indication of the activity level in an area, because actual activity, life between building as it is expressed, is equally a question of duration of stays out door (Jan Gehl, 2010).

Carr et. al. as cited in Carmona, 2003 argues that “the relationship of public space to public life is dynamic and reciprocal that new forms of life require new spaces.” This theme of relationship between urban space and population is very well expressed by (Zhange, 2010) who states “urban landscape as a geographical phenomenon is a mirror reflecting the functioning life of urban society, because it provides the physical equipment inside urban space to answer different needs of the society and its people, such as dwelling, working, transport and recreation etc.”

This relationship between public space and public life can also be strengthened by the expression on the transition of public life in relation to society development stated by Gehl et al, 2007 which is quoted as “Recent decades have seen a gradual development from industrial society’s necessary public life to the optional public life of a leisure and consumer society where city life was once a necessity and taken for granted, today it is to a high degree optional. For that very reason, this period has also seen a transition from a time when the quality of city space did not play much of a role in its use, to a new situation in which quality is a crucial parameter. In the past, people had to use the streets and squares of the city regardless of their condition. Today this is in the majority of cases an option.”

Therefore, (Gehl et al, 2007) described this process of change as “in a long-term historical perspective, city space has always served three vital functions – meeting place, marketplace and connection space. As a meeting place, the city was the scene for exchange of social information of all kinds. As a marketplace, the city spaces served as venues for exchange of goods and services. And finally, the city streets provided access to and connections between all the functions of the city.”

Currently though majority of works are necessary activities there are also growing number of optional activities which are created as a result of consumerism and leisure developed with increment of income and presence of workers right which were not there during the previous era comparably with that of Europe which is shown in figure 1 below.

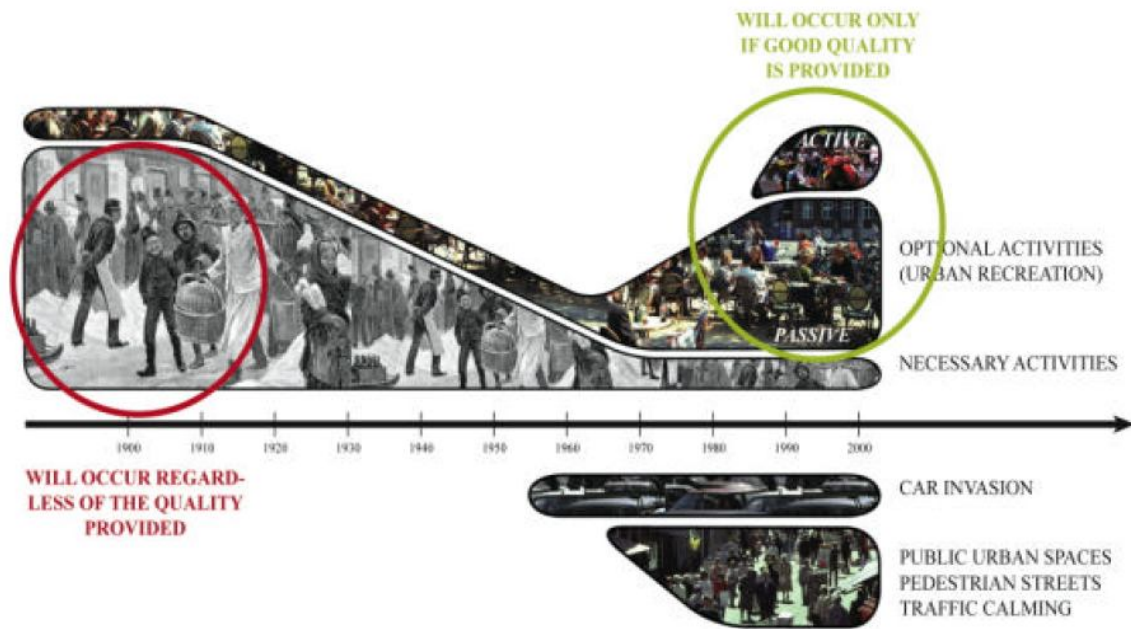


Figure 1: Different types of public open spaces and their relative uses (source Gehl et al, 2007)

As a result, the current society's public open space life or outdoor activities are classified in to three categories which are necessary activity, optional activity and social activity. Similarly (Carmona et al, 2003) state Carr et al (1992) who “identify five primary needs that people seek to satisfy in public space which are: comfort; relaxation; passive engagement; active engagement and discovery.” These requirements of Carr's successful public space are similar to that of Gehl's outdoor activities in which relaxation and passive engagements can be grouped in optional activity; and comfort is also what is expressed as a requirement for this optional activity. Discovery is also similar to that

of social activity that arise due to connection and its resultant activities in some form and on the other form it is also related to the quality of the space. And, active engagement of Carr can be grouped in necessary activity and optional activities according to the type of activity.

Among the three activities categorized under outdoor spaces, only the necessary activity is the one least affected by physical design of the environment while optional activity is the most influenced. Gehl (2011) expresses this as “necessary activities are only slightly influenced by physical planning while optional activity take place only when exterior conditions are favorable, when weather and place invite them. This relationship is particularly important in connection with physical planning because most of the recreational activities that are especially planned to pursue outdoor are found precisely in this category of activity.” He further reinforces this relationship between the quality of space and optional activity with the study which is illustrated in the figure 2 on the next page.


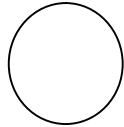

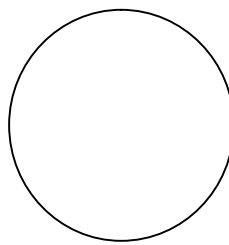

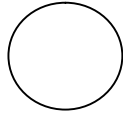
No.	Type of activity	Low quality	Higher quality
1	Necessary Activity		
2	Optional Activity		
3	Social Activity		

Figure 2: Relations between quality of environment and rate of occurrence of public life
(Source: Gehl, 2011)

Beside quality, successful public open space should accomplish the following four attribute of successful places described in (Carmona et al, 2003): comfort and image, access and linkage, uses and activity and, sociability. These attributes are further elaborated in the table 1- key attributes of successful public spaces.

Table 1 key attribute of successful places				
No	Key attribute	Intangibles		Measurements
1	Comfort and Image	Safety	Seat ability	Crime statistics
		Charm	Walk ability	Sanitation rating
		History	Greenness	Building condition
		Attractiveness	Cleanliness	Environmental data
		Spirituality		
2	Access and Linkage	Readability	Proximity	Traffic data
		Walkability	Connectedness	Mode split
		Reliability	Convenience	Transit usage
		Continuity	Accessibility	Pedestrian activity
		Realness	Activity	Property value
3	Uses and Activity	Sustainability	Usefulness	Rent level
		Specialness	Celebration	Land use pattern
		Uniqueness	Vitality	Retail sales
		Affordability	Indigenousness	Local business ownership
		Fun	Homegrown quality	
4	Sociability	Cooperation	Gossip	Street life
		Neighborliness	Diversity	Social network
		Stewardship	Storytelling	Evening use
		Pride	Friendliness	Volunteerism
		Welcoming	Interactivity	No. of women and children and elderly

Source: Carmona et al, (2003:p100)

If the quality of a space does not render satisfaction for its users, it create negative image as (MPR, 2006) noted it like “City dwellers tend to have a negative image of many parts of the city which can cause dissatisfaction with the quality of life.” This negative image may result in the impression of placelessness that may resulted as a product of lacking feeling for a space which is explained by Ralph like loss of attachment to a place. This loss of attachment is quoted by (Carmona et al, 2003) in the sub topic sense of placelessness as “Placelessness is a reaction to the loss or absence of environment we care about. Because people do not feel they belong they no longer care for their environment.” Carmona et al (2003) also noted the contrary to placelessness in the example he observed in the importance of belongingness at Peace Gardens of Sheffield, UK. He observed that beside the absence of use regulation, free behavior of users did not damaged the square garden which is a result of feeling of affinity with the space.

Therefore “a concept of place often emphasizes the importance of a sense of belonging of emotional attachment to place” (Carmona et al, 2003). And this attachment to a place which is called as peoples identity to a place by Ralph can be developed from three basic elements of place which are quoted by (Carmona et al, 2003) “physical setting, activities and meaning constitute the three basic elements of the identity of places”. Out

of which these three basic elements intern constitute different type of qualitative and quantitative features as shown in table 2.

No.	Activity	Physical Setting	Meaning
1	Land use	Townscape	Legibility
2	Pedestrian flow	Built form	Cultural association
3	Behavioral pattern	Permeability	Perceived function
4	Noise and Smell	Landscape	Qualitative assessment
5	Vehicle flow	Furniture	

Source Carmona et al, 2003

Sense of belonging can also be enhanced by engaging more people to experience the heritage site by walking as explained by (Miyakoda, 2004) referring to Robertson (1999) as “a sense of place is best experienced on foot which results in pedestrianization of many historic towns.” He also emphasizes the benefit of building identity as latest concept of revitalization program as “The third phase of downtown revitalization seeks to regain a larger population and more activity by reinforcing the identity of downtown characteristics” (Miyakoda, 2004). The importance of identity is also noted by UNESCO’s recommendation for historic urban area which aim to boost identity quoted as “it is important to strengthen social rootedness and counteract segregation and rootlessness through reinforcing identity beyond safeguarding heritage areas. “

3.4 Transition of concept on urban revitalization

Similar to transition of public open space with public life, transitions of concepts have also took place with regard to revitalization of old heritage towns. As a result, public open spaces have gained significant consideration for enhancement of city and for complementing conservation of heritage buildings. This is noted by Carmon et al, (2003, p199) as “conservation policies and strategies came in three waves. The first involved protection of individual buildings and historic/ancient monuments. In reaction to the evident social, cultural and physical disruption caused by first phase’s clearance and comprehensive redevelopment and road building, a second wave of policies emerged. Then the third wave began which was the development of local revitalization policies, stemming from realization that once historic buildings and areas were protected, they needed to be active and viable use.”

Carmon also expressed his concern on futurity of heritages whose aim is to make heritage area a place suitable for living not rather than preserving it as a monument which is quoted as “the initial preservation policies had largely been concerned with the 'pastness' of the past, the later conservation and revitalization policies were increasingly about a 'future for the past. Having been saved from destruction, the next issue was what buildings and spaces had been saved for.”

Thus, the latest kind of revitalization strategy which mainly focuses on the future of the past mainly uses public open spaces besides the use of the buildings for different activities that provide the need of the current generation. This focus is expressed by Li, 2003 as “Policy makers and planners realized that urban regeneration should meet the social objectives of the people by improving their quality of life and enhancing the image of the city. Thus, public open space construction has become an indispensable part of many of the successful urban regeneration policies of many cities.”

This transition in revitalization of heritage area did also take place in UNESCO's approach to the program. As stated in its Recommendation on historic urban areas, 2011 the organization emphasizes on this transition as “beyond conservation practice of half century that had focused on architectural monuments, broader recognition on the importance of social, cultural and economic processes required to adapt the existing policies and create new tools to address this mission. Hence landscape approach is suggested for this new desire.”

Furthermore, the consideration of public open space in revitalization of city is believed as one of the criteria set for evaluation of its success by Richard Rogers who was quoted by (Riddle, 2004) as “the demand to live in, work and leisure activities in a given city are considered as a prime points among the five criteria Rogers set for evaluation of success of urban regeneration project.”

3.5 Importance of street and pedestrianization for livability of a city

City streets are noted by Gehl, 2010 as city streets are not just thoroughfares for motor vehicles. They often double as public spaces where people walk, shop, meet and generally participate in many social and recreational activities that make urban living enjoyable.

On the other hand, paths or streets and squares are mostly favored ones to work on during revitalization. This is due to the meaning that can be attached to the place which is expressed by (James, 1992) like “Among variety of elements of city, the most important function of an element in the city is the symbolic meaning attached to it.” Out of these elements the path is probably the most significant structuring element in image building which is also described by (James, 1992) as “Most people relate other imaging features to their main network of paths.” Furthermore, streets can be preferred due to multifunctional services it render such as connectivity, market, recreation, working and living environment as (Carmona et al, 2003) quoted Lynch like “ paths could be important feature in city images for several reasons, including regular use, concentration of special uses, characteristics proximity to special features in the city, and visual prominence.”

When it comes to old town “Heritage areas seek a balance between preservation and economic development. And, main Street programs are a natural part of the heritage development strategy, since historic downtowns are an ideal setting for such visitor services as specialty shopping, restaurants, and lodging. Therefore, the transport system serving future urban systems would not only have to serve economic development, but also protect the environment and sustain future quality of life through provision of priority to public transport, cycling and walking, with reduced dependency on the private car” (Watson et al, 2003).

With regard to livability of a city, streets are one of the elements of a city through which its habitability can be achieved as (Carmona et al, 2003) stated Jacobs and Appleyard, (1987) who suggested “seven goals that were essential for the future of a good urban environment among which livable street and neighborhood are the first out of other four prerequisite physical characters”.

Similarly, Jane Jacobs was cited in (Moughtin, 2003) pertaining street to livability of a city as “streets and their sidewalks, the main public places of a city, are its most vital organs. If city’s street look interesting, the city looks interesting; if they look dull, the city looks dull.”

“City life is a matter of quantity and quality. Density alone does not necessarily produce life in streets. While many people live and work in high density buildings, the surrounding city spaces may easily become dark and forbidding” (Gehl, 2011). As it is

illustrated previously in figure 2 the amount of people, the time they spent on a given space and the type of activity that is performed on the space directly related to the quality of the space. Daniels & Daniels (2003) also stated the importance of quality of street as “Well-designed streetscapes draw residents and visitors and weave important buildings and public gathering places into a community fabric.”

Further, Daniels suggests the importance of consideration of the need of future generation’s quality of life besides serving current generation demand of movement during designing transportation system. Thus, he suggests protecting environment and enhancing livability of streets as “The transport system serving future urban systems would not only have to serve economic development, but also protect the environment and sustain future quality of life” (Daniels & Daniels, 2003). Buchanan did also point out the importance of restricted accessibility for improvement of streets like “there is basic incompatibility between demand for unrestricted accessibility and the preservation of a good quality environment” as cited in (Moughtin & Shirley, 1996).

Likewise, the Washington charter also emphasize on the effect of traffic movement on heritage areas as “Traffic inside a historic town or urban area must be controlled and parking areas must be planned so that they do not damage the historic fabric or its environment.” And also the Valletta charter notes the impact of traffic as “Most historic towns and urban areas were designed for pedestrians and slow forms of transport. Gradually, these places were invaded by car, causing their degradation. At the same time, quality of life has reduced.”

Therefore, regulating the movement or number of vehicles in current situation of high number of vehicles is recognized as an important factor for the livability of street. This is also indicated by (Moughtin, 2003) like “Unless some limit is placed upon traffic volume and its freedom of movement the destruction of streets and squares as places of social contact will continue, a process that will be accompanied by the degradation of local environmental quality.”

Along with impeding the increasing amount of vehicle, encouraging number of pedestrian is sought essential for colonization of streets to make it more habitable. And, this is referred by (Moughtin, 2003) as “It appears that most street activity occurs when it is convenient for large numbers of pedestrians to use the street in a variety of ways.

Activity in streets increases when densities are high enough to inhibit the use of the motor car and to support a range of facilities such as shops and schools within a walking distance.”

The importance of increment of pedestrian movement over motor vehicle was also demonstrated by (Gehl, 2011) as “in the streets where there was only little traffic, a great number of outdoor activities were registered. And in the street where traffic volume was greatly increased, outdoor activities become practically nonexistent. With middle to high traffic intensity, surprisingly great reduction in outdoor activities, emphasizing that even a relatively limited deterioration of quality of outdoor environment can have disproportionate severe negative effect on the extent of outdoor activities.” The impact of traffic over historic areas is mentioned by (Rudoslove and Cosoroaba, 2011) like “The main negative impact on public open space comes from a generic loss of function and substance, paired with rival use – the competition posed by motorized traffic and parking vehicles towards pedestrians – and aging. As a city ages, public spaces age with it, and certain circles of rehabilitation and modernization are required. ”

Similarly, in historic areas like Jugal where the existing street is very narrow and could not serve the pedestrian and vehicular demand together, it is better to make the street more of pedestrian than merely vehicular road which will destroy the remaining activity on the place. Because, pedestrianization is one of successful recent generation revitalization strategies as noted by (Miyakoda, 2004) “Certainly pedestrianization improvements are one of the critical factors for strong downtowns, because they function to integrate a variety of uses and to provide for spatial quality that creates amenities for people. It seems to be inevitable that many downtowns are now trying to regain the high quality of pedestrian environment, because downtowns were originally shaped for pedestrian activity.”

However, pedestrianization alone does not fulfill the target of revitalizing heritage areas. Therefore, it should be correlated with different type of programs such as land use planning. Land uses along streets are important for livability of city besides building identity together with other activities listed in table 2. It is also noted as one of the factors that affect the livability of a street by (Gehl, 2010) as follow. “Greater numbers of stops were noted in front of shops and exhibits that had a direct relationship to other people and to the surrounding social environment such as newspaper kiosk,

photography exhibition, film stills outside Movie Theater, clothing stores and toy stores.” The importance of land use for pedestrian area was also described by (Miyakoda, 2004) like “The third phase of downtown revitalization seeks to regain a larger population and more activity by reinforcing the identity of downtown characteristics, including the historic architecture (heritage), pedestrian-friendly environments and a densely woven diversity of land uses which made traditional downtowns prosper.”

In addition to land use, greenery has also significant impact in the enhancement of livability of streets which is stated in (Anne R.Beer, 1990) “if city livability is to be perceived to improve, any characteristics such as 'greenery' which are viewed positively need to be multiplied.”

Furthermore, in the urban transport system performance indicator developed by the (MoWUD, 2006): safety, security and health; environmental responsibility; and livability of the street comprise three points of performance indicator out of the five indicators totally listed as shown in the table 4 below in addition to the availability of different type of mode of transport in section of accessibility such as bicycling, walking etc.

Table 3 street performance indicator	
Desired Outcome	Some Possible Outcome Performance Indicators
Economic growth, efficiency and effectiveness	<ul style="list-style-type: none"> Delays for vehicles (by type) at intersections - Average time and money costs of journeys actually undertaken - Costs of operating different transport services - Tax revenue from vehicle use - Delays for pedestrians at road crossing - Variability in journey time (by type of journey) - Indicators for access and mobility by area and economic sector
Health, safety And security	<ul style="list-style-type: none"> - Perceptions of security while traveling - Personal injury accidents by user traveled type per person or per vehicle kilometer - Security incidents per person or vehicle-kilometer traveled - Percentage of trips/travel made by not-motorized modes (cycling or walking)
Access and mobility	<ul style="list-style-type: none"> - Activities (by type) within a given time and money cost for a specified origin and mode - Costs of travel to activities (by type) from a specified origin by a specified mode - Indicators as above, considered separately for different impact groups
Environmental responsibility	<ul style="list-style-type: none"> - Noise levels - Levels of different air quality (local) pollutants - Fuel consumption for the area as a whole - Vibration - Greenhouse gas emissions

	- Other environmental considerations
Livability, Amenity and Connectivity	- Perceptions of community severance - Townscape quality (subjective) - Perceptions of security while traveling - Visual intrusion

Source MoWUD, 2006

“Directly related to transportation, studies have found that people have more favorable perception of communities with green on roads. And drivers seeing natural roadside views show lower levels of stress and frustration compared to those viewing built settings. Another study found a decrease in crash rates on urban roads after landscape improvements were made. Contrary to what is commonly believed high-quality trees play many roles in environmental, social, and economic benefits for community improvement. In other words, street trees may buffer pedestrians from hazardous oncoming traffic” (K.Abdel-Gawad, 2011). Relatively, greenery can also create positive perception toward a place as (Anne R.Beer, 1990) noted “city dwellers tend to have a negative image of many parts of the city which can cause dissatisfaction with the quality of life. Therefore, if city livability is to be perceived, improve any characteristics such as 'greenery' which are viewed positively need to be multiplied.”

In addition to perception improvement, the green spaces can benefit different environmental factor such as “plants serve as purifier of the total environment. First of all, the plants of the green spaces remove suspended particulate matters and volatile organic compounds from air. The root systems of these trees help microbes convert the organic waste materials into plant nutrients. Secondly, the infiltration of rainwater through soil ultimately aids to purify the percolating water. This percolation along with infiltration is highly associated with green spaces i.e. places covered with vegetation where water can be captured and allowed to go into soil. Most of the land area in a city is covered with asphalt or concrete that reduces the infiltration rate” (James, 2003).

3.6 Best experiences on revitalization of livability and livable streets

Aleppo, Syria: Aleppo is one of the world heritage cities in the world of Islamic cities called medina. It is found in north western part of Syria. It is constituted of old heritage

city which is encircled by wall. And new city part constructed with the expansion of the city. Aleppo has been suffering from degeneration and decay of its infrastructure including housing. And the Revitalization of this world heritage city have undergone with the following 8 projects such as physical conservation and development; traffic and environmental management; local economic development and tourism; planning and regulatory frame work; community development; institutional set-up and process management. Out of this projects sub-project of improvement of public open space which is grouped under physical conservation and development and the project traffic and environmental management are given attention and discussed below as to its relation to this thesis.

Thus, with the notion that restoration of the fabric of the buildings purely as historic monuments would only have turned the old town into a museum, and would not have saved it as a living, dynamic entity. Only a holistic approach, which embraces living conditions, the technical and social infrastructure, a healthy environment, economic viability and the socio-cultural identity of residents, can have a sustainable impact. This approach has chalked up remarkable successes in Aleppo with the aid of GTZ:

Public open space improvement: In historic city centers with physical and social decay, public open space has often been neglected. The role and importance of historic city centers changed, and with the introduction of motorized traffic, open space has become mainly determined by the demands of easy traffic flow, rather than contributing to the social and cultural life of residential neighborhoods. But, Upgrading open space through attractive functions and a modern urban design responding to the public character of open space should be considered as a vital tool for the generation of a strong 'Old City-awareness' amongst the residents. Investing in public space has proven to be a strategic "entry point" to comprehensive rehabilitation. Thus, defining urban open space as streets and squares and green areas which form the urban fabric of Aleppo some case areas are selected to be worked on. And the interventions in these public sites have been based on the understanding of the historic development, the present change, and the future role of the site. In addition to compatibility with the heritage of the past, while at the same time providing possibility for a changing lifestyle where taken in to consideration during the project. With this consideration the measures taken comprises the following points

- Landscaping public space

- Paving
- Managing traffic
- Reshaping traditional streets
- Reshaping outer appearance

Traffic and environmental management: environmental protection project rationale was comprehensive urban rehabilitation that calls for a healthy environment, among others. This is an important factor with regard to creating a comfortable living environment and promoting tourist largely contributes to progressive image of an old city that combines history with future prospects. This image, in return, considerably contributes to further residential and economic attractiveness that will otherwise be abandoned by its residents. And the measures taken with this respect are

- Frequent cleaning of the public area
- Installing garbage bins and regularly empty them
- Public awareness and establishment of environmental groups
- Re-naturalizing the rivers bed
- Protecting sewerage disposal
- Protection of water, air and soil pollution from traffic and industries

With regard to traffic management; the rationale for traffic management was mainly to improve living conditions for inhabitants, maintain the economic viability of the Old City and its commercial function, alleviate physical deterioration of the built fabric resulting from pollution, reduce air and noise pollution and protect the environment, sustain the overall attractiveness of the city and support tourism.

Thus, in the residential areas of the Old City though traffic has been avoided by concentrating traffic on main axes. Central historical areas and a network of axes are designed as pedestrian route. The public transport from and to the old city improved by providing appropriate vehicles and servicing lines. Separate driveways and effective maintenance as well as parking facilities established for residents and visitors.

Finally, this holistically approached project implemented with cooperation of GTZ, Arab Fund for Economic and Social Development and Aga Khan Trust for Culture has chalked up remarkable successes in Aleppo, citizens cooperate enthusiastically with the

city council and the municipal authorities. And now the project is considered exemplary in its field.

Timisoara, Romania: city in western Romania, capital of Timiș County, on the Begej River and Begej Canal. The city consists of an inner town, which formerly was fortified, and four suburbs that are separated from the inner town by parks. Timisoara is a commercial center and one of the largest cities in Romania. The historical city area was on verge of collapse through “Balkanizing” or through the phenomenon of deserting this area. This might happen through the closing down of local commerce, abusive taking over of the public space or the loss of enjoyment of the street-life, and having this area taken over by the poorest people in town. As a sum this negative effects can lead to the loss of the city’s centrality. The first action of taking over the public space started with temporal, legal, or illegal constructions which afterwards tend to become permanent. This slowly leads to the loss of the initial identity of the central area. Considering these effects, the danger is the loss of the cities’ identity, given by their historical centers’ identity, which was not only danger of Timisoara but European historic centers as a whole.

In response to the danger of the destruction of European city centers, “The Leipzig chart for Durable European Cities,” in 2007 appeared a European Community act, in which one of the main goals is to attract investments and activities in the cities centers through the citizens’ participation. Another goal is to put an end to the limitless extension of the cities.

The revitalization model selected to perform this task was the sustainability model out of three models presented which are service center revitalization; economy based revitalization and finally sustainability model, the third model, was selected. The sustainability (holistic) bases its strategy upon a balanced development of all economical, ecological, and social criteria. This model proposes avoiding the excessive one way development and tries to avoid the social and ecological unbalances which result from an exclusively economical development, be it based on services or entrepreneurs. This model was implemented in two project phases such as:

- *Phase one - revitalizing historical central areas*
- *Phase two – creating a network of public spaces*

Phase one- revitalizing historical central areas: its entire economical development is encouraged by revitalizing a city's' historical centre. This revitalization is done under three levels, mainly, re-functioning of buildings – remaking of public spaces – reorienting artistic events in the public spaces, exactly in this order.

1. Re-functioning of Buildings.

It is done by transforming the inhabited spaces on the ground-floor into Coffee-shops, pubs, clubs and beer-houses for the young.

2. Re-making of Public Spaces

It is done by gradually banning cars from public spaces along with remaking the urban infrastructure, by making a terrace network and by placing artistic works and restoring existent one.

3. Re-orienting Artistic Events

Public space festivals, carnivals, scenes for mobile theatres, music shows are organized. According to the sustainability pattern previously mentioned it clearly results that by applying only one specific revitalizing strategy for the historic city isn't enough.

Phase two – creating a network of public spaces: An analysis of the historical evolution of Timisoara's centers (Cetate) shows that number of public space has not increased since 1890 till 2005 even though the population increased from 75.000 to 350.000. To create a network of support centers for "Cetate" a series of pedestrian pathways were proposed which contain each community's promenade converging on "Cetate" but also interconnect. This is the only way the whole "Cetate" neighborhood can become a centre, a pedestrian public space, fit for the size of the city. Thus different levels of centers where established mainly at city level, community level and neighborhood level according respective to population size of spatial area.

Finally, the strategy applied to revitalize Timisoara's main centre, the historical neighborhood "Cetate," which has proven its success, can be downscaled, and adapted to fit any community public space. It increases livability and attraction through a perpetual cycle of users drawn by other users.

Melaka, Malaysia: the historical city of Melaka has always been in the forefront of Heritage Tourism. Melaka provides splendid example of the way in which history is packaged and promoted as heritage. It is also currently applying to be listed as a World Heritage Site to strengthen its standing in the tourism scene. While there are abundant museums and other tourist attractions within the Civic Area, the Old Quarter has largely remained residential. In the year 2004, the Melaka state government, in order to improve conservation in the city, had embarked on streetscape improvement at the Old Quarter. The main thrust is to reduce vehicular traffic vibration that would affect the fragile heritage buildings. Another strategy is to provide a functional pedestrian network and creating harmonious streetscape that improves the overall quality to the living environment.

In the year 2003, the Melaka Government, working on the JICA studies started urban rejuvenation program. One main component is to reduce vehicular traffic and improve the streetscape of this area. The main thrust is to reduce vibration pressure to conserve the buildings, which foundations were sitting on relatively soft ground. As part of this exercise, a pedestrian pavement was constructed along the streets mentioned above.

The Streetscape improvements had practically opened up this previously quite residential area to the arrival of hordes of tourists. More and more tourists are now exploring the Old Quarter of Melaka to fulfill their curiosity. The introduction of a new pedestrian walkway as part of the streetscape improvement at this area practically opens up the whole area to an unprecedented increase in influx of tourists.

Copenhagen, Denmark: According to Gehl, (2010) Copenhagen was one of the first cities in Europe to begin reducing car traffic and parking in the city center in order to create once again better space for city life. The situation of pedestrianizing streets of Copenhagen is discussed by Jan Gehl as follow.

Copenhagen's traditional main street, Storgæt, was converted into a pedestrian promenade already in use in 1962. Skepticism abounded, would a project like this really succeed so forth?

After only a short period it was clear that the project was enjoying greater success faster than anyone anticipated. The number of pedestrians rose 35% in the first year alone. It

was more comfortable to walk and there was space for more people. Since then, more streets have been converted for pedestrian traffic and city life. And one by one the parking places in the city center have been turned into square that accommodate public life.

The pattern in the city center is now being repeated in outlying district where in recent years many streets and squares have been converted from traffic islands into pedestrian friendly squares. The conclusion from Copenhagen is unequivocal: if people rather than cars are invited in to the city, pedestrian traffic and city life increase correspondingly.

Extensive analysis in 1968, 1986, 1995, and 2005 documented a significant change in city life. The many whole hearted invitations to walk, stand, and sit in the city's common space had resulted in remarkable new urban pattern: many more people walk and stay in the city.

3.7 Legal instruments for conservation and revitalization of historical areas

During revitalization of heritage towns there should be consideration of charters especially for those heritage sites which are recognized internationally.

It is also essential that the principles guiding the preservation and restoration of ancient buildings should be agreed and be laid down on an international basis, with each country being responsible for applying the plan within the framework of its own culture and traditions.

With this regard, in order to bind restoration and revitalization program of different countries heritage, increasing awareness and critical study have been brought to bear on problems which have continually become more complex and varied with the current situation of rapid urbanization, population pressure and globalization. Thus, different charters, principles, and constitutions have been issued in order to save benefits of heritage areas for the benefit of humanity.

Some of these legal instruments are briefly discussed under the scope of this thesis as follow.

3.7.1 The Venice charter (International Charter for the Conservation and Restoration of Monuments and Sites, 1964)

The 2nd International Congress of Architects and Technicians of Historic Monuments, which met in Venice from May 25th to 31st 1964, approved Venice charter which contains five chapters with 15 articles. And main topics related to the topic of the thesis are discussed below.

The first chapter defines the meaning of historic monuments as: the concept of a historic monument embraces not only the single architectural work but also the urban or rural setting in which is found the evidence of a particular civilization, a significant development, or a historic event. This applies not only to great works of art but also to more modest works of the past which have acquired cultural significance with the passing of time.

Under the second chapter it discusses the importance of preserving the setting of the monuments without altering the relation of mass under article 6 of the charter quoted as “The conservation of a monument implies preserving a setting which is not out of scale. Wherever the traditional setting exists, it must be kept. No new construction, demolition, or modification which would alter the relations of mass and color must be allowed.”

Under article 11 of chapter 3, which is restoration, it states importance of revealing different time history of monuments as “The valid contributions of all periods to the building of a monument must be respected, since unity of style is not the aim of a restoration.”

3.7.2 The Washington charter (charter for conservation of historic towns and urban areas, 1987)

This charter concerns historic urban areas, large and small, including cities, towns and historic centers or quarters, together with their natural and manmade environment. With the threat historic areas face which often lead to irreversible cultural, social, and even economic losses, Washington charter was drawn up as complement for Venice charter. Washington charter defines principles, objectives, and methods necessary for conservation of historical towns and urban areas.

It is divided in to two parts. The first one defines the principles and objective of the charter and the second part lists methods and instruments to follow in due process. Under the first part of the charter article 2 states five qualities of urban heritage need to be preserved out of which four of them (a, b, d, and e) directly relate to urban public open spaces which are listed as:

- A) Urban patterns as defined by lots and streets;
- b) Relationships between buildings and green and open spaces;
- c) The formal appearance, interior and exterior, of buildings as defined by scale, size, style, construction, materials, color and decoration;
- d) The relationship between the town or urban area and its surrounding setting, both natural and man-made; and
- e) The various functions that the town or urban area has acquired over time.

The second part of the charter states different methods and instruments in conservation of historical areas some of which are listed as follow according to their relevance to the scope of this paper:

Article 6: states new functions and activities should be compatible with the character of historic urban towns though need for change is required.

Impact of traffic on historic areas is one of the elements which have been given due emphasis on this charter as referred under three different articles listed as follow:

12. Traffic inside a historic town or urban area must be controlled and parking areas must be planned so that they do not damage the historic fabric or its environment.

13. When urban or regional planning provides for the construction of major motorways, they must not penetrate a historic town or urban area, but they should improve access to them.

14. Historic towns should be protected against natural disasters and nuisances such as pollution and vibrations in order to safeguard the heritage and for the security and wellbeing of the residents.

3.7.3 The Valletta principle (principle for safeguarding and management of historic cities and towns and urban areas, 2011)

It is upgrade for the approaches in Washington charter. This principle tries to strengthen social rootedness and counteract segregation and rootlessness through reinforcing identity beyond safeguarding heritage areas. It redefines objectives, attitudes and tools needed concerning safeguarding and management of historic towns and urban areas by upgrading the scale to regional level rather than confined areas through recommendation of considering heritage as fundamental resource in urban ecosystem.

The document contains four part which are definition; aspect of change; intervention criteria and proposal or strategy.

In the second part, Aspect of change, it oblige change to be made for improvement of environmental context of historic town should be in a way that improve quality of air,

water and soil; foster spread and accessibility of green spaces; avoid pressure on a natural resources.

It also recognizes climate change as a devastating challenge for historical area as “climate changes have devastating consequence for historic town and urban area because in addition to the fragility of urban fabric, many buildings are becoming obsolete. Therefore, historic towns setting must be protected from climate change.”

Under the fourth part of the principle sub-portion a - elements to be preserved, it primarily refer to the urban patterns defined as street grid, the lot, green spaces and relationship between building, green and open spaces. It also discussed issues like various functions the town acquire over time and need to consider town with its surrounding.

Further, under this part in sub-portion of new function it try to regulate type of new function and way to introduce it to historical areas. It primarily states “the introduction of new activities must not compromise the survival of traditional activities or anything that support the daily life of the local inhabitants.

Similarly, with respect to public spaces this sub-portion discusses public space in historic towns is not just as essential resource for circulation, but is also a place for contemplation, learning, and enjoyment of town. Its design and layout, including the choice of street furniture, as well as its management must protect its character and beauty and promote its use as a public place dedicated to social communication.

With regard to mobility, it also recommends careful management to avoid effects of transport conflict and congestions mentioned previously in Washington charter articles. Such historic towns and urban areas were designed for pedestrian and slow form of transport gradually these places were invaded by the car, causing their degradation at the same time, quality of life has reduced.

It also state that traffic infrastructure must be planned in ways that will not damage the historic fabric or its environment. It also discusses the value of pedestrianization as “it is important to encourage pedestrian circulation, to achieve this traffic should be drastically limited and parking facilities reduced. At the same time, sustainable non polluting public

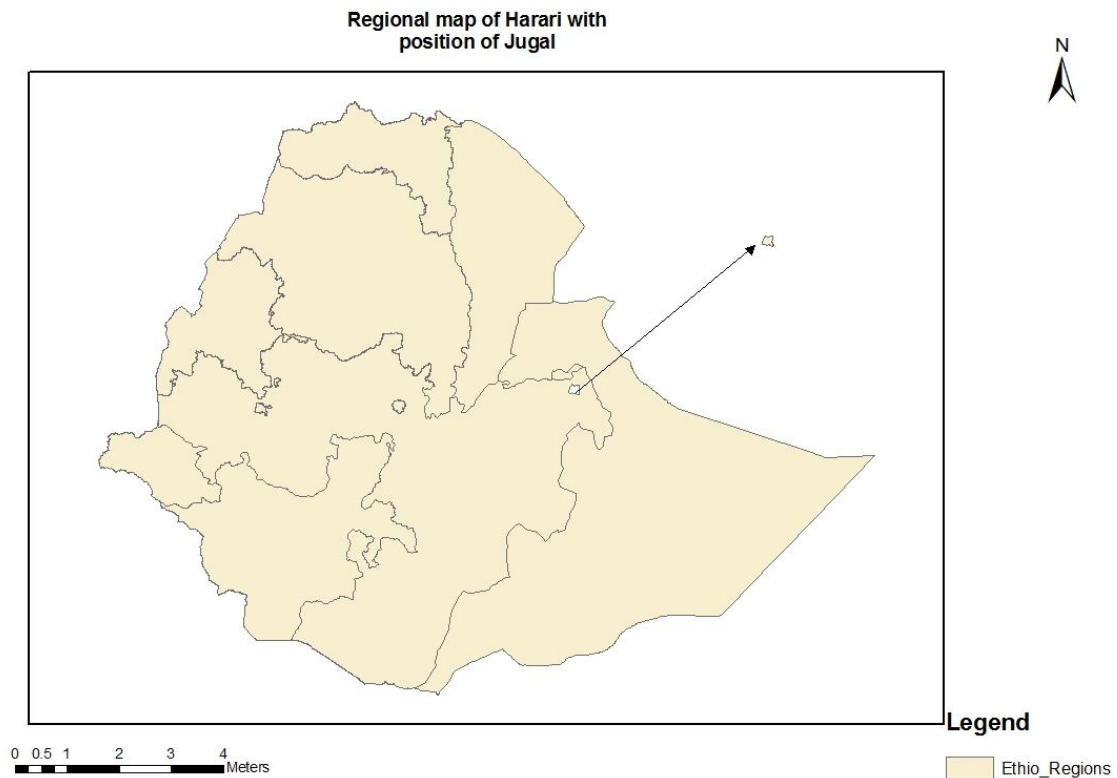
transport system need to be introduced and soft mobility promoted and priority should be given for pedestrians.

3.7.4 UNESCO Recommendation on historic urban area, 2011

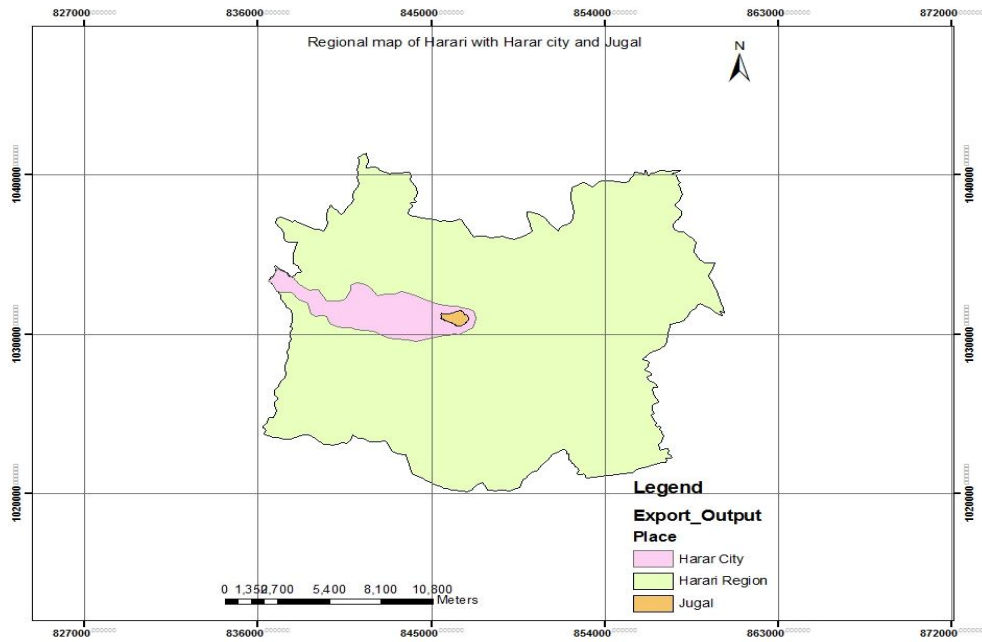
Beyond the importance of cities for various issues, the current trend of rapid and uncontrolled urbanization presents significant threat to quality of urban, its surrounding area, and heritage. As a result, though conservation practice for half of century had focused on architectural monuments, broader recognition on the importance of social, cultural, and economic processes has emerged. Thus, conservation of heritage requires desire to adapt the existing policies and create new tools to address this mission. Hence, landscape design approach is suggested for this new desire. This approach identifies, consider, and manage historic area within their broader urban condition by considering interrelationship of physical form, spatial organization, natural features, social, cultural, and economic conditions, and quality of human environment.

4.0 BACKGROUND OF THE STUDY AREA

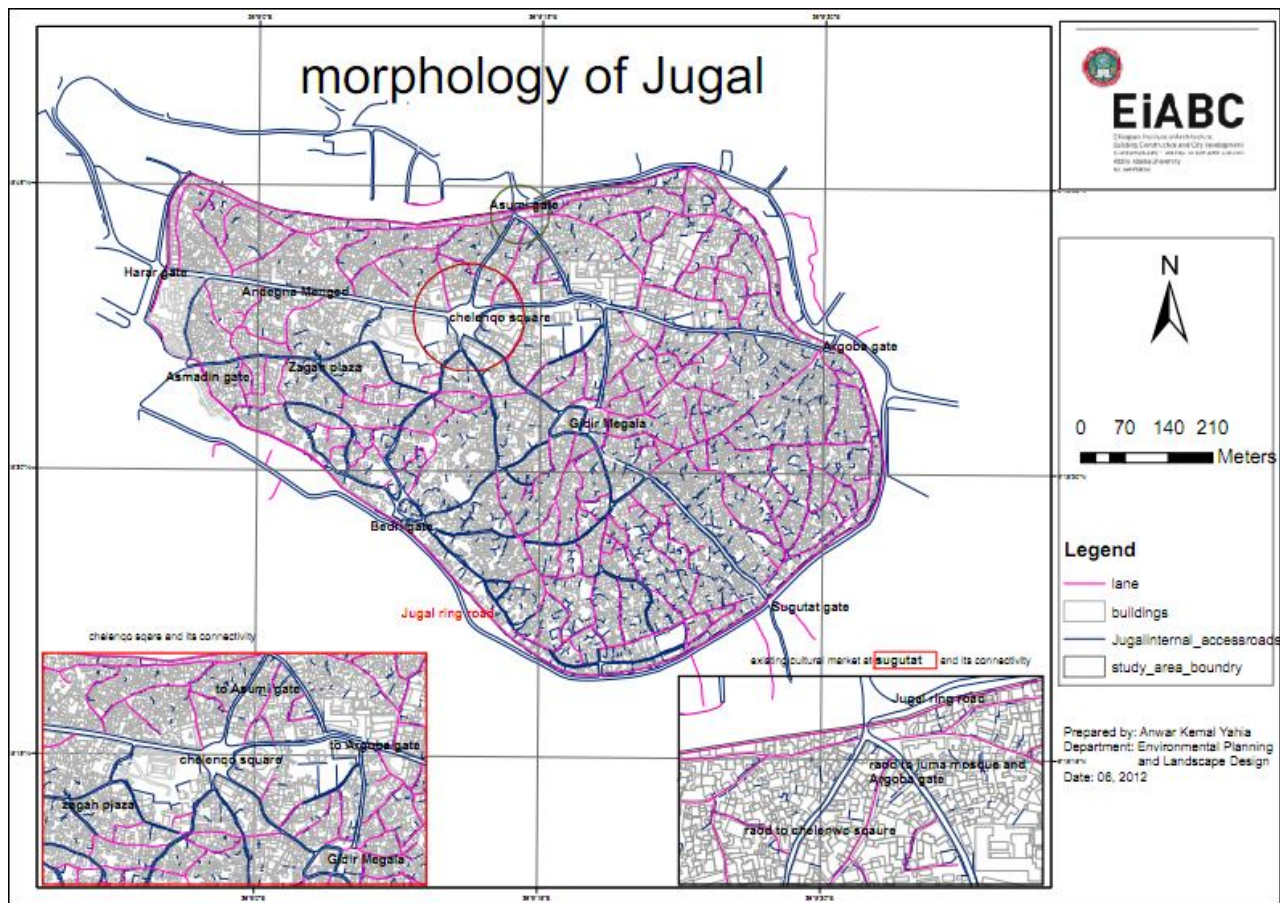
Our world has different types of heritage in different countries and cultures which are fingerprint of ancient civilizations. Ethiopia, as one of that ancient civilization, has provided nine internationally significant heritages to the world till now. Jugal is one of these heritages, which was registered in the year 2004 as world heritage. It is found in Harar city, the capital of Harari Regional State, located at the western edge of the Region on an approximate geographical coordinates of $9^{\circ} 20'N'$ and $42^{\circ} 10'E$, which is about 550 km to south east of Addis Ababa along Jigjiga road. It is situated at 1852 m.a.s.l occupying an area of 48 hectares with circumference of 33,412 meter. Jugal differs from other heritage of the country in that, the whole of the city and its surrounding agricultural activities are all registered as heritage. Jugal's Significance as cultural and religious place is quoted as "Jugal also offers a very good and complete example of a traditional human settlement which illustrates a significant Islamic culture of Ethiopian history" (Harar nomination file, 2004).



Map 1: Regional map of Ethiopia (source EthioGIS, 2004)



Map 2a: Regional map of Harari with Harar city and Jugal



Map 2b: morphology of Jugal

4.1 Spatial organization of Harar

4.1.1 Establishment of Harar

The walled city of Harar is believed to be established in the second half of sixteenth century. The construction of the wall has important contribution in restoring the settlement pattern of early period (NUPI, 1984). Each neighborhood within this wall had public spaces which are currently lost as a result of illegal construction of residential houses in response to population increment. This is noted in (IDP, 2006) as “between every feature of the hierarchical structural organization of the city there originally were open spaces, which used to serve and still serving (wherever they are being preserved) different communal as well as private purposes in the community” (NUPI, 2001).

4.1.2 Regulation plan of Harar prepared during Italian occupation in 1937

This was a type of master plan which is based on a system that facilitates a colonial rule. The theme of this plan which is prepared by the then governor of Harar, Nasi, is relationship between white and indigenous city and nothing was mentioned concerning the public spaces during this time.

4.1.3 The master plan of 1967

This master plan was prepared by the Italian town planner team known as Barucci Di Gaddo Sacco Architects. This plan has given base to the current morphology of Harar. The plan preserves the current land use and structure of Jugal except few additions of services like kindergarten, public bath (not implemented), and large development of commerce and major street of Jugal.

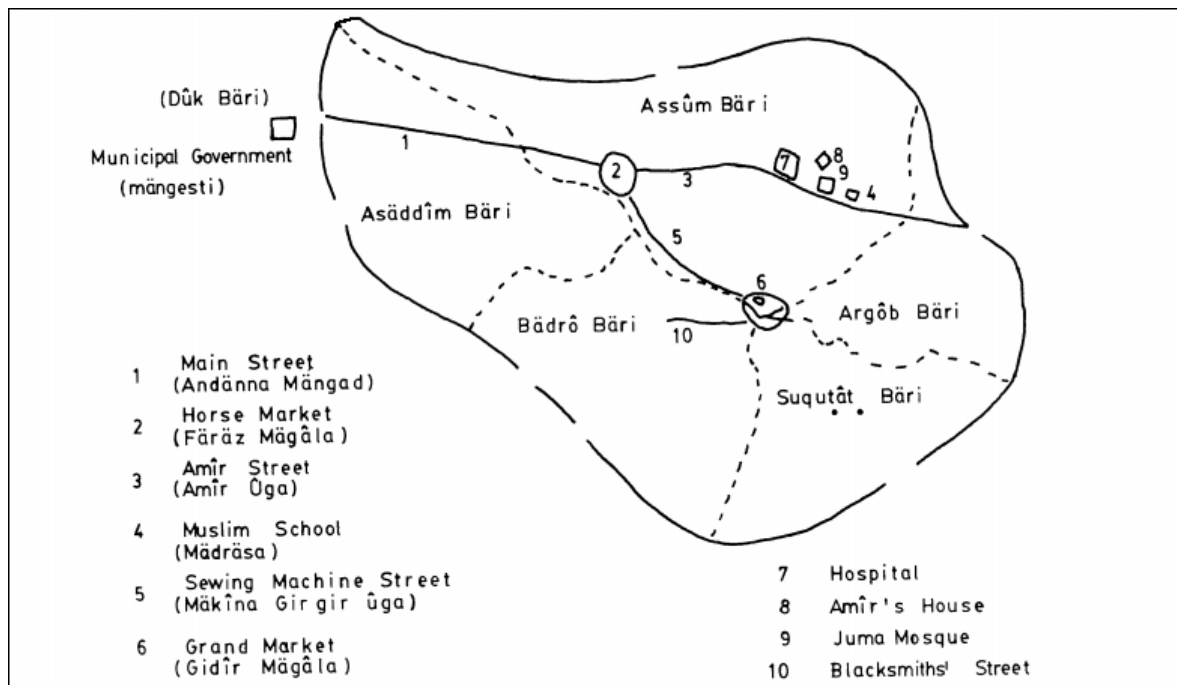
Concerning new part of Harar, it was found that existing streets are more or less the result of this master plan and part of existing land uses are also guided by this plan. Its major problem is lack of proper control on its implementation and improper decision to change the proposed land uses and public lands. Analysis of this master plan and its implementation shows difference in ratio of land use proposed and its implementation. Among this to see the variations in public open spaces the proposed percentage of land was 12.05% while its implementation is limited to less than one percent for open space land use which is 0.91%. Similarly, area of conservation proposed for utilization of different functions were 11.42% of land use but in its implementation no land was designated for this purpose (NUPI, 2001).

On the other hand, land use for military force, forest and agricultural services have occupied more than its planned land use percentage which is an increase of 3.75% and 23.83% respectively. One of the reasons for the diminishing of public green space is the expansion of armed force camp among major residential areas of the city (NUPI, 2001).

The implementation of this master plan had been working till recently though other master plan was developed after 38 years of its development in 1975 E.C. The latter master plan was failed as a result of lack of detail land use planning and lack of landscape consideration (NUPI, 2001).

4.2 Spatial organization of Jugal

“Jugal is divided in to five quarters which are related to the five gates of the wall: *Assumiberiach* (Felana Ber), *Assemedinberiach* (Shewa Ber), *Bedroberiach* (Buda Ber), *Suqutatberiach* (Senga Ber) and *Argoberiach* (Erer Ber) as shown in Picture 2. Each quarter intern divided in to neighborhood called *Toyach*” (Dorothy Hecht, 1982). Each neighborhood has its own identity or image as a tool for cultural awareness which can be a mosque or *Awach* and *Ayach* (representative for internationally or locally renowned religious scholars and leaders of both sexes who have made significant contribution for the city and or the religion). This self awareness is also noted by Waldron, 1948 as “Hararis use various tools and methods in order to reinforce cultural self awareness on their generation and sustain their way of life. This enable them maintain their identity among the majority of cultures around them. Among these cultural reinforcement methods, house hold architecture, and décor including basketry should be mentioned as a symbol of identity.”



Picture 2: Classification of Jugal in quarters (Dorothy Hecht, 1982)

The number of neighborhoods in each quarter varies from 8 in *Asemedinberiach* to 24 in *Assumiberiach*. Each of these neighborhood are comprised of a number of communal compounds, the so called *Abat*, which are surrounded by a stone wall fencing of about 1.80 m high. Within the communal compound */Abat/*, there are 5 or more households. These households have their own compounds the so called *Garabat*, which contains the actual living quarters, the so called *Gegar*.

Though, Jugal house orientation have some similarity with the Court yard type : which is oriented away from the street; receiving its light from an inner court, and buildings are so arranged as to secure a maximum of privacy to its inhabitants especially for the women. Household and compound architecture of Jugal can be seen as an adaptation ensuring residential privacy in extremely crowded conditions, rather than being specifically related to the treatment of women (Waldron, 1958).

The spatial organization of Jugal is structured by two elements: the city wall and the major street from Harar gate to the square in front of the church which is now called Chelenqo square (IDP, 2001).

4.2.1 The city wall of Jugal defines the morphology of the city that distinctly separates the old building typology and urban character from the other urban part (Development plan of Harar, 2001, P122).

The organization of the space or landscape outside Jugal can be categorized in to two main categories which are the farm or working landscape named Geyharshi and built-in landscape called the new city. Geyharshi mainly found around the east, north-east and south-west portion of Jugal. The new city or built-in landscape is mainly found at the western, south-west, and north-west part of Jugal.

Geyharshi originally comprises of three different round circles around Jugal which varies according to the availability of streams for irrigation, soil type, and immediate need of population of Jugal. Every residents of Jugal used to have parcel of land among these three different types of circular agricultural land use which enable production of various products by every citizens. The land tenure system of these agricultural lands was privately owned land with every farmer having his own certification written by Harari language through Arabic Latin Alphabets on skin hide.

Every farmer has been organized through cultural irrigation system along a common irrigation stream. These organizations have been headed by democratically elected irrigation system leader called *Miy Melak* meaning water distribution head. With this organization they solve every dispute among the farmers and manage their irrigation system and also other necessary issues.

With regard to the agricultural land use of aforementioned circular patterns, the inner most circle is the garden called *Areda*. Here residents of Jugal plant medicinal plants, fruits, cabbages, legumes and other plants needed for immediate use. The middle circle called *Gefegay* used to be the farm land for coffee, tchat, sorghum and other consumer goods. The outer-most circle, which they call *Gefefa* are used for cereals plants (IDP, 2006; P 45).

The density and the complexity of most of Jugel's interior, and its strained and inadequate resources encouraged settlement and growth beyond the city walls³. Hence the Italians started the new city by construction of the current administration offices just west of Harar Gate and *Butega* settlement areas. During the imperial era and the

Dergue regime these efforts of Italians were strengthened in addition to establishment of several military camps as a result of security issues in the region (IDP, 2006; P 46).

4.2.2 The main street (*Andegna Menged*) and Chelenqo square (Feres Magala)

Andegna Menged: is the commercial line of Jugal which is also connected to the original market called Gidir-Megala through the radiating streets from Chelenqo square and narrow commercial lanes emerging from this market. Besides this, Jugal in total is "divided into five quarters each of which is connected with the radiating streets except one which is *Bedri Beri (Buda Ber)*. Except for the introduction of the new gate which connects it to the new city during Menilik II's conquest (Dorothy Hecht, 1982) and an introduction of thoroughfares or the streets, the old town has undergone no major changes since its establishment which dates back about 1000 years (IDP, 2006).

According to Harar nomination file, 2004 a new straight street has been realized during the Italian occupation, within the traditional fabric, from a new western gate (called then Duke gate and now Harar gate) to the central main square of the city, allowing cars to get into the core of the city. But, due to the fact that the buildings constructed along this main thoroughfare have a modest scale (only one or two floors above the street level) the whole street was successfully integrated into the city. Welcoming new activities, *Andegna Menged* is the main modern thoroughfare bordered by contemporary dresses and utilities shops thus gave a new life to the traditional Jugal.



Picture 3: *Andegna Menged* before its current condition (source Rimbaud Museum, Harar)

***Chelenqo square*:** According to Harar nomination file, 2004 the central place *Fares Magala* currently *Chelenqo square*, located at the end of the principal street or *Andegna Menged* presents the same typology as the latter, with a characteristic of density due to the centrality of the place which includes the cinema and outdoor cafe (currently changed to building material shop).

As to Harar nomination file, 2004, this central area is connected to the western gate (Harar gate) by the *straight street (Andegna Menged)*, main modern thoroughfare bordered by contemporary dresses and utilities shops. It is also related to the central great market (*Gidir Magala*) by *Makina Girgir Street (Sewing Machine street)*, a sloppy street bordered by traditional fabric shops, dress makers and open air tailors. Therefore, there is a continuous commercial spine which structures the city from the western gate to the central market. “The structure of the city, with this central core is occupied with commercial and religious building a mosque which was changed in to *Medanialem Church* shown in *Picture 4*, refers to the traditional Islamic urban structure” (*Harar nomination file, 2004*).

According to an interview by this thesis researcher with Assistant Professor Ahmad Zakaria: this square, popularly known as *Feres magala* used to serve as a traditional

horse market during the period of the ancient sovereign state of Harar. It also used to function as center of administration in different eras. It became a political center following the Egyptian occupation that made their central government seat at the current Amir Abdulahi Hall. Subsequently, the Italian also used this place as a political center where political administrations were executed.



Picture 4: Chelenqo Square before its current condition (source Rimbaud Museum, Harar)

Ahmed Zakaria also informed that, during occupation of Menilik and its subsequent regimes; *Chelenqo square* was also used to show superiority of these regimes' power using the square. The police station and Ras Mekonen hall (the then name) both were

used for the purpose of imposing sense of occupational rule rather than promoting sense of unification of Ethiopia. During this time, even the police station used to impose sense of being spayed instead of security.

But, with the emergence of Federal Ethiopia, Ras Mekonen hall was named after the last king of Harar and named Amir Abdulahi Hall. Different symbols that implicated sense of the occupation were removed from the hall by people's movement that took place following the fall of dergue regime. The police station was also started to be governed by residents of the region following right of self governance of nations and nationalities. As a result, positive image started to build up with the street and the square.

Currently, with revitalization program of the region, *Feres Magala square* was named *Chelenqo* square. And, monument for Chelenqo martyrs was built at the square. Therefore, as to Ahmed Zakaria, this monument reconciliates the then history of blood shade and the flourishing peace with the federal government. With this, it signifies the importance of democracy and denounces war and blood shade.

With regard to function and use of these sites, due to improper utilization and change of land use; non restricted type of commercial activities and high traffic movement, this main street have become congested area. This congestion of traffic is noted by (IDP, 2006) as "The road pattern in Jugal is basically and mainly organic, which is winding and very narrow. However, it serves a high number of motorized as well as pedestrian movements. This movement is especially high along the street that connects *Feres Megala* area (the main taxi station) with the different gates. The main street that extends from *Harar Ber* up to *Erer Ber* is exceptionally crowded for it is not only commercially active but also is currently the main line that connects *Meyay* to the center. Although it had been built centuries ago, and not designed and constructed to accommodate motorized movement, it currently serves a high traffic flow. Thus, congestion is typically observed in this area."

4.3 Typology of public open spaces in Jugal

Public open space is an open space without any restriction to its access for the public (Carmona et al, 2003). According to this definition different authors made various types of classification with regard to public open space typology. The one which is found

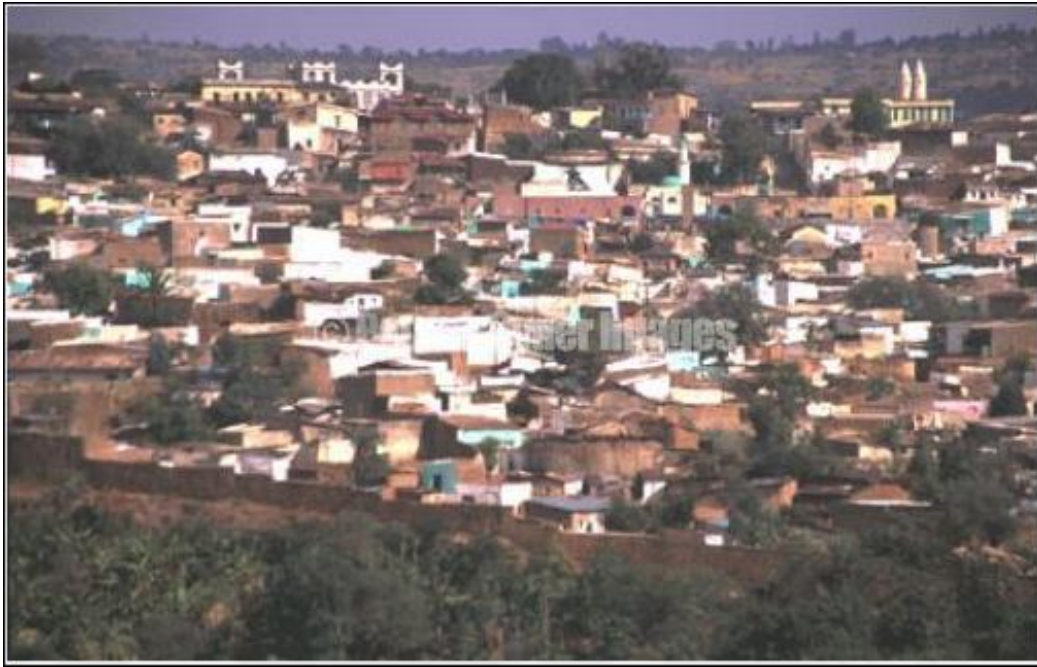
convenient for the case of Harar is typological classification of London's Urban Green Task Force (UGTS, 2007) who classified public open spaces as follow.

- Civic and market squares, and other hard-surfaced areas designed for pedestrians.
- Churchyards, cemeteries, disused and other burial grounds.
- Parks and gardens.
- Amenity green space
- Outdoor sports facilities.
- Natural and semi-natural green spaces (including urban woodland).
- Provision for children and young people.
- Community gardens and urban farms.

Accordingly, this researcher classifies public open space in Jugal into five main types which serve various demands of the public. These are:

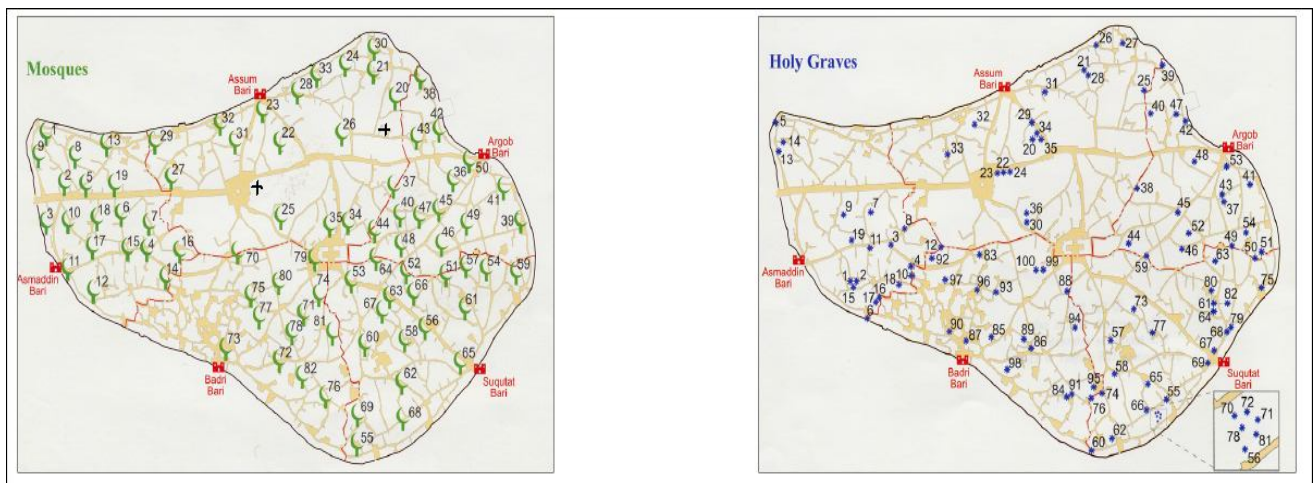
- Mosques and Churches compounds,
- Holly graves and shrines compounds,
- Markets and festivity public open spaces,
- Buffer zone which is working landscape,
- The streets, *Chelenqo* square, and the winding narrow lanes which can be called civic areas of Jugal.

Mosque and Church yard: In Jugal Mosques'and Churches'yard or compounds are public open spaces which mainly serve religious and cultural purposes for their respective followers. There are about 82 mosques with in Jugal. Out of which one of them is the grand *Juma* mosque. The other remaining ones are found within each neighborhoods of Jugal serving as identity which is described by Elisabeth-Dorothe Hecht and Sydney Waldron as stated earlier in section 4.2. With regard to Churches, there is one Orthodox Church and one Catholic Church which are situated at west and east of Juma Mosque with very little distances among them respectively.



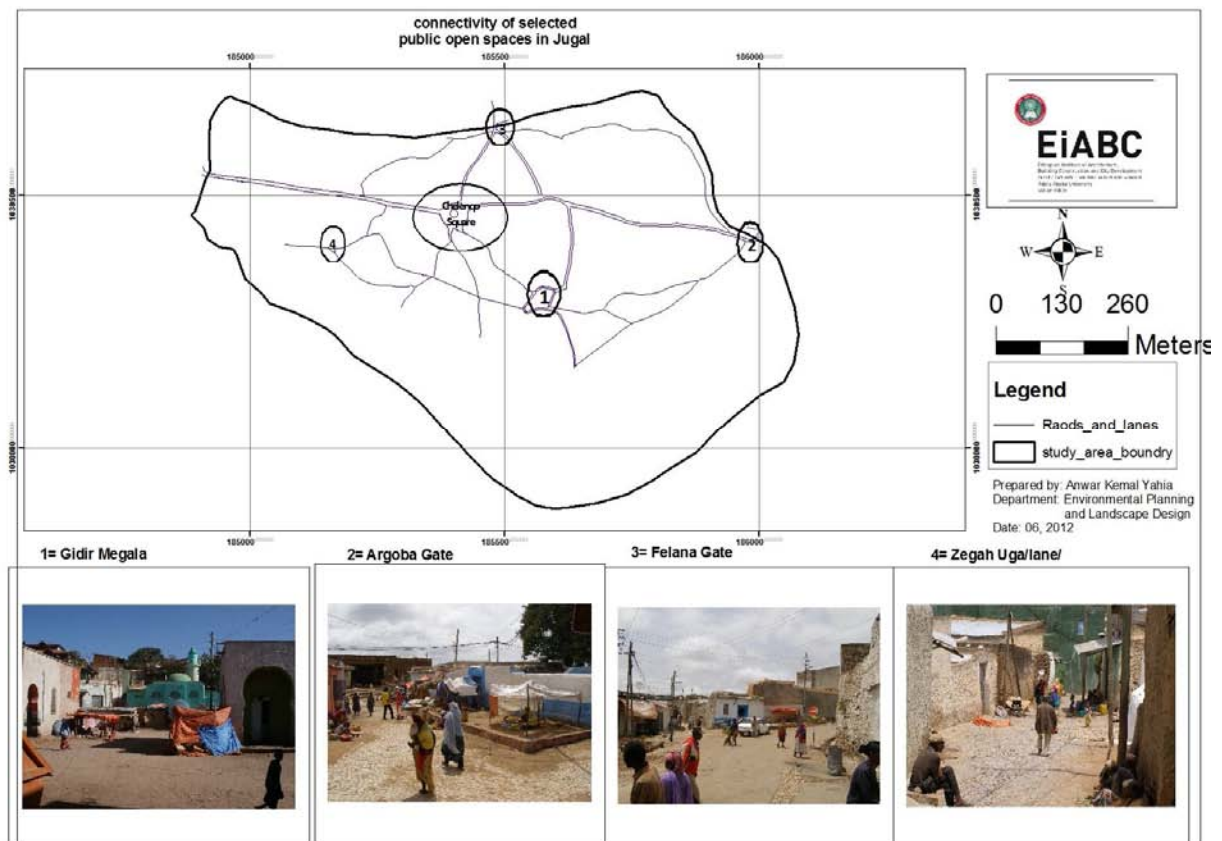
Picture 5: Picture showing congestion in Jugal (source EverythingHarar.com)

Holy graves and shrines compound: there are around 102 shrines scattered within Jugal as shown in picture 6. Some of these shrines (which are locally called as *Awach* and *Ayach* to mean fathers and mothers) are found in private compound, some are found along lanes. Some are renowned ones which occupy large areal compound and vital place in various socio-cultural purposes in relation to religious and cultural activity. Similar to Mosques, Shrines also serve as identity to local neighbors.



Picture 6: Mosque and church (left); shrines or holly graves (right) Source: modified from Harar Nomination File, 2004)

Markets and festivity places: According to this thesis author, there are about four public open spaces which serve as market, festivity and other purposes in Jugal. These spaces are plazas of *Argoba/ erer/ gate*, *Asumiy/ felana/ gate*, *Gidir megala*, *Zegah uga* plaza, and *Chelenqo* square. Traditionally, though each of the five quarters used to have market plaza in front of every gate, currently only *Argoba* gate and *Asumiy* gate market plazas exist⁴. These two plazas serve as cultural market places throughout the year except at time of the famous celebration of “*Shawal Eid*” - regional festivity for three days where males choose their brides for marriage. *Zegah Uga* lane also serve as sort of market path way except the day of “*Mewlid*” which is national festivity for the birth of Prophet Mohamed (p.b.u.h). Among these spaces four of them which are *Felana Gate*, *Argoba Gate*, *Gidir Megala* and *Chelenqo* Square are connected by the radiating street from *Chelenqo* square which have similar character throughout the way. But, *Zegah Uga* does not have any type of convenient connection with these spaces except through elongated lane.



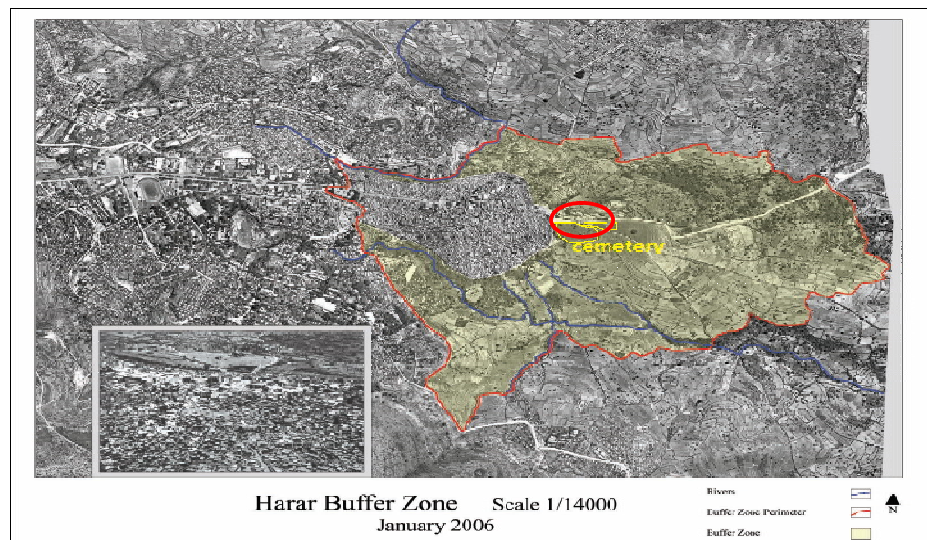
Map 3: Spatial location of some of festivity and market public open spaces

⁴ The market plaza at *Asmadin* gate or *Shoa* gate is not selected because the main market of *Asmadin* gate is out of Jugal and need further research to study the relation and impact it have with Jugal. Besides it does not have cultural celebration or festivity activity which gives it similarity with the aforementioned spaces.

Gidir Megala: notes from Harar nomination file indicates that *Gidir Megala* is famous traditional colorful local market that attract many tourists. It was the main market of Jugal or even can be said for Harar in total before construction of the new city and the biggest market of the region at gate *Asmadin/Shoa/* called shoa market. This market place is a very critical place for the history of Harar besides being market. It almost clearly shows the total evolution of history of Jugal. It contains the Egyptian occupation era building such as *Arab Bank* (found along *Mekina Girgir* lane that connects *Gidir Megala* to *Chelenqo Square*) and *Arab Mosque*. House of Arthur Rimbaude which was built before Harar was unified with Ethiopia. Likewise, at this time there was also the influence of Indian type housing typology and house of Emperor Hailesilase which is currently Abdella Sherif museum found around “*Mekina Girgir.*”

The streets, Chelenqo square and winding narrow lanes: are the other types of public open spaces of Jugal. The winding radial streets radiate from *Chelenqo* square to the three gates of Jugal. These roads mainly serve for the purpose of connectivity except *Andegna Menged* which serves various types of public activity. It is the main route to connect to the new city and is tourist route as discussed in section 4.2.2 and will further be discussed in the fifth chapter. A number of winding narrow lanes of Jugal did also serve as connectivity.

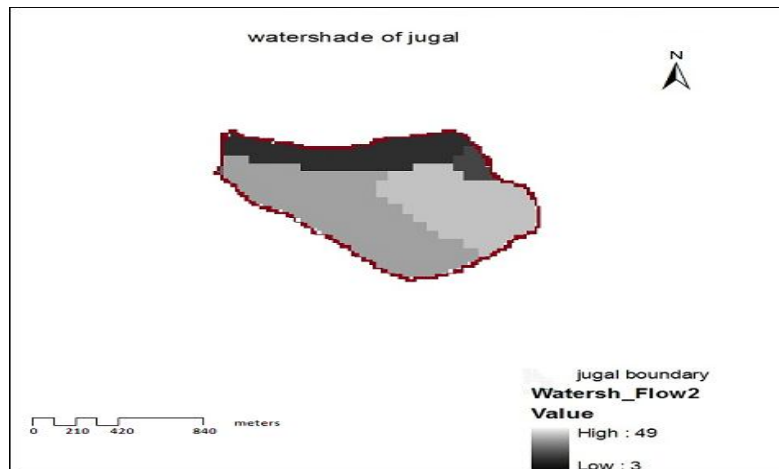
The buffer zone: “is the other public open space of Jugal mainly found around north east, east, south east, and southern part of Jugal. It is about 52 hectares which is mainly occupied with working landscape constituted of agricultural land.” The spatial organization of this buffer zone is also discussed in detail at section 4.2.1. The cemetery is also public space which is found within buffer zone near to *Argoba* gate.



Picture 7: Buffer zone of Jugal and cemetery (source Harar nomination file,2004)

4.4 Drainage of Jugal

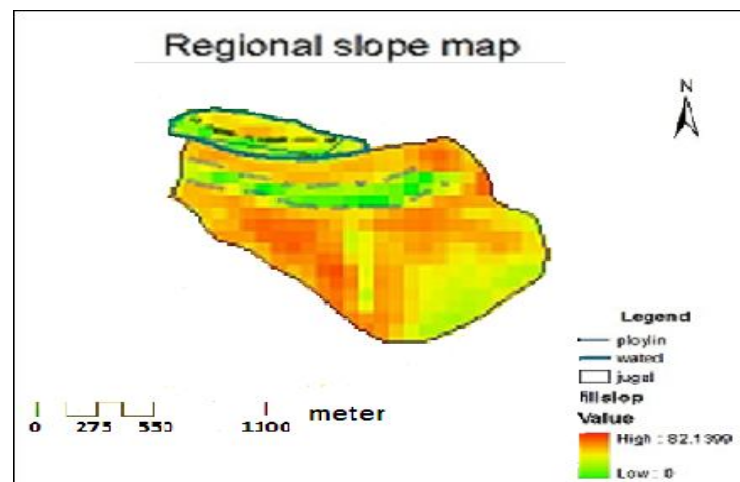
Drainage classifies Jugal entirely into three basins. The first one drains towards north direction. This drainage occupies the space that situates north direction of *Andegna Menged* which is consisted of *Asumiy* gate and part of *Argobari* gate as shown with deep dark color in map 3. The second drainage consists of *Bedri*, *Asmadin* and part of *Asumiy* gate which are entirely situated at south and south east of *Andegna Menged* as shown with gray color in the map. The third drainage, marked by faded white gray color is situated along *Sugutat* gate which drains to east of Jugal as to map 3 below.



Map 4: Water shade of Jugal

4.5 Slope

The slope of Jugal signifies its drainage. It has a sloppy land surface that increases toward the study area which is situated at the highest position of Jugal. But, the slope of the study area is graded which ranges from 0-2% as shown in the map 4 below by green color at the center of Jugal moving from west to east.



Map 5: Slope of Jugal and discontinued ring road

5.0 ANALYSIS OF RESULTS AND DISCUSSIONS ON THE STUDY AREA

5.1 Operations on the study area and facilities it provide for its functionality

Findings of operations obtained on the main street (*Andegna Menged*) and *chelenqo square* used field excursion which contained observation of the activities happening on the area, photograph shots, behavioral mapping, and interview with renowned personalities on Harar. With these and different type of other information gathering methods including those obtained from secondary data, the success of the study area as public space was investigated according to measure points on the successful functionality of public open space listed under table 1 and arranged in analytical frame work portion of methodology. These measure points are: use and activity with addition of traffic condition of the space; comfort and image; access and linkage and sociability of the space which will be discussed below according to the respective order.

5.1.1 Use and Activity: refers to the activities that are performed on the place. Investigating these activities can be used for grasping the potential demand of the population from the site and the relationship the site has with its users. Identification and management of activities performed on the place is also detrimental for the preservation and enhancement of the study area which may render the otherwise if not properly controlled. Therefore, the relation between cultural identity of Jugal and the type of activities undergoing on the site should be analyzed as listed in table 2. Hence, this investigation was made to identify whether these activities on the civic public open space complements the efforts of revitalization, betterment of Jugal's image and enhancement of public utilization of the site.

Accordingly, from the field excursion it was found that the street and the square serve various uses. These uses cover all range of outdoor activities which are optional, necessary and social activities in situation with almost no proper functioning space and facility as discussed below.

Necessary activity: since these types of activities occur regardless of quality of a space and functions it support, it was observed that necessary activity took place on the area throughout the day without major hindrance of time and situations. Though little variation

in the amount of participants was observed, this activity occurs despite favorable condition. Some of these activities are local market and movement.

Local market along the study area: among common local markets qat selling and buying is much known for Harar. It took place at certain moments of a day which take place despite the quality of the space. It only looks for the moment of buyers' demand which is around noon and dusk. At this moment qat market can be observed at certain fixed areas despite the conditionality of the study area.



Picture 8: Qat market along Chelenqo square at noon (for spatial location refer Annex 2)



Picture 9: Qat market of Chelenqo square at dusk (for spatial location refer Annex 2)

Beside qat market, the other known indigenous local market is coffee and tea drink sells which take place along the study area. In addition to these, beverage sells are accompanied with breakfast service most of the time. Some of these places can be shown on the following picture.



Picture 10: Beverage and breakfast local market (for spatial location refer Annex 2)

Land use along the edge of the study area: types of land use along a street influence pedestrian activity as noted by (Miyakoda, 2004) “three key components that must exist to support a successful pedestrian environment are land use plans, zoning ordinances, and transportation plans.” Land use also influence sense of identity and image of city as noted in table 2. Therefore, analysis of the pedestrian activity along the study area should also consider types of activities or land uses on the edge of the study area. With this regard, it was found that *Andegna Menged* is occupied mainly with stationary, electronic shops, textile retailers, goldsmith, café, bulk stores, and building material shops such as cement, painting, and metal products etc. And, Chelenqo square has a cinema, game center, kiosk, grocery, police station, and metal shops around its edge. Out of these land uses, building material shops are new type of shops which occupy about 16% of total land use which is at second place next to textile with 21.08% abundance. At the fourth place there is bulk store which occupy 5.23% of total land use along the study area. Increment of building materials arose as a result of boost of

housing construction in the region. Besides the boost of building material shops, the emergence of high rise building in the adjacent new city portion is competing for and taking away pedestrian friendly land use types like *boutique*, gallery, textile retailers, cafe and etc. The type and abundance of land use on the study area is shown in the table 4 as follow.

Table 4: type and abundance of land use on study area			
No.	type of land use	abundance	%
1	textile	35	20.34884
2	building material	28	16.27907
3	sheket	21	12.2093
4	electronics	17	9.883721
5	gold smith	13	7.55814
6	stationary	10	5.813953
7	store	9	5.232558
8	shoe shop	9	5.232558
9	hotel or bar	8	4.651163
10	cafe	6	3.488372
11	mosque	3	1.744186
12	barber shop	2	1.162791
13	bakery	2	1.162791
14	pharmacy	2	1.162791
15	glass shop	1	0.581395
16	cinema	1	0.581395
17	game house	1	0.581395
18	cosmetics	1	0.581395
19	church	1	0.581395
20	police station	1	0.581395
21	hall	1	0.581395

Building materials and stores mainly require tracks for transportation and also do not render anything to catch the glimpse of pedestrians. It also create nuisance through dust and smell of the materials on sale. Furthermore, this type of land use results in parking of Lorries and increase heavy transportation that renders congestion of the only available public space. On the study area these two types of land uses together occupy first place in abundance which is 21.51%. This shows the threat the area is facing from lack of controlling land use type. These predicaments resulted from the emergence of building material shops are also noted by the renowned researcher on Harar, A/Professor Ahmed Zekaria, who recommended prohibition of this types of activities during interview made with this thesis researcher. Likewise, the type of land use which is very suitable for pedestrian environment was mentioned by (Gehl 2011, 29) as

“greater number of stops were noted in front of shop and exhibits that had a direct relationship to other people and to the surrounding social environment, such as newspaper, kiosk, photography, clothing store, toy store etc.”

Movement along the study area: The other types of necessary activity which take place on the study area is movement from and to the study area for various reasons. Among different types of movements, the necessary type of movement is discussed in this part. The reasons for this necessary movement can be for buying or selling and for passing through since it is the main street that connects Jugal to the outer new city. As a result, the necessary movements that take place on the study area range from vehicle to pedestrian. Taking in to account that most type of movement that take place on the study area at inconvenient time are the necessary movement, the following pictures try to show movements around noon and morning. At noon, where the shadow decrease and the heat increase most relative to the whole day create unfavorable condition, aside from total absence of natural or artificial shading facility in the whole case area.

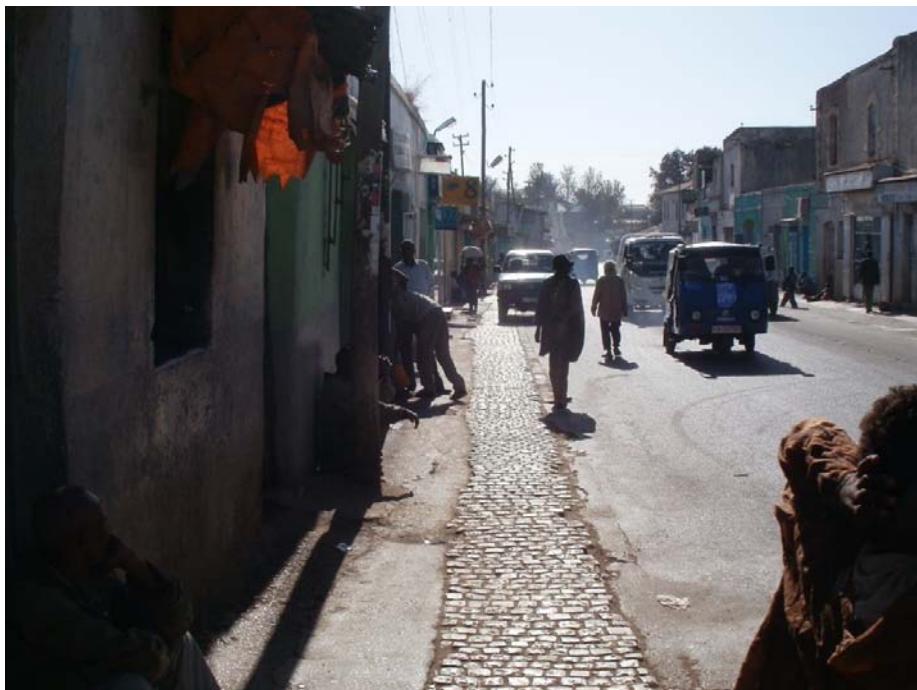


Picture 11: Movement along Andegna Menged morning



Picture 12: Movement along Andegna Menged at noon

Traffic condition: Among the necessary type of movements, vehicular movement is the major type of activity which occupies the study area. This place was also noted as one of the most traffic congested area in Harar city by IDP, 2004 quoted as “Traffic congestion and smoke from vehicles are also noted as nuisance on the case area.” This is supported by picture 13 below.



Picture 7: Movement of vehicle and gas pollution (for spatial location refer Annex 2)

Parking along the study area: beside vehicle movement, parking is also one of widely seen activity along the study area. Parking on this narrow street competes for space with other activities the study area serves. Among this competing services, competing for shadow with pedestrians right of way are some to be mentioned as shown in picture 14 below.



Picture 84: Parking and completion for shade (for spatial location refer Annex 2)

Furthermore, as a result of some business type along the study area such as building material shops, there is loading and unloading of items. These types of parking of large Lorries suffocate the traffic route and pedestrian way. In relation to the business type, the presence of stores within Jugal is also one of the causes for the intrusion of Lorries.



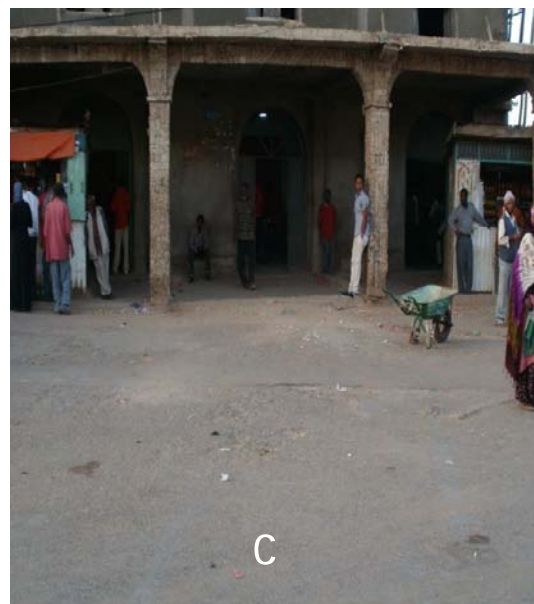
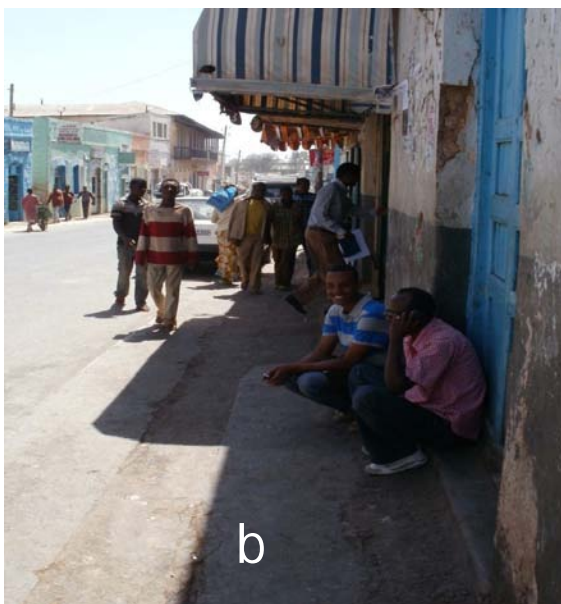
Picture 95: Presence of stores, garage, and heavy vehicles (for spatial location refer Annex 2)

Optional and social activities: these activities are those types which prefer favorable places to happen at a given area. Social activities further need the presence of other people or activities to enable its happening. As a result, it is termed as “resultant or dependant activity.” Though, the study area do not have such quality spaces to be used for these types of activities, optional and social activities still take place on the study area. These social and optional activities may have been occurring due to adaptation of users mainly in search of information and passive engagements along the area. In addition to these daily occurrences of social and optional activities, there are some cultural and social activities that happen in specific calendar time. Some of which are discussed below.

Passive activities: passive engagement within a given space requires conditions which can catch a person’s attention on a given place such as something to watch or a place to seat for watching it. The other form of passive engagement is slow motion movement which is most of the time termed as walking or lingering. Between these two types of optional activities, the most frequently observed one on the study area is walking with short stand at shops as a result of shortage of seat.

Sitting: sitting along the study area takes place at very limited cafés along the study area and at some junctions of winding lanes as shown in the picture 16 below. Normally, for sitting to take place seat and clean area is required. But, along the study, area seats are

found in very limited places most of which are found at the junction of lane with the street and none are found at edge of the study area though it occasionally take place in front of closed shops .



Picture 106: Sitting area at narrow lane junction and various places of study area (for spatial location refers Annex 2)

Walking: walking for pleasure along the study area mainly takes place around dusk. The time that is relatively cool and shade is available along the study area as shown in picture 17. And, to show holistic view of the use and activity on case area, with respect to time variation, figure 3 have been produced as shown on next page.



Picture 17: Walking at dusk along the study area

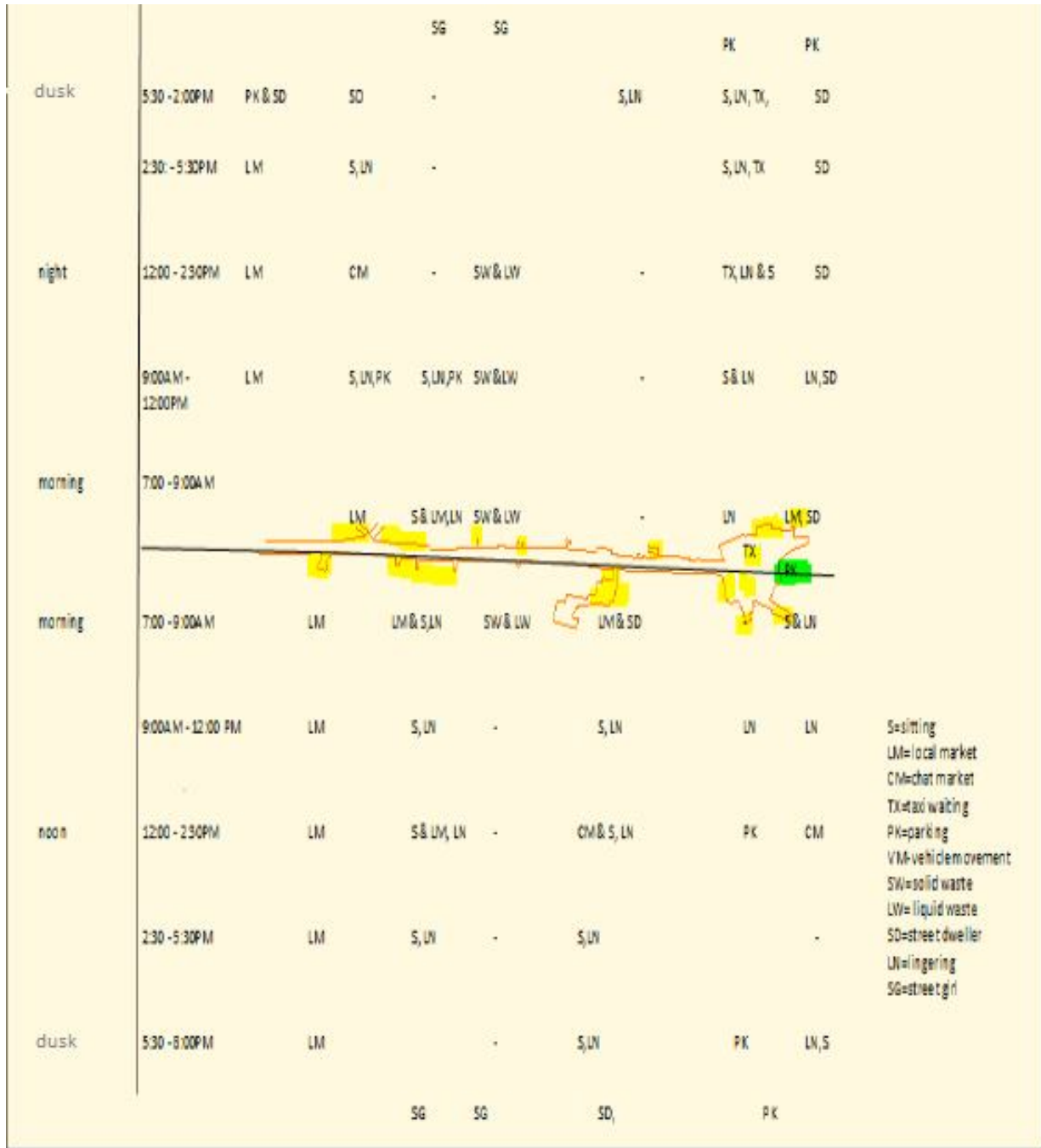


Figure 3: Spatial and temporal distributions of behavior or use of study area

Active activities: Active engagement involves a more direct experience with a place and the people within it. Carmona et al (2003) from Carr et.al noted that, although some people find sufficient satisfaction in watching people, others desire more close contact, whether with friends, family, or strangers. He also argued that successful public space provides opportunities for varying degrees of engagement, and also for disengagement from contact. Accordingly, the major active activities that take place in the site are cultural celebration, sport and political activities which are further discussed below:

Cultural Celebration and Sport activity: there are different types of celebrations which take place in Jugal. Cultural, religious, and national ceremonies are among some of these celebrations to be mentioned. Great run of Jugal is also one of sport activities that take place in Jugal besides the yearly basket ball match which is performed at cultural and heritage center behind Medanialem church. Out of these activities, the major cultural celebration and sport activities that take place on the study area are the international Harari day (IHD) and the Great run of Jugal. IHD is a festival which is performed every year on July 4th at a specific chosen city around the world, while every fourth year is a term for city of Harar. IHD is normally celebrated for a month with the aim of collecting and connecting all Harari peoples together. During this festival the central place of the celebration is the world heritage city portion, Jugal. Thus, traffic movement is banned during the whole seasons of the festival. Some of the activities during IHD event are shown in picture 18 and 19 as follow.



Picture 18: July 4 festival (sport activity along study area) (for spatial location refer Annex 2)

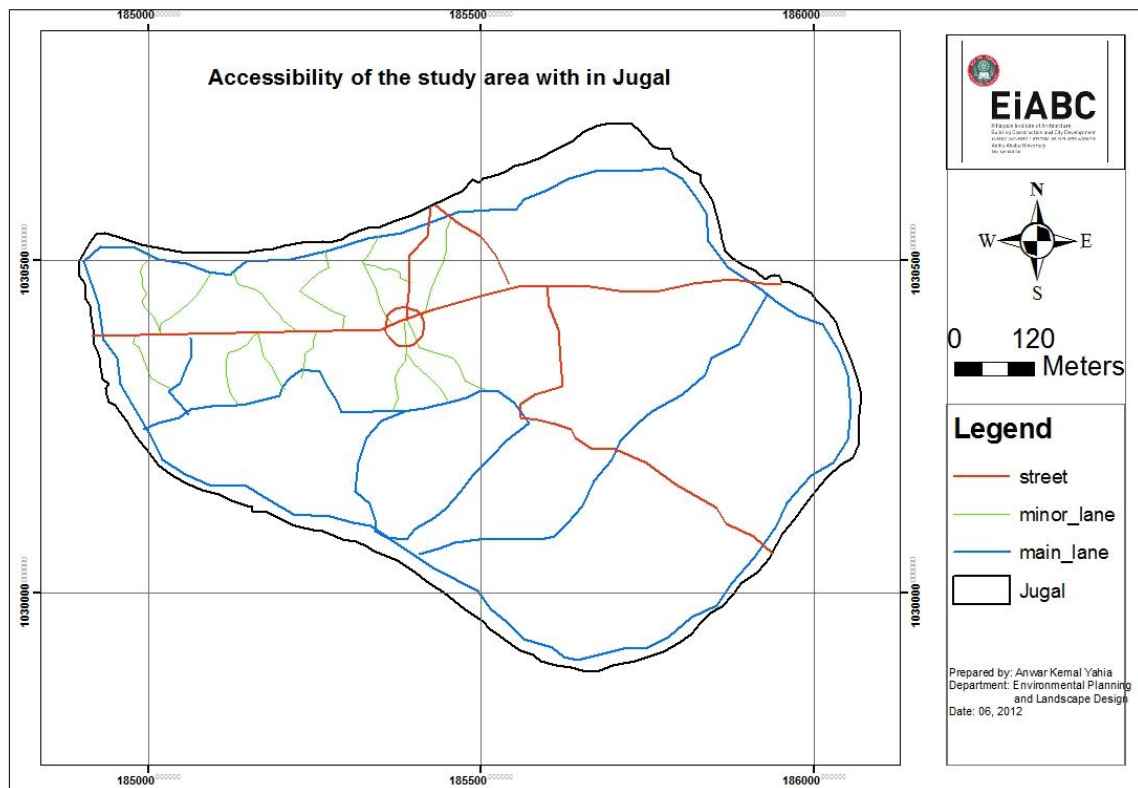


Picture 19: Cultural celebration on the study area (for spatial location refer Annex 2)

Political activity: the two main halls of the city in total are found in side Jugal. Most of the time, when there is national and/or international meeting, workshops and etc, the vehicle movement will be banned from the study area for the matter of security and creating convenient access for attendants of the venue.

5.1.2 Access and linkage: the main access and linkage to the new city part from or to Jugal is *Andegna Menged*. And, the radial streets of Jugal are all rooted from this street through *Chelenqo* square. Besides these streets, the main lanes of Harar also join this street at different stages beginning from *Harar Ber* till *Chelenqo* square.

These lanes and streets connected to the study area provide access to reach the study area within Jugal from any corner which in turn gives it the role of centrality. The study area will also provide linkage to the main tourist attraction and heritage sites of Jugal besides being totally modern market area. With this regard, the study area is called as tourist route and also commercial route of Jugal. This linkage can be strengthened by the following map.



Map 6 Accessibility of the study area from different corner of Jugal (Source urban regulation of Jugal)

The extension of *Andegna Menged* to the new city extending from the city administration to *Ras hotel* is the prime connection of Jugal to the new city. “Pedestrian walkways are only limited along this main road from Harar Ber up to *Ras Hotel* area. But this convenient pedestrian way cease right at *Harar gate*.

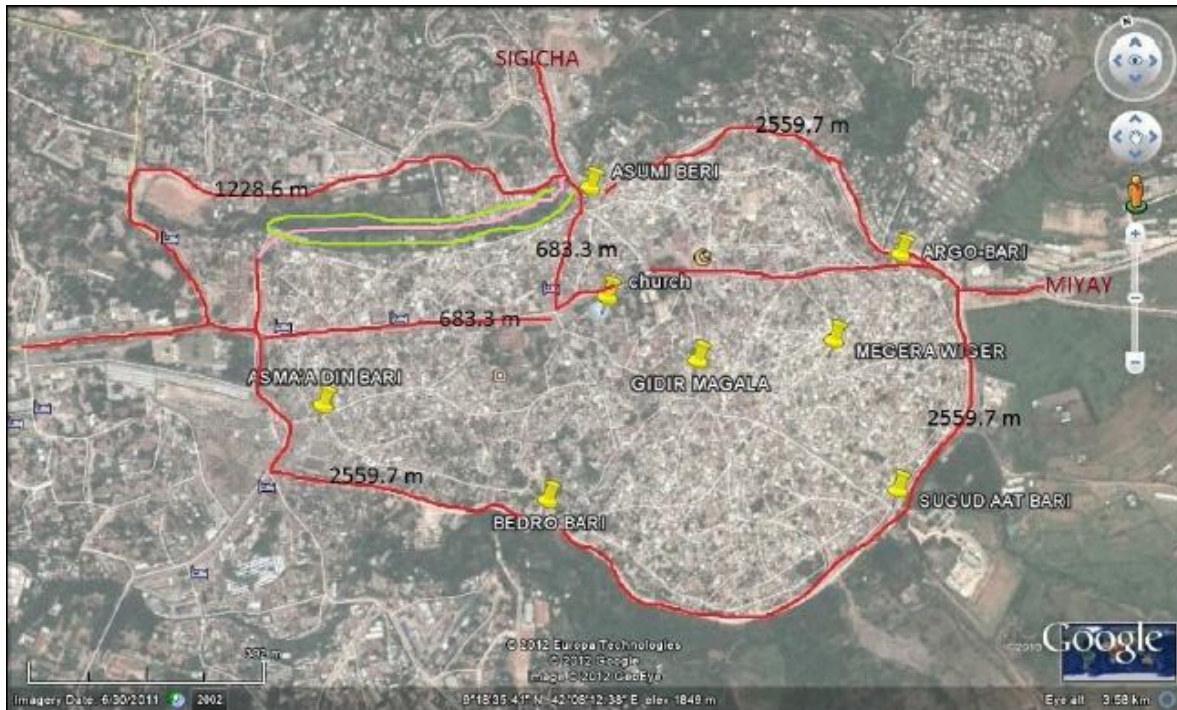
The walk way of this main road outside Jugal is composed of different types of infrastructures that attract walking. But, these infrastructures cease its continuance just in front of *Harar Ber* at a point where the new city joins the old traditional city. Along this road, seating area, shade, and green infrastructures are provided with design and different land uses that attract walking as can be seen in picture 20 below.



Picture 20: Different type of activities along the adjacent linkage street of study area (for spatial location refer Annex 2)

The other type of access and linkage to Jugal is the ring road surrounding Jugal wall which also serves as a buffer and connection for the wall. But, this road discontinues at *Asumiy gate /Felana Ber/*. This termination of road continuation in combination with lack of proper traffic management system, make the *Andegan Menged* to serve as a short cut for those who move to the outer side of Jugal and some rural areas like *Miyay* and *Sigicha*. To move to *Sigicha* vehicles have only three alternative ways. The first one is a way from *First Street* through *Asumiy /Felana/ gate* which is about 683.3 meter long. The second one is the ring road from *Asmadin /Shoa/ gate* passing *Sugutat /Senga/ gate*, *Bedri /Buda/ gate* and finally reach *Asumiy /Felana/ gate* which is about 2.56 km

long⁵. The third alternative which is not convenient for use and is almost not used by vehicles is the local street through *police Meda* to *Asumiy /Felana/ gate* with 1.23 km⁶. With these alternatives, any vehicle which is less than 30 tones rationally chooses the shortest path from *Andegan Menged* to Felana gate. This is one of the reasons for creation of traffic congestion as it was also stated in (NUPI, 2001) as “the service of first street as a pass through for vehicles to *Miyay* is also one of the reasons for creation of traffic jam.” This relative distance to Sigicha is shown in the following map.



Picture 21: Accessibility of the study area from outside Jugal (Measures from structural map of Harar)

As mentioned above one of the reasons which make the *Andegna Menged* the shortest path to *Miyay* and *Sigicha* road is the termination of the ring road at gate *Asumiy /Felana/*. As a result of absence of continuation of this ring road, the service of the road is inhabited and thus it enforces *Andegna Menged* to close this discontinuation of the ring road. On the other hand, due to this discontinuation the space situated in the middle of the regional prison and *Asumiy /Felana gate/*; and space between the Jugal wall and residents of this area is totally lost. The reason for this wastage of the space can be: lack of access, absence of connection and functions on the space. Consequently, this lost space which is shown by green color curvilinear in Map 6 is occupied by: illegal

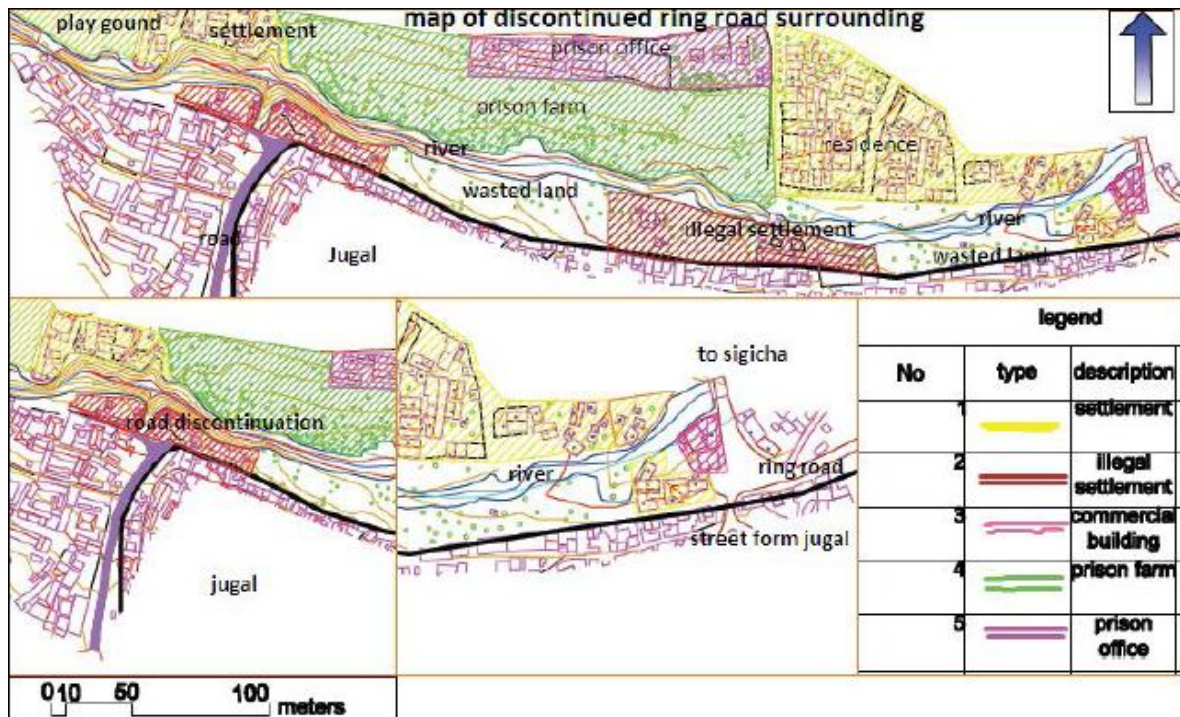
⁵ Measures are taken from the structural map of Harar

⁶ Measures are taken from the structural map of Harar

settlement; very limited form of urban farming; liquid and solid waste disposed on the site from residents around that area. For better expression of the area, the following pictures and map that show the land use of the area are presented as follow.



Picture 22: Abandoned spaces along discontinued ring road of Jugal



Map 7: Land use along discontinued ring road

5.1.3 Comfort: is a prerequisite for public spaces to be habitable which is noted like “The length of time people stay in a public space is a function and an indicator of its comfort” Carmona et al (2003). Environmentally comfort’s dimension include: factor such as relief from sun, wind, cleanness etc. Physically it includes factors such as comfortable and sufficient seating; and social and psychological comfort which are also listed in table 1.

When we examine the study area, it is found that none of the aforementioned comfort dimension have been built or installed along the study area except very few. There are no green plant on the place which could be use for shade, enhance breath and visual image. There is no any canal or ditch for waste water service. Neither, there is any public toilet along the study area. And, finally, there are only two small waste bin installed by the regional EPA along the street, which looks decorative rather than functional service due to its miniature size (see picture 24). As it can be seen some of the lanes along the street have been used for relief from toilet problem. And, it is also these lanes which are used for disposal of liquid waste. Sometimes, during the night time the streets are also used as place of urination especially by drunkards that enforce shop owners to wash the street during morning opening hour as captured on picture 23 below.



Picture 23: Washing of street from urination of night (for spatial location refer Annex 2)



Picture 24: Some of few waste bin along study area (for spatial location refer Annex 2)

5.1.4 Image: “issue of meaning and symbolism are in fact important components of environmental images. And sense of place is one kind of meaning to a place” (Carmona et al, 2003). This concept of sense of place in this thesis is according to Edward Ralph’s definition of sense of place, stated in Carmona et al (2003), who tried to study the psychological and experiential sense of place. He tried to find the meaning attached to or identity given for space through lived experience. Along with this investigation of meaning to a place, Ralph also considers rootedness to a place which emerges as a result of physiological and spiritual attachment. Out of different meanings and images for a given environment, sense of place through lived experience is the one in focus for this research. These senses are those that develop from practical activities on a space; its physical setting and meaning attached towards a place which create an identity of a place experienced by a specific person. Hence, due to the qualitative nature of this attributes the result are discussed in the section that investigates qualitative source of data which is under the portion of public perception and experience.

5.1.5 Socialization: socialization of the study area has been investigated in previous portions along with the two types of activities - necessary and optional activities. Since socialization is dependent on the presence of these two type of activities and is the

consequence of it as noted by (Gehl, 2011) “these activities could be termed resultant activities, because in nearly all instances they evolve from activities linked to the other two activity categories.” And, the qualitative portion of this character obtained from the questioner collected found that significant amount of respondents respond socialization as one of the aim to use the study area. Pride, stewardship, and number of women and children were also some points among the intangible and tangible qualitative measures of socialization listed in table 1. Therefore, these indicators were also included in the following portion of result and discussion.

5.2 public experience and perception on the study area

5.2.1 Profile of respondent in age, sex, and place of residence: the purpose of discussion of the composition of the respondents is to give the highlight on the structure of the users of the space prior to analysis of the results obtained from the respondents. These compositions are prepared with regard to gender, age, work, and place of residence. Thus the range of ages in the questioner was grouped in to five classes of different age groups according to age classification from Kumlachew T., 2004. These are Teen age (7-18); Young (18-35); Adult (35-50); Old person (50-65) and Retired which is the age greater than 65 years old. And, the composition of the respondents was found to constitute about 20.5% of female respondents among the users of the space while the rest 79.5% of respondents are males. Out of these respondents, the three abundant group content of age reference are young and adult male age groups which constitute about 43.4 and 21.3 percent of the respondents. This is followed by young female group occupying 13.1% of respondents. This variation of age composition is further shown in the figure below.

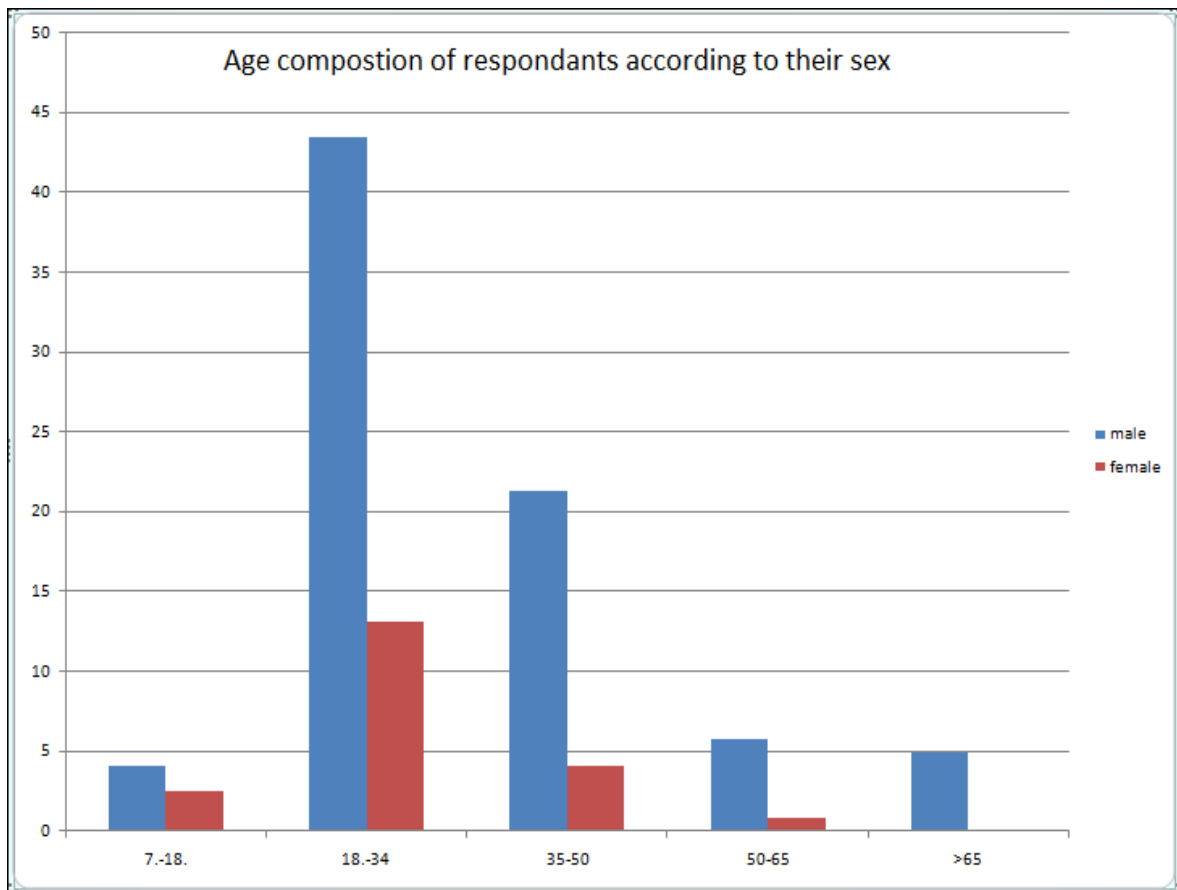


Figure 4: Age and sex composition of respondents of the study area users

With respect to the condition of work composition, generally 66.38 % of respondents are found to be employed; while 12.3 % of respondents are unemployed; 14.75% students and the remaining 6.55% percent are retired ones.

Regarding to residence place of the respondents, about 64.28 % of the respondents reside within Jugal out of which 25.71 % of the respondents reside along the study area. And the rest 25.71 % of the respondents live outside Jugal.

Concerning to frequency of use to the study area, about 80.32 % of respondent use the space daily, where as 15.57 % visit the site occasionally and the remaining 4% come to the site weekly.

5.2.2 Public perception for comfortability, image and use, and activity of the study area

Comfort: The descriptions for comfort of an area have been defined using qualitative and quantitative measure factors listed in table 1. The quantitative factors of the area have been analyzed in the previous section of analysis. And, it was discussed that as a result of noise, congestion, lack of shade and seat, the area does not seem comfortable with regard to quantitative factors or dimensions. Similarly, the perception of users of the space was found that they lack comfort from the place. From the response asked on recommendation for the improvement of the place only 4.92% are satisfied with its current condition. Out of those who recommend for the betterment of the site, almost all of the respondents which are about 95.08% recommend improvement measure that relate to comfort such as cleanness, provision of toilet, tree and shade on the study area. This can be used as indication for the lack of comfort on the space. Due to lack of shade, the space mainly serves only on the hours it gain shade and become cooler like at times of dusk and early morning. It is obvious that noon is the time the space is most under populated or vacant as shown on picture 12. At this time peoples are forced to move by vehicle even very short distances such as from Feres *magala* to municipality of Harar which is just out of Harar Ber.

Image: in order to identify the direct experience attachment of residents to the place and the feeling towards the area, two types of questions have been asked. These questions are whether the respondent likes the area or not. And the other one is what kind of immediate picture is attached to their memory about the site. The answers obtained from the first question indicate 24.41% like the area very much; 36.89% like the space; where as 24.59% of response don't like the place and 12.29% respond prefer not to tell their feeling.

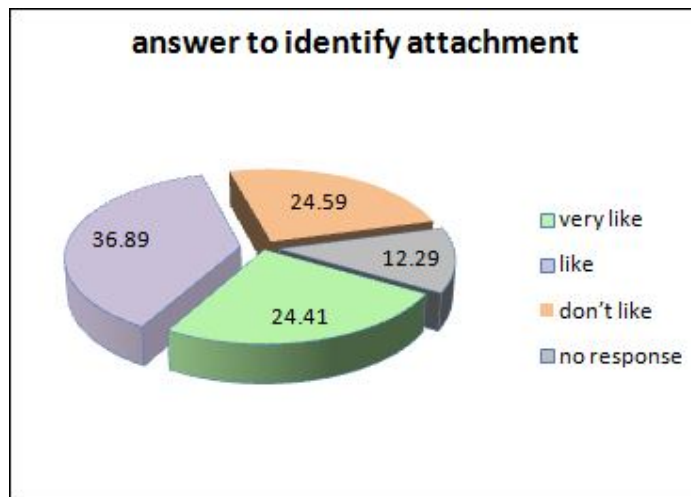


Figure 5: Answer to identification of attachment

Out of thirty six respondents who answer the open question for reasons of liking the space, 41.67% of them answered that they like the place for purpose of connecting with people. The other respondents reason show sense of rootedness with the place. These respondents answer for liking was sense of belonging and love for the heritage and history of Jugal. The amount of these respondents is about 30.55% of entire open question respondents for liking the place.

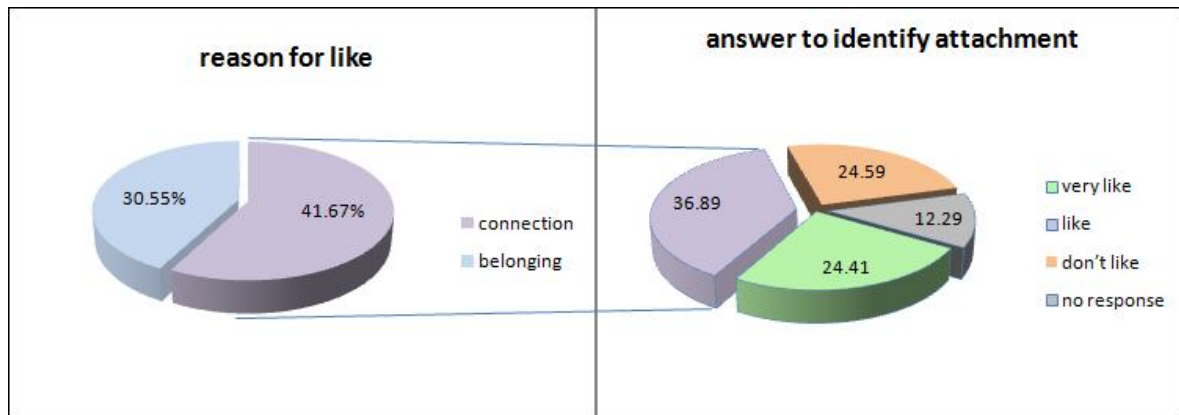


Figure 6: Reasons for liking the case area

From those respondents of the open question that don't like the area, the major reasons stated for their answer were congestion, chaos, high traffic and unwanted activities such as prostitution and presence of grocery. These stated reasons all together occupy nearly 60.86% of respondent reason who don't like the space. Next to these, a major objection to the place comes from lack of sitting place and shade which together contribute around 17.4% of. The other remaining reasons don't occupy such significant

portion of responses. But the type of their answer include hate of black history (the conflict believed to happen during road construction in Jugal) of the study area, narrowness etc.

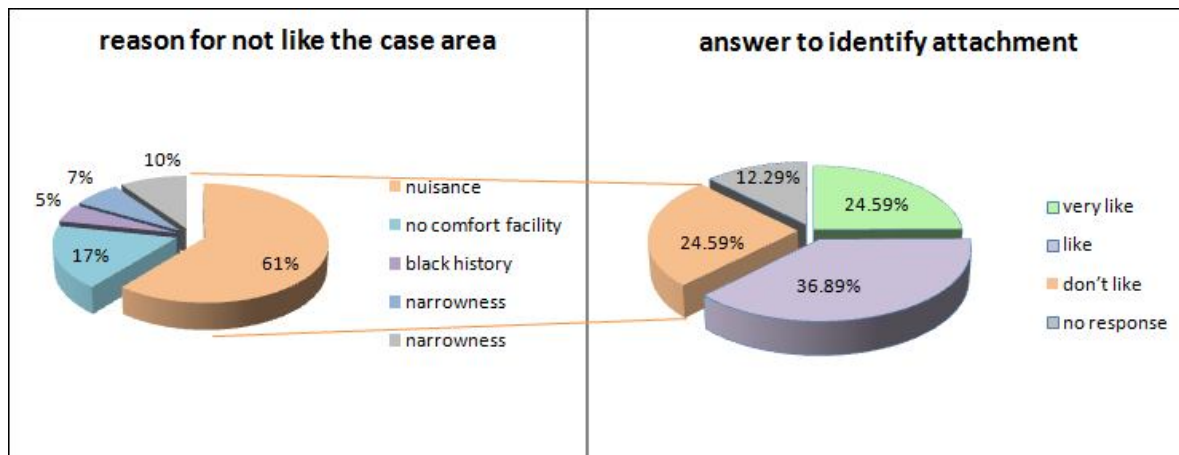


Figure 7: Reasons for not liking the case area

The second question which relate to image of the place is the immediate picture that can be recalled in relation to the space. Out of the responses given for this question, majority of the answer indicate chaos and vehicular activities took the greater portion of memory attachment. Chaos contribute for 48.97% of the response given while vehicular activity takes about 20.69% of the memory attached to the place among respondents of the question. Next to the previous reasons replied, market comes at third place with 13.1% of total respondents of the question. The remaining memory attached do not have significant portion of the answer but the type of answers include history, view, church, monument etc. As shown in the figure below.

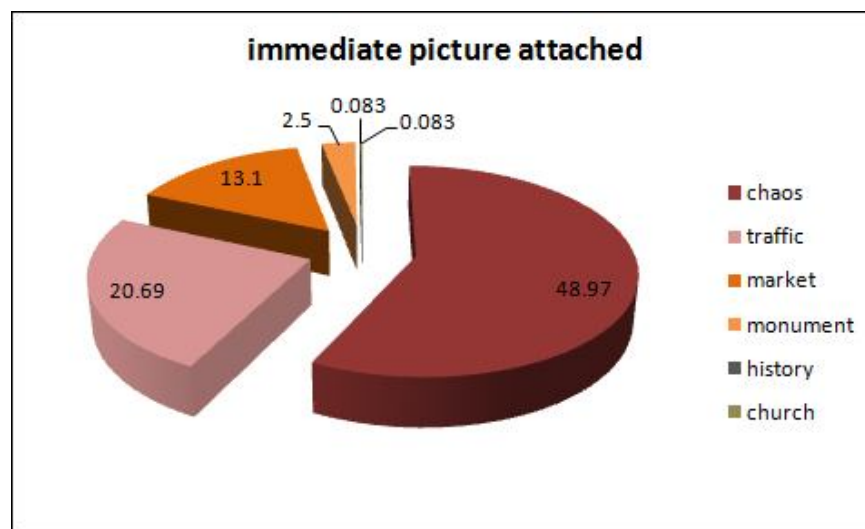


Figure 8: Immediate picture users have about the space

From these it can be concluded that, 69.66% of respondents have experience oriented attachment to the study area as shown from reply to image of the place. Contrary to response for immediate image, the majority of the respondents (41.67%) among those who like the space liked the space to connect with people which is experience related resultant social activity. Though this type of activity requires comfortable and quality space which is not present in the study area, the place was found to serve this activity most and is liked above all for purpose of sociability. This can be due to being the only easily accessible access to the new city portion from and to Jugal, since the immediate picture attached and lack of comfort from the place do not support these reason of liking.

However, there are still significant amount of respondents who have no experience oriented attachment to the case area. The reason given for this attachment to the place was found to be due to rootedness from the place which occupies 30.55% of reasons for liking the space. These respondents are either born there or grew in the region which gave them sense of belonging to Jugal.

Use and activity: from the physical analysis of the study area it was observed that except for car movement, the space is not well designed for other type of activities though it serves as a market and main pedestrian walk way. In addition to the physical investigation of the site, investigation of perception of the users of the study area was also made for identifying the current cognition and future demand of users.

And, it was found that, more than half of the respondents use the space for the purpose of optional and social activities such as walking, recreation, and connecting to people. Out of these responses, 55.74% were optional and social activities. With which 36.89% of respondents come for the purpose of entertaining themselves; while 18.85% of respondents mainly use the space for walking. From total responses the necessity activity gained only 33.6% of the users of the space.

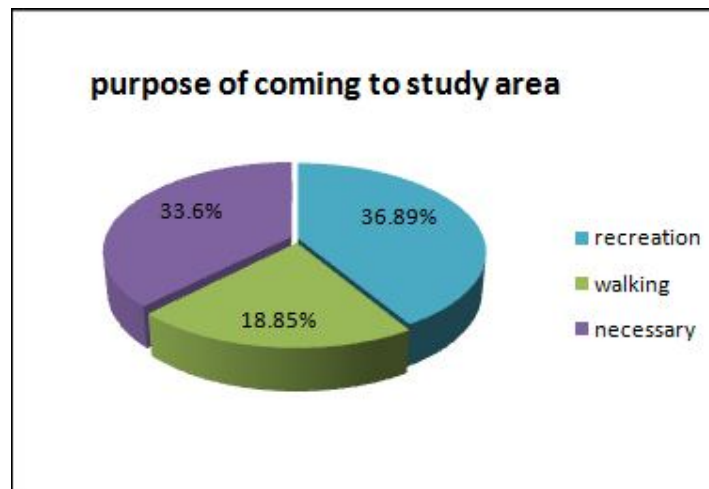


Figure 9: Purpose of coming to the study area

Though majority of users use the study area for the purpose other than necessary activity, the relative time spent in the study area was found to be lesser than outside Jugal. These users' mounts for 58.26%, while the 41.73% stay longer period in Jugal relatively⁷. This indicates, though there is greater amount of interest for using the space, the fewer relative period spent on it show lack of comfort comparatively. But, with this notion comes the question why do the majority of users use the place out of necessary activity? The answer can be obtained from the reason given for the purpose of use of the space. Majority of the response indicate they use the space for connecting with other people.

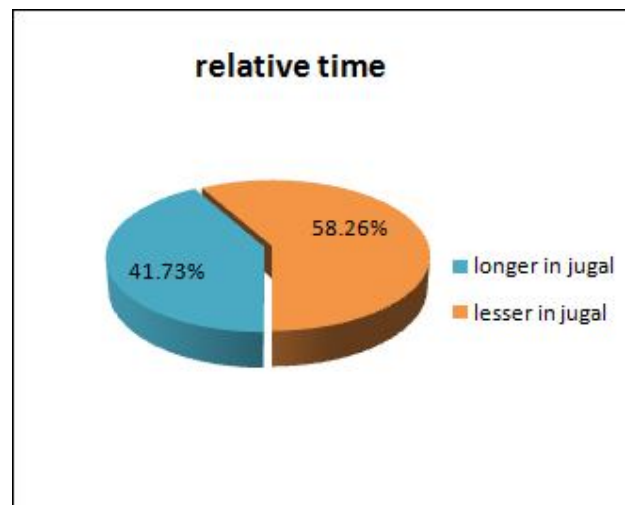


Figure 10: Relative time spent for recreation in Jugal and outside of Jugal

⁷ Respondents are allowed to answer questions they like to or not to answer if they don't like to. Thus some of the responses do not sum up to 100% if not answered by some.

Further, investigation made on the open question for inquiring reason of relative time spent demonstrates, the cause for fewer staying in the study area was due to chaos, low quality, and very limited place of recreation. These reasons occupy the following percentages respectively: 37.04%, 25.93%, and 22.22%. On the other hand, the major reasons indentified as a cause for relative more time spent on the study area were to be sense of belonging which occupy 27.27% followed by view or connection which contains 18.18%.

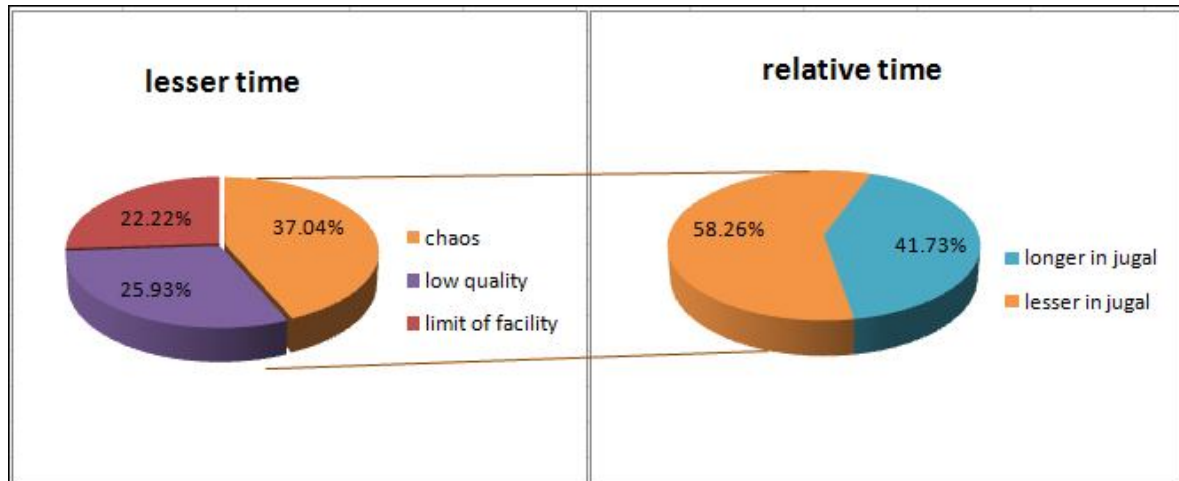


Figure 11: Reason given for relative few time spent in Jugal

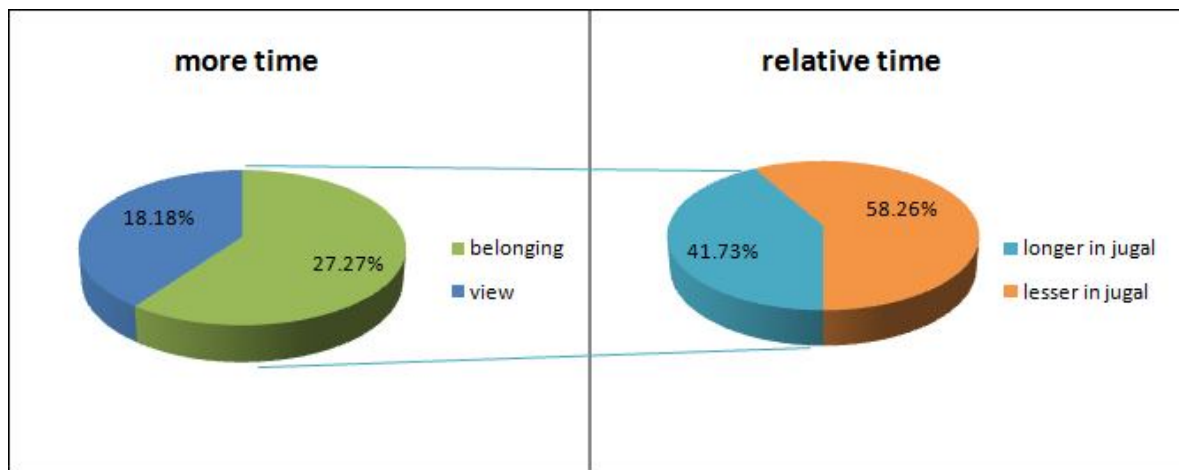


Figure 12: Reason for relative more time spent in Jugal

Parallel to this lack of comfort to stay longer in Jugal's recreation area, the recommendation of respondents forwarded to meet their demand on the study area also reinforce similar notion. It was noted that respondents mainly wished for enhancement of recreation material along the study area almost at equal percentage with the cleanness of the area which are 55.74% and 54.1% respectively. Then come the need

for tree and shade which was followed by request for public toilet. Consecutively, these two occupy about 44.26% and 35.25% of respondents' answer.⁸

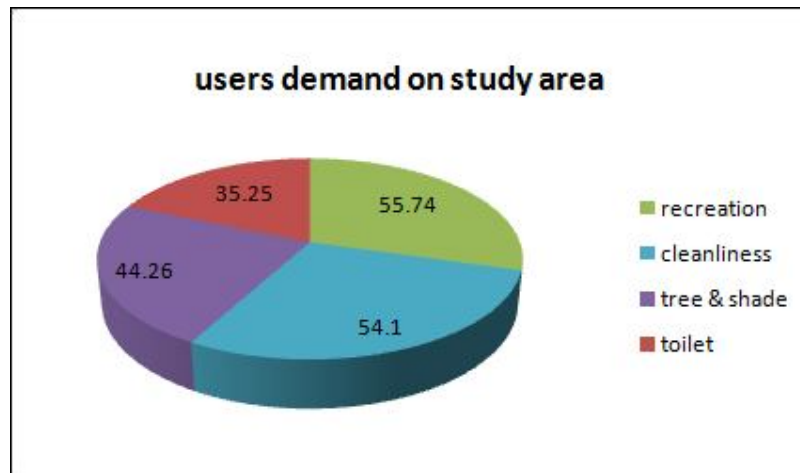


Figure 13: Demand of users to enhance case area

In relation to demand for enhancement of the place and user satisfaction, analysis on cognition of safety or security from vehicle movement was also inquired. It was found that 75.41% of respondents have feeling of insecurity while only 24.59% feel secure. The reason mentioned for this feeling is that presence of car; lack of separate walk way; absences of speed and traffic management are among major reasons stated.

Generally, only 2.41% of respondents were found to be satisfied with the quality and services of the existing study area. While the remaining 97.39% of respondents need improvement of it either qualitatively or quantitatively. Therefore, the need for the improvement of the area becomes crucial in order to satisfy users of the space and respond to future demand of users from the case area.

5.3 Conclusion of Analysis of Result and Discussion

Observation from the field excursion shows that different types of outdoor activities take place on the study area without significant infrastructure and quality of the space. These can be grouped in three groups which are necessary activity, optional and social activities.

⁸ Respondents were allowed to give more than one answer on some of the questions. This affects the percentile coverage to be more than 100% which show responses answered more per individual.

With regard to perception of users, primarily their composition on basis of randomly selected questionnaire shows small number of women who use the study area which is only 21.3% of respondents. Similarly, almost no child who is below age of seven have been found or encountered during data collection. And, it was also found that parents do not feel at ease to send their little children along the study area due to fear of car accident. This view of parents was also reflected on the data collected which manifests lack of security along the study area among 75.41% of respondents. Likewise, the amount of retired personnel who were using the study area was only about 5% of the respondents who are totally male respondent. Therefore, according to indicators of success of a place listed in table 1 the absence of children, very little number of women and retired persons indicate non conformity with the indicators of success.

Secondly, it is found that majority of the respondents has experience related immediate images with the study area. Majority of the images are negative characters or features of the place like nuisance and traffic congestion which occupy about 69.66% of the responses, whereas the monument, heritage or history of the place occupy very little amount of the memory attachment. This indicates lack of positive image for the place. In addition, it also confirms the previous reason for the absence children and small number of women users on the space.

Thirdly, in opposite to the previous results, 61.3% of respondents are found to like the space. But, the reason for this answer was mainly found to be belonging to Jugal and getting connection with other persons. On the other hand, those who do not like the space reasoned experience of the place which was chaos and nuisance created from vehicle. The reason for dominance of liking the space without having pleasant image about the area may have been resulted from the composition of respondent's majority (64.028%) of whom are residents of Jugal. And, likewise, the answer of connection may have been due to the centrality role the case area has.

Fourthly, it was noted that most of the respondents work on the space and they spent most of their spare time at nearby area in Jugal. But, the relative amount of time spent on these recreation places were found that 58.26% of respondents spend longer time in recreation areas found outside Jugal and lesser time at those in Jugal. The main reasons found to this were chaos, lack of quality and narrowness of the study area which is directly related to the experiential attachment found on the space.

Therefore, it can be generalized that almost all users of the space lack positive experiential attachment with the place as deduced from the main reason given for loss of satisfaction on various experiences from the place. The only positive attachment remained on majority of users (61.3%) of the place is type of rootedness to the place. But, these respondents are also among those who lack experiential satisfaction on the space. This can be strengthened by the demand of users on the space and it shows 95.08% of users demand for recreational, shade, seat, and toilet facility provision on the area and enhancement of its cleanness. While only 4.92% of users are satisfied with the current existing situation.

6.0 RESEARCH FINDINGS AND CONCLUSION

From all tools used in investigating and analyzing operations of case area and users satisfaction, it was found that the place does not have the facility to accommodate various types of activities demanded and considered essential by residents of Jugal. And, from field observation, it was noted that there are no provisions for supporting outdoor activities occurring on the space though the activities take place in existing unfavorable condition at minimal level. With regard to users' perception of the space, it was found that almost all of users demand for the improvement of the space in order to satisfy their needs that can be grouped in to optional and social activities.

Totally, it was found that users of the space have no positive attachment regarding to functions on the case area that arise from tangible and intangible benefits gained from a given place named by Ralph as direct experience. The collected answers also indicate that though majority of the users (71.30%) like the space for sake of sense of belongingness and socialization, nearly all users (97.39%) recommended enhancement of the place in terms of services it provide and its quality. These show the dissatisfaction of users for the place with respect to the functions it serve. Hence, though the population has strong attachment of belonging to the place, they also lack direct experience attachment. As a result, the users of the study area did not show strong sense of ownership for the space which was noted by Carmona among users of peace park in Sheffield, UK where users protect their park as a result of strong ownership developed for the space. This sense of ownership developed due to the satisfaction the users have gained from that space's direct experience. This form of attachment have not been developed on the case area of this research due to lack of demanded dimensions for building experiential identity noted by Ralph as listed in table 2.

7.0 PROPOSAL AND RECOMMENDATION

7.1 Proposal

Beers and Higgins (1990) “state four factors that influence how people understand and experience their environment these are: the sense; needs (such as security and identity); desire from experience satisfaction and aesthetics.” Beers and Higgins’s sense and aesthetics are almost related to comfort of a space. Need factor can also be related to the site with feeling of security from traffic accident, belonging and experiential attachment to the place. And, in relation to experience of satisfaction for users which developed from the space, it can be related to factor of desire. Therefore, the planning and design of the space is responded in consideration of these factors to respond to users demand.

Thus, as per the analysis and discussion of the case area specifically and Jugal in general, the major problems that require planning and design solution have been primarily identified as:

- High traffic congestion and nuisance on the case area due to absence of transportation planning.
- Inability of the case area to provide services demanded by population and lack of comfort.
- Inability to serve users of space at different time and seasons.

As a result, the proposed solutions for the problems of the case area are:

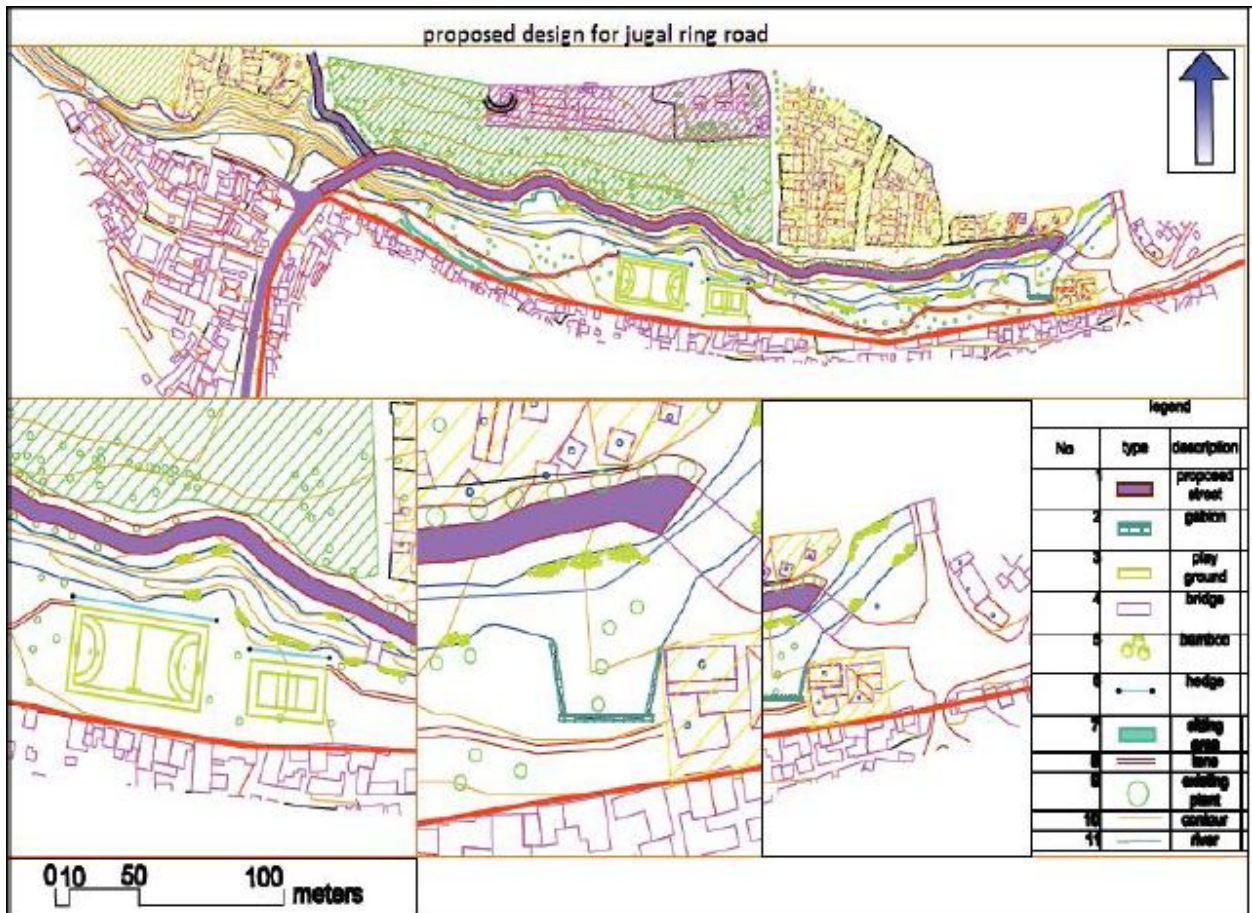
- Completing the terminated ring road and finally reclamation of the lost space found at terminated ring road.
- Abandonment of the case area from traffic and also complete pedestrianization except for emergency case,
- Provision of more number of waste bins.
- Building toilet at open spaces found adjacent to the case area,
- Provision of green plants and shades,
- A number of seats at various spaces.

7.1.1 Concept development for binding Jugal’s ring road: the spatial configuration of the proposed road is at a place where it may serve as a buffer between residents of surrounding environment and Katibin River. The road should also serve as shorter path

to bind the discontinued portion. Therefore, the best position for the road is proposed to be designed on the current walk way which requires widening that result in displacement of some residents at the place. As a result, the left place between Jugal wall and the river *Katibin* will have large size of open space. Then, this place should be entitled for different types of functions that serve variety of activities so as to discourage different illegal actions and unwanted activities such as waste disposal and illegal settlement.

7.1.2 Functions proposed along binding discontinued ring road: the programs selected for developing this area are: road and recreation center - which occupy active functions such as valley ball, hand ball; and passive functions like walking, sitting and lying etc. And other functions for environmental services such as gabion wire and the regions cultural and biological conservation practice with use of reeds.

7.1.3 Plan proposed for the binding of discontinued ring road: some of the residential, commercial and prison farm has been displaced due to the proposition of the road. Play grounds and other passive activities such as sitting area is assigned through ground development at the area of high slope by cut and fill. Gabion wire and reeds are proposed for controlling environmental damage on the area. The activities are shown in figure 14 below.



Map 8: Proposed plan for discontinued ring road

7.2.1 Concept map for case area: as the finding of field excursion and perception of users of the place indicate, the main demand from the case area is its improvement which enables it to give quality environment for various kinds of outdoor activities. With respect to its comfort, the required improvements listed as indicator of a place's success are needed.

With regard to use and activity, the study area is mainly a center of connection and the demand is to strengthen this function with provision of various facilities for the convenience of this service. Sociability is also related to connectivity and requires similar solution of enhancing centrality of the place.

Thus, the concept developed to provide solutions for these measure points is limiting traffic movement on the case area except for emergency case. This concept has been strengthened with Washington charter and Valletta principles as discussed in the literature part. In addition, in an interview made with A/Pro. Ahmed Zekaria, He also suggested complete pedestrianization of the case area, since all part of Jugal is

completely within a range of walking distance. Similarly, the interview with key informant Mr. Abdulaziz Adem also recognized the need to limit traffic movement though not complete banning of its access.

But in consideration of the following points:

- The total distance one can cover to ward Jugals center and or from this center toward the surrounding gate is all within walking distance,
- The disruption vehicles created towards the historic image and authentic experience of the medieval walled town,
- Threats created directly or indirectly, on any aspects of Jugal's heritage by vehicular movement,
- The discomfort and nuisance motorized vehicles created to the space users; this research also recommends complete pedestrianization of the study area.

The purpose of selecting pedestrianization is for: improving the public utility of the area rather than prioritizing traffic right way as noted in literature part and from lessons gained through experience of other heritage towns. Along with enhancing public utility, pedestrianization can also avoid the air and noise pollution from traffic movement. Further, pedestrianization protects heritage from the damage that traffic impose on it. Finally, along with pedestrianization, land use types that attract and synergies various optional activities will flourish as noted by Gehl. Therefore, the planning and design solutions forwarded are presented as follow in the design section.

7.2.2 Design: The design of plantation and seat for *chelenqo square* are made more of circular and elliptical shape in order to emphasize the squares character and centrality. Besides, it was made to give more open view and at the same time render shade and enhance optional and social activities on the site...

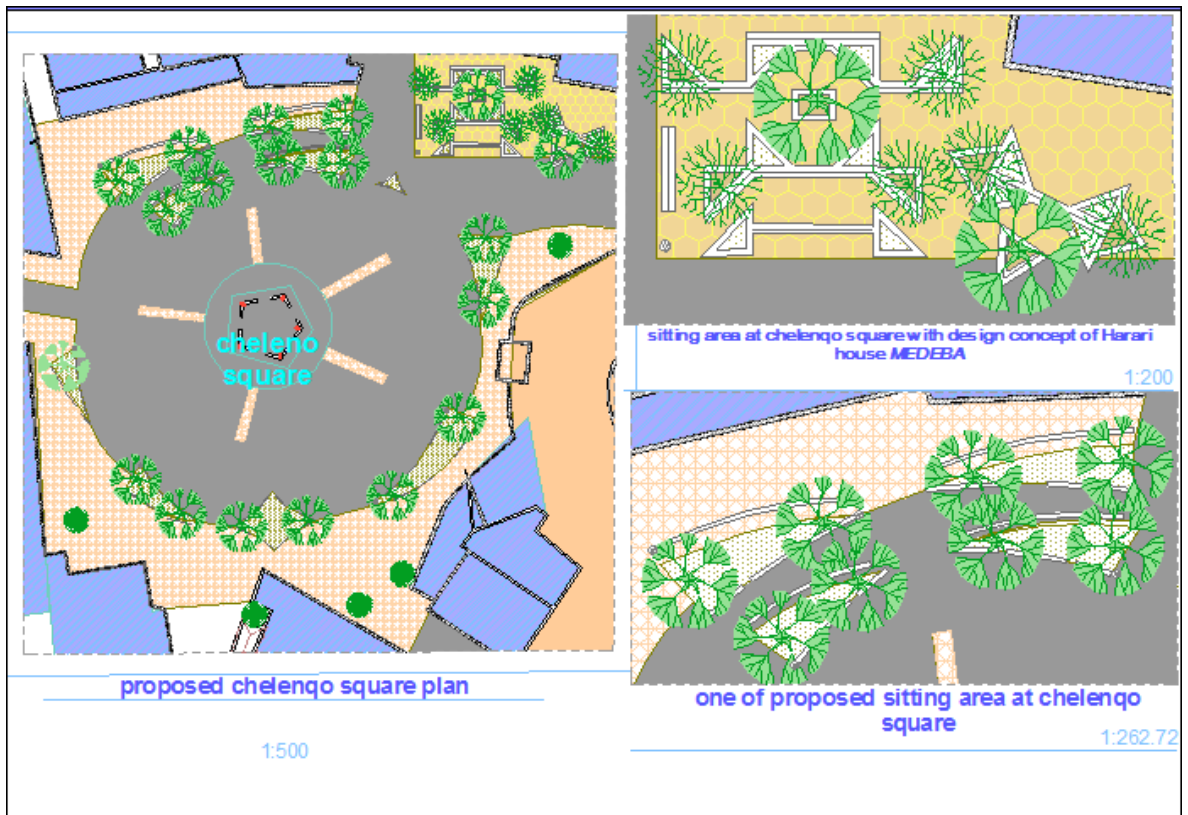


Figure 14: Proposed design for Chelenqo square



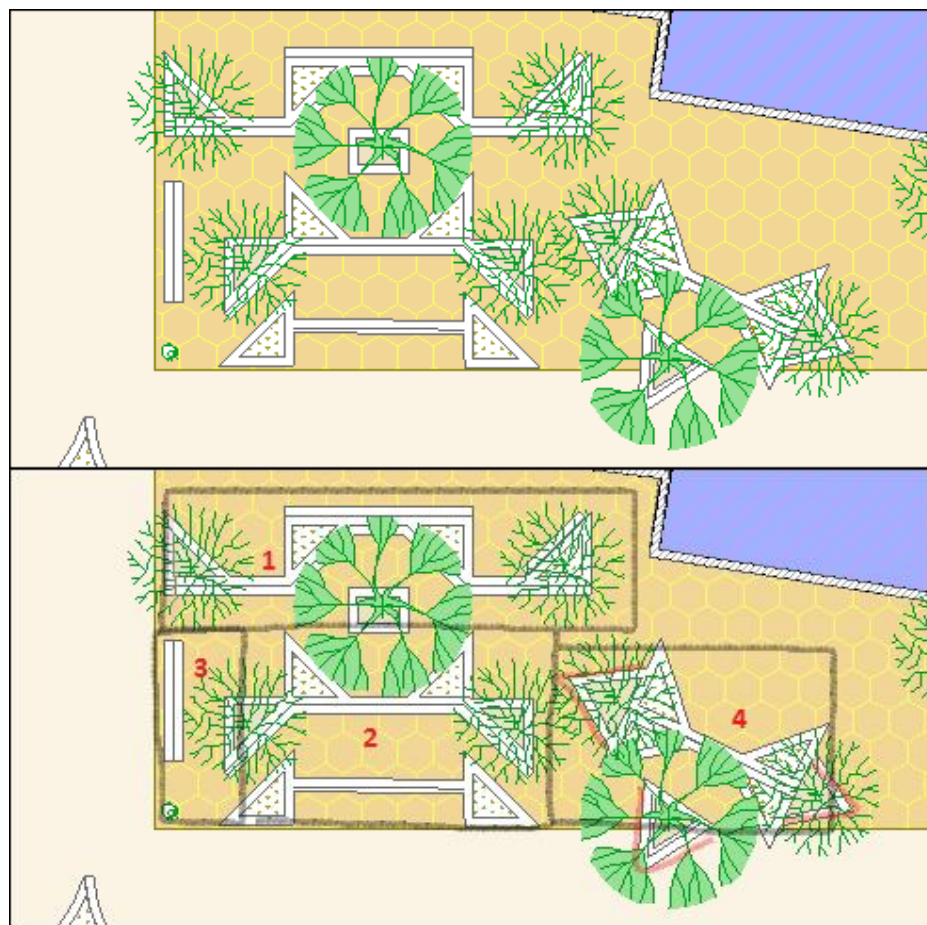
Picture 25: Perspective view of proposed Chelenqo square design

7.2.3 Explanation for some of the design used on the square:

Pavement: the radiating cobble stone from the *Chelenqo square* represents the five gate of Jugal. It also enhances storm water infiltration of the square which is mainly

dominated by asphalt. Majority of the study area except walk ways is left with asphalt for two purposes. The first is for economic purpose while the second is to remind the construction of asphalt which was constructed during Italian occupation. Additionally, grass is used for the esthetic value and also for improving environmental services and quality of the square.

Shade: shade for *chelenqo square* is designed mainly with use of trees which have scattered branches. It is preferable if such kinds of trees are found from those biodiversities known to the region. If not national indigenous tree will be used.



Picture 26: Designed seat for Chelenqo square wasted area

Sitting area: sitting area is facilitated with benches of marble along the study area. Besides, the wasted area on the *chelenqo square* is also designed for sitting in order to make the square more sociable and vibrant. This wasted land seat is made in the

concept of the Harari cultural house seat called *Nedeba* that have five hierarchies. As shown in the picture 26 above.

The upper wider seat designated with number 1 is synonymous with *Gidir Nedeba*. Number 2, designates smaller one called *Tit Nedeba*, and *Amir Nedeba* is the left most part labeled with number 4. *Sutri Nedeba* is the single line presented at the right most part of the seat which is labeled by number 3.

To signify *Gidir*, *Amir*, and *Sutri Nedebas* their relative size and respective spatial position was used. *Amir Nedeba* keeps its spatial position and it is signified by arrows in every direction. And also its tilted more toward the square in order to give one of the purposes *Amir Nedeba* serve which is to have convenient view of once own compound.

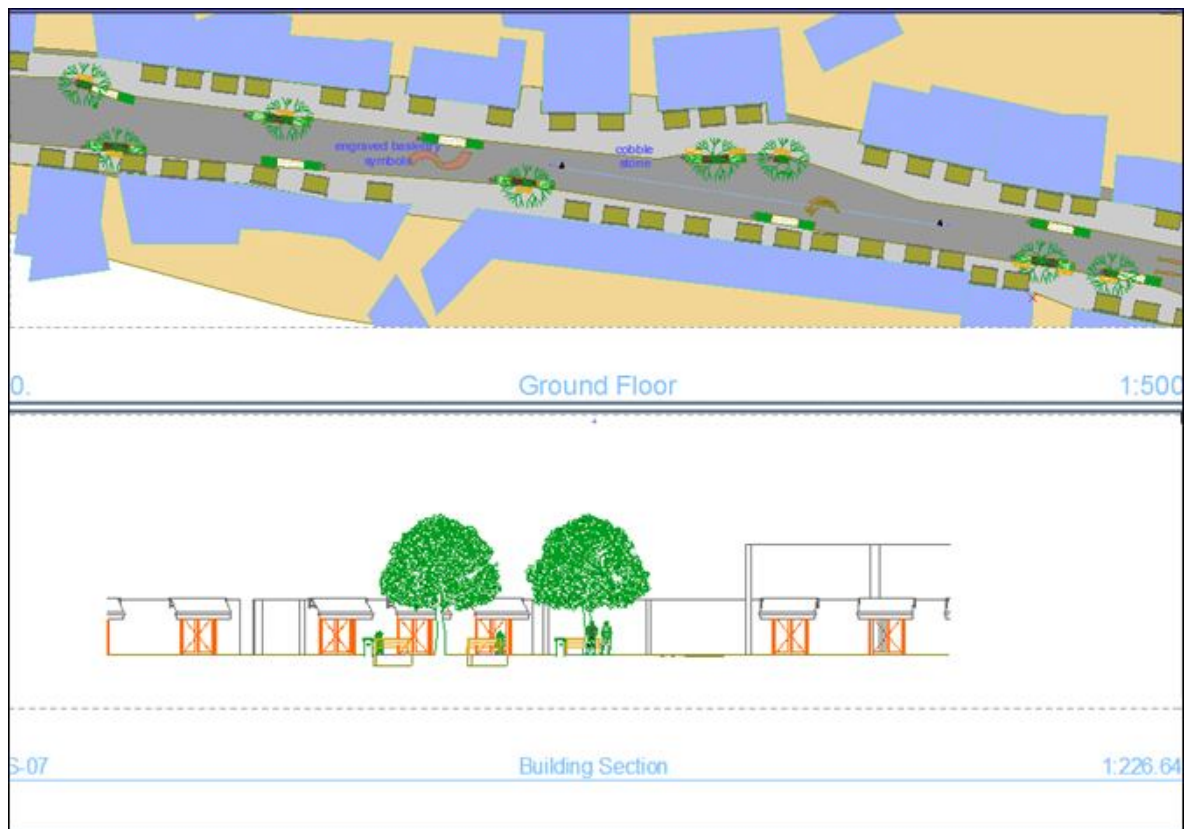


Figure 15: Proposed design of Andegna Menged



Picture 27: Perspective view of proposed Andegna Menged

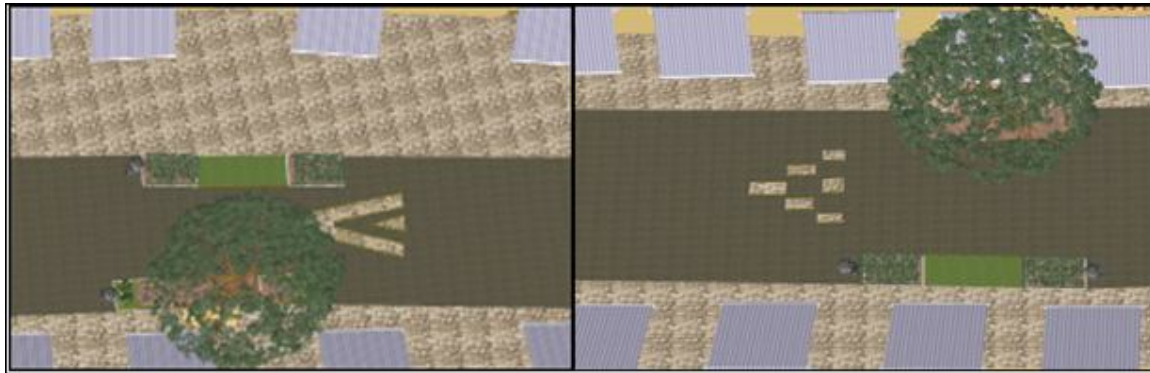
Explanation of designs used along *Andegna Menged*

With respect to *Andegna Menged*, its straight path is strengthened by provision of trees, shrubs and grass along the corridor that separate the emergency vehicle movement from pedestrian only way. The purpose of strengthening straight shape is to reinforce the contrast between winding ancient lane of Jugal and the modern street. The right of way prepared for the emergency movement is about 3m while that of pedestrian right of way is also 3m at both sides of the street on average and it is paved with cobble stone.

Shade: Trees are planted in order to serve as: shade, enhance esthetics, comfort, and also provide different ecological services. The main place trees are recommended are those areas that are identified to serve as sitting and local market spot during field excursion. Therefore, to enhance and promote the continuation of this type of local activities trees are provided near these places with sitting wood bench. In addition to trees, shades are provided to improve shade of the street and also serve as shelter from rain.

Pavement: the street is proposed to remain the same except for those areas proposed for walk ways covered with cobble stone, grass, shrubs, and also at those areas proposed to be engraved cobble stone. The engraved cobble stone is important for improving infiltration of storm water. Besides to its ecological benefit, the shape of these

engraved cobble stone is to signify the cultural image of the case area with those symbols derived from the famous basketry art of Harari people. Basketry is chosen because it is the only form of Harari art that tells about the historical, social, and economic situation of the region in various eras more richly. Thus, symbols from basket will be used which are studied in detail by Elisabeth-Dorothe Hecht as noted on her article titled Basket Work of Harar as shown in the picture 28 below.



Picture 28: Pavement design using cultural arts

Drainage: drainage of the study area is proposed to be constructed alongside line accesses and link lanes to the study area as shown in map 5. This is due to the drainage pattern of Jugal which is shown in map 3. And also fear of lack of sufficient water which may create smell nuisance if the drainage pipe is constructed along the study area. Finally the experience of Municipality of Harar gained from construction of drainages along different narrow lanes of Jugal successfully is the type of drainage proposed for the study area at those places which have not been constructed yet. Therefore, the researcher of this thesis believes that similar drainage pipe lines along the proposed way can solve the grey water sewerage problem. These drainages will have perforated openings within an average distance of about 10m as the length of houses found along the lane. The perforated opening will enable to pour grey waste water for those houses which are not accessible to connect with the canal. The section and type of canal is shown in the figure below.

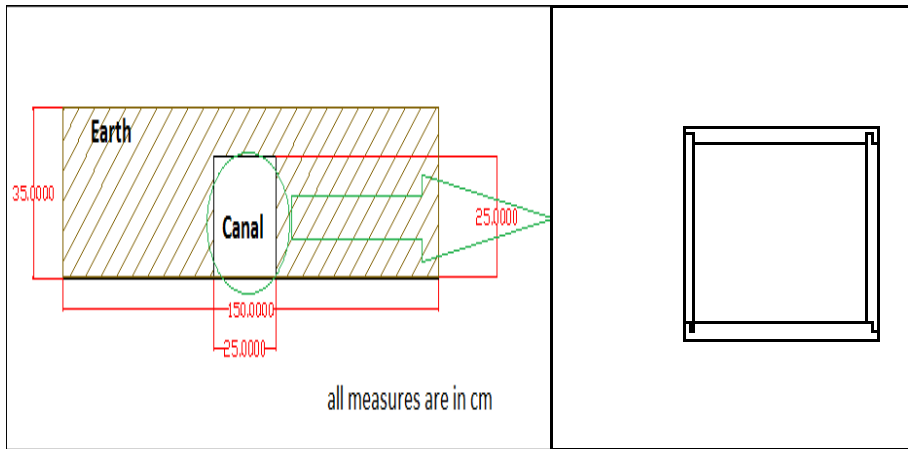


Figure 16: Drainage type and its section

Waste bin and Toilets: waste bins are proposed with in every twenty five meter on both sides of the study area along with shrubs recommended along the tree shades. Toilets are also proposed at pocket open spaces found along the study area as shown in figure 18 below.

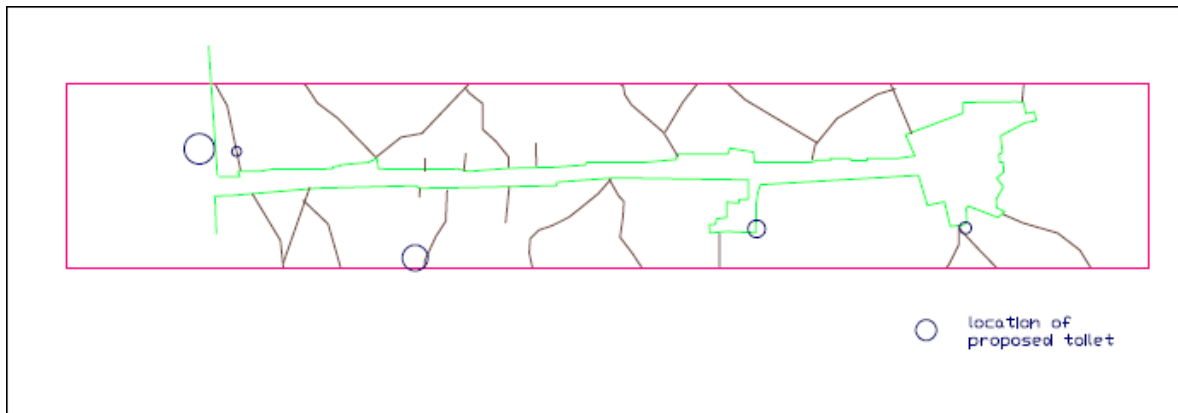


Figure 17: Spatial location of proposed toilets

Local market along pocket open spaces of Andegna Menged: these local markets serve as qat and coffee drink and breakfast sells area. To design a sample of pocket open space along the study area, it was aimed to strengthen the current local and qat market while enhancing the esthetic beauty of the spaces. Further, it is designed to serve additional multiple activities such as sitting and toilet services. The sample design and its spatial location are shown below.

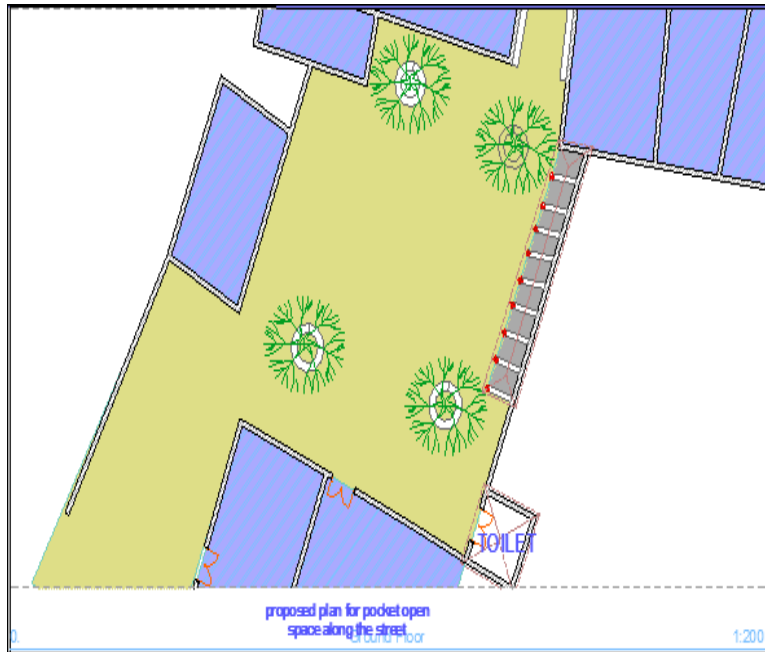
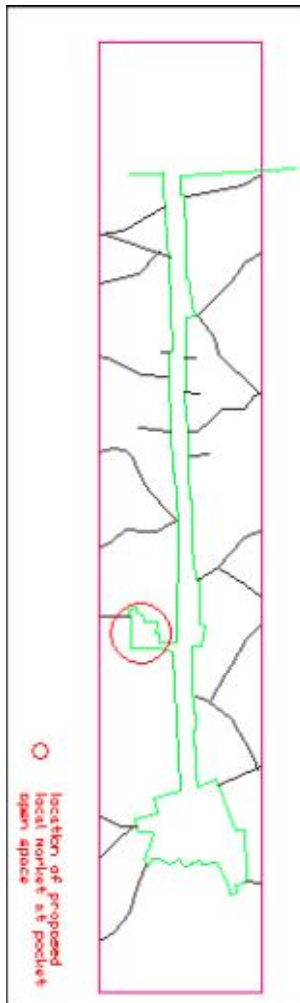


Figure 18: Location, plan & 3D view of proposed design for pocket space along the street

Facade of the street: façade of the street have been seen as one of descriptive property of *Andegna Menged* according to (Harar nomination file, 2004). Therefore, without major change to the facade of the study area this proposal recommends removal of very loud advertisement boards which are so colorful and very brighter that outdo or outfit the heritage. This type of advertisement is shown as follow.



Picture 29: Very loud advertisement on Chelenqo square which is intrusive to the historic setting, thus need to be removed

IMPLEMENTATION STRATEGY

Implementations of the proposed planning and design solutions require multidisciplinary approach with sets of steps to follow. In addition, the public and private partnership (PPP) and acceptance should not be forgotten since the proposal's success directly or indirectly depends on these stakeholders.

Therefore, from the inception of the project identifying the specific demand of the shop owners along the space, different social organizations and representative of the public in general need to be consulted and sensitized so that negative impression should not develop on the project implementation. In addition to consultation, series of awareness creation programs should be developed through FM radio of Harar, TV programs and other Medias. Furthermore, to create sense of concern within the population, especially business improvement district (BID) may cover the project cost or pay the familiar contributions for the development.

After agreement of private and public partners have been guaranteed, the following steps should be followed in its implementation

- I. First, the discontinued ring road of Jugal should be connected.
- II. Then, the access of the street should be limited to one way in direction from the *Chelenqo* square to new city through Harar gate as first step to pedestrianize the area.
- III. Additionally, only high traffic time will be allowed through the street which will be 8-9:00 AM morning and 2-3:00 PM noon time.
- IV. During this time the design improvement of the case area can be implemented.
- V. Then, when the public became familiar with the utilization of transportation service out of Jugal, vehicle access will be limited out of *Andegna Menged* and *Chelenqo square* in total. But with the exception of emergency case.
- VI. The environmental quality of the area should be regularly followed and keep in the desired way.

Lastly various recommendation points should follow after these steps have been gone through.

RECOMMENDATION

As discussed earlier in the thesis, solutions that may alleviate the major problems of the case area have been forwarded. But, implementation of the proposed points could be strengthened by the following recommendations.

Land use policy that may synergize the proposed solution of the study area should be developed.

In addition to land use, additional economic policy should be developed so as to motivate the type of commercial activity needed on the site.

To facilitate the transportation along the ring road of Jugal, squares should be provided in front of each gate.

The potential of the buffer zone is not merely safeguarding of Jugal but also have potential value with regard to water conservation and management; soil conservation and management; agro forestry and productivity; which is also recognized by the National Green Award. Therefore, this potential should be investigated thoroughly to see if it can be registered in its own right.

Other public open spaces with in Jugal should also be improved, so that the need of its public services improved.

Environmental communities should be established with in every count zone of revitalization program census, in order to raise the direct involvement of the residents on environmental issue.

Cultural courtyard garden of Harari should be given focus within program of Harar revitalization so as to tackle climate change and conserve biodiversity.

Public space greening should also be given similar attention to that of courtyard greening.

The renowned waste collection program, using donkeys for transportation within the narrow lanes of Jugal which had been proven successful, should be restarted with better management system for donkeys.

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Annex 1

Interview and questionnaire 1 for *Andegna Menged*

1. Respondent age group

- | | | |
|------------|------------|--------------|
| 1.1. 0-6 | 1.2. 7-18 | 1.3. 18-34 |
| 1.4. 35-50 | 1.5. 50-65 | 1.6. Over 65 |

2. Respondent sex

- | | |
|-----------|-------------|
| 2.1. Male | 2.2. Female |
|-----------|-------------|

3. Respondent Occupation

- | | | |
|---------------|-----------------|--------------------|
| 3.1. Employed | 3.2. Unemployed | 3.3. Self employed |
| 3.4. Student | 3.5. Retired | |
4. If you have work can you specify type of your work?
-

5. Respondent place of residence area?

- | | |
|---------------------------------|-------------------|
| 5.1. along the street or square | 5.2. Within Jugal |
| 5.3. Outside Jugal | 5.4. Tourist |

5. Respondent place of work area?

- | | |
|---------------------------------|-------------------|
| 5.1. along the street or square | 5.2. Within Jugal |
| 5.3. Outside Jugal | 5.4. Tourist |

6. If your work place is along andegna menged or Chelenqo square what do you recommend enhancing the quality of space and improving your working condition.

7. Respondent presence on the site?

- | | | | |
|---------------|-------------|--------------|-------------------|
| 7.1. Everyday | 7.2. Weekly | 7.3. Monthly | 7.4. Occasionally |
|---------------|-------------|--------------|-------------------|

8. Purpose of coming to the site

- | | |
|--------------------|------------------------------------|
| 8.1. For work | 8.2. Appointment (to meet) friends |
| 8.3. To spent time | 8.4. Walking |

9. If others can you please specify it?

10. Pattern of arrival

- | | | |
|--------------|--------------------|-------------|
| 10.1. Single | 10.2. with friends | 10.3. Other |
|--------------|--------------------|-------------|

11. Feeling about the space

- | | | | |
|---------------------------|-----------------|-----------------------|------------------|
| 11.1. I like it very much | 11.2. I like it | 11.3. I don't like it | 11.4. No opinion |
|---------------------------|-----------------|-----------------------|------------------|

12. Memories attached to the place

- | | | |
|---|----------------------------|---|
| 12.1. The physical characteristics of the space | 12.2. The sport activities | 12.3. Different music festivals and recreational activities |
|---|----------------------------|---|

12.4. Congestion and chaos

12.5. Traffic movement

12.6. Shopping

10.7. Others

13. If your answer for the above answer is others can you specify it please?

14. Where would you like to spend your leisure time mostly?

14.1 In side Jugal

14.2 Outside Jugal

15. Why do you prefer to spend more time at the place you chose above?

16. How long do you stay on public area along *Andegna Menged and Chelenqo square*?

16.1 Shorter than other places

16.2 Longer than other places

17. Could you explain the reason for your answer above?

18. Why do you think is that more people gather at *Alibal café* in Chelenqo square?

18.1. It is more protected from traffic

18.2. It has wide area of view on the square

18.3. Other

19. If your answer in the above question is others can you please specify it below?

20. Ideas, opinions and wishes you have about the place that should be worked on in the future?

20.1. Maintenance and cleaning

20.2. Provision of recreational facilities

20.3. As it is

20.4. No response

20.5. Shade

20.6. Lightening

20.7. Toilet

20.8. Others

21. If your answer in the above question is other can you write your reason in the spaces provided below?

22. Which feature of *Andegna menged and the Chelenqo square* are in your image to tell?

23. What do you feel during walking along andegna menged with regard to traffic movement?

23.1 secure

23.2 Insecure

24.1 could you give your reasons for the answer you gave for the above question?

Annex 2

