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Utilization of Neighborhood Parks for Social Interaction and Recreation: The case of Kolfe Keranyo Sub City, Woreda 7, Addis Ababa, Ethiopia

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APPROVAL SHEET

This is to certify that the thesis prepared by Feben Kassahun Nigatu, entitled: "Utilization of Neighborhood parks for social interaction and recreation, in the case of Kolfe Keranyo Sub City Woreda 7, Addis Ababa, Ethiopia" and submitted in partial fulfillment of the requirements for the Degree of Master of Science in landscape architecture complies with the University and meets the accepted standards concerning originality and quality.

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ABSTRACT

Neighborhood parks are located in residential areas throughout the city. Their existence is extremely important. They are an essential component of a thriving, healthy city. They continue to play an important role in building infrastructure for cities – which is essential for creating healthy lifestyles, enhancing the values of urban settings, and providing dynamic and attractive recreation opportunities for citizens. However, from a preliminary study, the existing open spaces expected to serve as a Neighborhood Park are not serving as targets. The main objective of the research is to identify the challenges in the utilization of the Neighborhood Parks and to come up with a recommendation, design, and implementation manual for the utilization of the parks for social interaction and recreation. This research used both qualitative and quantitative data as a methodology. The sample size was calculated using a Raosoft sample size calculator software. The neighborhood parks were classified into three strata and a random sampling method was used to pick samples from each stratum. The data was collected by Observation, questionnaire, interview, focused group discussion, and literature review. The cluster analysis method was used to analyze qualitative data, narrative analysis was used to narrate field level observation while statical analysis method for the quantitative data. The result suggested that most of the community is not using neighborhood parks. The community has mentioned their reason for park nonuse. On this basis, Neighborhood parks can be activated for social interaction and recreation by fulfilling the need of the community.

Keywords: Neighborhood, Neighborhood Parks, Parks, Social interaction, Recreation

DEDICATION

This work is dedicated to my newly born baby – **Elnathan Habtamu**. You have made me stronger, better, and more fulfilled than I could have ever imagined. I love you to the moon and back.

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CHAPTER ONE: INTRODUCTION

1.1. Background of the study

Parks are important components of a city. Parks contribute to community identity, provide active and passive recreational opportunities, appeal to all ages, contribute to health and wellness of community, create valuable green space (Paul, 2006). Parks are beneficial to humans for many reasons, and they are also beneficial to native plants and animals. Especially in urban areas like cities, parks are an effective area to encourage native flora and fauna to grow. This will make the area more inviting and safer for wildlife to enjoy, as well (Paul, 2006).

There are different types of parks. The classification varies in different countries based on the criteria they set. In Addis Ababa, Ethiopia parks are classified into four; City Park, Sub-city Park, Woreda Park and Neighborhood Park. Among this, Neighborhood parks are the type of green spaces which are less than 0.3ha. They serve neighborhoods and other residential areas of the city for a variety of recreation opportunities, close to residents and employment centers. They are located to serve local residential neighborhoods, broader residential communities, and urban employment or mixed-use centers. For people who don't have a yard or don't have one, neighborhood parks provide open space. The user experience at neighborhood parks may be casual and informal, geared toward social interaction, play, and outdoor enjoyment, or maybe more structured to support organized sports and park programs. (Rakhshandehroo et al 2017).

The existence of these parks has a great role in increasing social interaction. The social interaction creates an active community which in return creates a safe and secured environment. As a result, the community will develop a sense of living. (Byrne et al, 2010).

Therefore, enough emphasis needs to be given in the utilization of Neighborhood parks to create an active community by increasing the social interaction and a safe and secured environment.

1.2. Problem statement

The lack of utilization of Neighborhood Park is the major challenge faced in the study area. It is observed that the new expansions incorporate some lands around residential areas that are left open to serve as a Neighborhood Park. These open spaces are expected to serve the different needs of the community and the environment. However, from a preliminary study made, the neighborhood parks in the study area which are found in three levels of development; developed, developing, and not developed area not serving as targets. The lack of utilization observed can be discussed in two categories. (1) lack of utilization by **not developing the spaces provided** for the community as a neighborhood park and (2) lack of utilization of the parks categorized under the level of developing and developed spaces by **not using them for social interaction and recreation**.

The main problem in most of the developed parks is hindering social interaction. The spaces don't invite all age groups to use the space equally. The Parks which are not developed have a greater side effect on the community and the environment. In the study area, some development has been made on some of the spaces but it is not satisfactory and could not meet the desired goal. Its development could not create the interaction of the community as it should. As a result, the community cannot be active and free from stress, due to the lack of recreational space nearby.

1.3. Objective of the study

1.4.1. General Objective

The main objective of the research is to identify the challenges in the utilization of the Neighborhood Parks and to come up with a recommendation, design, and implementation manual for the utilization of the parks for social interaction and recreation.

1.4.2. Specific Objective

- To assess the current condition of the parks in Kolfe Keranyo sub-city Woreda 7.
- To identify the challenges encountered by the community in the development of the parks.
- To evaluate the public perception of the importance and their experience on the use of neighborhood parks.
- To recommend ways on how to increase society's parks usage.

1.4. Research Questions

- What is the current condition of the parks?
- What are the challenges in the development of the parks?
- What is the perception of the community on the importance and their experience in the use of the parks?
- How can a neighborhood park be activated?

1.5. Thesis structure

Chapter one introduces the paper. It explains the main reason for this research to be done, which is the problem statement. It states the aim and objective of the study. The research question to be answered by this paper is also presented. The scope of the research and how it is significant are also discussed in this chapter. Chapter two gives a thorough overview of the international literature review on park usage. The value and benefits of parks to components and key standards to activate a park are discussed in this chapter. Chapter three described the research process that was followed to conduct this research. Chapter four presents the respondent's profile and the collected data from the community nearby the case study area, the committee members, and the regulatory bodies. It presents the main findings achieved from the assessment. Chapter five discusses and analyze the respondents' perceptions and preferences of service delivery in general and their expectation in the delivery of park and recreation services. The respondents' levels of satisfaction with parks in terms of park management and maintenance are also discussed in this chapter. Chapter six concludes the whole research and presents recommendations and an exemplary design suggestion to address the challenges found by the research. An implementation manual is also prepared in the annex to help the community implement the suggested and other designs in the neighborhood park development.

1.6. Scope of the study

1.6.1. Thematic scope

The paper's central theme is social interaction and recreation. This paper investigates the role of neighborhood parks in social interaction and recreation. Furthermore, this research paper assessed the perception of the different communities living in Woreda 7 on the use and need for neighborhood parks.

1.6.2. Geographic Scope

The study's spatial scope is limited to Ethiopia's capital city, Addis Ababa, with a focus on one of the sub-cities, Kolfe Keranyo, specifically Woreda 7. The study attempts to evaluate the neighborhood parks in this Woreda.

1.7. Significance of the study

The growth of park use may improve the quality of human life, which is an essential component of sustainable development and a sustainable city (Chiesura, 2004). This included neighborhood parks - that are situated within a community neighborhood housing area and which offers leisure and recreational purposes for local and the immediate communities (Nurhayati et al, 2011)

Kolfe Keranyo, Woreda 7 is one of the newly urbanizing areas of Addis Ababa. In the Woreda, there are some communal green spaces – described as Neighborhood Parks are left in between residential units. The existence of Neighborhood Parks has a great role in benefiting the community in different dimensions as described above. However, the existing spaces in Woreda 7, expected to serve as Neighborhood Parks are not serving as targets. Some developments have been made on some spaces but even the spaces considered as developed; fail to meet the need of the community and the environment. This is because most of the developed parks hinder social interaction.

As a result, a systematic study of the Utilization of Neighborhood Parks for Social Interaction and Recreation in Woreda 7 is very important and it will benefit, the community, the regulatory bodies, and environmental conservation.

The Community – a utilized Neighborhood Park will help the community to increase social interaction which creates an active community. The activeness of the community would lead the environment to be a safe and secured space to live in. It can also serve as

a recreational space in which the community can relax, take fresh air and escape from the city. This study provides information and guidance on the development of Neighborhood Parks so that the committee members utilize them as a guide in the development of their neighborhood parks.

The Regulatory bodies – the results of the study will help the regulatory bodies to understand the perspective of the community, analyze the type of provision they should make, the professionals they should engage in the development of Neighborhood Parks, and helps to guide the committees on how to implement the designs of Neighborhood Parks to the ground.

The Environment – the result of the study helps the environment to be a habitat for pollution abatement as a result cooling effect will be increased. It also helps to control the stormwater runoff, so that the environment will be conserved.

CHAPTER TWO: LITERATURE REVIEW

2.1. Definitions of Keywords

Parks - In underdeveloped countries, parks are one of the most common types of protected areas. Other types of protected areas include nature reserves, wildlife sanctuaries, and biosphere reserves. The formal purpose of creating protected areas has been to preserve plants, animals, and microbes, while real management practices vary slightly between countries (Ghimire, 1994). The idea of establishing national parks originated in the United States during the second half of the nineteenth century. The main aim of the parks was to preserve the scenic beauty and natural wonders and to meet the educational and recreational needs of the population (Ghimire, 1994).

Neighborhood parks - serve neighborhoods and other residential areas of the city for a variety of active and passive recreation opportunities, close to residents and employment centers. Areas designated for natural and cultural resource protection may also be included within these parks.

Neighborhood parks with vast open areas serve as infrastructure for adhering to national requirements for moderate to vigorous physical activity (MVPA)—at least 60 minutes/day for youth and 150 minutes/week for adults (Deborah et al, 2016).

Location and Access: Neighborhood parks should be located to serve local residential neighborhoods, broader residential communities, and urban employment or mixed-use centers. Pedestrian, bicycle, and car access is appropriate depending on the setting and access features. School grounds also serve as neighborhood parks and should be treated with the same experiences and length of stay.

Character and Extent of Development: Neighborhood parks primarily provide facilities for active or passive recreation, or both; areas for scheduled and unscheduled recreation

activities and social gathering places; and serve residential, employment, and mixed-use centers. In the City, park size will typically be at least ½ acre and less than 25 acres.

The character of neighborhood parks may vary depending on their location within the city. Neighborhood parks will be larger in residential areas than they would be in urban areas. For people who don't have a yard or don't have one, neighborhood parks provide open space. Open play areas, playgrounds, courts, athletic fields, game areas, trails, trail connections, natural spaces, picnic spaces, and facility lighting are some examples of typical facilities. The service area for neighborhood parks is typically no more than one mile.

The user experience at neighborhood parks may be casual and informal, geared toward social interaction, play, and outdoor enjoyment, or maybe more structured to support organized sports and park programs. Co-Location of a mix of park uses and facilities that support both informal and structured activities is increasingly necessary to meet the City's diverse and varied recreation and leisure needs with minimal available land. To the extent possible, facilities should be planned so that areas that address different needs are compatible.

Social interaction - A social interaction is defined as a social exchange between two or more people. Since these interactions are the foundation of social structure, they are an important object of basic social inquiry and analysis. Social interaction can be studied in groups of two (dyads), three (triads), or larger.

Social interactions are the foundation of social structures and cultures. People design the rules, institutions, and systems within which they seek to live by interacting with one another. Symbols are used to communicate a society's expectations to those who are new

to it, whether they are children or outsiders. Through this broad schema of social development, one can see how social interaction is at the heart of it all.

From the Sociology field of study, social interaction is defined as the process of reciprocal influence exercised by individuals over one another during social encounters. Usually, it refers to face-to-face encounters in which people are physically present with one another for a specified duration. However, in contemporary society, we can also think of social encounters that are technologically mediated like texting, skyping, or messaging. (Little, 2013, Little 2016)

Recreation - is an emotional state that arises from a sense of well-being and satisfaction within an individual human being. It is distinguished by feelings of mastery, accomplishment, exhilaration, acceptance, success, personal worth, and pleasure. It helps to maintain a positive self-image. Recreation is a reaction to an aesthetic experience, the achievement of one's goals, or positive feedback from others. It is unaffected by activity, recreation, or social acceptance. (Veal, 1992)

Recreation is also defined as an activity that allows people to experience and enjoy leisure, but it is also viewed as a social institution that is socially organized for social purposes. (Veal, 1992)

2.2. Classification of Parks

Parks are divided into numerous varieties based on their size and amenities, such as mini-parks, pocket parks, or parklets (less than 2 acres), neighborhood parks, community and big urban parks, sports complexes, and natural resource areas (Mertes, 1996). According to Addis Ababa's structural strategic plan (2020-2027), parks are majorly divided into two - **Recreation Park** and **Special use Park** (AACPPO, 20172027)**.**

2.2.1. Recreational Parks

Recreational Parks are established with a view of providing recreational and other social services. The opportunity to provide services to the parks is dependent on their size. The larger the park is, the greater the opportunity to accommodate a variety of activities. Parks are classified depending on the size and the function they are serving or providing. The classification is different from one country to the other by a slight size categorization or by the naming. Generally, Recreational Parks are classified into five. These are Town Squares, City Parks, Community Parks, Neighborhood Parks, and Pocket Parks. (DPLA, 2020)

Town Parks /Squares: – Town parks are located in the heart of the town; the square was a tract of land owned or used jointly by the residents of the community. It could have started off as a communal pasture. The square became a park or plaza in front of the original county courthouse or town hall as settlements flourished. To represent its importance in the community's civic life, it frequently included a monument, fountain, or flagpole. Some town squares also functioned as a marketplace or a commercial gathering place.

Town squares hosted civic gatherings, parades, and other community events, as well as serving as an informal meeting or recreational space. Many town squares were decreased to make place for broader roadways or parking or were reconstructed entirely, as city centers became more oriented to commerce and cars came to dominate the urban environment in the twentieth century. (DPLA, 2020)

City Parks – City parks are open to the public and include regions with unique natural characteristics, historical value, or centralized cultural institutions. The facilities are usually geared towards the interests of adults and families (Mohammad et al, 2015).

Community Parks: - Generally, the area from which a city pulls people for community parks is defined as a 2.4-kilometer radius around the park. They serve as a focal point for community-wide activities, and as such, they are proposed to provide either the facilities or intensity of activities that are appropriate for the area in terms of noise, lighting and vehicular traffic. They usually have parking and restrooms available.

Where there aren't any neighborhood parks, community parks can fill the need. A Community Park can satisfy one or more of the following recreational needs of the community, based on its size, visual character, natural determining elements, or location: Ecologically sensitive and distinctive natural places where the nature of the area is preserved for the future generations through public protection. Uses will be primarily passive and may include trails, picnicking, viewing, and environmental education. Explanatory sites of historic land use such as agriculture or mining may also be included in these parks. Areas intended to provide a diversity of either structured or non-structured outdoor recreation activities. It could feature athletic fields, play spaces,

waterfront, swimming pools, community gardens, skating rinks, or outdoor

amphitheaters, among other things. Active recreation facilities can be the focal point of several community parks. Parking lots can get fairly enormous in these situations. Proposed areas to meet the need for indoor recreational activities. These may include gyms, daycare, fitness facilities, meeting space, classrooms, game rooms, swimming pools, theaters, recreation centers (Mohammad et l, 2015).

Neighborhood Parks: **-** They are small parks that provide informal recreation in residential areas. Neighborhood parks generally serve an area of 500 to an 800-meter radius and provide a local park function at the neighborhood level. Neighborhood parks serve a smaller area and have fewer amenities than community parks. At this scale, parks

may accommodate both active and passive recreation. The current criterion for neighborhood parks is 0.6 hectares per 1,000 residents. It offers many different facilities to a wide range of people. A playground, basketball court, sitting area, shelter, tennis, multi-use courts, horseshoe pitch, gazebo, and play meadow are among the active attractions, while flower beds create a relaxing environment. Neighborhood parks should be evenly spread across the city so that residents may enjoy them near to home. They are small (under 10,000 m2) and are utilized for unsupervised or organized leisure activities in the area. A neighborhood park typically offers a variety of activities, such as a children's play area, seasonal wading pools, picnicking, open grass for passive use, outdoor basketball courts, multi-use facilities, sports fields for soccer (Mohammad et al, 2015).

Pocket Park: - the term "pocket parks" refers to small (generally smaller than a quarter of an acre), publicly accessible areas that often provide greenery, a place to sit outdoors, and sometimes a playground for children. They may be created on vacant building lots or as part of a large building development's public space requirement (DPLA, 2020).

In the case of Ethiopia; Recreational Park classification is slightly different on the naming it uses. They are classified into four as follows: City Park, Sub-city Park, Woreda Park, and Neighborhood Park (AACPPO, 2017-2027).

Table 1: Park classification in Addis Ababa

No.	**Park**	**Size (ha)**	**Catchment Radius**	**Example**
1	City Park	>10	10.0km	Bhere-Tsige
2	Sub-city Park	1-10	5.0km	ECA Park
3	Woreda Park	0.3-1	1.5km	

4	Neighborhood Park	<0.3	0.3km	

2.2.2. Special Function Parks

Special Function Parks are primarily established for conservation, education, research, and recreation. Gullele Botanical Garden (Gullele Sub-city and Sululta Woreda) and Peacock Zoological Park (Bole Sub city) are Special function parks in Addis Ababa (AACPPO, 2017-2027).

2.3. General Purposes of Neighborhood Parks

The neighborhood is a focal point such as school and recreational area where each house should be adjoined to a planned open space area although many sociology scholars often debated that a definition of the neighborhood was irrelevant simply because the concept of the neighborhood was vast and had evolved through time (Nurhayati et al, 2011) Neighborhood Parks serve both active and passive recreation providing a local community. Neighborhood Park refers to parks that are situated within a community neighborhood housing area and which offers leisure and recreational purposes for local and the immediate communities (Nurhayati et al, 2011). Park systems are built on the foundation of neighborhood parks. They frequently have a variety of amenities such as playgrounds, picnic tables, basketball courts, green spaces, and shade trees, allowing inhabitants of all ages to regularly engage in recreational activities. Neighborhood parks are usually between 2 and 20 acres, have more facilities than mini-parks, and are intended to serve residents living within a 1mile radius around parks. (Mertes, 1996.)

2.4. Value and Benefits of Neighborhood Parks

Benefits that people receive from parks may determine whether they are used or not as well as the frequency with which they are used. Parks have the potential to benefit people by providing a high-quality life and contributing to a sustainable city. To accomplish sustainability, there has to be a balance between economic, environmental, and social aspects of parks (Scott et al, 2000). When the balance is achieved, people see parks as a holistic entity, which may influence people's personal and social perceptions of parks and in turn determine the frequency of use. An increase in park use may improve the quality of human life, which is an important component of sustainable development and a sustainable city (Chiesura, 2004). Parks furthermore provide opportunities for "social interactions, serve as reminders of childhood memories and serve as opportunities for people to escape from urban life. The most valued parks are the intimate and familiar ones which play a part in people's daily lives rather than distant ones far from home" (Burgess et al, 1988) Three attributes make up the value of open spaces (such as urban parks): functional, aesthetic and ecological attributes (Shi et al, 2006)

***Functional attribute*:** It allows people to know that places are available for leisure/recreation activities.

- Individual leisure/ recreation activities
- Group leisure/ recreation activities
- Public leisure/ recreation activities

***Aesthetic attribute*:** It allows residents to feel comfortable in the open space.

- **Visual amenity:** Natural scenery and beauty and architectural styles
- **Aural amenity:** Human voice, the sound of wind, rain, and creatures
- **Tactual amenity:** Sunshine, wind flick, material sense of benches and water surfaces
- **Olfactory amenity:** Fresh air, aroma, and smell of food
- **Health amenity:** Breaking continuous building patterns, enhancing the quality of life, better mental health, stress relief, self-confidence, relaxation, independence, therapeutic benefits (gives people a hobby) and forms a relationship between people, animals, and plants
- **Economic amenity:** Property values nearby parks will increase

***Ecological attribute*:** Ensures that the environment is protected to ensure sustainable city development.

- Improves microclimate
- Water-soil retention
- Environmental quality and function
- Biodiversity
- Protecting wildlife habitats
- Traffic control – through providing greenway transportation systems

- Fire-hazard reduction

This literature broadly provides eight park benefit categories: economic, environmental, transportation, aesthetic and amenity, sense of place, restorative, spiritual, and other benefits.

Ecological benefits **-** Parks and other green spaces provide many ecosystem benefits, such as regulating ambient temperatures, filtering air, reducing noise; sequestering carbon, and attenuating stormwater. Aside from the benefits to people, well-designed urban green spaces can also help to safeguard habitats and conserve biodiversity. Green places with adequate connectivity that act as 'wildlife corridors' or 'urban forests can help to keep populations of species alive that might otherwise perish in urban areas (Byrne & Sipe, March 2010).

Social benefits **-** Urban green spaces offer a variety of social advantages. Parks have been shown in numerous studies to provide urban inhabitants with respite from their stressful lives, expedite recovery from disease or illness, and promote active living, thereby countering sedentary lifestyles linked to obesity, heart disease, and a variety of cancers. Community gardens, which have recently been a popular feature of many inner-city parks, can provide residents with a place to socialize while also allowing them to supplement their meals with fresh fruits and vegetables. They may also foster closer community ties. Parks can moderate incivility and cultivate child development. Given the opportunity, most children would prefer to play in outdoor spaces that provide them with a range of sensory experiences and which help them to refine their motor skills (Byrne & Sipe, March 2010).

Economic benefits **-** include increasing tourism, mitigating environmental consequences (e.g., Carbon sequestration, stormwater attenuation), reducing pollution by providing

alternate traffic routes, and lowering healthcare costs by encouraging healthy living (e.g., promoting regular exercise). Parks exert a significant beneficial impact upon nearby property values. Properties located near parks and greenways have been found to have higher resale value and homeowners value these spaces as important attributes when making decisions about residential location and housing choice. The other economic benefit of urban green space is in adapting cities to the anticipated impacts of climate change such as higher temperatures, increased flooding, increased storminess, and the like. Green space that is well integrated into urban environments will likely lessen the severity of many of these anticipated problems – providing significant economic benefits (Byrne & Sipe, March 2010).

Environmental benefits include, among other things, reducing air pollution adjusting local temperatures, ameliorating airflow, and enhancing food security through community gardens in parks (Byrne et al, 2009).

Aesthetic and amenity benefits include the following: parks allow for adventure, fun, play and imaginative recreation and parks give people opportunities to escape the built environment temporarily by providing an opportunity for people to forget their daily worries and for people to step out of the routine of their daily lives Furthermore, parks give a feeling of wellness when people can touch, smell, see and hear elements of the natural world (Azuma et al, 2006)

The presence of parks gives residents pride in their community and helps to establish a community identity and sense of place which is expressed through shared time in the form of shared territory. The presence of parks furthermore provides restorative and spiritual benefits (Byrne et al, 2009). The restorative value of parks restores people's equilibriums, compensates for the stress of daily life provides health benefits (if people use parks for exercise, enhances people's overall quality of life, and has a positive influence on the

longevity of the elderly (Azuma et al, 2006). ***Spiritual benefits*** are defined as the notion that nature is mystic energy, giving the sense to live and acting as the driving force behind human existence (Azuma et al, 2006). Spiritual value is expressed in parks through them being the value and essence of life, providing a space for freedom, happiness, reflection, meditation, silence, beauty, and tranquility to occur. Antecedents include people's motivations and attitudes for visiting parks. While some park visitors may not be seeking spiritual outcomes, quantitative studies suggest that 46 to 82 percent of park visitors seek or experience spiritual outcomes (Heintzman, 2014).

2.5. Park Use Activity

People in developed and developing countries engage in similar activities in parks. The literature divides recreation into two broad categories: active and passive recreation. **Active recreation** is defined as activities in which people are physically active and mobile that can be done individually or in groups. Active recreation refers to a structured individual or team activity that requires the use of special facilities, courses, fields, or equipment (Burgess et al, 1988).

Passive recreation is activities that provide mere visual, emotional, socializing, or relaxing enjoyment and it includes mostly stationary activities that are investigative and acquisitive (Burgess et al, 1988). Table 2 shows a typology of international park usage. The activities in which people partake in parks are also the reasons why people visit parks.

Table 2: Activity Type

Typology of park usage	
Passive recreation	**Miscellaneous activities**

Dating Escaping/getting away from it all / the city Festivals/parties Getting fresh air Outing with family/friends Photography Picnics/barbeques Sightseeing/hanging out Sitting/relaxing/resting Studying/working Sunbathing Taking children on an outing Talking/socializing Viewing the landscape/nature/gardens	Birding/feeding birds Drug using Educational school trips Events: music/crafts/funfairs/fireworks/concerts/circus Exhibitionism Experiencing wildlife Flying kites Museums/conservatory A place to eat lunch during work hours Rites of passage, such as weddings, funerals, and birthday parties Taking a shortcut / using park as a route to work/school/shops (Commuting through parks) Thievery Used by homeless people and vagrants Used by squatters as a home Using parks as community gardens to act as

/Trees Watching organized sports Watching people/opposite sex	community development Using parks as community gardens to act as Voyeurism Watching zoo animals Working/studying
Active (individual activities)	**Active (group activities)**
Bicycling Exercising Jogging/running Playing games (alone) Rollerblading/skateboarding Walking Walking the dog	Children playing Playing Frisbee Playing games Playing sports (such as soccer, baseball, basketball, football, golf, tennis, volleyball) Skateboarding/biking Water sports (such as swimming, fishing, boating, watching boats)

The more activities parks offer people, the more reasons and opportunities people will have to go to parks and participate in these activities. Consequently, park use will increase (Pasaogullar & Doratli, 2004). Activities in which people engage in parks can also offer people an opportunity to encounter other community members, which can enhance social interaction and a sense of community among them. Social interaction consists of planned social acts or activities in which people participate in parks, which benefit people and form a social network of intimate neighboring relations (Peters, 2010). People with different demographic characteristics use parks differently, which is evident from the aforementioned sections on park users and park-use activities.

2.6. Parks Use and Non-Use

2.6.1. Park Use

The pool of potential park users is closely linked to park use. Many sociodemographic variables influence park use, including age, sex, race, ethnicity, and household composition, as well as socio-economic factors such as education, income levels, disability, and homeownership. Other user-centered variables also potentially influence park use, including residential location, physical mobility (eg, car-ownership), time resources (eg, working poor), attitudes towards nature, and leisure preferences (Byrne et al 2009).

Different Variables can be used to investigate park use (who uses parks, where, when, why, and how. Besides, the below variables are also indicators for park use.

- Frequency of park use
- Time spent in parks
- Distances to parks

- Participation in activities

2.6.2. Park Non-Use

Despite having more free time, most individuals spend less time in cities, public areas, and particularly local or neighborhood parks, and more time in regional or resource-oriented public parks, as well as private clubs, resorts, or second homes (Gold, 1976).

Reasons for park non-use:

There are so many reasons for the nonuse of neighborhood parks. Such as lack of security and safety, drunks, drug users and gang problems, too little time available, lack of maintenance of the park, lack of facilities in the park, fear of sexual attacks, litter, and vandalism, homeless people are around, not enough trees and nature, the park is not big enough, pet problems, a conflict between park users, the park is too crowded (by other activity), not easily accessible (blocked access).

Generally, the barriers are divided into two key areas and they are general barriers and personal barriers (Nehme, 2014). Each of the barriers has subsidiary elements.

Local government funding, the cost for providing facilities, and urban development which has sacrificed valuable public open spaces are the general barriers (Nehme, 2014).

Time constraints, accessibility, the cultural background of individuals, perception of safety are personal barriers (Nehme, 2014).

Seymour Gold (Gold, 1977) categorizes the park nonuse in three categories; behavioral, environmental, and institutional. The table below explains this classification.

Table 3: Major causes of non-use in Neighborhood Parks

Behavioral	**Environmental**	**Institutional**
User Orientation*	Convenient Access*	Goal Difference*
Social Restraints*	Site Characteristics*	Personal Safety*
Previous Conditioning	Weather and Climate	Relevant Program
Competing Activities	Physical Location	Management Practice
User Satisfaction	Facilities and Development	Maintenance Levels

* Most significant in each category relative to all factors

2.7. Quality Neighborhood Parks

As (Maleka et al, 2012) (Willie, 1992) quoted, Quality is not solely about techniques and procedures but includes people who use them. Willie's definitions of quality include fitness for use, compliance with requirements, continual improvement, customer delight, and many others. Quality has been described in a variety of ways, including one well-known definition from the field of business management and services, which stated: "Quality is the degree of excellence with which we meet the needs of our customers" (Neil, 1992, p.10).

Similarly, (Smith et al, 1997) define quality as "features that support a high rank or a degree of excellence."

Quality Neighborhood Parks will be stated as, a successful and excellent public green open space within a residential neighborhood area that conforms to the needs and requirements of people including various techniques in using the space and upon agreed standards that are beyond the usual outdoor recreation and leisure expectations (Maleka et al, 2012). According to Maleka, for the quality neighborhood park development, there are factors for successful green open spaces; which can be divided into four main subcategories which include the natural surrounding factors, spaces and design factors, cultural and social motivation factors, and the external factors that contribute to the understanding of what is called a successful green open space (Maleka et al, 2012).

2.8. Creating an active park

2.8.1. What is Active Park?

Parks play an important role in encouraging people to live more active and healthier lives. A park that is easily accessible, safe, well designed, clean, has a variety of facilities and encourages residents to utilize it for physical or recreational activity. The Active Park philosophy does not differentiate between different park types, but it understands the local park would not be able to cope with the provision of as many facilities or equipment as that of a neighborhood park (Nehme, 2014).

2.8.2. Standards to Activate a Neighborhood Park

(Nehme, 2014). Nine criteria are listed for creating active parks. They are accessibility, a facility for physical activity, amenities, shading, cleanliness, graffiti, play surface, Security/safety, and lighting.

Accessibility - the park's ability to provide suitable and safe access routes i.e., via a footpath and/or a designated cycle path.

Facilities for physical activity **-** for a park to become active there must be facilities provided for the residents to use for physical or recreational activity. There is a range of equipment and facilities provided that allow a diverse range of people to use the park (Australia, 2008).

Amenities **-** Marks are allocated based on the amount, condition, and appropriate location of the amenities.

Shading **-** Shading is another important factor that needs to be addressed when creating an Active Park.

Cleanliness-A Park that is free from litter and rubbish on floors, play equipment, seating, and amenities enhances the aesthetic values of the park (Dunn, 2001) and makes it a much more enjoyable place. The cleanliness of the park is a key factor in encouraging people to use the local park. Residents will be more willing to use a park if they recognize it is clean and well maintained and free from rubbish (Budruk, 2006).

Graffiti **-** The prevalence of graffiti in open space is a key reason that directly impacts the visitor experience and subsequent visitation (Budruk, 2006).

Playing Surface **-** For safety for all users of the park, it is always important to maintain all surfaces that make up the park.

Security **-** Surveillance of the park is imperative to reassure residents that they are safe when they use the local park. Surveillance is a key directive of "Crime Prevention through Environmental Design" and it is an element that should be incorporated into the Active Park philosophy if the best usage of the park is to be ensured.

Lighting **-** Lighting becomes more of an issue during the later hours of the day if residents choose to use the park at night. Providing efficient and suitable lighting both at the park

and on the access, routes will be beneficial because it could; facilitate better natural surveillance from other users and surrounding properties provide safe destinations to be physically active, and deter criminal behavior (Government, 207).

2.8.3. Barriers to Activate a Neighborhood Park

There are several identifiable barriers associated with the creation of Active Parks. The barriers are divided into two key areas and they are general barriers and personal barriers (Nehme, 2014). Each of the barriers has subsidiary elements.

Local government funding, the cost for providing facilities, and urban development which has sacrificed valuable public open spaces are the general barriers (Nehme, 2014).

Time constraints, accessibility, the cultural background of individuals, perception of safety are personal barriers (Nehme, 2014).

2.9. Perception on the importance of Neighborhood Parks

(Dennis, 1951) defines perception as an experience that is occasioned by the stimulation of sense organs. He further examines cultural factors that influence perception by examining historical and anthropological evidence. The price of open space includes people's attitudes towards nature and thus the need for contact with it (Thompson, 2002). (Reed, 1988) and (Cherry, 2010), among others, describe how an individual's perception depends on various factors; the variety of which are:

- Personal characteristics of the perceiver, like attitudes, moods, motives, self, Interest, cognitive structure (which is somebody's pattern of thinking), similarly as expectations.

- Characteristics of the target, like appearance, sound, and size of the target being perceived.
- Characteristics of the case during which the interaction between the perceiver and so the target takes place.

There is a dual view of parks, the conventional and the new. The conventional view considers them as providers of recreational activities and opportunities. The new view exceeds the conventional value of parks and considers the broader contributions the parks can make to the vitality and wellbeing of communities and their residents and focuses on how policymakers, practitioners, and the public can consider parks as valuable contributors to larger urban policy objectives such as job opportunities, youth development, public health, and community building (Hailegiorgis, 2017).

Perceptions are different from developed to that of developing countries. Researches show that perception among developed countries and developing countries are different. Developed countries have a better understanding of the value of parks, unlike developing countries.

2.10. Components of quality neighborhood parks

Neighborhood Park refers to parks that are situated within a community neighborhood housing area and which offers leisure and recreational purposes for local and immediate communities. Quality Neighborhood Park is a successful and excellent public green open space within a residential neighborhood area that conforms to the needs and requirements of the people including various techniques in using space and agreed-upon standards that are beyond the usual outdoor recreation and leisure expectations (Maleka et al, 2012). The following are key components for a quality park

Table 4: Quality Park Components

Users	Activity / Access and variety linkage	Comfort and Image	Sociability
Behavior	Sitting	Legibility	Safety	Co-operation
Perceptions	Chatting	Continuity	Suitability	Friendliness
Requirements	Resting	Proximity	Walkability	Interactive
Personal	Eating	Convenience	Greenness	Diversity
Calmness	Watching	Walkability	Cleanliness	Storytelling
Comfortable	Walking	Accessibility	Landscape	Friendliness
Safety	Lying	Connection with transportation	elements (benches, pavement, steps, bins, ledges …)	
Health	Celebration			
Environment	Fun	Connect with activities		
Needs/Expectations	Vitality			

Conceptual Framework

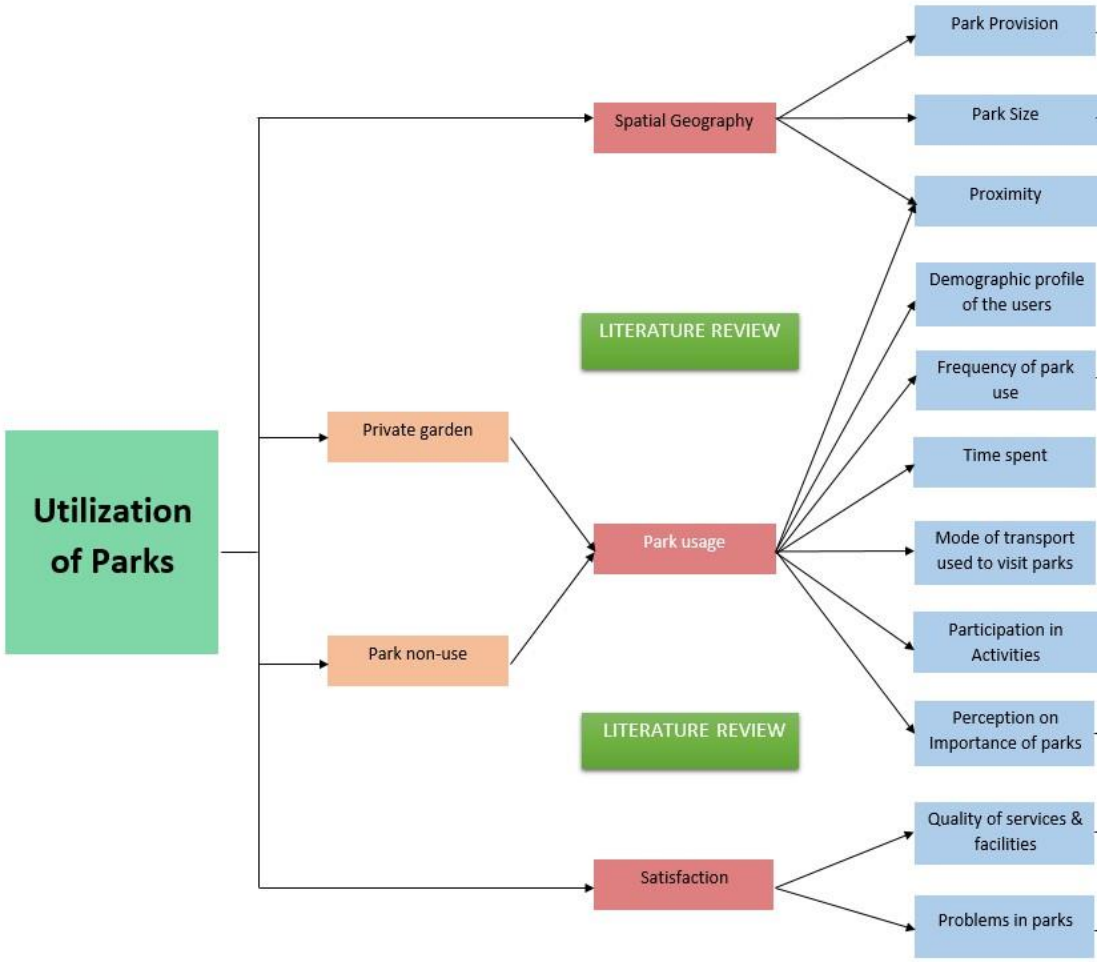


Figure 1: Conceptual Framework

(Source: Author)

CHAPTER THREE: MATERIALS AND METHODS

3.1. Description of the study area

3.1.1. Background of the study area

This study area is found in Addis Ababa, which is the capital city of Ethiopia, Africa. Addis Ababa is currently classified into 11 administrative areas called Sub-cities and 120 Woredas. Among the 15 Woredas found in Kolfe Keranyo Sub-city, Woreda 7 is one of the newly urbanized areas relatively with a high number of neighborhood parks to deal with. Kolfe Keranyo is also known for its high population among the Sub-cities. It is located in the northwestern part of Addis Ababa.

According to the data from the woreda administration Woreda 7 has got 82 neighborhood parks. The woreda is classified into 9 villages. In each village, there are different numbers of neighborhood parks of different sizes. An assessment was made by the author throughout the 82 neighborhood parks by developing a checklist (refer to table 5 & 6). From the assessment made the parks were stratified into three groups: developed, developing, and not developed.

Table 5: Criteria's set by the author to evaluate the neighborhood parks in Woreda 7

No.	Criteria	Explanation
1	Developed	Is the site Fenced, clean, and has seats, designed walkways, Shading Trees?
2	Developing	Include two or more of the above criteria
3	Not Developed	No Development Work (Maybe only Fenced)
4	Location of parks	Is the NP surrounded by residences?
5	General cleanliness	Is the site clean?
6	Fenced	Is the site Fenced?
7	Seats/benches/tables	Is there any seat/bench/table in the NP?
8	Shading Trees	Are there Shading trees in the NP?
9	Ornamental Plants	Are there ornamental plants in the NP?
10	Play equipment for children	Is there any play equipment for children?
11	Walkway	Is there a Path for walking in the park?

The checklist-based assessment made through observation has led to the following results found in table 6. From the observation, only 4 parks have met the criteria set to be categorized developed. The rest 72 parks were developing and 6 parks were not developed.

Table 6: General status of Neighborhood Parks in Woreda 7

General Status of NH Parks	No NH Parks	Percentage
Developed	4	4.9%
Under Developed	72	87.8%
Not Developed	6	7.3%
NP Surrounded by Residences	82	100.0%
General Cleanliness	79	96.3%
Fenced	70	85.4%
Availability of Seats/Benches/Tables	7	8.5%
Availability of Shading Trees	74	90.2%
Availability of Ornamental Plants	14	17.1%
Availability of play equipment for children	2	2.4%
Walkway	7	8.5%

Developed

Developing

Not Developed

Figure 2: Developed, Developing and Not Developed Parks

3.1.2. Location and accessibility

The study area is located in the northwestern part of Addis Ababa which lies within Kolfe Keranyo Sub-city. The study area is located in between the following areas: Alembank to the south and southwestern, Weyra to the eastern, Mendida to the northeast, and Anfo to the northwestern. It is accessible from the above areas in respective directions.

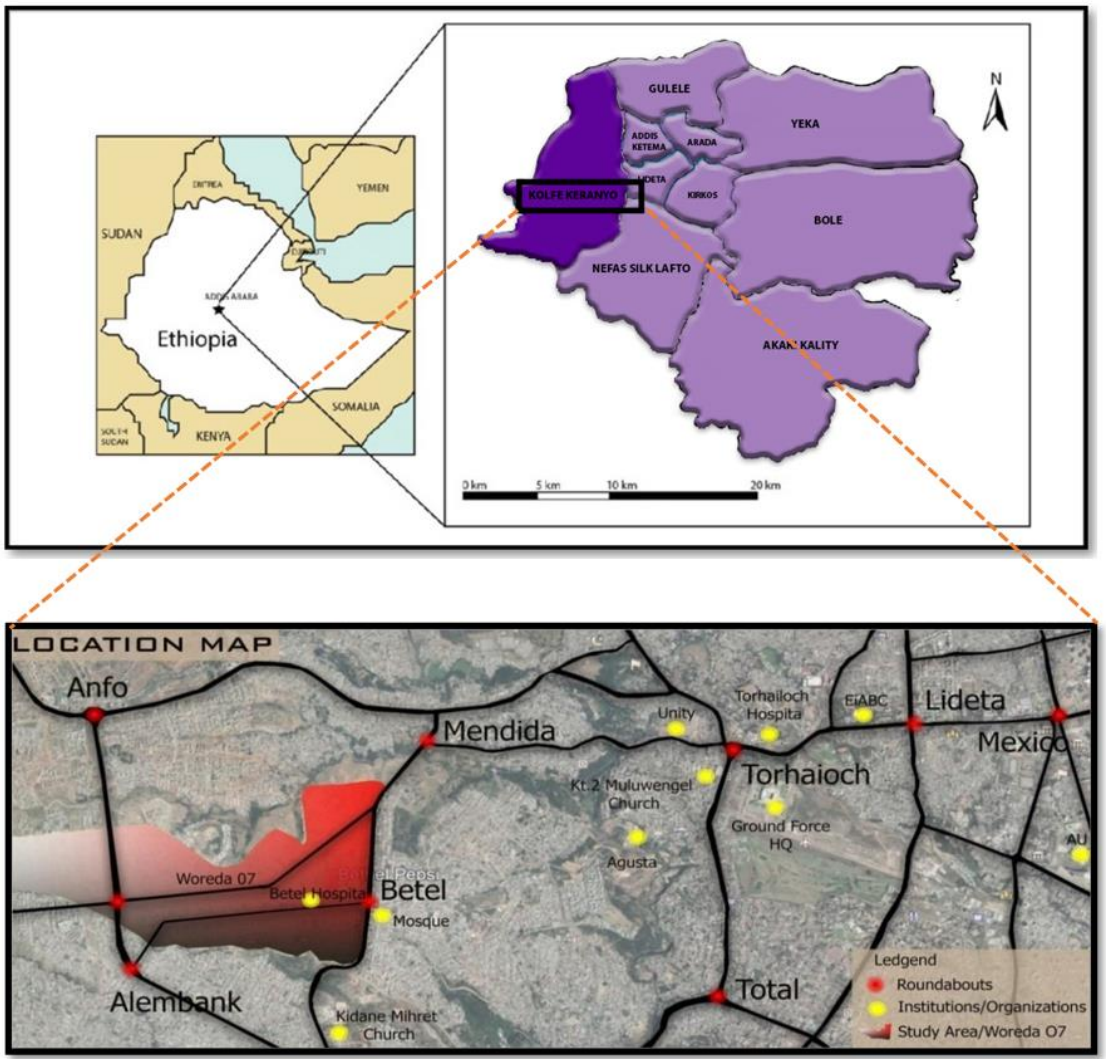


Figure 3: Location map of the study area

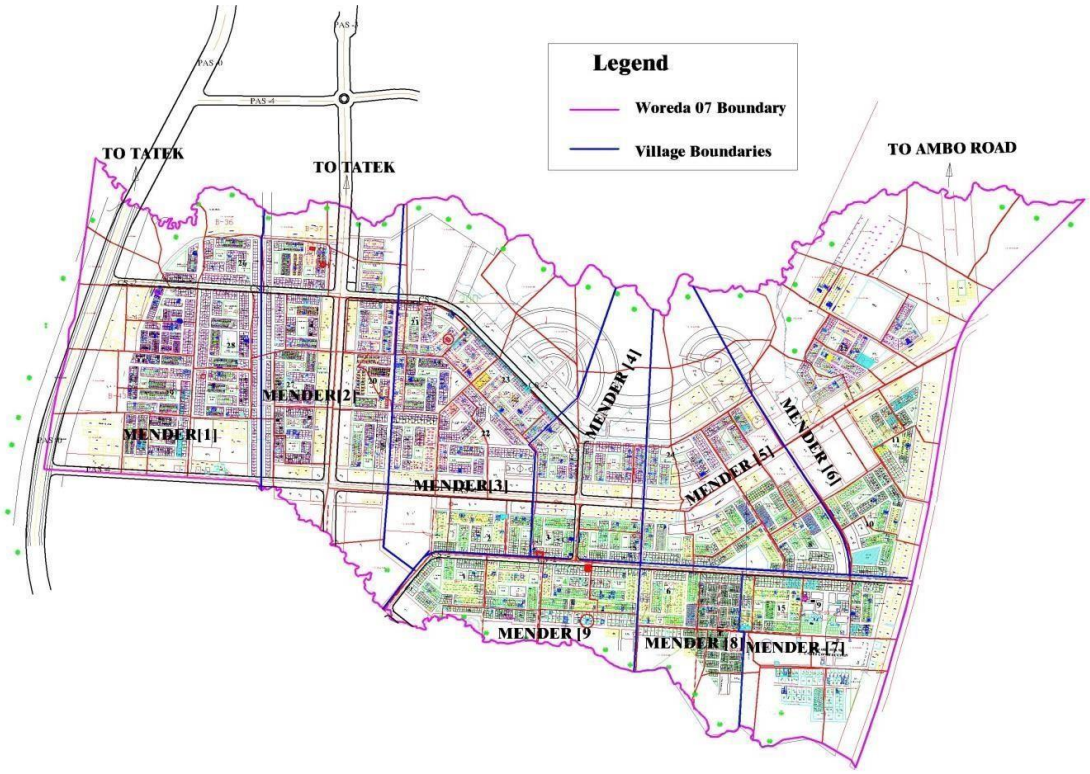


Figure 4: Villages of Woreda 7

3.1.3. Study area selection

The study area is found in Kolfe Keranyo Sub-city. As shown in Table 7 and 8, it is among the Sub cities which have neighborhood parks and higher number of populations. Neighborhood parks are planned to serve the population. This in return shows the demand of the community. If there are a high number of populations then it is expected to have relatively a higher number of neighborhood parks with good quality to serve. If the number of the population is higher and the neighborhood parks are less, then utilizing what is in hand is mandatory.

The table below compares the difference from the year 2006 to 2016 of the first top three Sub cities with a higher population and their relative park areas.

Table 7: 2006 Population to park area ratio

No.	Sub Cities	2006		
		Population	Area (m^2)	Park Area (m^2)
1.	Kolfe Keranyo	428,895	62,934,356	37,128.43
2.	Bole	398,995	82,122,848	57,521.87
3.	Yeka	346,664	118,492,366	134,260.71

(Source: Traced from GIS)

Table 8: 2016 Population to park area ratio

No.	Sub Cities	2016		
		Population	Area (m^2)	Park Area (m^2)
1.	Kolfe Keranyo	543,767	62,934,356	153,504.83
2.	Bole	497,624	82,122,848	65,854.32
3.	Yeka	446,825	118,492,366	469,520.27

(Source: Traced from GIS)

3.2. Methodology

The method mainly focuses on the case study approach. *A Case Study Method for Landscape Architecture* highlights the value of case studies and outlines a set of critical dimensions that should be addressed in a case study to critically document and evaluate projects and issues. In this study Kolfe Keranyo sub city woreda 7 is taken as a case to study neighborhood parks. The study used both qualitative and quantitative approaches. Related literature reviews on Neighborhood Parks are taken as a reference point. Side by side survey is made using a checklist to understand the level of development of all parks in the study area. A conceptual framework was designed from the literature review to identify the variables to be used in the survey process. Secondly, following the consultation of the different sources; questionnaires, interviews, and focused group discussions have been conducted. Finally, analysis of the data gathering from the questionnaire, interviews, and focused group discussion have been made which leads to the proposal based on the findings for the utilization of Neighborhood Parks for social interaction and recreation. Following this, a summarized conceptual framework was developed to summarize all the concepts used to achieve better park usage.

To research the utilization of Neighborhood Parks for social interaction and recreation, Neighborhood Parks in a newly emerged area – Kolfe Keranyo Sub-city, Woreda 7 in Addis Ababa is taken as a case study. This area has been chosen as a model for other newly emerged and future expansion areas of Addis Ababa to show the values and benefits of the spaces and how they can be developed to increase the quality of life of the community by overcoming the challenges in the development of Neighborhood Parks. This can lead to a better park usage.

3.3. Research Design

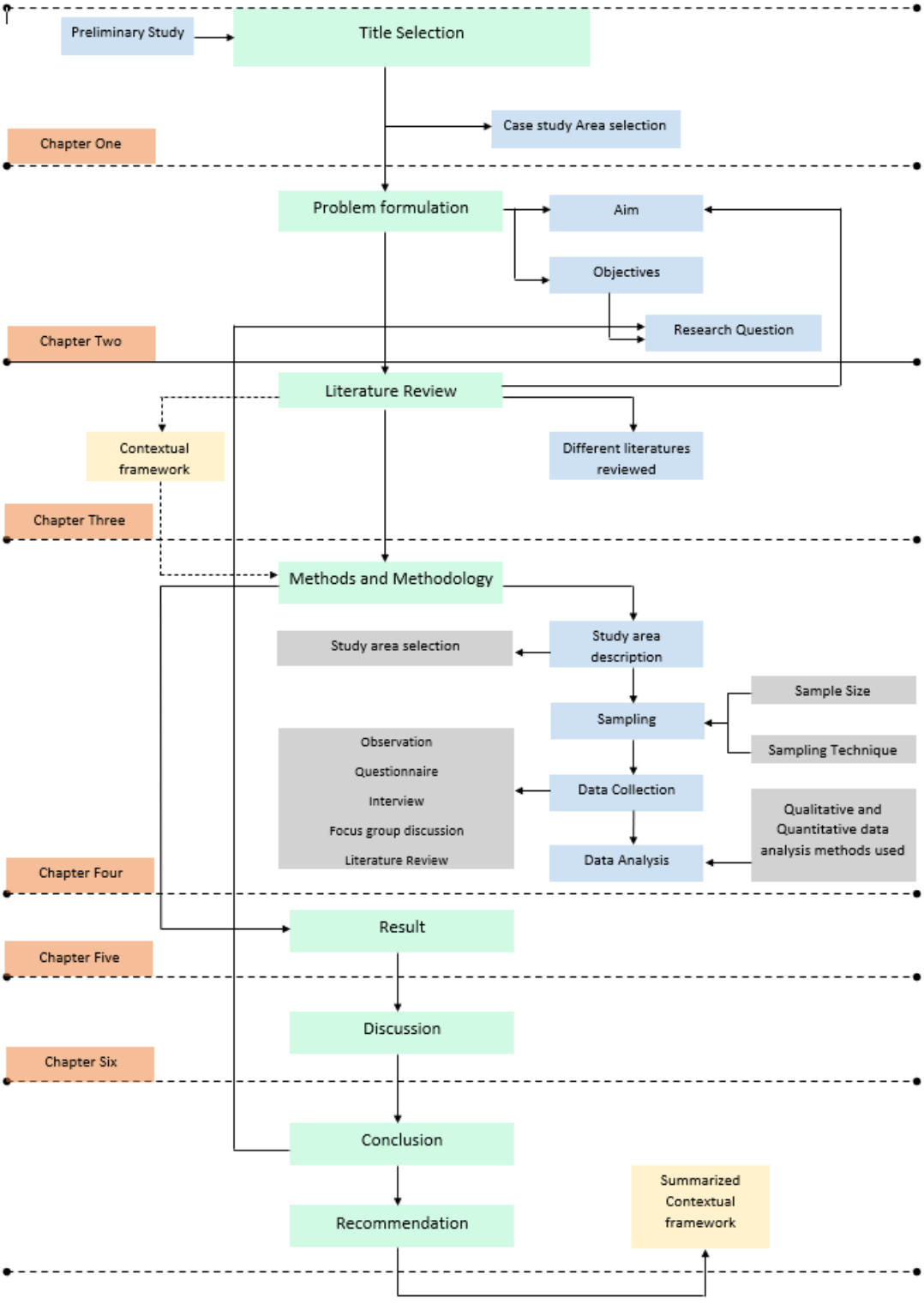


Figure 5: Research Design

3.4. Sample and Sampling technique

3.4.1. Sample Size

Sample size determination is the act of choosing the number of observations or replicates to include in a statistical sample. The sample size is an important feature of any empirical study in which the goal is to make inferences about a population from a sample. The total population of 82 Neighborhood Parks was involved in this particular study. From the population of 82, with a 5% margin error; 95% of the level of confidence, and 50% variability; the recommended sample size is 45.

The sample size n and margin of error E are given by

Table 9: Formula for sampling

x	=	$Z(^{c}/_{100})^{2}r(100-r)$
n	=	$^{N\,x}/_{((N-1)E^{2}\,+\,x)}$
E	=	$\mathrm{Sqrt}[^{(N\,-\,n)x}/_{n(N-1)}]$

Where N is the population size, r is the fraction of responses that you are interested in and Z(c/100) is the critical value for the confidence level c. The Z score is 1.96.

3.4.2. Sample Techniques

In the sampling process; the parks, park development committees, and the community were considered as a source of information.

Sampling the Neighborhood Parks - first, the parks were stratified into three categories as (a) Developed – 4 parks, (b) Underdevelopment – 72 parks, and (c) Not developed – 6 parks. In studying those stratified categories, committee members and the community were randomly picked. The community sample includes both children and adults. From

the population of 82 (with a 5% margin error; 95% of the level of confidence, and 50% variability; the recommended sample size is 45 (Raosoft sample size calculator)). To get a proportional sample size among each stratum the sample size (45) was divided by the total population (82) gives 55%. This was applied to each stratum as follows.

- Developed = 4parks * 55% = 2parks,
- Under Developed = 72parks * 55% = 40parks
- Not Developed = 6parks * 55% = 3parks

Total = 2parks + 40parks + 3parks = 45parks were picked.

To get the information about the Neighborhood Parks, 3 informants (community) from each sample and 8 committee members from 8 neighborhood parks were picked randomly. This gives a total number of 143 ((45*3 =135) +8) informants.

3.5. Data Collection Method

Data collection was conducted using different techniques. The first one is observation; this helped to categorize the parks into three strata studied in this research. Two groups were applied for the interviews, one for the park user community (both children and adults) and the other for the park development committee by developing a questionnaire. A focused group discussion was also held with the Woreda Administrative. Further, one of the parks was picked and a sample landscape design and implementation manual is prepared to make the study more practical.

3.5.1. Observation

A detailed checklist was prepared to check the current condition of the neighborhood parks to establish a basic understanding of the level of every park development (refer Appendix 5 & 6).

3.5.2. Questionnaire

The questionnaire was utilized, (with a combination of open and close-ended questions) to be responded to by both the committee of the neighborhood parks and the community to check the understanding and the perception of the dwellers on the use of the neighborhood parks and evaluated the current condition of the site. Capable and oriented data collectors were also engaged with the organized list.

3.5.3. Interview

The interview was conducted with eight committee members from different neighborhood parks. This helped to gain the desired information regarding the development process and challenges in the development of neighborhood parks.

3.5.4. Focused group discussion

A focused group discussion was held with the Woreda Administrative to get clear information on the support provided to the community and, rules and regulation set by the Woreda administrative concerning park development.

3.5.5. Literature Review

A comprehensive literature review was conducted on park usage. The literature focuses on where parks fit into the broader open-space system, the value and benefits of parks, and describing elements of park usage. The following issues are discussed: the frequency of park usage, what people use parks for (the activities in which they partake in parks), park nonuse, and how the park space itself influences park usage.

3.6. Data from GIS

Using GIS, the Neighborhood parks change were analyzed from the year 2006 to 2016. There are two sets of data which describe the urban morphology types (UMTs) for the city of Addis Ababa for year 2006 and 2016, These parks only exist within UMTs 71, 72, and 73, which are condominium (multiple occupancy above four storeys), multiple occupancy under for story, and single occupancy under four storeys (villas and single store apartments).

Digitizing the parks within UMT 72 and 73

The parks were digitized according to the following procedure. 2016 was done first. Polygons for UMT 72 and 73 were isolated in a new layer apart from the layer containing all UMTs. This layer was aligned with a satellite raster file of Addis taken in 2016. Each polygon was examined to determine the presence of green spaces within that polygon. Areas determined to be green spaces were digitized as polygons in a new layer.

For polygons containing housing developments under construction, or for areas which could not be easily categorized as green space, the most up to date satellite image from Google Earth was used to provide additional information. This was done by exporting a *.kmz file of the polygon and opening the file in Google Earth. As such, the shapefile containing green spaces from 2016 includes some information from Google Earth which is more recent than 2016, up to 2019. Therefore, some green spaces that were digitized did not actually exist in 2016.

Digitization of 2006 NPs followed. At the time the UMT polygons were created for 2006, many areas that are classified as UMT 72 or 73 in 2016, were classified as UMT 75 - mixed housing or mixed developments. UMT 75 can be land that includes a mix of formal and informal housing, and residential and commercial uses. As a result, the set

of UMTs 72 and 73 was incomplete for 2006 and each polygon classified as UMT 75 was examined to see if any of them contained housing classifiable under UMT 72 or 73. Once these polygons were marked, each of polygon in the "new" set of UMT 72/73 was examined to determine the presence of green spaces within that polygon, and areas determined to be green spaces were digitized as polygons in a new layer.

3.7. Conceptual Framework

The conceptual framework was developed by the author to develop the pathway of the study. The main variable is the target of the study is the Utilization of parks. This paper has taken a path of searching whether the parks are being utilized or not and their reasons for their use and none used as well the interest of the community. Spatial Geography, Park usage, and Satisfaction are the main variables studied under the topic Utilization of park. For those who have private gardens and park no reasons are also studied under the park use variable. Park Provision, Park Size, and Proximity were dependent variables studied under Spatial Geography. Demographic profile of the user, Frequency of Park use, Time spent, Mode of transport used to visit parks, Participation in Activities, Perception of importance of Parks were dependent variables studied under Park Usage. Qualities of services and facilities, and problems in parks were dependent variables studied under Satisfaction. Next to the recommendation section of the paper, a summarized conceptual framework is provided. It complements the findings based on the study dependent on the variables and Intervention suggestions for better park usage.

3.8. Data Analysis Techniques

In this study, both qualitative and quantitative data analysis methods were utilized. Cluster analysis was used to conduct the qualitative method. The Cluster analysis or clustering is the task of grouping a set of objects in such a way that objects in the same group are more

similar (in some sense) to each other than to those in other groups. As described in the sampling method part of this chapter, the samples were picked proportionally from each stratum. This helped to determine the number of samples to be picked from each group to be studied.

In addition to the above, a narrative analysis was applied to narrate the field-level observation. The whole population was observed to classify them into the above groups. As described in table 5 above, a set of criteria was established to determine whether a particular neighborhood park is developed, underdeveloped, and not developed.

One of the quantitative methods applied for this study is statistical analysis. All the data collected through observation, interviews, and questionnaires are categorized and entered in Microsoft excel in the already designed data entry table. Especially the questionnaire was categorized and coded so that data entry is possible for each set of responses from each respondent.

From the entered data, using statistical tools, basic data information such as central tendencies (mean and mode), standard deviation, variations, frequency (to learn variability) of the character of each respondent was analyzed and studied.

By applying the statistical analytical method, it helped to learn, the frequency of visits, the time spent, specific preference on the service required, understanding and demand of the community in the development and use of Neighborhood Park. The data is presented in tables and graphs. Finally, the results were discussed.

CHAPTER FOUR: RESULT

4.1. Introduction

This chapter deals with the results found through data collections. The data are presented with five categories. The first part presents the current condition of the park. Park possession, and for parks being used; the frequency of park visits per week and current activities taking place in the parks. The second part presents the challenges. Reasons for not using the parks and the nuisance of the parks are discussed in this part. The third part presents the perception of the community about the parks; how they evaluate the existing condition of the parks, what they need to be included in the parks to be usable by them, and the perception they have about the importance of parks. The fourth part presents the information conveyed from the administrative bodies and the guidelines set by the regulatory for the development of the parks.

4.2. Current Condition

This part of the paper discusses the current status of the park and the participation of the community.

4.2.1. Private garden possession

The main aim of collecting the private garden possession data is to assess how the community is related to green space.

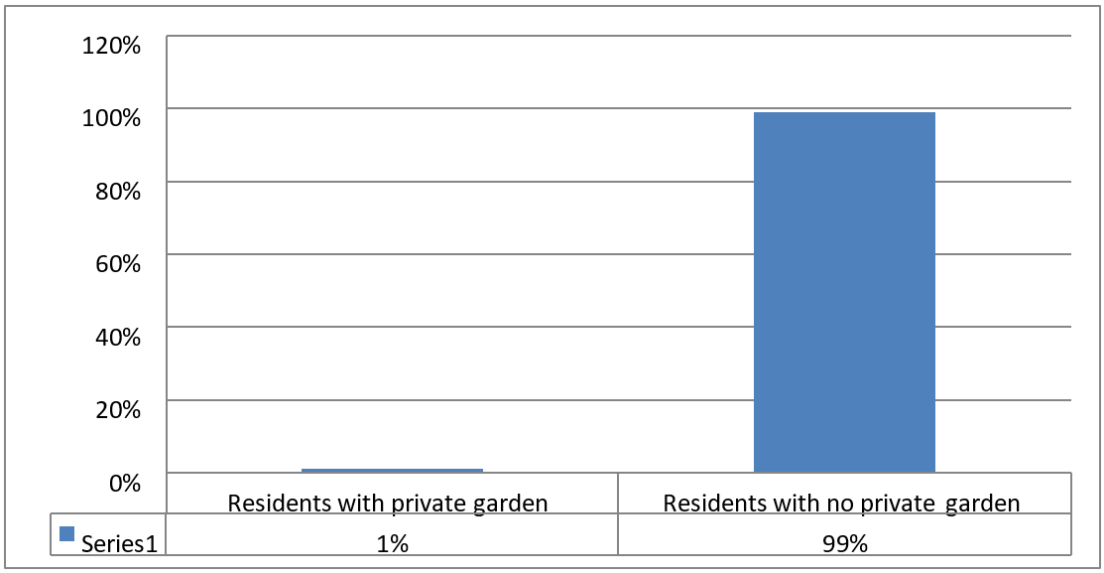


Figure 6: Private Garden possession

4.2.2. Weekly visit and Leisure Time Spending

In this part, where the adults and children who are dwellers in the surrounding neighborhood parks are spending was questioned. This is because studying the use of Neighborhood parks, evaluating the amount of time that adults and children spent in the park is important to decide how the parks are developed.

Weekly visit

This data was collected to get information about the community's park use pattern on weekly basis. The collected data shows that most of the children and adults never visited the neighborhood parks.

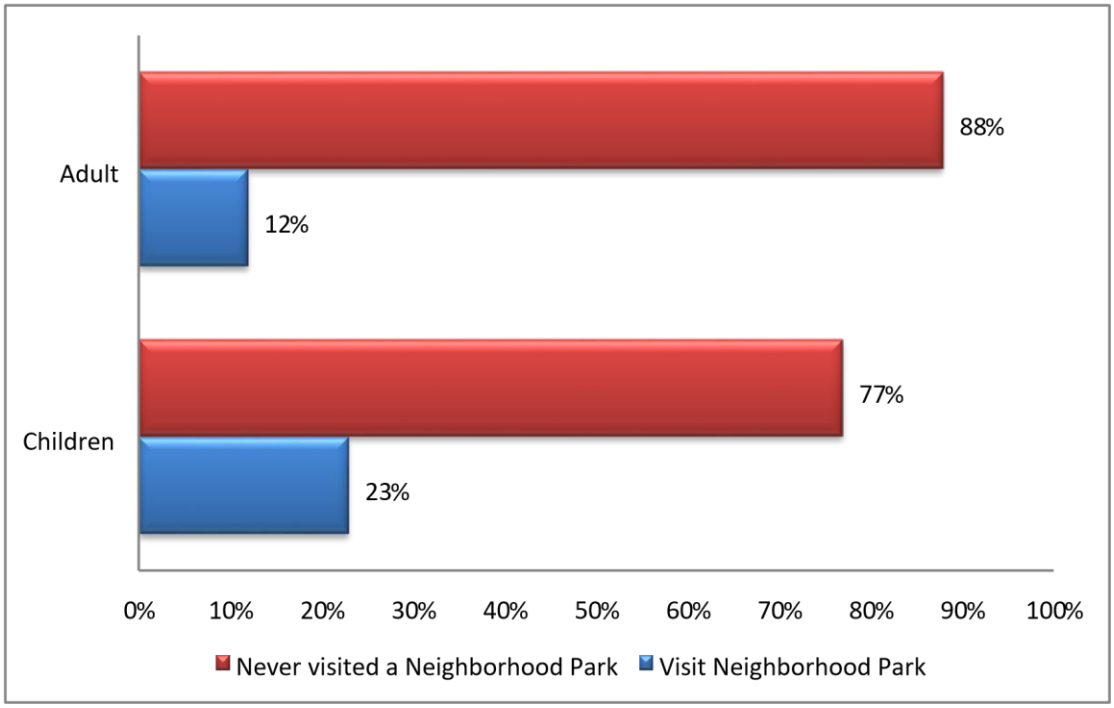
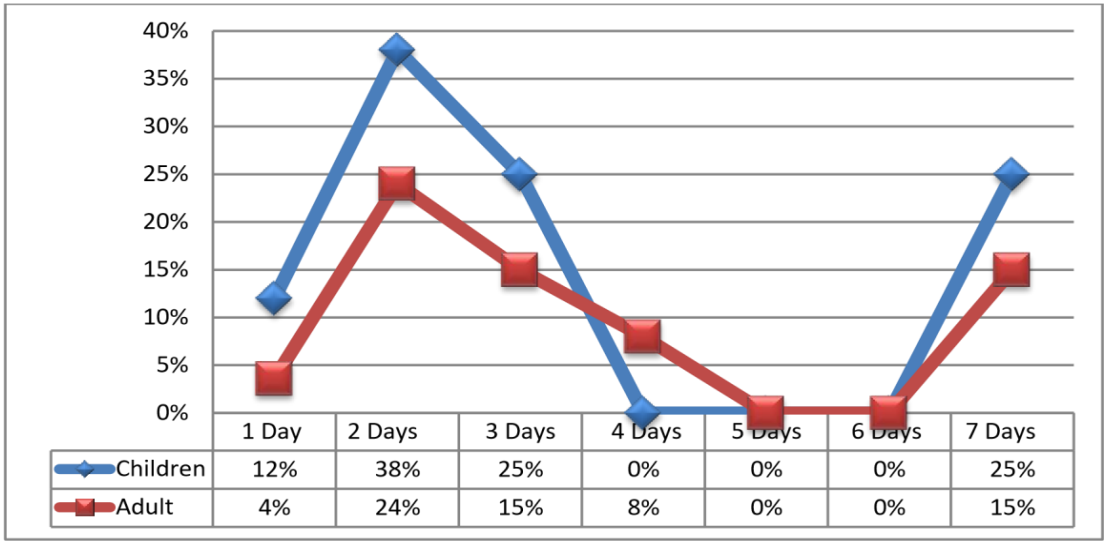


Figure 7: Neighborhood Park Visit both by children and adult



	1 Day	2 Days	3 Days	4 Days	5 Days	6 Days	7 Days
Children	12%	38%	25%	0%	0%	0%	25%
Adult	4%	24%	15%	8%	0%	0%	15%

Figure 8: Frequency of visit to neighborhood parks during the week both by children and adult

Children's leisure time spending place

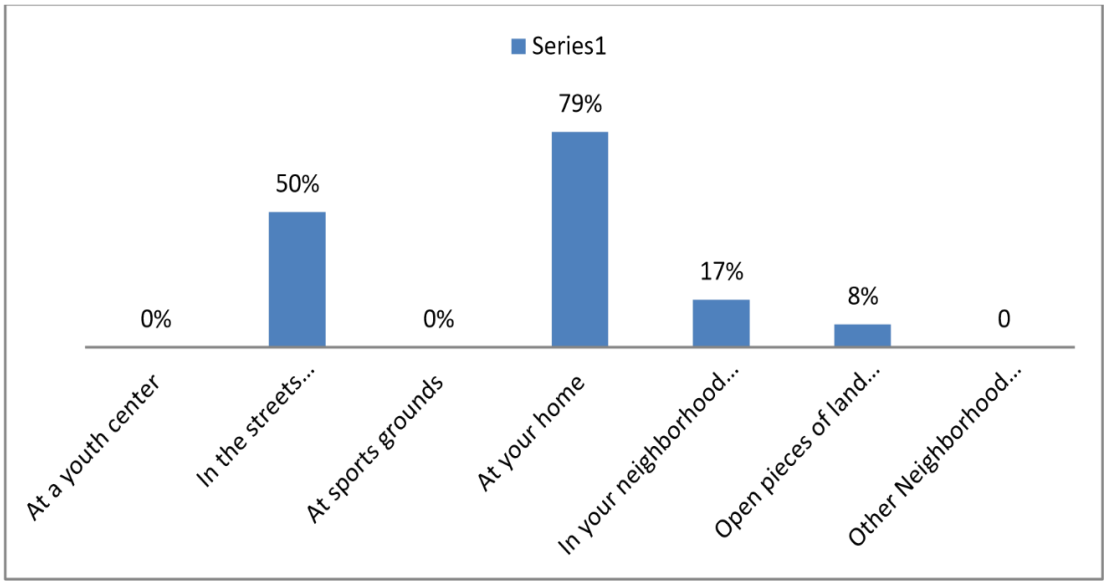


Figure 9: Children's leisure time spending place

Adult's leisure time spending

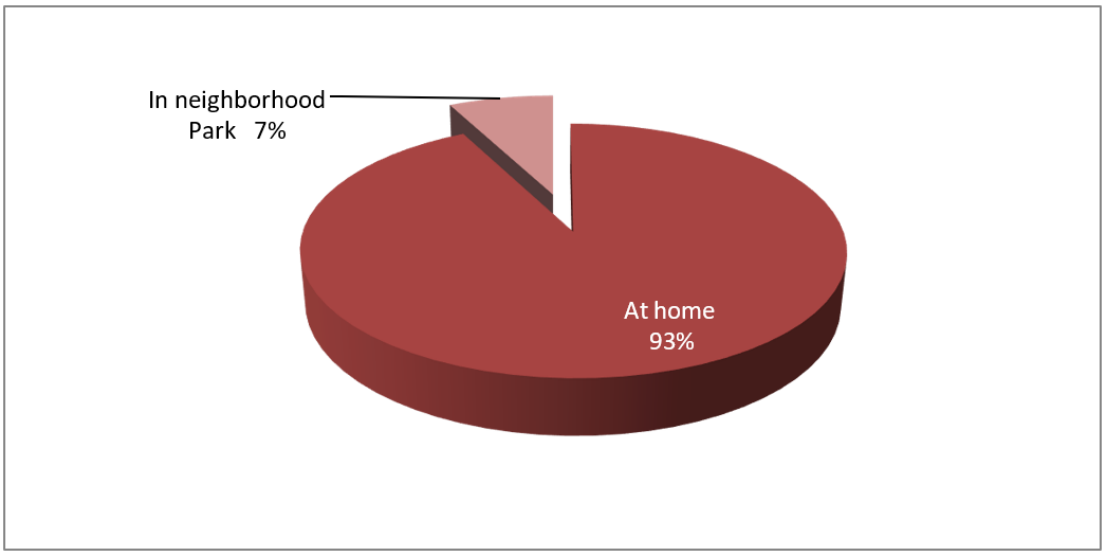
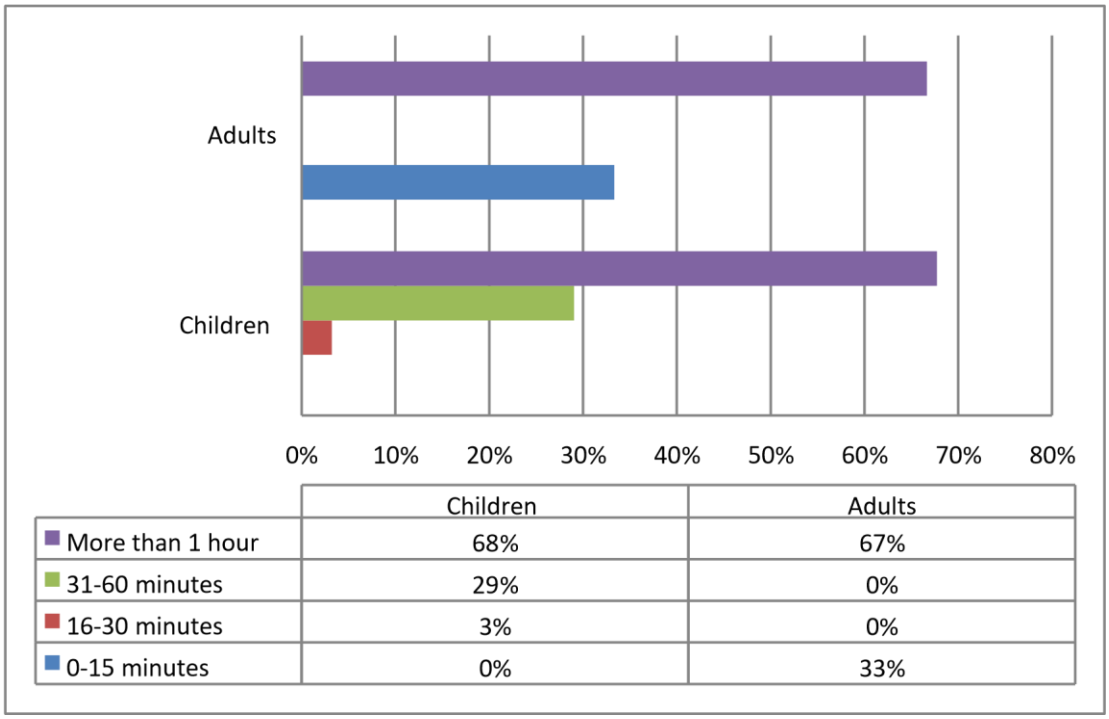


Figure 10: Adult's leisure time spending place

4.2.3. Time spent in the neighborhood parks



	Children	Adults
More than 1 hour	68%	67%
31-60 minutes	29%	0%
16-30 minutes	3%	0%
0-15 minutes	0%	33%

Figure 11: Time spent in the Neighborhood Parks per visit

4.2.4. Activities conducted in neighborhood parks

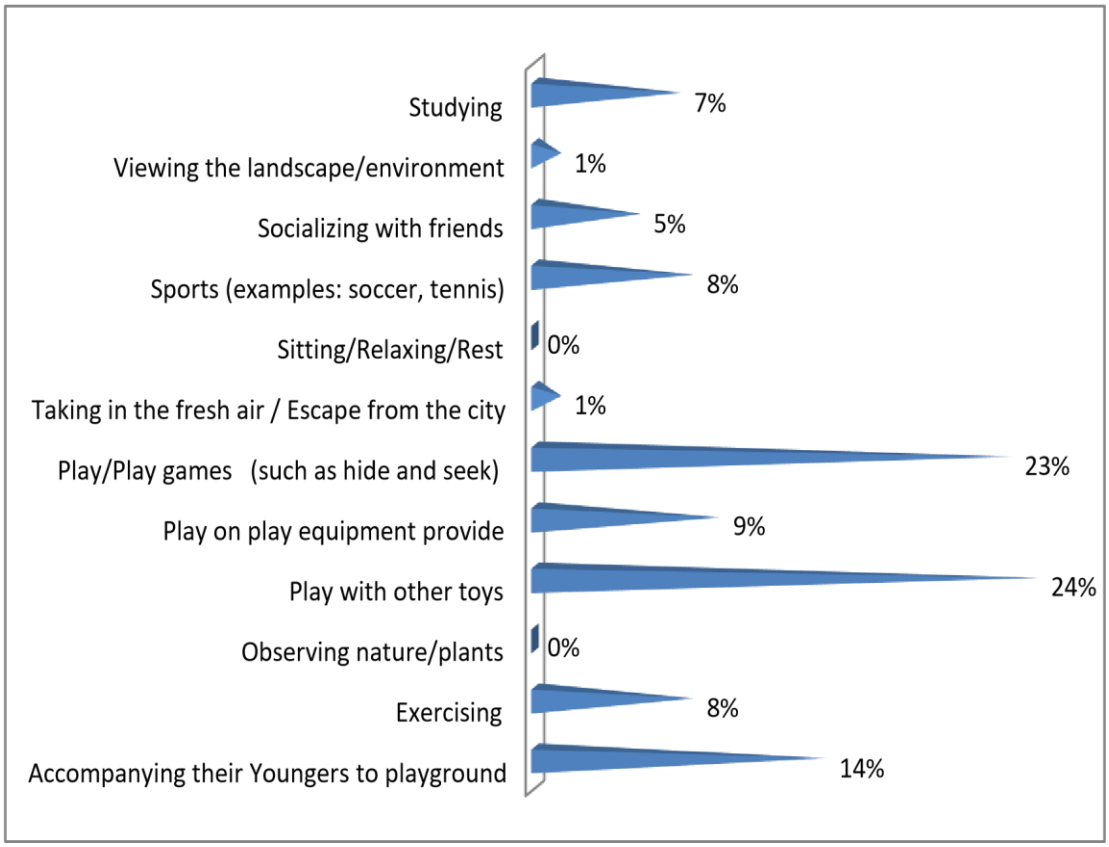


Figure 12: Activities conducted by children in the Neighborhood Parks

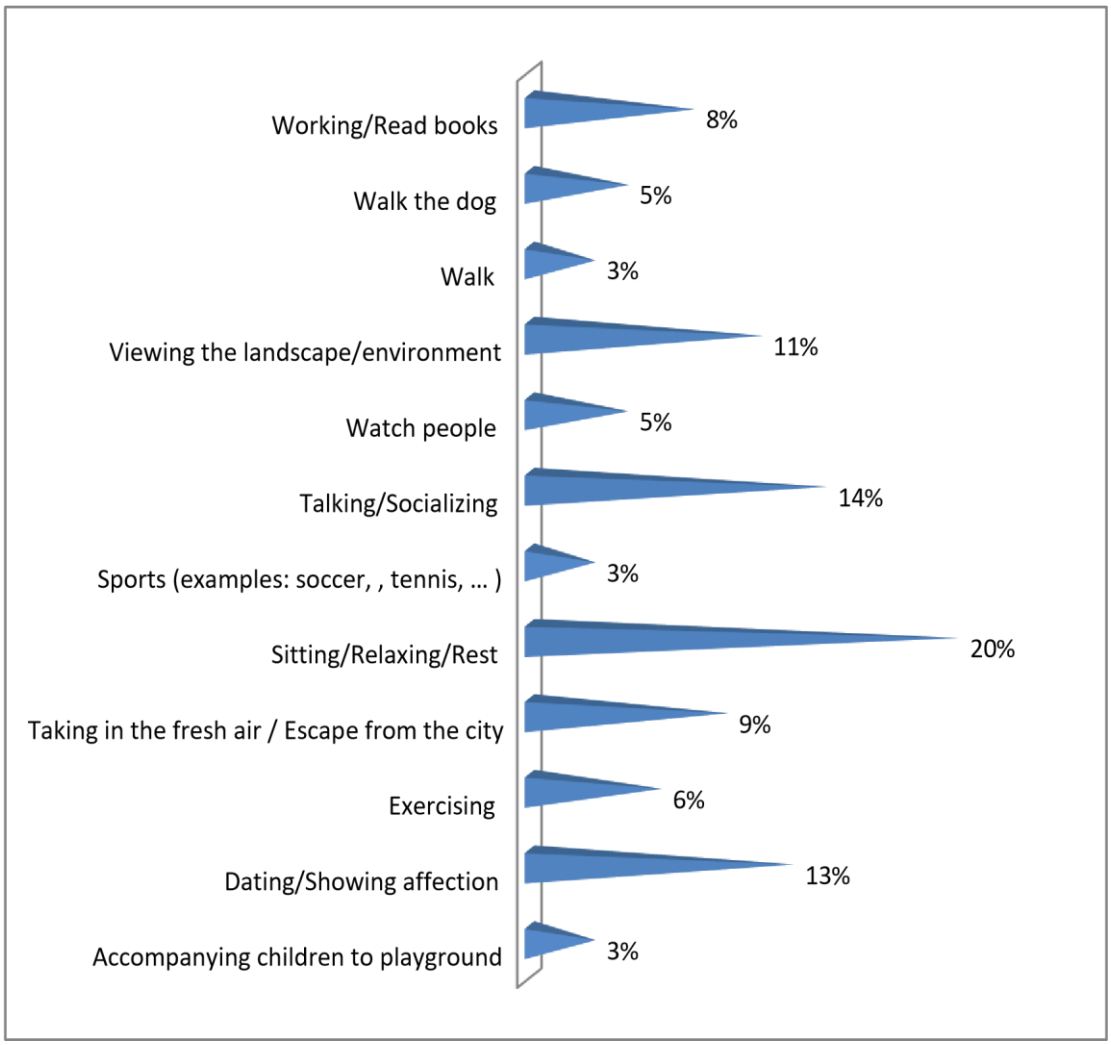


Figure 13: Activities conducted by Adults in the Neighborhood Parks

4.3. Challenges

4.3.1. Reasons for not using the parks

In the study, reasons for not using the Neighborhood Parks were analyzed. As presented in Figure 9, respondents: 77% of the children and 88% of adults never visited the Neighborhood Parks. The respondents have picked their reasons for not using the Neighborhood Parks. Some of them have picked more than one choice as their reason for not visiting the parks.

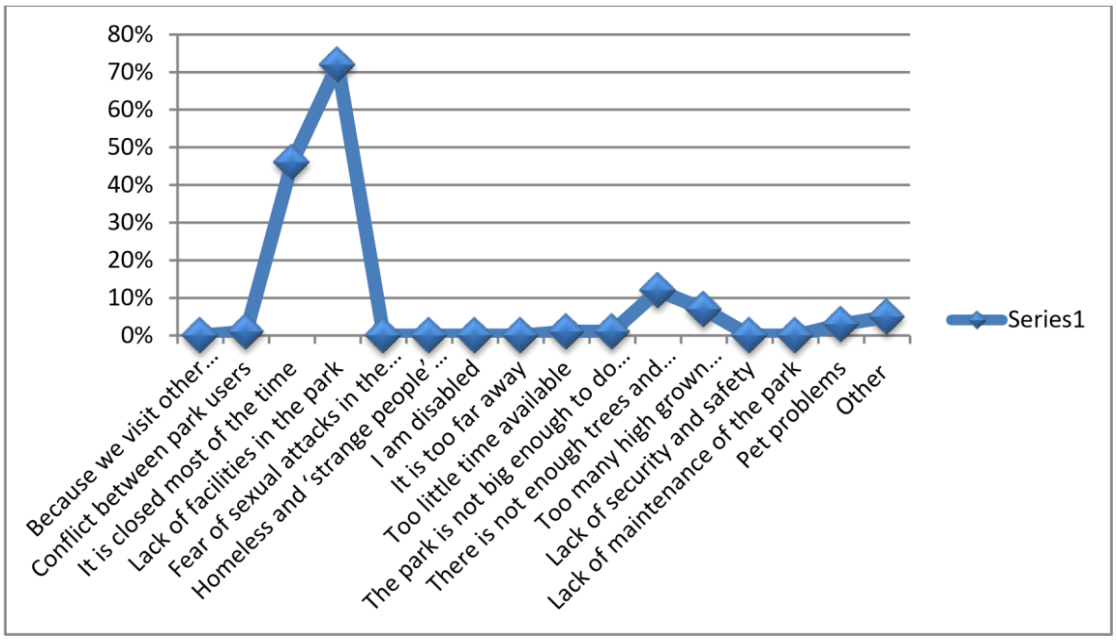


Figure 14: Reasons for not using the parks

4.3.2. Nuisance in the park

The figure below illustrates the presence of nuisance in the park. The main issue raised was the presence of dogs as a nuisance. From the data analyzed the presence of dogs' results a mean of 33.33 and standard deviation of 15.18, whereas throwing of waste resulted a mean of 33.33 and standard deviation of 34.93. In general, one third of the population considers the presence of dogs and throwing of wastes as a nuisance.

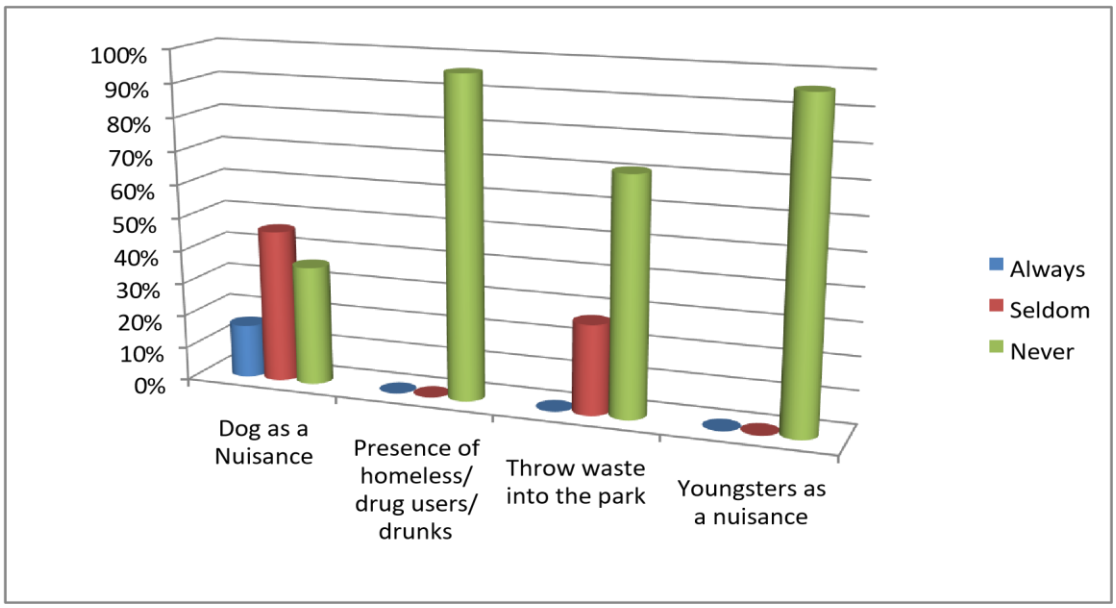


Figure 15: Nuisance in the park

4.4. Public Perception

4.4.1. Importance of neighborhood parks

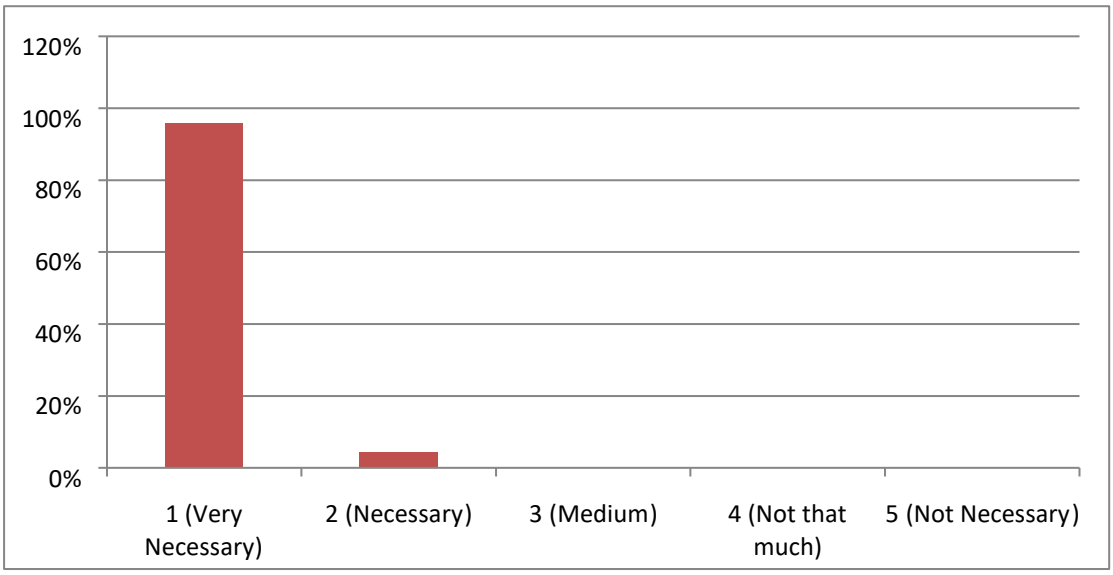


Figure 16: Importance of neighborhood parks

4.4.2. The quality of the services and facilities in the Neighborhood Parks

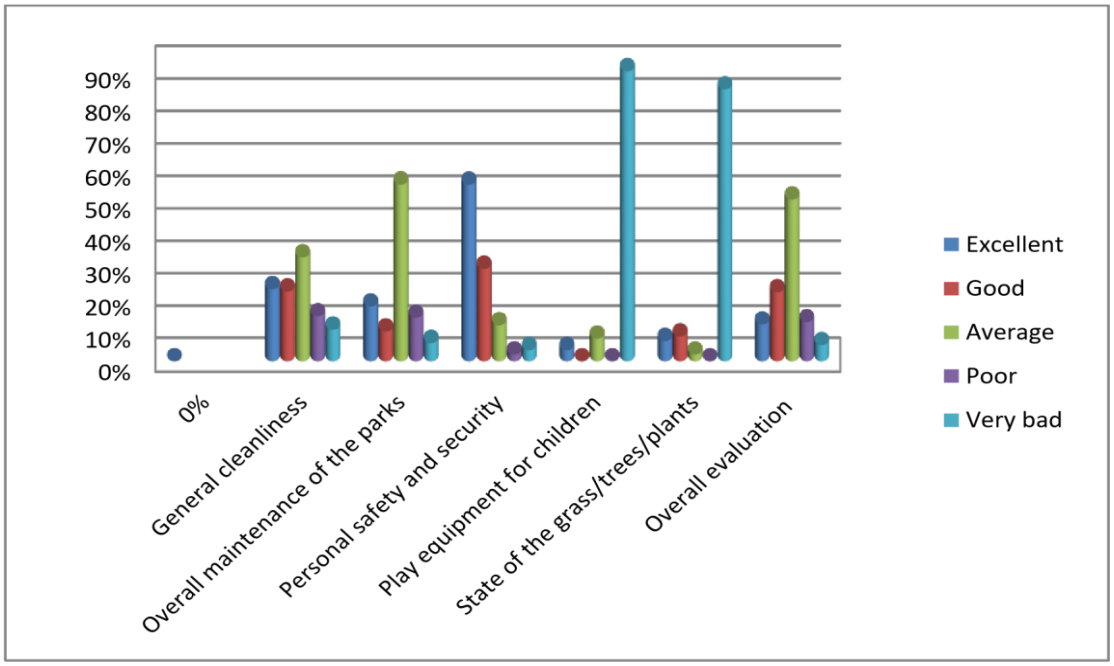


Figure 17: The quality of the services and facilities in the neighborhood Parks

4.4.3. Facilities required in the neighborhood parks

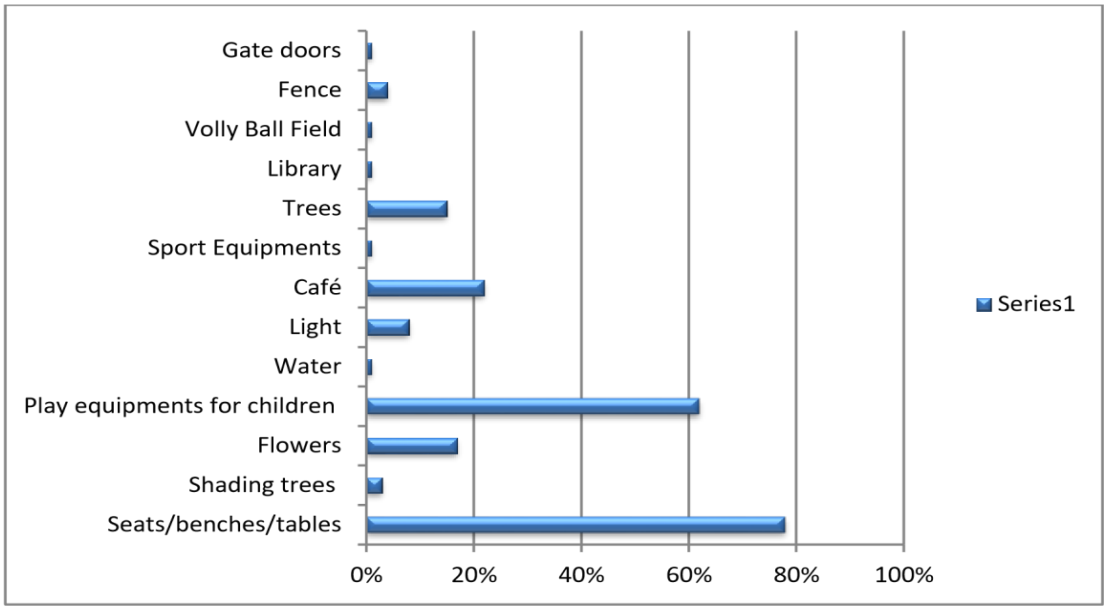


Figure 18: Facilities required in the neighborhood parks

4.4.4. Committee members

In this study, the neighborhood park development committees are one of the sources of data. The committee members are important stakeholders in the neighborhood park development; this is because they are the bridge between the community and the Woreda administration.

Most of the committee members responded that their neighborhood parks are underdeveloped. The committee considers the participation of the community is not satisfactory. They described there are multiple challenges in the development of Neighborhood parks. The Community, the location, the Woreda agreement, and the shortage of funds are the major challenges.

The communities are not cooperative, resist or not willing to fund contribution, and assumes as committee members are the only and special beneficiary. The other challenge is with tenant residents. The tenants are not willing to participate on behalf of the house owners in the neighborhood parks development.

The other challenge is concerning specific park situation, some of the parks' soil is not suitable for plantation and most of them are not professionally designed.

Excessive shortage of funds for the development of the park is another issue. Some of the committee members spend extra own money on the park.

The committee members consider the support of Woreda administration is substantial. The Woreda administration provides different plants free of charge, made frequent visits, gives timely guidance if the service is required. One of the concerns the committee members stated is there is a high level of regulation by the Woreda administration especially during the start-up phase of the park development.

The agreement to be made with the Woreda is not workable. It restricts to erect only temporary items, as the result those who interested to support the development of the park will not be willing to support for smaller and temporary items. This is due to the fear that, the land administration may repurpose the neighborhood parks which the community has already made an investment, regardless of the amount invested.

In addition to the above, the high level of woreda administration involvement reduces the level of ownership feeling of the community.

4.4.5. Administrative bodies

The parks are administered by Kolfe Keranyo Sub-City Woreda 7 Administration Urban Beautification & Green Development Office (በኮልፌ ቀራንዮ ክፍለ ከተማ በወረዳ 7 አስተዳደር የከተማ ውበትና አረንጓዴ ልማት ጽ/ቤት) and developed by the community. The ownership is given to the community by the Woreda for a given year which is going to be renewed periodically. The community prepares its administration structure by appointing a

committee that can facilitate the development process and the communication with the Woreda.

In this study, there was a focused group discussion and interview with the Woreda 7 administration with the team in charge of the neighborhood parks development.

The main discussion points were: (1) the existence of a team to support neighborhood parks development in the Woreda (2) the presence of Woreda level regulation on the neighborhood parks development (3) the supports provided to the community on neighborhood parks developed. (4) The qualifications of the team in supporting the development of neighborhood parks. (5) The Woreda perspective on the neighborhood parks development.

Traditionally, the Woreda administration calls the neighborhood parks Green Areas. Kolfe Keranyo Sub-City Woreda 7 Administration Urban Beautification & Green Development Office supervises the entire Woreda level neighborhood parks development. The Office has a head and four main officers. The team is dedicated to supporting the community on neighborhood park development. Their main role involves supervision, approval, giving guidance, and make sure the development is done as per the existing regulation.

There are eight pager regulations developed by the Woreda on the Green area committee and community. The regulation is an agreement to be made among the communities for the development of the parks. The regulation mainly focuses on the development, maintaining and use of the green area. The detail of the regulation is about membership, source of income of the green area development, committee formation, the responsibility, the right and the obligation of the development committee and the community.

There is also a bilateral agreement to be made between the community and the Woreda River basins and green areas development and administration Office. The committee members are responsible to sign the agreement on behalf of the community.

The most important articles of the agreement stipulate the minimum *ground cover of plant* and *canopy cover* of plants. According to article 2 sub-article 6 of the agreement, the minimum ground cover of the plant should be 80%. Sub article 7 states that the canopy of the plants should be 60%. As well, the plants should be environmentally and ecologically friendly. All the development should be made naturally.

The team members are degree holders in different discipline including environmental development and agriculture.

4.5. Summary of the Findings

The findings were summarized as follows:

- Most of the respondents do not have a private garden.
- Most of the time, the community members are not visiting neighborhood parks.
- Most of the respondents, children, and adult do not spend their time in the park.
- Most of the visitors visit the parks two to three days per week.
- Most of the respondents, who visited the Neighborhood Parks, spent their time in the park more than an hour.
- Children spent their time in the Neighborhood Park playing games with the equipment provided and/or using their play materials and toys.

- Most of the adults spent their time sitting, relaxing, and socializing.

- The majority don’t visit the site because of the lack of facilities and amenities in the site.

- The presence of dogs and the throwing of waste into the Neighborhood Parks have mentioned sources of nuisance.

- The community values Neighborhood parks as very necessary.

- The safety and security, and accessibility of Neighborhood Parks were rated as excellent; on the contrary, the provision of seats and children's play equipment was rated as poor.

- The majority of the community needs the provision of seats/benches/tables and children's play equipment.

- The committee faces challenges in developing the Neighborhood Parks.

- The local administrations are supportive in the development of Neighborhood Parks

CHAPTER FIVE: DISCUSSION

The main objective of the research is to identify the challenges in the development of the neighborhood parks and to design and prepare an implementation plan so that the Parks can be convenient for social interaction and recreation.

This chapter includes a discussion of major findings as related to the literature on the definition, classification, their general purpose, value, and benefits of parks, park use activities, park use, and non-use, what quality Neighborhood Parks are, creating an active park, barriers to creating active parks, perception on the importance of Neighborhood parks. The chapter concludes with a summary of major findings and contains discussion which helps answer the research questions:

(R1): What is the current condition of the parks?

(R2): What are the challenges in the development of the parks?

(R3): What is the perception of the community on the importance and use of the parks?

(R4): How can a Neighborhood Park are activated?

0The study has summarized the collected data into four groups: (a) current condition of the Neighborhood Parks, (b) challenges, (c) public perceptions, and (d) Administrative bodies.

Interpretation of the Findings

Interpretation of the findings from the collected data will be discussed in detail in the following sections.

5.1. Current Condition

The current condition presents the going on phenomenon of the Neighborhood Parks and their users. In this part of the paper, the current private garden possession status, weekly visit and leisure time spending, time spent in the Neighborhood Parks, and Activities conducted in the Neighborhood Parks by the respondent will be discussed in detail.

5.1.1. Private garden possession

Private garden possession refers to whether the respondents have got a private garden in their residential unit or not. Studying this status will help to understand whether the community is benefiting from green space use or not. An increase in park use may improve the quality of human life, which is an important component of sustainable development and a sustainable city (Chiesura, 2004). If the community doesn't have a private garden, then it is clear that there should be another source of green space for the community since the community should take advantage of the multidimensional benefits of green spaces. The main theme of the paper is social interaction and recreation. Having this in mind, the community with a private garden might fulfill not social interaction but the need for recreational service in their residential unit which might decrease the participation of the community in the Neighborhood Park development activity. According to the collected data, almost all of the community (99% of the respondent) doesn't have a private garden. This implies that the only source of green space for the community is the nearby Neighborhood Parks. Since Neighborhood Parks are the only source of green space for the community, enough attention should be given to its development.

5.1.2. Weekly visit and Leisure Time Spending

Weekly Visit

The frequency of park usage was tested through respondents indicating how many days in a week the children and adults visit parks. As per the survey majority of the children and adults never visited the neighborhood parks. If neighborhood parks are the only source of green, then it was expected from the community to visit the parks. But among those small visitors the majority are children visitors (23%); which verify the findings in the studies of Burgess et al, 1988; Kaczynski et al, 2009; Seeland et al, 2009. This finding may suggest that the adults do not always accompany their children to parks. Among those small visitors 11% of both children and adults visit parks only for two days per week.

Internationally, the more affluent visits parks more often, which may be explained by the fact that as the levels of social prosperity increase, the participation in park recreation facilities increases as well (Gedikli & Ozbilen 2004).

Distances to parks may also influence how regularly parks are visited or not. A distance decay function, as mentioned by Burgess et al, 1988; Hansen 2006; Kaczynski et al. 2009. In this study distance was not found as a reason for not visiting the parks since the Neighborhood Parks are suited with residential areas.

Leisure time spending

Leisure time refers to the time free from work or duties (Merriam-Webster). In simple words, it refers to free time. As discussed above the community is not using the Neighborhood Parks more often. Answering where the community spent their leisure time is important to understand if the community has got another source of green. According to the survey conducted including Neighborhood Park users, leisure time spending places mentioned were: home, nearby streets, open lands, and Neighborhood

Parks. The majority of the children (79%) and the adults (93%) spend their leisure time in their home. This indicates that the level of park usage is very low. The most valued parks are the intimate and familiar ones which play a part in people's daily lives rather than distant ones far from home" (Burgess et al, 1988). As Burgess said, this study suggests using nearby parks is very important. If the community starts using neighborhood parks as their leisure time spending place, people tend to focus on the development of the neighborhood parks.

As mentioned above, the community doesn't have a private garden. But even if they were owning a private garden it was expected from the community to visit the neighborhood parks because unlike private gardens, Neighborhood Parks provide opportunities for "social interactions, serve as reminders of childhood memories and opportunities for people to escape from urban life (Burges et al, 1988). This is another and additional scene for the development of neighborhood parks.

5.1.3. Time spent in the Neighborhood Parks

The time spent refers to the dedicated time to perform any type of activity in the Neighborhood Parks by the visitors. As it has been discussed in this paper 23% of the children and 12% of adults visit the Neighborhood Parks. The main target of this analysis is to understand the number of hours the community spent in Neighborhood Parks per visit. The literature shows that different variables can be used to evaluate the satisfaction of park users. One of the variables is the time spent. This study aligns with the literature in assessing the satisfaction level of the park users by the time they spent. In addition to that, most scholars associate time spent in a park with the level of income. According to Willemsen, low-income children visit a park the longest, while middle-income children visit a park for the shortest amount of time. On the contrary, high-income adults visit a park longer than low-income adults (Willemsen, 2010). Uzun described that most people spend between

15 minutes to more than an hour in the park, whereas, in Turkey people spend between one and two hours in a park (Uzan, 2016).

The analysis made in this study also shows that most of the children (68%) and the adults (67%) spend more than an hour while visiting the Neighborhood Parks. This implies that most of the park users are satisfied with the parks they are using or there is no alternative green space in their surroundings (it is important to recall that 77% of the children and 88% of the adults never visited the Neighborhood Parks). the time spent is directly related to the activity conducted by the community in the neighborhood park.

5.1.4. Activities conducted in neighborhood parks

This section of the study discusses the type of activities (Passive or Active) performed in the Neighborhood Parks by the visitors. As mentioned in the literature review, there are two types of recreational activities that take place in Neighborhood Parks; Passive recreation and Active recreation (Burgess et al, 1988).

The Analysis shows that the majority of the children are engaged in active recreation; which is playing games in the Neighborhood Parks. Most of the children engage in these activities by taking their playing equipment with them or engaging in activities that don't seek any equipment like hiding and seek and the like.

When the activities conducted by adults are observed, the majority of the adults engage in passive recreation. Such as sitting, relaxing, socializing, and taking fresh air. This evident that, people with different demographic characteristics use parks differently, which is marked from the sections on park users and park-use activities (Peters, 2010).

From the analysis, it is found that Neighborhood Parks should integrate both passive and active recreational opportunities. Integrating both active and passive recreation helps to increase park usage both by children and adults. Quality life will be led by the

community as the park usage gets higher. This in return leads to the sustainable development of cities.

5.2. Challenges

Challenges refer to difficulties faced by the users of the Neighborhood Parks. In this section, two subtopics will be raised and discussed: (a) reasons for not using the parks and (b) nuisance in the parks. As explained in the result section of this paper, the majority of the community is not using the parks. This section can explain the challenges faced by the community not to use the Neighborhood Parks and measures that need to be taken towards the development of Neighborhood Parks as desired by the community. As Maleka et al quoted (Maleka et al, 2012) (Willie, 1992), Quality is not solely about techniques and procedures but including people who use them.

This section is a way paving towards understanding the challenge and need of the community to create a quality Neighborhood Park.

5.2.1. Reasons for not using the parks

As per the analysis made above, Neighborhood Parks are the only sources of green space for the community, yet, the majority of the community is not using them. This section tries to bring the core reasons for not using the Neighborhood Parks into a discussion.

According to the analysis, it is found that the majority of the community doesn't visit the Neighborhood Parks because of the lack of facilities in the park. In this context, facilities in the park refer to the seats, playing equipment, walkways, shading trees, etc. As the community raised and the observation made, most of the Neighborhood Parks do not fulfill all the facilities needed by the community. Missing one of the needs might lead people to use the park less. To have a sustainable environment, there needs to be protected, well – maintained, and High-quality parks with a variety of activities and facilities that serves

the community at all. According to the literature, quality is not only about the space but also its user; the need of the community needs to be taken into consideration towards utilization of Neighborhood Parks for social interaction and recreation.

5.2.2. Nuisance in the park

Nuisance is a factor that unpleased the park users. It is one of the obstacles that hinder the community from visiting the Neighborhood Parks. Seymour Gold (Gold, 1977) categorizes the park nonuse in three categories; behavioral, environmental, and institutional. The issues to be discussed in this section are categorized under the institutional category; which refers to the following subcategories. These are goal difference, personal safety, relevant program, management practice, and maintenance level.

According to the analysis, the main nuisance is the presence of dogs. Another factor considered as a nuisance is throwing of wastes into the Neighborhood Parks. Internationally, if parks are filled with litter and vandalism, people do not visit it often, because it is not aesthetically pleasing to spend time there (Azuma et al. 2006; Hansen 2006; Jansen et al, 2005; Pasaogullari & Doratli 2004). The debate about allowing dogs in parks is not only an international phenomenon (Dunnett et al, 2002; Hansen 2006; Rishbeth 2001), because majority of the respondents mentioned the Prescence of dogs as a nuisance factor.

When these two factors are analyzed according to (Gold, 1977), they fall under the institutional category; the subcategory of maintenance level. Maintenance level refers to the effort of the assigned committees. The assigned committees should work on the maintenance of the park. If the park is maintained to the highest level, and proper

community awareness is created, the presence of dogs and throwing of wastes into the Neighborhood Parks can be easily managed.

5.3. Public Perception

Public perception is the way that the community thinks about the Neighborhood Parks or the impression they have about them. In this section points that can help the study to understand the perception of the community are raised and discussed. The subcategories assess how the community understands the importance of the neighborhood parks, how they evaluate the quality of services and facilities in the Neighborhood Parks, and what their ideal park looks like by allowing listing out the facilities they need to be included in the Neighborhood Parks.

5.3.1. Importance of parks

Parks are an important component of a city. It has been discussed that the majority never visited neighborhood parks. This discussion helps to answer one of the questions that comes to mind in relation to park nonuse; that is, is the community not using the neighborhood parks because they think they are not important or not? A community that understood the benefits of the parks and value the importance of parks as they value other services like health care, educational, housing services would have used parks more frequently.

Benefits that people receive from parks may determine whether they are used or not as well as the frequency with which they are used. Parks have the potential to benefit people by providing a high-quality life and contributing to a sustainable city (Byrne & Wolch 2009; Cranz & Boland 2004; Shafer et al, 2000).

According to the assessment made it is found that the community values Neighborhood Parks as very necessary. This implies that the community awareness on the importance of

Neighborhood Parks is substantial. From this it can be concluded that the understanding of the community about the importance of the parks is not a factor for their park nonuse.

Understanding the perception of the community on the importance of the neighborhood parks is also important to forecast their participation in the development of parks. Besides when a balanced Neighborhood Park development is achieved people see the park as a holistic entity which may influence people's personal and social perception of parks and determine the frequency of use.

5.3.2. The quality of the services and facilities in the Neighborhood Parks

Quality Neighborhood Parks will be stated as, a successful and excellent public green open space within a residential neighborhood area that conforms to the needs and requirements of people including various techniques in using the space and upon agreed standards that are beyond the usual outdoor recreation and leisure expectations (Maleka et al, 2012). One of the criteria that make a Neighborhood Park quality is the quality of services and facilities provided in it. The key components used to evaluate the quality of services and facilities are the accessibility of the Neighborhood Park, general cleanliness, personal safety and security, play equipment for children, seats/benches/tables, shaded areas, state of grass/trees/plants, and overall maintenance. Dissatisfaction with any of the services and facilities can be considered as one of the major factors for most of the community not to visit the Neighborhood Parks.

According to the collected data, it is found that personal safety and security, and accessibility were rated as excellent. The services and facilities rate as average include general cleanliness, the existence of shaded areas, current status of grass/trees/plants, and overall maintenance. Play equipment and provision of seats/benches/tables were rated as very bad. This implies that the majority of the community might not be visiting the

Neighborhood Parks because of the lack of good provision of seats/benches/tables and play equipment for children. Therefore, emphasis should be given to the provision of seats/benches/tables and play equipment for children.

5.3.3. Facilities required in the neighborhood parks

Assessing the facilities required by the community can help to understand what the ideal park of the community looks like. This is directly related to the evaluation made about the current quality of services and facilities of Neighborhood Parks. The one rated as very bad in the assessment by the community might be listed here as a need of the community to be provided.

Most respondents indicated, in accordance with other researchers‟ work (Azuma et al. 2006; Pasaogullari & Doratli 2004; Payne, Mowen & Orsega-Smith 2002), that they want their ideal parks to be clean, spacious, green and flat with pretty gardens or nice scenery and shade.

From this study, it is found that the majority of the community specifically needs the provision of seats/benches/tables and play equipment for children. This implies that emphasizing seats/benches/tables and play equipment for children can easily activate the Neighborhood Parks. When the communities get what they want, the park usage will be increased. Therefore, considering the need of the community is one of the key components towards the development of Neighborhood Parks.

5.3.4. Committee Members

The Neighborhood Park development committees are the bridge between the community and the Woreda administration. The committees are responsible for managing the resource organized by the community and the support provided by the Woreda administration. One of the big challenges of the committee is organizing different interests of the community.

Regards to the design, they just replicate the already developed version. One neighborhood park copies a design from what is made traditionally in the other neighborhood park. As the result most neighborhood parks are designed traditionally.

The committee members consider that the Woreda administration is very supportive. The committee's role is short-term, just to establish the park, which didn't consider the sustainability issue. In addition to the above, the neighborhood parks were developed by the community only. This creates a lot of challenges especially in raising funds for the development and provision of important facilities. Even though the Woreda administration is supportive, most of the parks are not developed professionally. Woreda administration should perform community awareness creation activities and should support the committees technically.

5.3.5. Administrative Bodies

In Woreda 7, the river basins and green areas development administration Office oversees the overall monitoring, such as the use, development, and control of the neighborhood parks in the Woreda.

As a regulatory body, the Woreda administrative office should have Woreda level regulation and guideline which is to be communicated to the community and the committee members. The only available tools are the two agreements (1) the agreement to be signed between committee members and the Woreda office, and (2) the agreement to be made among the community to form committee members. These tools are very helpful and can serve as a commencing document towards neighborhood park development at the community level, although may lack logical guidance.

Regardless of the above, the Woreda office is very responsive and supportive. They are willing to give guidance regarding the specified tools and any technical support. One of the major concerns of the office is, communities developing the neighborhood parks where the ground cover of plants ratio (80%) is not maintained. Nevertheless, The Woreda Office strongly supports the development of a well-studied and designed neighborhood parks development.

CHAPTER SIX: CONCLUSION AND RECOMMENDATION

6.1. Conclusion

To conclude, the overall park usage in the study area is very poor; even though, the community doesn't have a private garden. The community has responded their reason for dissatisfaction with the parks such as, lack of amenities like seating spaces, children's Playground, and lack of maintenance. The interest of the community to use the parks is high. However, the community cannot get the best out of the parks because of the mentioned reasons.

The community needs a well-designed Neighborhood Park that is with full amenities: - Seating Spaces, Children Playground, Shading Trees, Sports Facilities, Reading Spaces, ornamental plants. Some respondents demanded the provision of cafés and library in the parks. However, the Neighborhood Park development guideline issued to the communities; by the Sub-city allows only 20 % of the parking area to be a hard surface and the rest 80% should be covered with green as stated in Article 2 number 6.

Neighborhood parks are very important and need to be designed by fulfilling the key standards to activate them. These are accessibility, facilities for physical activity, amenities, shading, cleanliness, graffiti, playing surface, security, and lighting. From the study, it is shown that parks can be activated by meeting those standards.

The role of the committee member is vital. They serve as a link between the Woreda administration and the community. They are neighborhood park development frontrunners. They can benefit both society and environmental conservation if relevant and adequate resources (money and skills) professional designs are provided. Both the community and Woreda administration should support the committee members.

Therefore, this study is helpful in directing the key standards as well as a sample design and an implementation manual for neighborhood park developers and Woreda administrative bodies to develop the parks in a professional manner.

6.2. Recommendation

Based on the results and discussion made in the previous chapters of this study, the recommendation is made in relation to better park usage, design, and an implementation manual.

6.2.1. Recommendation for better Park usage

Table 10: Recommendations for better park usage

Recommendations for better park usage	**Description**
Government and economic Recommendations	Adequate Park planning delivery, management, and maintenance strategies must be implemented
Environmental Recommendations	Parks should enhance environmental sustainability
Management Recommendations	Parks must be effectively managed to serve all in society
Aesthetic Recommendations	Parks must be physically appealing
Social Recommendations	Parks must be areas where social interaction can occur

Safety and Security Recommendations	Parks must be safe and secured areas in which to perform recreation activities

Source: Azuma et al. (2006)

The recommendation is grouped into different categories. It tries to cover the basic points towards the Utilization of Neighborhood Parks for social interaction and recreation.

Aesthetic Recommendation – parks should be aesthetically appealing to use and spend more time there. Parks must also contain a variety of facilities, equipment, and furniture for a variety of different users. The availability of different programs in the parks plays a great role in the aesthetical view of the park. Vegetation is one of the factors that affect the aesthetical value of a park. Vegetation should be carefully selected and planted. After planting there needs to be maintained since the plantation doesn't stay where it is left sometimes before. Therefore, maintaining existing as well newly planted vegetation, such as mowing the grass regularly is very important. Aesthetical Recommendation can be achieved in the following ways: -

- Create disabled-friendly parks, with a hard surface for wheelchairs and more seats
- Create different sections in parks to enhance multiple-use, such as:

    1. Sports area with different facility
    2. an area for children’s play equipment

3. an area where adults and the elderly can relax

4. Walkways through the parks for walking, jogging, and the like o an area to observe nature

- Park facilities must be provided

- Plant trees for shade

- Parks must be clean, spacious green, flat, beautiful, and aesthetically pleasing

- Provide the most basic play equipment/park furniture for all ages.

- There should be more variety in play equipment and park furniture.

Management Recommendation – since Neighborhood Parks are developed by the neighboring community, the committees managing the site should be taking care of the parks. There should be a well-designed park management framework. Proper management and regular maintenance are one of the factors for regular park usage.

- There should be a waste collecting system on the site so that the users will not be damping any trash in the parks.

- Dumping of litter should be responsible.

- Engaging unemployed individuals of community members as park personnel to maintain and clean parks daily.

- Maintaining and cleaning parks regularly.

- Replacing vandalized and broken play equipment and park furniture timely.

Government and Economic Recommendations – the government should be giving care in planning the urban. Parks are one of the basic components in the planning of the urban. The delivery of Parks and recreation services must be seen as equally important as other services, such as clinics and health care, and housing. If it is not given enough emphasis as other services there will be no adequate space in the future to develop parks that the community desire. Therefore, future expansions should consider giving enough spaces and the right locations for parks while urban expansion.

Social Recommendation – Neighborhood parks in most cases especially in the Ethiopian context are developed by the community around them. As it is known, one community has a different perspective towards the same thing. Creating clear awareness is one of the steps in utilizing the parks for social interaction and recreation. To develop a park the developers, need to have a clear image of what is expected from them. This can be achieved by the following community participation: -

- Education on park environments and regular park maintenance
- Participation in the development of the parks is crucial to create successful park usage
- Management of parks by volunteer's neighborhood watches and forming Neighborhood park-management teams
- Participation in Park planning and design by giving input into what their ideal parks look like.
- Maintenance by volunteers who organize the regular cleaning of parks.

Safety and security Recommendation – This is one part of the management issues.

There should be more security in the parks, as parks are meant for families and children. The following can be done to achieve the safety and security recommendations:

- Create safe park environments by adding the following: - Fences with gates to control free access, appropriate lighting, park personnel, and security guards.
- Remove unwanted park elements and antisocial characters (homeless people, vagrants, vandals, drunks, and thieves, teenagers who drink, smoke, and use drugs) from a park regularly.

6.2.2. Design Recommendation

The next part of the paper presents a sample design to make a clear image of some of the points that have been recommended. It shows what facilities and the different sections that a park should include.

A. Site Selection

Site Selection Criteria

The researcher considered the following selection criteria to select the site for which the design was to be worked.

Status of Development

The researcher already identified the development status of each site, and the sites are categorized as developed, underdeveloped, and not developed. In Woreda 7, 4 sites are developed, 72 sites are underdeveloped and 6 sites are non-developed. For this particular study, the sites to be considered should be either ***developing*** or ***not developed.***

Proximity to the road

This criterion is taken into account because the proximity of the site to the main road is much helpful to supply the required raw materials and supplies to develop the site will be easy. Further availing of electricity and water system will be convenient.

Visibility

Visibility of the site by the community at large is considered one of the important criteria of the site selection. This is because; when the community and the dwellers in another mender (village) pass by, they can learn and replicate the neighborhood park development of the selected site. Therefore, the research believes that the selected site should be visible to as many community members as possible

Area of the site

The area of the site is another important factor to look at. The area of neighborhood parks in Woreda 7 ranges from 300 to 2906 square meters. The average area is 1249 square meters. Out of the total 82 sites, 32 sites are less than 1000 square meters; the areas of 38 sites are 1000 - 2000 square meters; only the areas of 12 sites are above 2000msq. Considering the above facts, the researcher tends to take an area closer to the average (i.e., area between 1400-1600msq).

Number of Community Users

The number of users is also considered to be one of the selection criteria for the site. The larger the number of users the easier will be the development of the site. If there are a low number of users the likely hood of the sites being developed as desired will be lower. Therefore, the researcher considered the larger number of the neighborhood park user to be preferred, so that the development of the site as desired will be easier.

Convince for frequent visit

Convinces of the site location for a frequent visit are considered the last and the list criteria for the site selection. This is because as Woreda 7 is the selected area to study neighborhood parks, it is mandatory to go anywhere with Woreda. However, after all the above criteria are considered if the site is happening more convenient for the researcher to make as frequent visit as possible.

The Selected Site

Based on the above criteria **Bethel Pepsi** Neighborhood Park, with a total area of 1565 sq. meter and which is under development is selected as a design site. The site is located close to Bethel Taxi station, and most of the communities living in another village pass by Bethel Pepsi Neighborhood Park so that the visibility of the site is high. Further, the site is close to the main road; therefore, it will be easier to supply raw materials for the development of the site. When we see the number of households using the site is more than 20. There is also a business building where the possibility of using the park by the business facility users will be high. It is also convenient for the researcher.

B. Site Narrative

Betel Pepsi Neighborhood Park is found around Bethel Hospital. It is grouped under the Parks which are under development. The area of the site is 1565 square meters. It is surrounded by residential and some commercial units. Since the site is around the main roads (from Bethel Hospital to the Highway and from Betel roundabout to Alembank), there are parking activities taking place around the site at night time. There are big and relatively several different species of trees in it; some of them are Juniperus

Procera Jacaranda Mimosifolia, Gravelia Robusta, Bottle Brush, Phoenix Reclinata. However, having those shading and ornamental trees, the site is not functioning; it is closed all day long and it is not designed well.

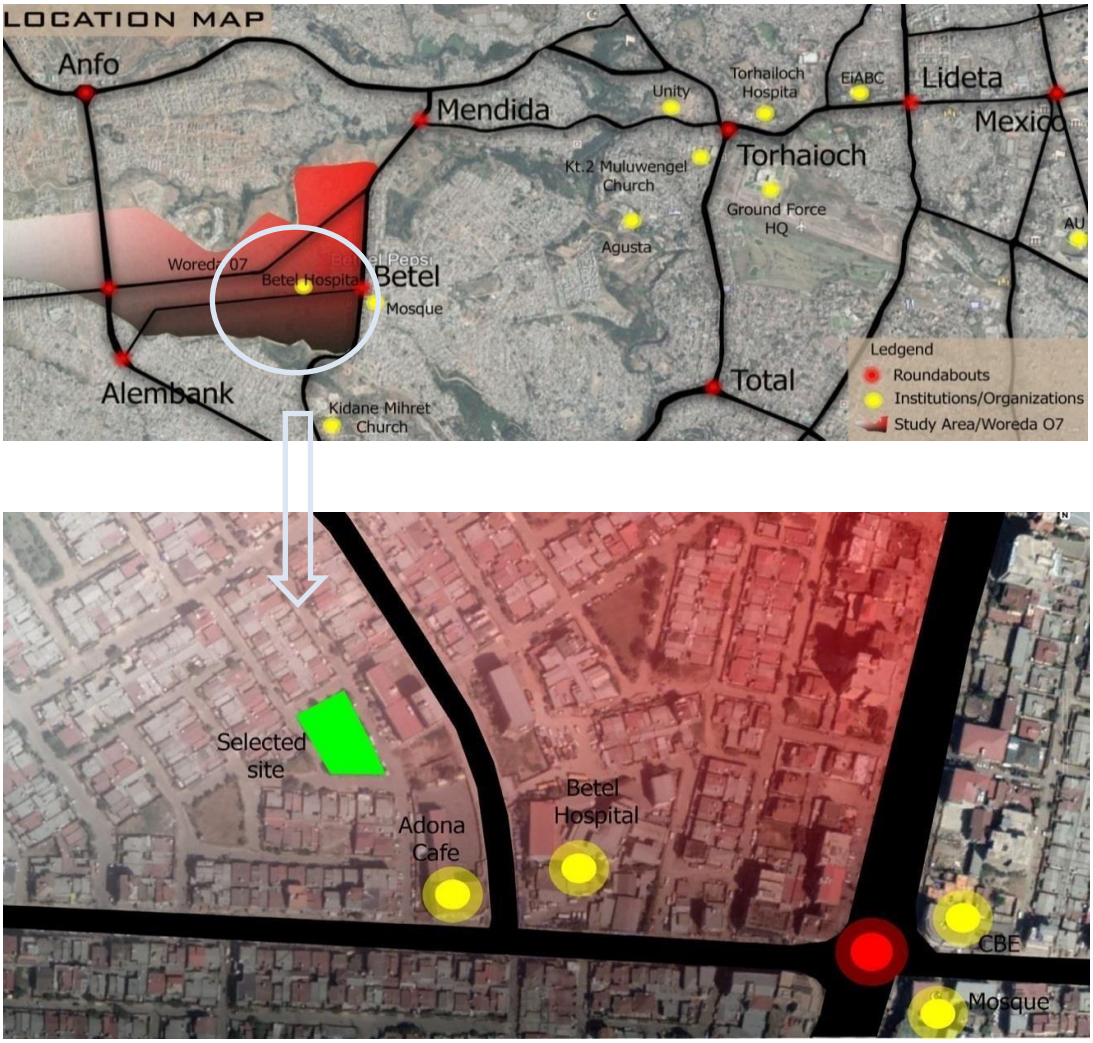


Figure 19: Site location map

C. Site Presentation and Analysis

History of the Site

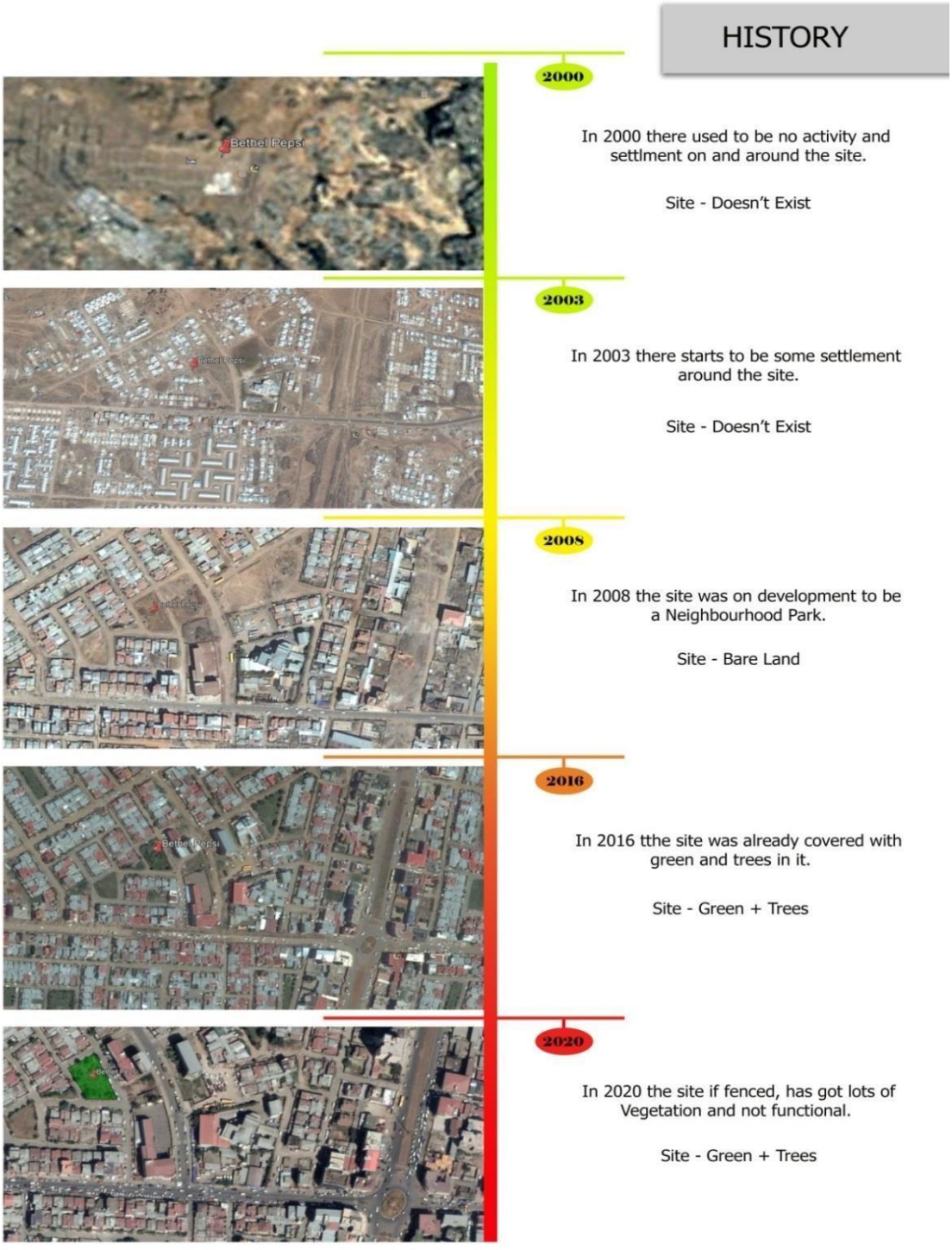


Figure 20:History of the site

Shade and Shadow

Figure 21: The shade in and around the Site at 9 AM

Figure 22: The shade in and around the Site at 12 Noon

Figure 23: The shade in and around the Site at 9 AM

Activities around the Site

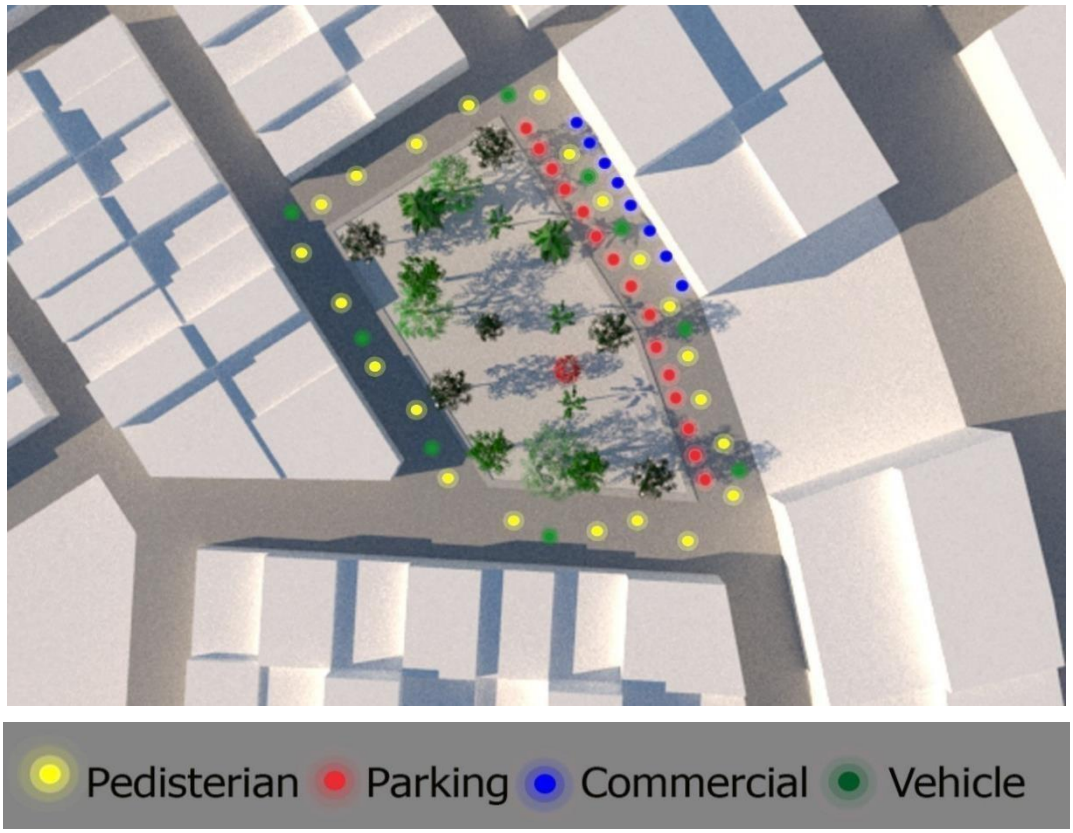


Figure 24: Activities around the site

There are different activities around the Site.

- **Pedestrian** – most dominantly the residents and passengers cross the site.
- **Parking** – as shown on the map, at night time there is a parking service, which makes the area secure.
- **Commercial Activity** – the buildings found to the right side of the site are commercial buildings. Which increases the number of visitors to the site from a different area.
- **Vehicle** – different vehicles cross the routes beside the site to pass by.

View Shade (from and to the Site)

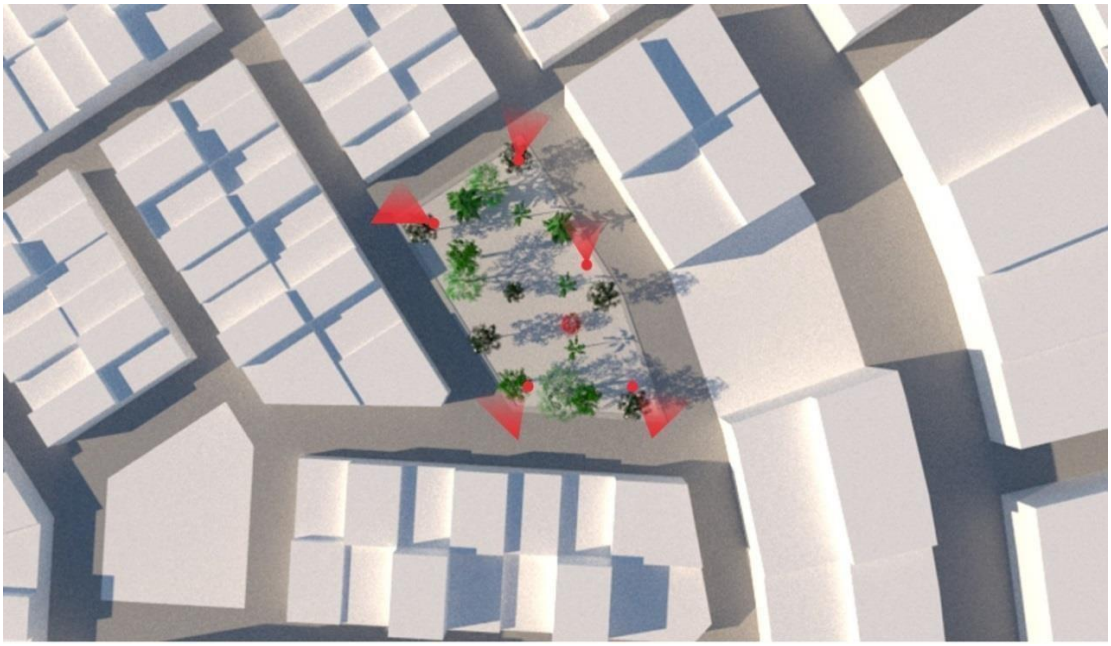


Figure 25: View Shade from the site

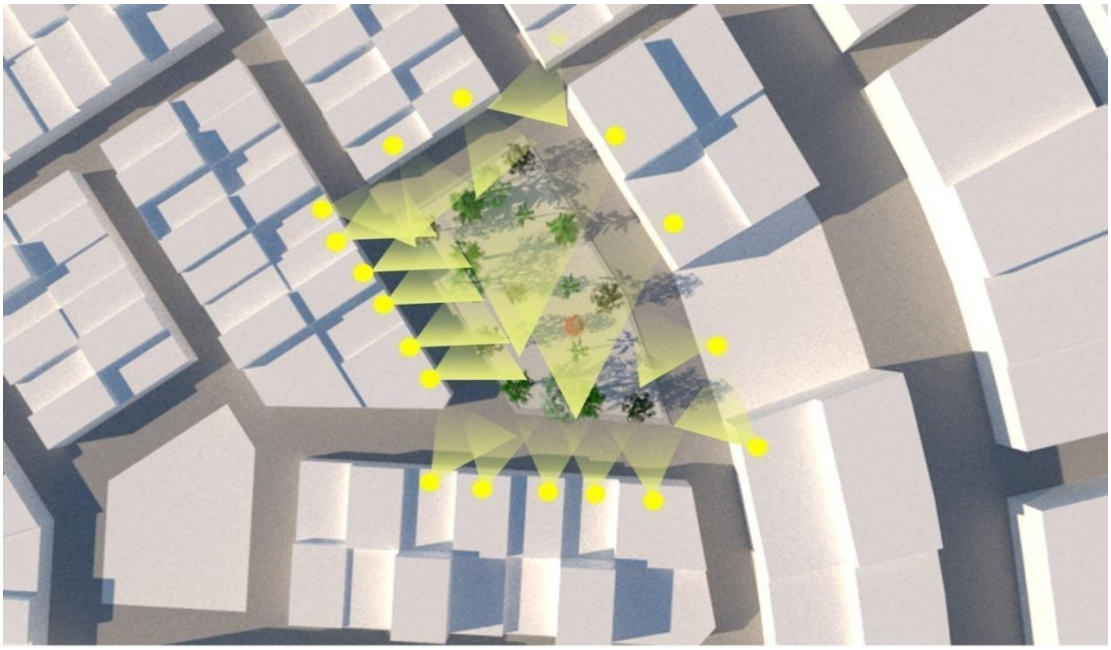


Figure 26: View Shade to the site

Vegetation Cover

There is a number of vegetation on the site. Some of this are; Junipers Procera Jacaranda Mimosifolia, Gravelia Robusta, Bottle Brush, Phoenix Reclinata and Acacia Melanoxylon.

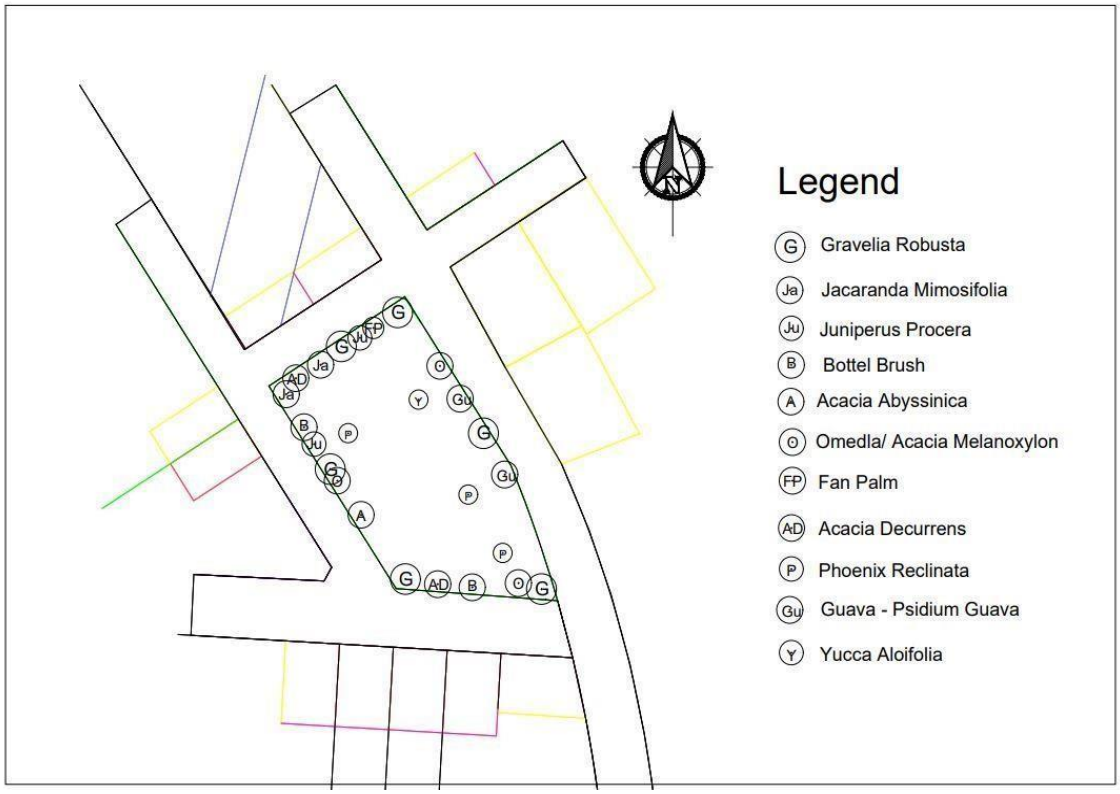


Figure 27: Existing Vegetation

Road Network

There are three types of routes around the site. The routes are illustrated in the figure and described in the table below.

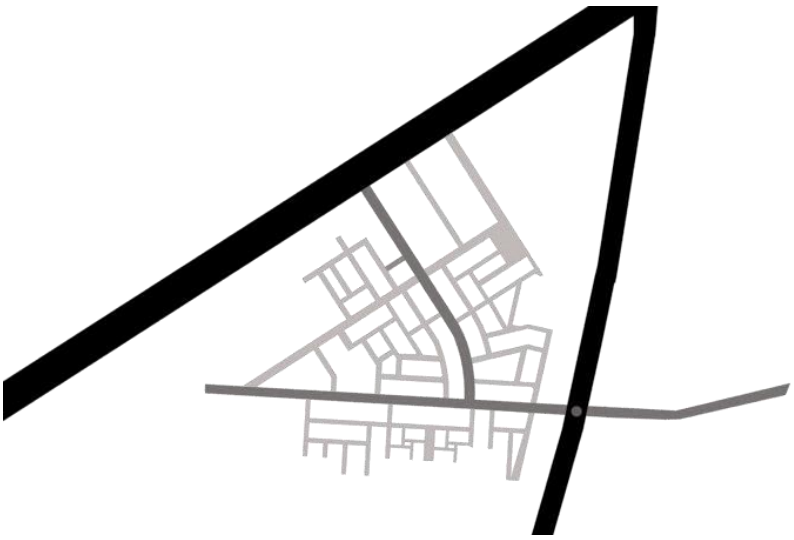


Figure 28: Road Network

Table 11: Road Network Description

Road	Type	Width	Fininsh
	Primary	40 meters	Asphalt
	Secondary	20 meters	Asphalt
	Tertitiary	10 meters	Cobble

Geology

The Soil type in the Site is a Humic Nitosols. Nitosols are soils having an argillic B horizon with a clay distribution where the percentage of clay does not decrease from its maximum amount by as much as 20 percent within 150 cm of the surface; lacking plinthite within 125 cm of the surface; lacking vertic and ferric properties.

Humic Nitosols are soils having a base saturation of less than 50 percent (by NH4OAc) in at least a part of the B horizon within 125 cm of the surface; having an umbric A horizon or a high organic matter content in the B horizon, or both.

Storm water management

There are no special treatments for storm water. Specific to the site, since the surface has no pavement and covered with vegetation; it has the capability of infiltrating the water in to the surface relative to the constructed residential units and paths around the site.

Waste Management

The waste is disposed by the people assigned by the Woreda to collect wastes. There is no waste management system that is specific to the site. Since the site is fenced and not accessible there are no wastes disposed to the site but there exists unmanaged and not treated vegetation which creates a visual discomfort.

D. Design Report

In this part of the research, complete Neighborhood Park Landscape Design for the selected case will be presented based on the recommendation. It includes Plans, Sections, Details, 3Ds and Plant Selection.

Description

As the finding explains, the community needs a well design space for recreation and social interaction. Some of the major components are seating, play equipment for children, gathering space for events and holidays, flowering plants and the like. The site is designed considering design principles with the literature reviews and the need of the communities.

Zoning

The site is zoned in to different programs based on the need of the community and as well the required Spaces that a park should include. There are five zones in the design. These are the Seating, children playground, Gathering, Reading and Outdoor Gym Zones. The children playground is zoned intentionally to be in between different zones in order to keep the children safe from the external environment. The gathering space is located at the center of the site based on the function it serves and to serve as a focal point of the site.

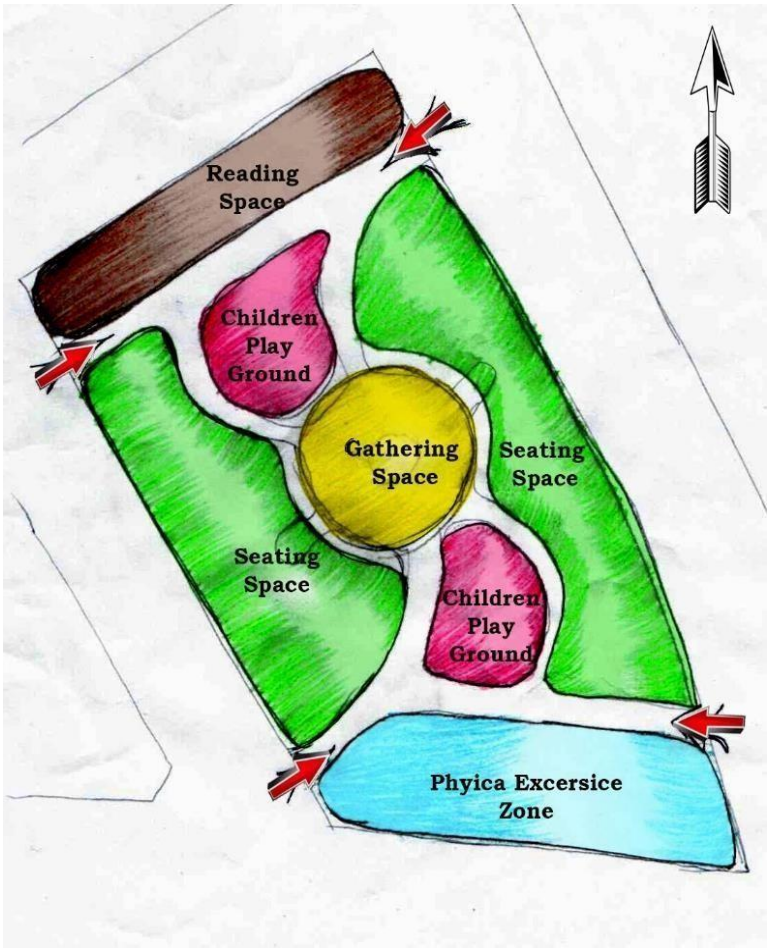


Figure 29: Site Zoning

Design Programs and Elements

A. Paths / Walkways

The paths are designed in order to create comfort while experiencing the site. The paths have curvilinear shapes which creates a smooth feeling while experiencing. They are designed to have a comfortable and relatively longer distance in order to increase the physical fitness and health of the community. There are shading and ornamental plants across the path. Shading structures are also provided at different spots along the entrance paths of the site to define the paths and create sense of closure & directs the entrance/ exit points of park. Different spaces of the sites are connected through this path. Viewing all those activities creates a pleasant view which creates relaxing, and refreshing feeling. The finish of these paths is made of Bazzola Tiles which creates a natural feeling and not slippery while walking. The width of the path is 1.6m minimum and 2.2m maximum. In general, the finish as well the width of the paths is comfortable both for pedestrian and Wheel Chair users. The total area covered by the path is 247.28 square meters which is 15.96% of the total area of the site.

B. Seating/ Social Spaces

Seating gives people a stopping point, whether it is for a rest, a place to wait and meet others, read books or simply a place to sit and take in the scenery. There are different typologies of seats in the site which are provided in the Reading, Gathering, Seating and Outdoor Gym spaces of the site.

The Seating Spaces are spaces which are provided for the community in order to perform different informal activities in the site. This space allows the users to do whatever activity they like. The space is located to the left and right side of the gathering space. They are relatively wider. They include shading trees, ornamental plants, seats, lawns and birds' bath for the provision of shade, fresh air, aesthetics, and attraction of birds to the site respectively.

The surface finish in the seating spaces is a lawn which in return can be used as a seating space. This space can be used for different purpose as to the user.

C. Reading Space

Reading spaces are spaces which are used for reading. In order to fulfill the need of the community and add variety of activities into the site this space is included. It helps the communities which are interested in reading books in an outdoor environment. It is located to the upper side of the site in order to create a private feeling. It has got sits and shading trees in order to provide shade and fresh air to the space. The surface is a lawn which helps in the storm water management.

D. Gathering Space

Gathering spaces helps people gather for different activities. This space is provided at the center of the site. The surface finish is a Bazzola tile which creates a natural and comfortable environment for walking. It is connected to the paths. The paths pass through it. It has got seats following the circumference of the space. The space accommodates relatively a large number of people. There is a tree with a big canopy at the center of the site which provides a large shade and sense of unity. The existence of the tree can simply define the function of the space. It also serves as the focal point of the site.

E. Children Playground

Children Playground is designed for the neighboring children to play on. The children playground provides equipment that helps the children to play with. Its surface finish is sand in order to protect the children from harm. Sand has also a good quality in percolating the surface water into the ground. There are Single Axis Swing, Balance and Slide play equipment. There are also shading and ornamental plants in this zoning. The space allows children to bring their equipment and play with it on the ground. The

space can be viewed from the seating spaces so that parents can control their children playing from the seating spaces.

F. Outdoor Gym Space

This space provides an opportunity to have a physical exercise in the site. It has equipment that helps the user to have an opportunity to exercise different actives. The space is located to the southern part of the site. The site has shading trees which provide enough shade to the site. The surface finish is a grass which is comfortable for physical exercises.

Drawings

Site plan

Figure 30: Site Plan

Sections

Figure 31: Section A-A

Figure 32:Section B-B

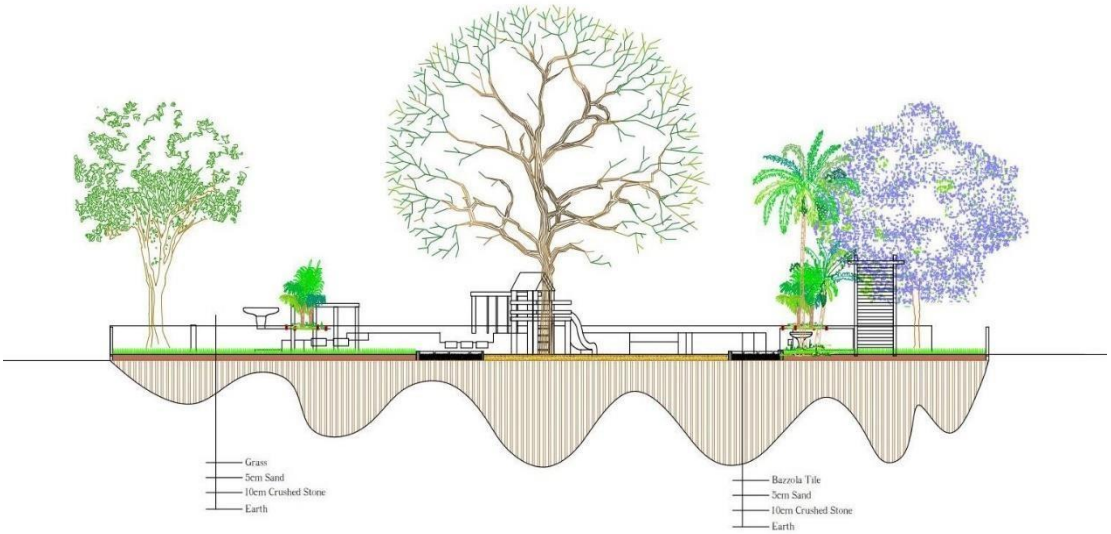


Figure 33: Section C-C

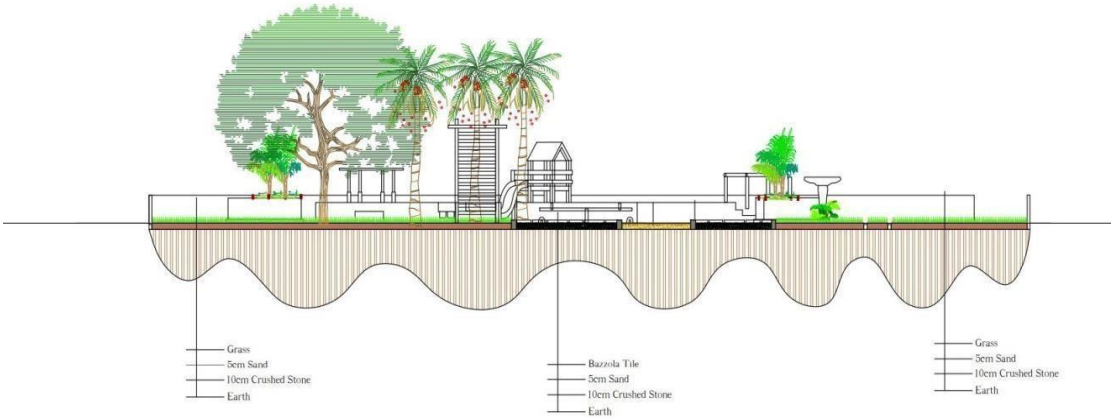


Figure 34: Section D-D

Details

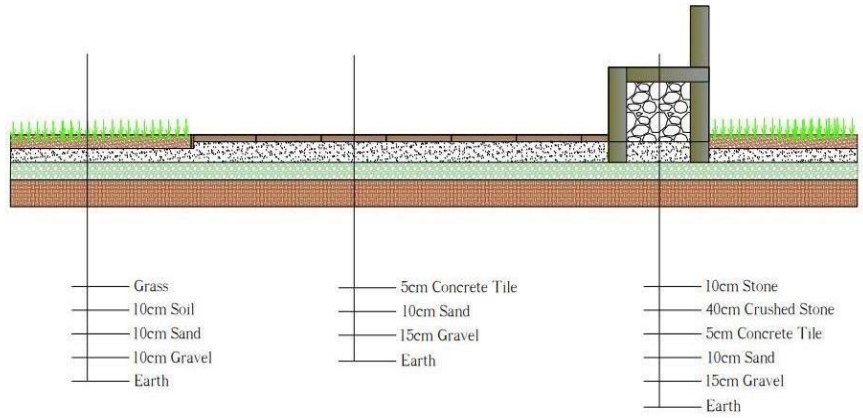


Figure 35: Seating and Pavement Detail

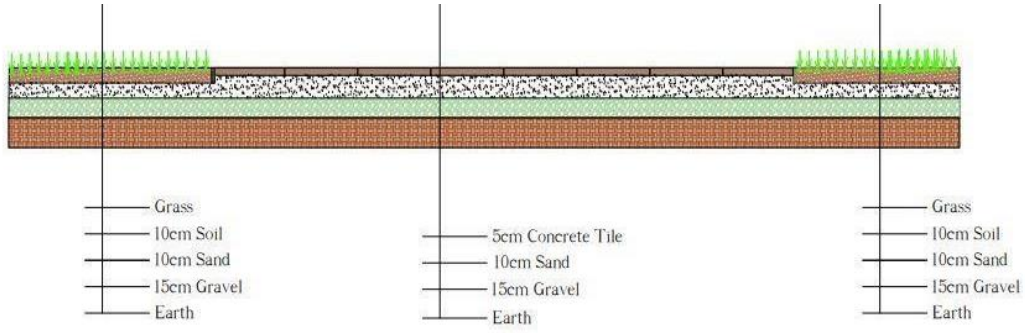


Figure 36: Pavement Detail

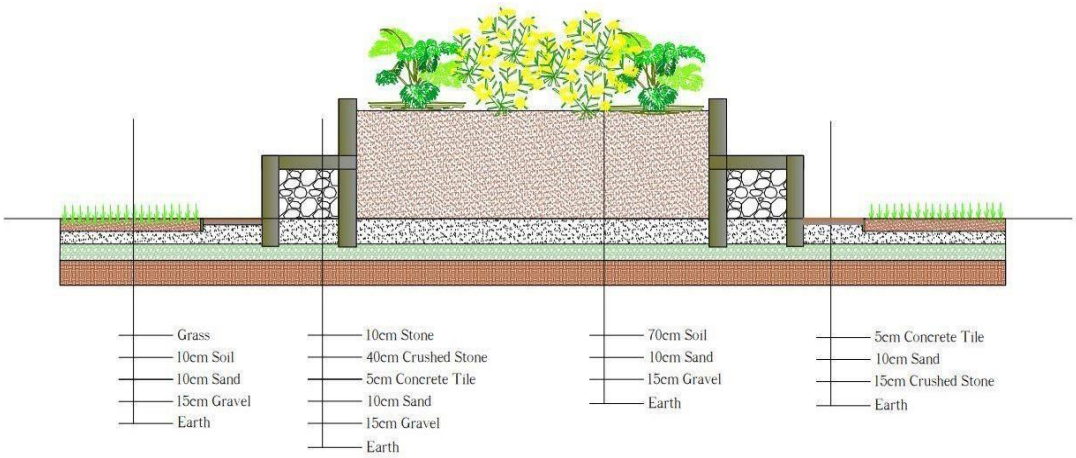


Figure 37: Seating and Lawn Detail

Details that help in the Storm water management Plan

Storm water at a neighborhood park level can be managed by improving the capability of the surfaces to be more efficient to percolate water in to the ground. The following details shows how we can manage the storm water through the lawns, pavements, Seating and the sand surface of the children playground.

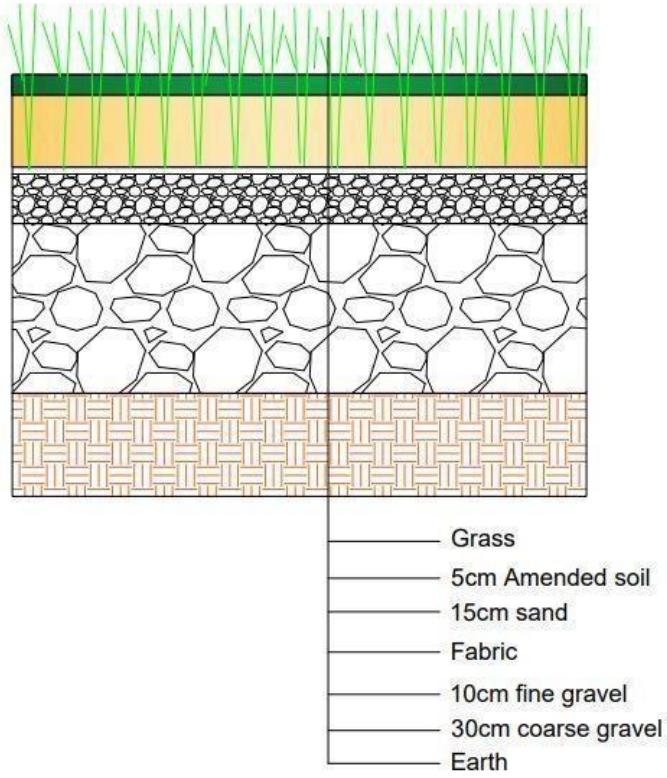


Figure 38: Lawn Detail

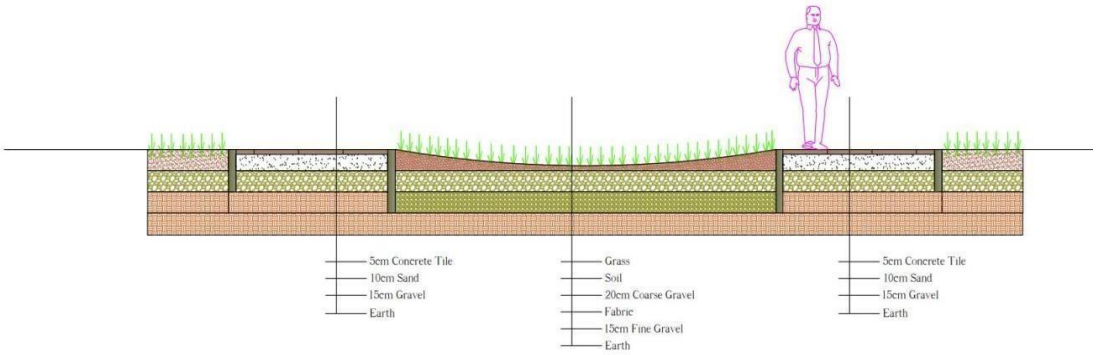


Figure 39: Lawn Detail

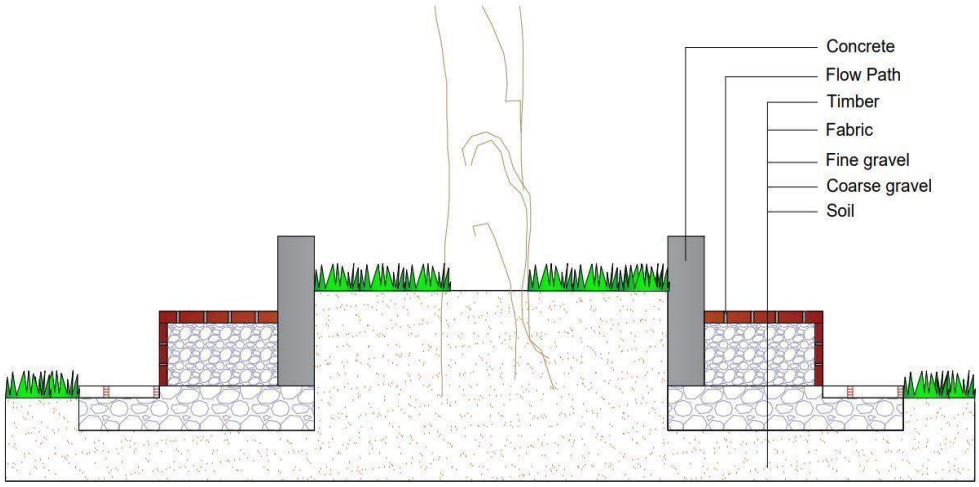


Figure 40: Seating Detail

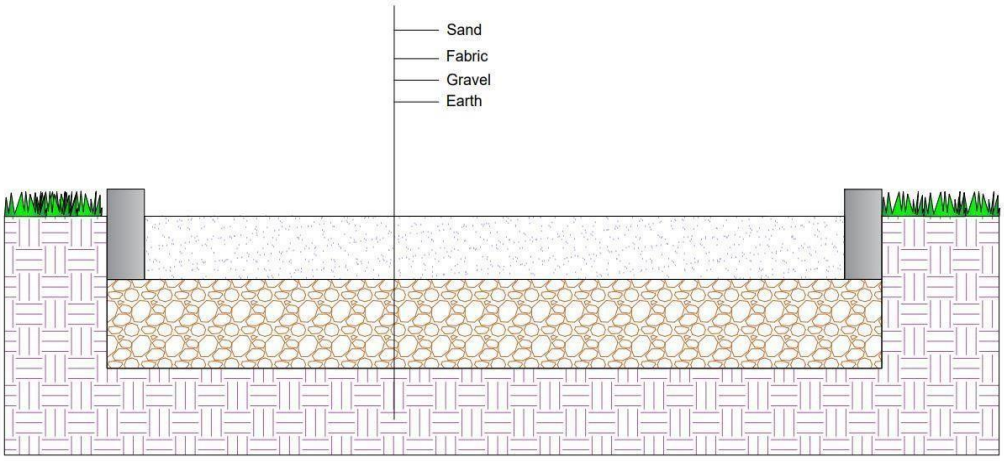


Figure 41: Children Playground Detail

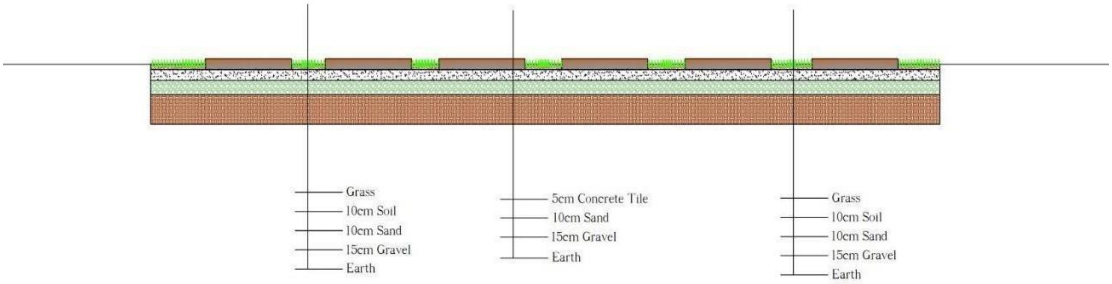


Figure 42: Pavement Detail

Planting Plan

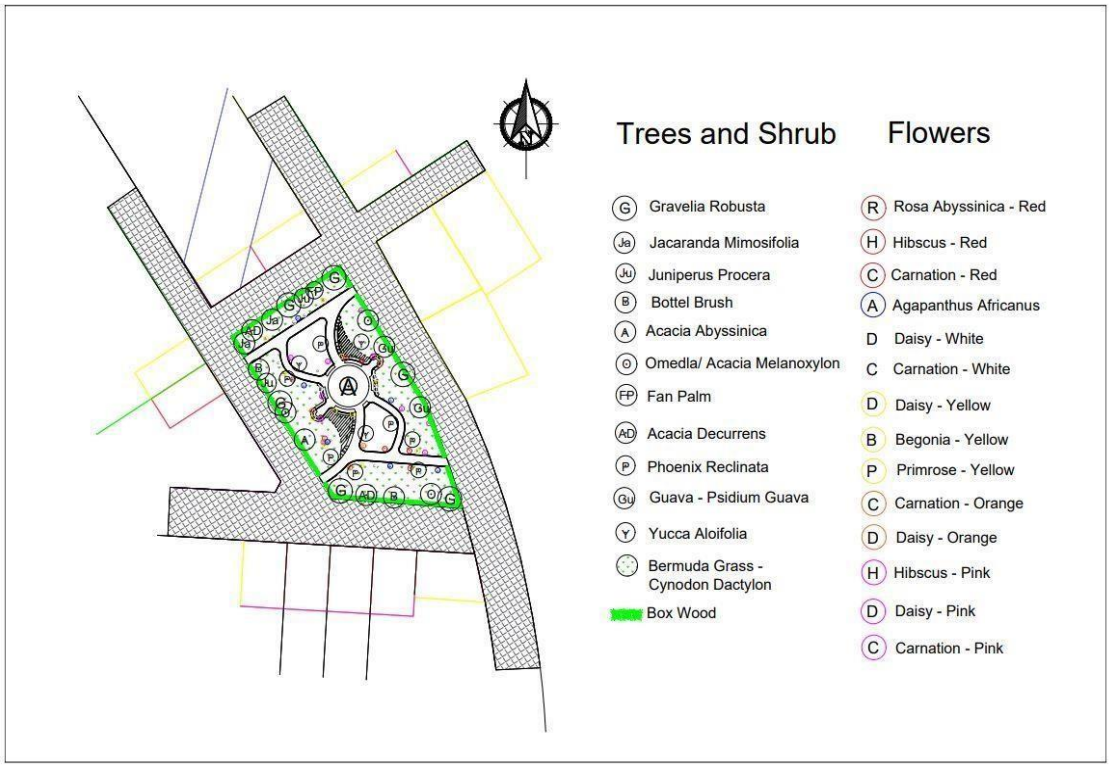


Figure 43: Plantation Plan

Table 12: Plant description - Trees

No.	Plant Name	Picture	Description
1.	Gravelia Robusta		Active Growth Period – Spring, Summer, Fall Growth Rate – Rapid Moisture Use – Medium Fertility Requirement – Medium Drought Tolerance - Medium Deciduous tree up to 20m Flowering from early spring to June
2.	Jacaranda Mimosifolia		Fruit Maturing in Spring and early Summer Soil Type – Sandy Loam Soil
3.	Juniperus Procera		Medium Sized Climate – Cold high ridges Growth rate – Slow Soil type – Well drained Drought tolerance – High
4.	Bottle Brush		Flowering perennial desert shrub Mature Size – up to 15 feet tall Sun Exposure – Full Sun Soil Type – Loamy, moist, well-draining Bloom time – March to September
5.	Acacia Abyssinica		Mature size – up to 20m Very many flowers Drought tolerance – High Fruit – Pods to 12cm Flowers – Very many

6.	Omedla		Growth Rate – Fast; 36 or more inch per year Climate – Cold Soil Type - Deep, moist & Fertile Height - up to 45m Mature size – 8 to 15 ft Growth Rate – Slow
7.	Fan Palm		Exposure – Full sun to partial shade Climate – Warm Drought Tolerance – High Soil type – Average, medium moisture, well drained
8.	Acacia Decurrens		Mature size – 12m Growth rate – Rapid Active growth period – April Soil type – medium moist, Drought tolerance – Medium
9.	Phoenix Reclinata		Mature size 7.5 – 15m Growth rate – Medium Soil type – Dry Drought Tolerance – High Flowering period – In fall or in summer
10.	Psidium Guava		Is a small tree Soil type – moisture & fertile Exposure – Sunny position Drought tolerance – high Growth rate – Rapid Bloom time 2 to 8 years
			Mature size – 7.5m

11.	Yucca Aloifolia		Soil type – Sandy Exposure – Like full sun Growth rate – Rapid Flowering time – Spring to late summer Drought Tolerance - High

Table 13: Plant description - Shrub, Grass, Herb, Flowers & Creeper

1.	Box Wood (Shrub)		Mature Size – 1 to 6 ft. Exposure – Need full sun Growth rate – Slow Soil type – Well drained Climate – Hot Drought Tolerance – High
2.	Bermuda Grass		Pest Resistant It is durable Drought Tolerance – High Growth rate – Rapid Mature size – 0.5 to 2.5 inches Soil Type - Sandy
3.	Lavender (Herb)		Mature size – 20 to 40cm Exposure – Full sun Drought Tolerance – High Soil Type – Well drained Growth Rate – Fast Climate – Hot Bloom Time – Early Spring
4.	Genus Rosa (Flower)		Mature size – 5 to 15cm Growth Rate – Rapid Drought Tolerance – High Soil Type – Moderately Fertile Climate – Warm Exposure – Warm

5.	Hibiscus (Flower)		Height - Up to 8ft long Habitat – Entire sun light to some shade with ample moisture Drought tolerance - High
6.	Carnation (Flower)		Height – 6 to 8.5cm Planting time – Spring usually April Soil type – Deep, sandy loam Exposure – some hours of full sun Moist
7.	Agapanthus Africanus (Flower)		Perennial ; Evergreen Leaves Flowers in early to midsummer Thrives in full sun, fertile, moist & well drained soil Water needs – Average Maintenance – Low Soil type – Chalk, Clay, loam, Sand
8.	Daisy (Flower)		Perennial Planting Time – Spring Flowering Period – March to Nov. Location – Sunny to full sun Height - 10 to 15cm Soil type – moderately moist, nutrient rich & Humic Soil
9.	Begonia (Flower)		Large double blooms and Comes in many colors. Do best in climates with little wind. Plant in full sun or partial shade. Needs moist well drained soil
10.	Primrose (Flower)		Partial shade, Moist soil, and Cool conditions Plant in full sun Needs well-drained soil
11.	Parthenocissus Tricuspidata (Creeper)		Growth rate – Fast Climate – Moderate Soil Type – Loam Drought Tolerance – High Exposure - Full sun Active growing season – Summer & Fall

Grading Map

As it is shown in the figure there is no contour crossing the site. The site is flat and there is no as such effort needed to grade the site.

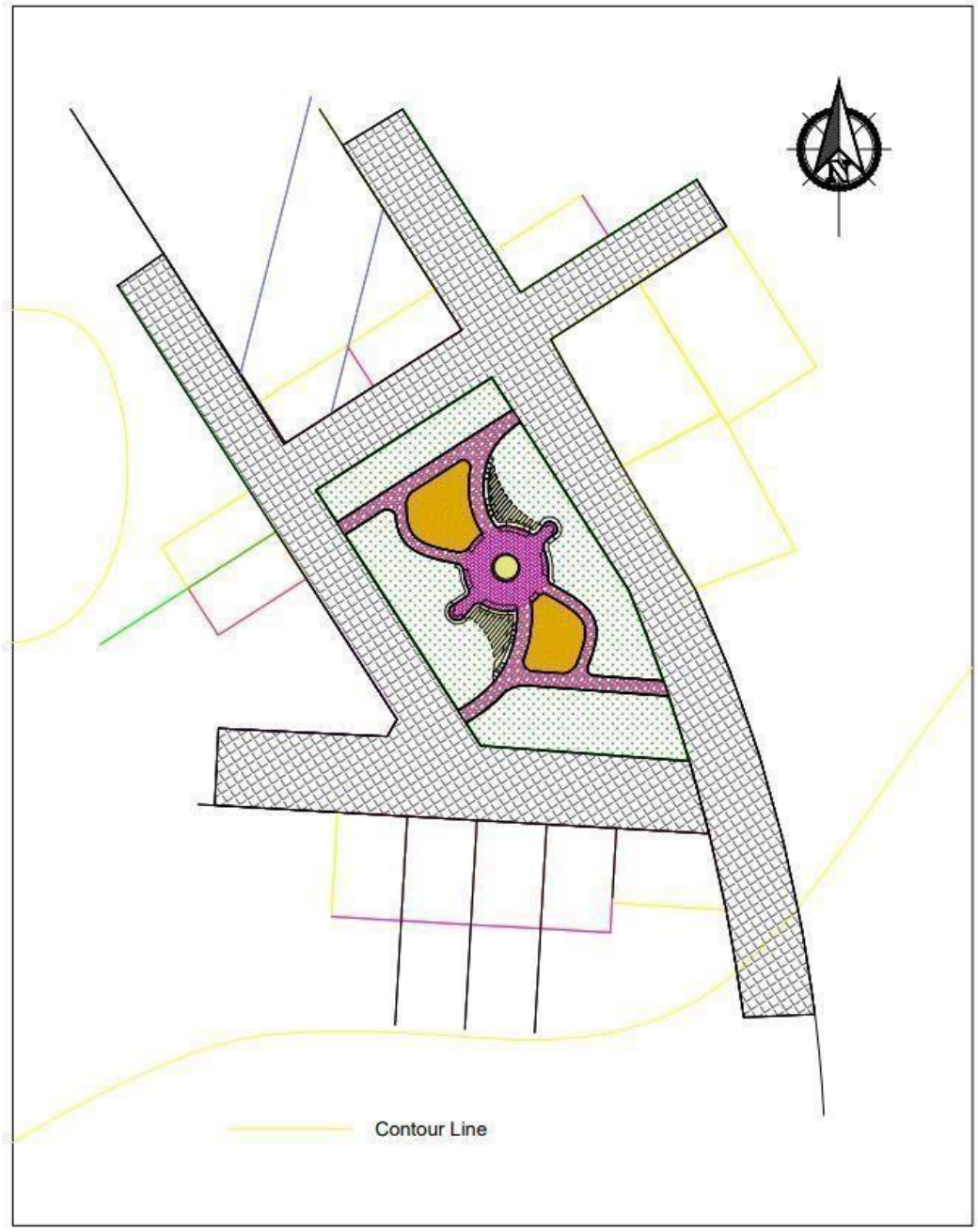


Figure 44: Grading Plan

Water flow Direction

Figure 45: Water Flow Direction

Pervious Vs Impervious surfaces

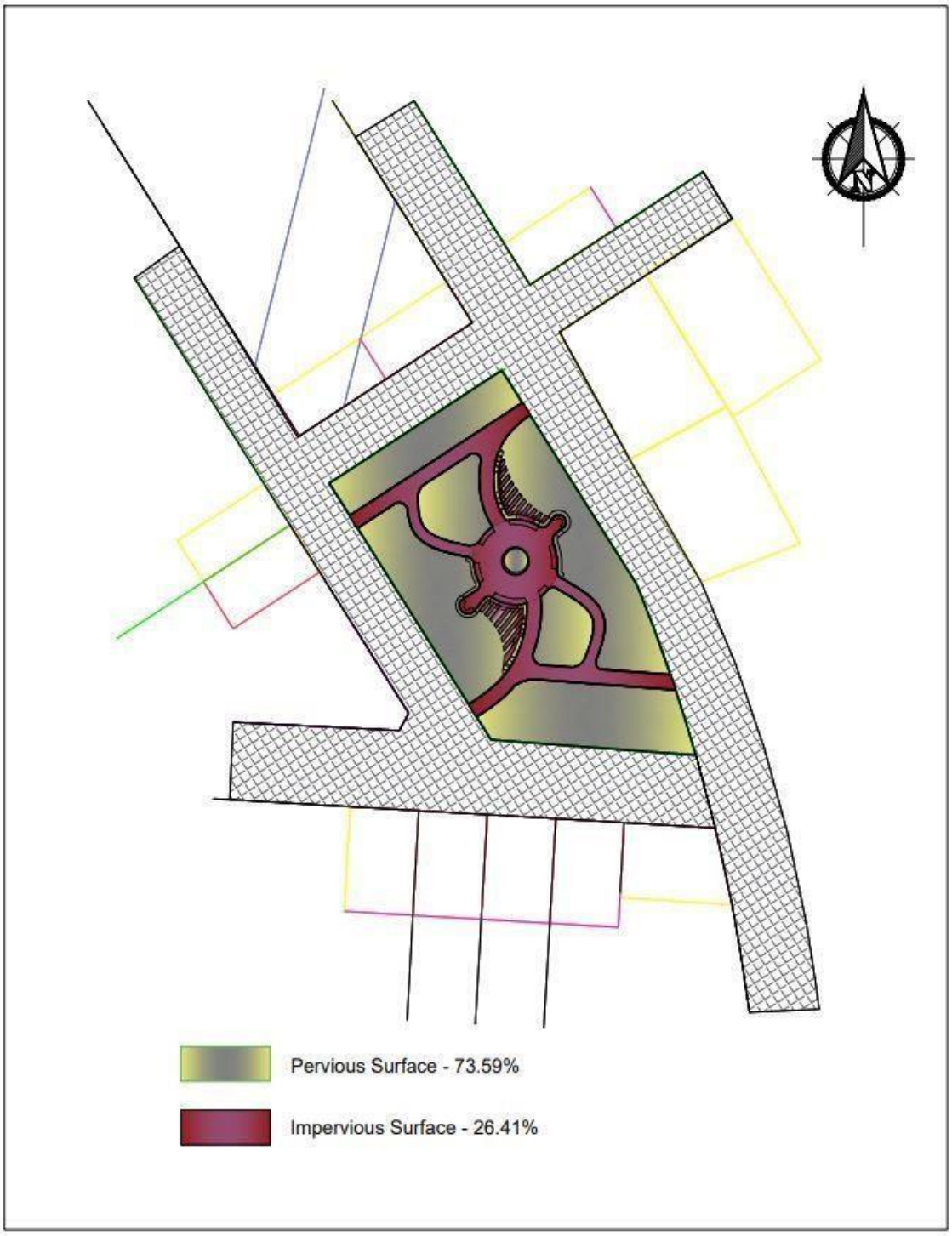


Figure 46: Pervious Vs Impervious Surfaces

3Ds

Figure 47: Seating + Gathering Space

Figure 48: Outdoor Gym

Figure 49: Children Playground

Figure 50: Gathering Space

Figure 51: 3D Perspective of the Park

Figure 52: Reading Space

Figure 53: Children Playground

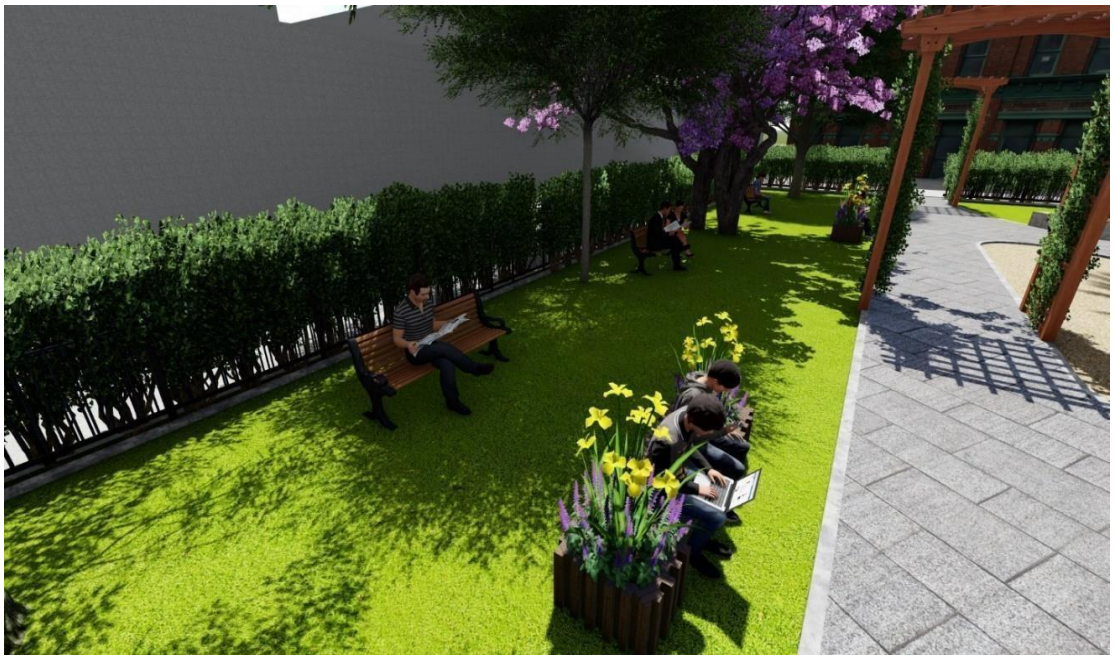


Figure 54: Reading Space

Figure 55: Walk Way

Figure 56: Top View of the Park

Summarized Conceptual Framework

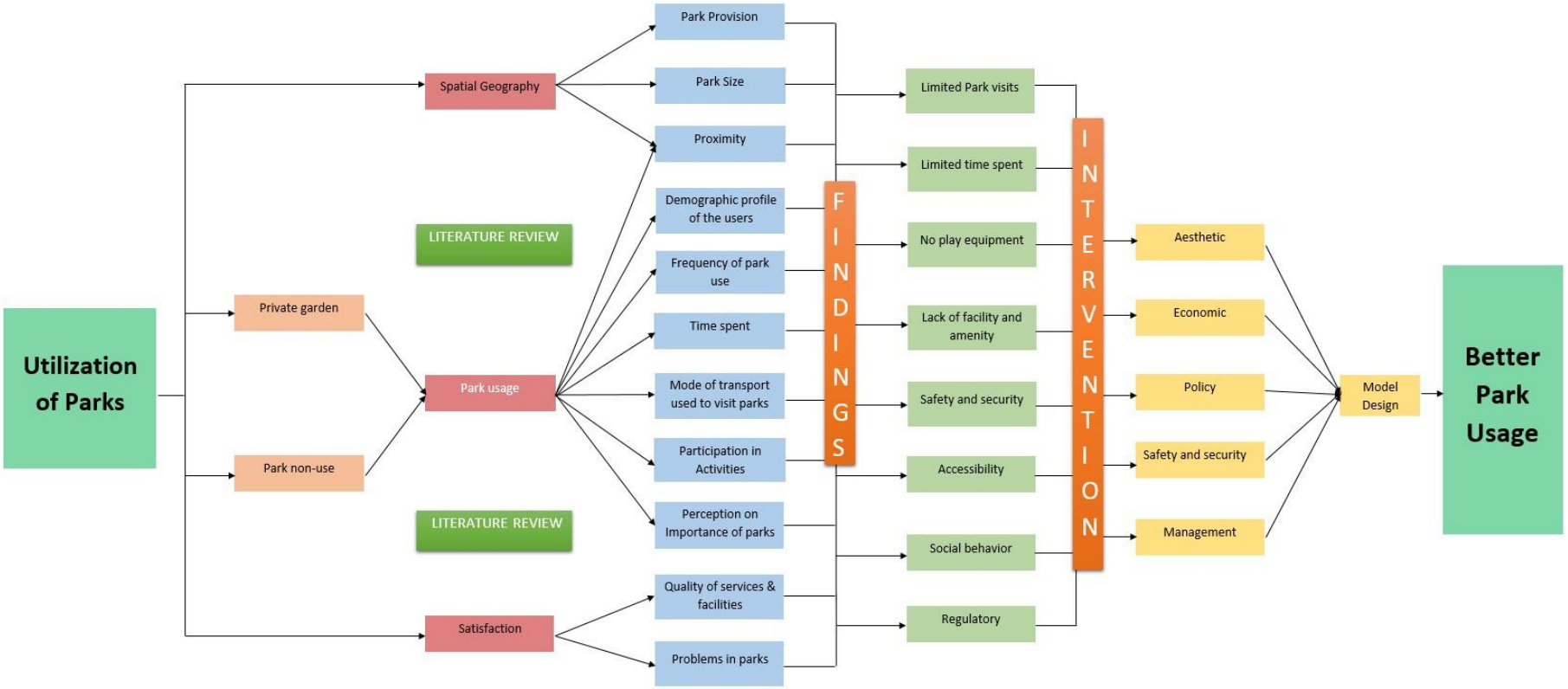


Figure 57: Summarized Conceptual Framewo

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Appendix

Appendix 1 – Questionnaire for the community

INSTITUTE: Addis Ababa University, EiABC (Ethiopian Institute of architecture and building construction)
CHAIR: Chair of Landscape Architecture
PROGRAM: MSC. Degree in Landscape Architecture
RESEARCHER: Mrs. FEBEN KASSAHUN
LOCATION: ETHIOPIA, ADDIS ABABA
RESEARCH TOPIC: "Utilization of Neighborhood Parks for Social Interaction And Recreation"
DATE: .....

A: GENERAL INFORMATION	
A1. What is the name of your suburb/area of residence:	
A2. What is your gender?	F ☐ M ☐
A3. In which group of age are you?	Below 12 ☐ 12-17 ☐ 18 - 30 ☐ 31-50 ☐ Above 50 ☐
A4. How long have you stayed in this suburb/area of residence?	☐☐ years
A5. Do you have a private garden?	Yes ☐ No ☐
A6. What is the number of household occupants?	☐☐

A7. Where do children and adults of your household usually spend their outdoor recreational time? (More than one option is possible)

Place	**Children**	**Adults**		**Children**	**Adults**
At a youth center	☐	☐	In your neighborhood park	☐	☐
In the streets surrounding your house	☐	☐	Open pieces of land surrounding your house	☐	☐
At sports grounds	☐	☐	Other community parks or conservation areas located in other neighborhoods/suburbs	☐	☐
At your home	☐	☐			

A8. How would you evaluate the value of Neighborhood parks?

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

B: PATTERNS OF COMMUNITY/NEIGHBOURHOOD PARK USE

B1. How far is the nearest neighborhood park from your house, **in distance or time**, in other words how long does it take children and adults in your household to walk there?

0-5 minutes 6-10 minutes 11-15 minutes More than 15 minutes

OR

0-50 meters ☐ 51-100 meters ☐ 101-200 meters ☐
201-300 meters ☐ 301-400 meters ☐ More than 400 meters ☐

B2: How many days in a week, do children and adults, in your household, visit the neighborhood park? **(If you answer „never", please answer only question B2 (1). If you did not answer „never" then complete the whole questionnaire, except question B2 (1)).**

	1 Day	**2 Days**	**3 Days**	**4 Days**	**5 Days**	**6 Days**	**7 Days**	**Never**
Children	☐	☐	☐	☐	☐	☐	☐	☐
Adults	☐	☐	☐	☐	☐	☐	☐	☐

B2 (1). Why do children and adults in your household not use your neighborhood parks? **(Only respondents who answered never in question B2 must answer this question)**

Reasons for non-use: Mark with a X. (More than one option is possible).

Because we visit other neighborhood	The park is not big enough to do

parks or district parks or conservation areas	☐	activities in that are preferred by you and your family	☐
Conflict between park users	☐	There is not enough trees and nature around	☐
It is closed most of the time	☐	Too many high grown trees/plants creating disclosed/invisible areas	☐
Lack of facilities in the park		Lack of security and safety	☐
Fear of sexual attacks in the neighborhood park	☐	Lack of maintenance of the park	☐
Homeless and 'strange people' also occupy the neighborhood park	☐	Pet problems	☐
I am disabled	☐	Too little time available	☐
It is too far away	☐	Other (Specify)	

B3: On average, how much time do children and adults in your household spend at the neighborhood park, **per visit**?

	0-15 minutes	**16-30 minutes**	**31-60 minutes**	**More than 1 hour**
Children	☐	☐	☐	☐
Adults	☐	☐	☐	☐

C: ACTIVITIES DONE IN COMMUNITY/NEIGHBOURHOOD PARKS

C1 In order to ensure that community parks provide residents with adequate facilities, which will suit their needs, it is important to know activities that residents, engage in neighborhood parks. (Mark with an X. More than one option is possible).

Activities people do in the community/NPs	**Children***	**Adults***		**Children***	**Adults***
Accompanying children to playground	☐	☐	Taking in the fresh air / Escape from the city	☐	☐
Dating/Showing affection	☐	☐	Sitting/Relaxing/Rest	☐	☐
Cycle	☐	☐	Sports (examples: soccer, cricket, rugby, tennis, golf)	☐	☐
Exercising	☐	☐	Run/Jog	☐	☐
Observing wildlife and nature/plants	☐	☐	Talking/Socializing	☐	☐
Play Frisbee or with other toys	☐	☐	Watch people	☐	☐
Play on play equipment provide	☐	☐	Viewing the landscape/environment	☐	☐
Play/Play games (such as hide and seek)	☐	☐	Walk	☐	☐
Working/Studying	☐	☐	Walk the dog	☐	☐

***Children**: Children in your household **Adults**: Adults in your household

D: Management/maintenance of community/neighborhood parks" facilities

D1. Please rate the quality of the services, amenities and facilities provided in the community/neighborhood parks that children and adults in your household visit in your neighborhood.

(Mark with a X. If your answer is average, poor or very bad, or always, please specify the reasons for the answer in the space provided).						
Services / Amenities / Facilities provided in neighborhood parks that you and members of your household use	**Rating (Only one rating per item)**					**Motivate your answer if it is average, poor or very bad**
	Excellent	**Good**	**Average**	**Poor**	**Very bad**	
Accessibility/Proximity to your community/neighborhood park	☐	☐	☐	☐	☐	
General cleanliness	☐	☐	☐	☐	☐	
Overall maintenance of the parks	☐	☐	☐	☐	☐	
	☐	☐	☐	☐	☐	
Personal safety and security	☐	☐	☐	☐	☐	
Play equipment for children	☐	☐	☐	☐	☐	
Seats/benches/tables	☐	☐	☐	☐	☐	
Shaded areas	☐	☐	☐	☐	☐	
State of the grass/trees/plants	☐	☐	☐	☐	☐	
Overall evaluation	☐	☐	☐	☐	☐	
Nuisance in the park	**Rating (Only one rating per item)**					Motivate your answer if you choose always (explain why you say so)
	Always		**Seldom**		**Never**	
Dogs as a nuisance	☐		☐		☐	
Presence of homeless/drug users/drunks	☐		☐		☐	
Throw waste into the Neighborhood park	☐		☐		☐	
Youngsters as a nuisance	☐		☐		☐	

D2. What facilities/amenities would children and adults in your household like to add to neighborhood parks in

your neighborhood in order to ensure better use? (Specify facilities):

.....

Reasons:.....

D3. Any further comments or suggestions about neighborhood park usage in your neighborhood:

.....

.....

THANK YOU VERY MUCH FOR YOUR PATICIPATION!

Appendix 2 – Questionnaire for the committee

INSTITUTE: Addis Ababa University, EiABC (Ethiopian Institute of architecture and building construction)
CHAIR: Chair of Landscape Architecture
PROGRAM: MSC. Degree in Landscape Architecture
RESEARCHER: Mrs. FEBEN KASSAHUN
LOCATION: ETHIOPIA, ADDIS ABABA
RESEARCH TOPIC: "Utilization of Neighborhood Parks for Social Interaction And Recreation"
DATE: .....

A: GENERAL INFORMATION

A1. What is the name of your suburb/area of residence:	
A2. What is your gender?	F ☐ M ☐
A3. In which group of age are you?	Below 12 ☐ 12-17 ☐ 18 - 30 ☐ 31-50 ☐ Above 50 ☐
A4. How long have you stayed in this suburb/area of residence?	☐☐ years
A5. Do you have a private garden?	Yes ☐ No ☐
A6. What is the number of household occupants?	☐☐

A7. Where do children and adults of your household usually spend their outdoor recreational time? (More than one option is possible)

Place	Children	Adults		Children	Adults
At a youth center	☐	☐	In your neighborhood park	☐	☐
In the streets surrounding your house	☐	☐	Open pieces of land surrounding your house	☐	☐
At sports grounds	☐	☐	Other community parks or conservation areas located in other neighborhoods/suburbs	☐	☐
At your home	☐	☐			

A8. How would you evaluate the value of Neighborhood parks?

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

B: PATTERNS OF COMMUNITY/NEIGHBOURHOOD PARK USE

B1. How far is the nearest neighborhood park from your house, **in distance or time**, in other words how long does it take children and adults in your household to walk there?

0-5 minutes 6-10 minutes 11-15 minutes More than 15 minutes

OR

0-50 meters ☐ 51-100 meters ☐ 101-200 meters ☐
201-300 meters ☐ 301-400 meters ☐ More than 400 meters ☐

B2: How many days in a week, do children and adults, in your household, visit the neighborhood park? **(If you answer „never", please answer only question B2 (1). If you did not answer „never" then complete the whole questionnaire, except question B2 (1)).**

	1 Day	2 Days	3 Days	4 Days	5 Days	6 Days	7 Days	Never
Children	☐	☐	☐	☐	☐	☐	☐	☐
Adults	☐	☐	☐	☐	☐	☐	☐	☐

B2 (1). Why do children and adults in your household not use your neighborhood parks? **(Only respondents who answered never in question B2 must answer this question)**

Reasons for non-use: Mark with a X. (More than one option is possible).

Because we visit other neighborhood	The park is not big enough to do

parks or district parks or conservation areas	☐	activities in that are preferred by you and your family	☐
Conflict between park users	☐	There is not enough trees and nature around	☐
It is closed most of the time	☐	Too many high grown trees/plants creating disclosed/invisible areas	☐
Lack of facilities in the park		Lack of security and safety	☐
Fear of sexual attacks in the neighborhood park	☐	Lack of maintenance of the park	☐
Homeless and 'strange people' also occupy the neighborhood park	☐	Pet problems	☐
I am disabled	☐	Too little time available	☐
It is too far away	☐	Other (Specify)	

B3: On average, how much time do children and adults in your household spend at the neighborhood park, **per visit**?

	0-15 minutes	**16-30 minutes**	**31-60 minutes**	**More than 1 hour**
Children	☐	☐	☐	☐
Adults	☐	☐	☐	☐

C: ACTIVITIES DONE IN COMMUNITY/NEIGHBOURHOOD PARKS

C1 In order to ensure that community parks provide residents with adequate facilities, which will suit their needs, it is important to know activities that residents, engage in neighborhood parks. (Mark with an X. More than one option is possible).

Activities people do in the community/NPs	**Children***	**Adults***		**Children***	**Adults***
Accompanying children to playground	☐	☐	Taking in the fresh air / Escape from the city	☐	☐
Dating/Showing affection	☐	☐	Sitting/Relaxing/Rest	☐	☐
Cycle	☐	☐	Sports (examples: soccer, cricket, rugby, tennis, golf)	☐	☐
Exercising	☐	☐	Run/Jog	☐	☐
Observing wildlife and nature/plants	☐	☐	Talking/Socializing	☐	☐
Play Frisbee or with other toys	☐	☐	Watch people	☐	☐
Play on play equipment provide	☐	☐	Viewing the landscape/environment	☐	☐
Play/Play games (such as hide and seek)	☐	☐	Walk	☐	☐
Working/Studying	☐	☐	Walk the dog	☐	☐

***Children**: Children in your household **Adults**: Adults in your household

D: Management/maintenance of community/neighborhood parks" facilities

D1. Please rate the quality of the services, amenities and facilities provided in the community/neighborhood parks that children and adults in your household visit in your neighborhood.

(Mark with a X. If your answer is average, poor or very bad, or always, please specify the reasons for the answer in the space provided).

Services / Amenities / Facilities provided in neighborhood parks that you and members of your household use	**Rating (Only one rating per item)** Excellent	Good	Average	Poor	Very bad	**Motivate your answer if it is average, poor or very bad**
Accessibility/Proximity to your community/neighborhood park	☐	☐	☐	☐	☐	
General cleanliness	☐	☐	☐	☐	☐	
Overall maintenance of the parks	☐	☐	☐	☐	☐	
	☐	☐	☐	☐	☐	
Personal safety and security	☐	☐	☐	☐	☐	
Play equipment for children	☐	☐	☐	☐	☐	
Seats/benches/tables	☐	☐	☐	☐	☐	
Shaded areas	☐	☐	☐	☐	☐	
State of the grass/trees/plants	☐	☐	☐	☐	☐	
Overall evaluation	☐	☐	☐	☐	☐	

Nuisance in the park	**Rating (Only one rating per item)** Always	Seldom	Never	Motivate your answer if you choose always (explain why you say so)
Dogs as a nuisance	☐	☐	☐	
Presence of homeless/drug users/drunks	☐	☐	☐	
Throw waste into the Neighborhood park	☐	☐	☐	
Youngsters as a nuisance	☐	☐	☐	

D2. What facilities/amenities would children and adults in your household like to add to neighborhood parks in your neighborhood in order to ensure better use? (Specify facilities):

.....

Reasons:.....

D3. Any further comments or suggestions about neighborhood park usage in your neighborhood:

.....

.....

Appendix 3 – Interview Questions only the Committee Members

Interview Questions only for committee members

1. Is the neighborhood park developed in your surrounding? If your answer is no, why?

   ……

   ……

2. How do you evaluate the participation of the community?

   ……

   ……

3. What are the challenges you are facing in the development of neighborhood parks?

   ……

   ……

4. Is the Woreda administrative supportive? What kind of support do you expect from the Woreda administrative?

   ……

   ……

5. How do you evaluate the agreement made with the Woreda Administrative?

   ……

   ……

6. Are the agreement and the guidance from Woreda workable?

   ……

   ……

THANK YOU VERY MUCH FOR YOUR PATICIPATION!

Appendix 4 – Focused group discussion Questions for Woreda Administrative

INSTITUTE: Addis Ababa University, EiABC (Ethiopian Institute of architecture and building construction)
CHAIR: Chair of Landscape Architecture
PROGRAM: MSC. Degree in Landscape Architecture
RESEARCHER: Mrs. FEBEN KASSAHUN
LOCATION: ETHIOPIA, ADDIS ABABA
RESEARCH TOPIC: "Utilization of Neighborhood Parks for Social Interaction And Recreation"
DATE: .....

Focused group discussion questions for Woreda administrative

1) Explain what the organization of the office looks like?

.....
.....

(2) Is there a team that supports the development of neighborhood parks?
.....
.....
.....
(3) Is there any Woreda level regulation on the neighborhood parks development?
.....
.....
.....
(4) What are the supports provided to the community on neighborhood parks development?
.....
.....
.....
(5) Are the teams in supporting the development of neighborhood parks qualified?
.....
.....
(6) What is your perspective on the development of neighborhood parks?
.....
.....
.....
(7) What are the challenges you are facing in the development of neighborhood parks
.....
.....

THANK YOU VERY MUCH FOR YOUR PATICIPATION!

Appendix 5 – Checklist criteria of the Neighborhood Parks

		Representation	Explanation
1	Developed	Dev.	Is the site Fenced, clean and have seats, Shading Trees?
2	Under development	U Dev.	Include two or more of the above
3	Not Developed	N Dev.	No Development Work (May be only Fenced)
4	Location of parks	Loc.	Is the NP surrounded by residences?
5	General cleanliness	Cln.	Is the site clean?
6	Fenced	Fen.	Is the site Fenced?
7	Seats/benches/tables	Seat	Is there any seat/bench/table in the NP?
8	Shading Trees	ShTr.	Is there Shading trees in the NP?
9	Ornamental Plants	OPlnt.	Are there ornamental plants in the NP?
10	Play equipment for children	PlEq.	Is there any play equipment for children?
11	Walkway	Ww.	Is there a Path for walking in the park?

Appendix 6 – Current status checklist-based assessment of the Neighborhood Parks in each village

Woreda 7 village 1 Green areas

No.	Name	Dev.	U Dev.	N Dev.	Loc.	Cln.	Fen.	Seat	ShTr.	OPlnt.	PlEq.	Ww.
1.	Selam	X	√	X	√	√	√	X	X	X	X	X
2.	Mebrat Gan	X	√	X	√	√	√	X	√	X	X	X
3.	Fikir	X	√	X	√	√	√	X	X	X	X	X
4.	Wuha gan	X	X	V	√	√	X	X	X	X	X	X
5.	Yabebal	X	√	X	√	√	√	X	X	X	X	X
6.	Family	X	X	√	√	√	√	X	X	X	X	X
7.	Yetebaberut	X	√	X	√	√	√	X	√	X	X	X
8.	Fikire selam	X	√	X	√	√	√	X	√	X	X	X
9.	Anefo mench 2	X	√	X	√	√	√	X	√	X	X	X
10.	Meskerem	X	√	X	√	√	√	X	√	X	X	X
11.	Mercha tabya	X	√	X	√	√	√	X	√	X	X	X
12.	Tsegereda	X	√	X	√	√	√	X	√	X	X	X
13.	Heber	X	√	X	√	√	√	X	√	X	X	X

Woreda 7 village 2 Green areas

No.	Name	Dev.	U Dev.	N Dev.	Loc.	Cln.	Fen.	Seat	ShTr.	OPlnt.	PlEq.	Ww.
1.	Block 8, 1	X	√	X	√	√	√	X	/	X	X	X
2.	Block 8, 2	X	√	X	√	√	√	X	√	X	X	X
3.	Hedase	X	√	X	√	√	√	X	√	X	X	X
4.	Selam	X	√	X	√	√	√	X	/	X	X	X
5.	Anfo mench,1	X	√	X	√	√	√	X	/	X	X	X
6.	Gojo bet	X	X	√	√	X	X	X	X	X	X	X
7.	Anfo genet	X	√	X	√	√	X	X	√	X	X	X
8.	Tebo mamrcha	X	√	X	√	√	X	X	√	X	X	X
9.	Beza	X	√	X	√	√	√	X	√	X	X	X

10.	Gebeat	X	√	X	√	√	√	X	√	X	X	X
11.	Bruhtesfa	X	√	X	√	√	√	X	√	X	X	X
12.	Shola	X	√	X	√	√	√	X	√	X	X	X
13.	Chefe	X	√	X	√	√	√	X	/	X	X	X
14.	Beemnet	X	√	X	√	√	√	X	/	X	X	X

Woreda 7 village 3 Green areas

No.	Name	Dev.	U Dev.	N Dev.	Loc.	Cln.	Fen.	Seat	ShTr.	OPlnt.	PlEq.	Ww.
1.	Zebu	X	√	X	√	√	X	X	√	X	X	X
2.	A.A.U	X	√	X	√	√	√	X	√	X	X	X
3.	Wubet	X	√	X	√	√	√	X	√	X	X	X
4.	Addis 84	X	√	X	√	√	√	X	√	√	X	X
5.	Selam	X	√	X	√	√	√	X	√	X	X	X
6.	Top view	X	√	X	√	√	√	X	√	X	X	X
7.	Bet – wubet	X	√	X	√	√	√	X	√	X	X	X
8.	Fikir	X	√	X	√	√	√	X	√	X	X	X
9.	Rom	X	√	X	√	√	√	X	√	√	X	X
10.	Debubawi Zone	X	√	X	√	√	√	√	√	√	X	X
11.	Fikir beandnet	X	√	X	√	√	√	√	√	X	X	X
12.	Selam genet	X	√	X	√	√	√	√	√	X	X	X
13.	Block 26/1, 1	X	√	X	√	√	√	X	√	√	X	√
14.	Block 26/1, 2	X	√	X	√	√	X	X	√	√	X	X
15.	Mid hill	X	√	X	√	√	X	X	√	X	X	X
16.	Athlete	√	X	X	√	√	√	√	√	√	X	√

Woreda 7 village 4 Green areas

No.	Name	Dev.	U Dev.	N Dev.	Loc.	Cln.	Fen.	Seat	ShTr.	OPlnt.	PlEq.	Ww.
1.	Obama	X	√	X	√	√	X	X	√	√	X	√
2.	Sayt Armenia	X	√	X	√	√	√	X	√	X	X	X
3.	Timkete bahir	X	√	X	√	√	√	X	√	√	X	√
4.	Rediet	X	√	X	√	√	√	X	√	√	X	X
5.	marile	X	√	X	√	√	√	X	√	X	X	X
6.	Eden	√	X	X	√	√	√	√	√	X	X	X
7.	Fegeg bandinet	X	√	X	√	√	√	X	√	X	X	X

Woreda 7 village 5 Green areas

No.	Name	Dev.	U Dev.	N Dev.	Loc.	Cln.	Fen.	Seat	ShTr.	OPlnt.	PlEq.	Ww.
1.	Hiwot medhanit	X	√	X	√	√	√	X	√	X	X	X
2.	Hiwot	X	√	X	√	√	√	X	√	X	X	X
3.	Fikir	X	√	X	√	√	√	X	√	X	X	X
4.	Betesfa ltelel	X	√	X	√	√	√	X	√	X	X	X
5.	Betel pepsi	X	√	X	√	√	√	X	√	X	X	X
6.	Block 34	X	√	X	√	√	√	X	√	√	X	X
7.	Selam	X	√	X	√	√	√	X	√	X	X	X
8.	Perl garden	X	√	X	√	√	√	X	√	X	X	X
9.	Afar betoch ga	X	√	X	√	√	X	X	√	√	X	√
10.	IN front of wuha tanker	X	√	X	√	√	√	X	X	X	X	X

Woreda 7 village 6 Green areas

No.	Name	Dev.	U Dev.	N Dev.	Loc.	Cln.	Fen.	Seat	ShTr.	OPlnt.	PlEq.	Ww.
1.	Tos amba	X	√	X	√	√	√	X	√	X	X	X
2.	Bete selam	X	√	X	√	√	√	X	√	X	X	X
3.	Fikir	X	√	X	√	√	X	X	√	X	X	X
4.	Selam	√	X	X	√	√	√	√	√	X	X	√
5.	Hidase	√	X	X	√	√	√	√	√	√	√	√
6.	Gbe terara	X	√	X	√	√	√	X	√	X	X	X
7.	Fikir	X	√	X	√	√	√	X	√	X	X	X
8.		X	X	√	√	√	X	X	√	X	X	X
9.	Nurana habib yegara hintsa	X	√	X	√	√	√	X	/	√	X	X
10.	Pegases nur gara hintsa	X	X	√	√	√	√	X	√	X	√	X

Woreda 7 village 7 Green areas

No.	Name	Dev.	U Dev.	N Dev.	Loc.	Cln.	Fen.	Seat	ShTr.	OPlnt.	PlEq.	Ww.
1.	Tenadam	X	√	X	√	√	√	X	√	X	X	X
2.	Beg tera	X	√	X	√	X	X	X	X	X	X	X
3.	Baby	X	√	X	√	√	√	X	√	X	X	X
4.	Techno pol	X	√	X	√	√	√	X	√	X	X	X

Woreda 7 village 8 Green areas

No.	Name	Dev.	U Dev.	N Dev.	Loc.	Cln.	Fen.	Seat	ShTr.	OPlnt.	PlEq.	Ww.
1.	Jacaranda	X	√	X	√	√	√	X	√	X	X	X
2.	Jacaranda no2	X	√	X	√	X	√	X	/	X	X	X

Woreda 7 village 9 Green areas

No.	Name	Dev.	U Dev.	N Dev.	Loc.	Cln.	Fen.	Seat	ShTr.	OPlnt.	PlEq.	Ww.
1.	Meskel fok	X	√	X	√	√	√	X	√	X	X	X
2.	Abay	X	√	X	√	√	√	X	√	X	X	X
3.	3 LG	X	√	X	√	√	√	X	√	X	X	X
4.	Enon	X	√	X	√	√	√	X	√	X	X	X
5.	Grar	X	√	X	√	√	√	X	√	√	X	X
6.	Selam	X	√	X	√	√	√	X	√	X	X	X

Appendix 7 – Stratified list of the Neighborhood Parks

Village	Developed	Under Development	Not Developed
		Selam	Wuha gan
		Mebrat Gan	Family
		Fikir	
		Yabebal	
		Yetebaberut	
1		Fikire selam	
		Anefo mench 2	
		Meskerem	
		Mercha tabya	
		Tsegereda	
		Heber	
		Block 8, 1	Gojo bet
		Block 8, 2	
		Hedase	
		Selam	

2		Anfo mench,1	
		Anfo genet	
		Tebo mamrcha	
		Beza	
		Gebeat	
		Bruhtesfa	
		Shola	
		Chefe	
		Beemnet	
	Athlete	Zebu	
		A.A.U	
		Wubet	
		Addis 84	

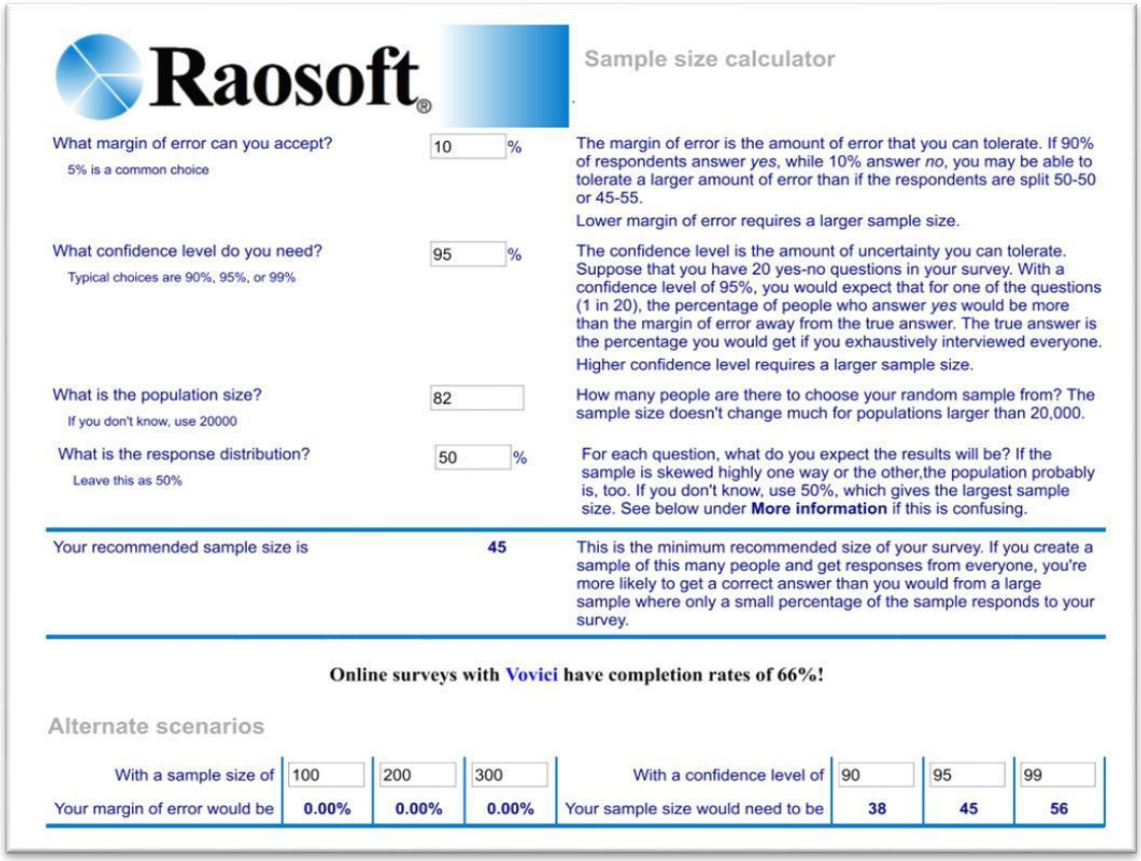
3		Selam	
		Top view	
		Bet – wubet	
		Fikir	

		Rom	
		Debubawi Zone	
		Fikir beandnet	
		Selam genet	
		Block 26/1, 1	
		Block 26/1, 2	
		Mid hill	
4	Eden	Obama	
		Sayt Armenia	
		Timkete bahir	
		Rediet	
		marile	
		Fegeg bandinet	
5		Hiwot medhanit	
		Hiwot	
		Fikir	
		Betesfa ltelel	

		Betel pepsi	
		Block 34	
		Selam	
		Perl garden	
		Afar betoch ga	
		IN front of wuha tanker	
6	Selam	Tos amba	8
	Hidase	Bete selam	Pegases hintsa
		Fikir	
		Gibe Terara	
		Fikir	

7		Nurana habib yegara hintsa	
		Tenadam	Beg tera
		Baby	
		Techno pol	
8		Jacaranda	
		Jacaranda no2	
9		Meskel fok	
		Abay	
		3 LG	
		Enon	
		Grar	
		Selam	
TOTAL	4/82	72/82	6/82
	6.56%	91.80%	1.64%

Appendix 8 – Sample size calculator



Raosoft®

Sample size calculator

What margin of error can you accept? 5% is a common choice	10 %	The margin of error is the amount of error that you can tolerate. If 90% of respondents answer *yes*, while 10% answer *no*, you may be able to tolerate a larger amount of error than if the respondents are split 50-50 or 45-55. Lower margin of error requires a larger sample size.
What confidence level do you need? Typical choices are 90%, 95%, or 99%	95 %	The confidence level is the amount of uncertainty you can tolerate. Suppose that you have 20 yes-no questions in your survey. With a confidence level of 95%, you would expect that for one of the questions (1 in 20), the percentage of people who answer *yes* would be more than the margin of error away from the true answer. The true answer is the percentage you would get if you exhaustively interviewed everyone. Higher confidence level requires a larger sample size.
What is the population size? If you don't know, use 20000	82	How many people are there to choose your random sample from? The sample size doesn't change much for populations larger than 20,000.
What is the response distribution? Leave this as 50%	50 %	For each question, what do you expect the results will be? If the sample is skewed highly one way or the other,the population probably is, too. If you don't know, use 50%, which gives the largest sample size. See below under **More information** if this is confusing.
Your recommended sample size is	**45**	This is the minimum recommended size of your survey. If you create a sample of this many people and get responses from everyone, you're more likely to get a correct answer than you would from a large sample where only a small percentage of the sample responds to your survey.

Online surveys with Vovici have completion rates of 66%!

Alternate scenarios

With a sample size of	100	200	300	With a confidence level of	90	95	99
Your margin of error would be	**0.00%**	**0.00%**	**0.00%**	Your sample size would need to be	**38**	**45**	**56**

Appendix 9 – City Data

No.		2006	2016	Change	%Change
1.	Population	2,829,551	3,243,473	413,922	14.63
2.	City Area Total (m^2)	519662585.2	519342567.6	0	0.00
3.	City Area Total (ha)	51966.25852	51934.25676	0	0.00

4.	Number of Parks	141	769	628	445.39
5.	Nbrhd Park Area (m^2)	259272	1242556	983284	379.25
6.	Nbrhd Park Area (ha)	25.93	124.26	98.33	379.25
7.	Area/Cap ($m^{2/}$/cap)	0.09	0.38	0.29	318.09
8.	Area/Cap (ha/cap)	0.0000092	0.0000383	0.0000291	318.09
9.	% of City Area	0.050	0.239	0.189	379.54

Appendix 10 – 2006 Data at Sub-city level

		2006

No.	Sub Cities	Area (m^2)	Population	Park Area (m^2)	Park Area (ha)	% of Sub-city area that is Nbrhd Park	% of Total Park Area	Park Density ($m^{2/}$/capita)
1.	Akaki Kality	124,038,187	181,270	21654.64	2.17	0.02	8.35	0.119
2.	Nefas Silk	58,217,637	316,283	7167.84	0.71	0.01	2.76	0.023
3.	Kolfe Keranyo	62,934,356	428,895	37128.43	3.71	0.06	14.32	0.087
4.	Gulele	31,191,020	267,624	1538.94	0.15	0.00	0.59	0.006
5.	Lideta	10,991,908	201,713	0	0.00	0.00	0.00	0.000
6.	Kirkos	14,646,626	221,234	0	0.00	0.00	0.00	0.000
7.	Arada	9,498,638	211,501	0	0.00	0.00	0.00	0.000

8.	Addis Ketema	7,385,246	255,372	0	0.00	0.00	0.00	0.000
9.	Yeka	82,122,848	364,664	57521.87	5.75	0.7	22.19	0.166
10.	Bole	118,492,366	398,995	134260.71	13.43	0.11	51.78	0.336
11.	Total	519,518,832	2,829,551	259272.43	25.93	0.05	100.00	0.092

Appendix 11 – 2016 Data at Sub-city level

No.	Sub Cities	2016						
		Area (m^2)	Population	Park Area (m^2)	Park Area (ha)	% of Sub-city area that is Nbrhd Park	% of Total Park Area	Park Density ($m^{2/}$/capita)
1.	Akaki Kality	124,038,187	229,885	4425988.22	44.26	0.36	35.65	1.925
2.	Nefas Silk	58,217,637	401,897	108480.1	10.85	0.19	8.74	0.270

3.	Kolfe Keranyo	62,934,356	543,767	153504.83	15.35	0.24	12.3 6	0.282
4.	Gulel e	31,191,020	276,887	1673.55	0.17	0.01	0.13	0.006
5.	Lideta	10,991,908	211,785	0	0.00	0.00	0.00	0.000
6.	Kirkos	14,646,626	204,604	0	0.00	0.00	0.00	0.000
7.	Arada	9,498,638	212,012	0	0.00	0.00	0.00	0.000
8.	Addis Kete ma	7,385,246	218,187	0	0.00	0.00	0.00	0.000
9.	Yeka	82,122,848	497,624	65854.32	6.59	0.08	5.30	0.132
10.	Bole	118,492,366	446,825	469520.27	46.95	0.40	37.8 1	1.051
11.	Total	519,518,832	3,243,473	124163 1.3	124.16	0.24	100. 00	0.383

Appendix 12 – Traced percent of change from 2006 to 2016

No.	Sub cities	% Change			
		Population	Park Area (m^2)	Park Area (ha)	Park Density ($m^{2/}$/capita)
1.	Akaki Kality	26.82	1943.90	1943.90	1511.66
2.	Nefas Silk	27.7	1413.43	1413.43	1091.03
3.	Kolfe Keranyo	26.78	313.44	313.44	226.10
4.	Gulele	3.46	8.75	8.75	5.11
5.	Lideta	4.99	-	-	-
6.	Kirkos	-7.52	-	-	-
7.	Arada	0.24	-	-	-
8.	Addis Ketema	-14.56	-	-	-
9.	Yeka	43.55	14.49	14.49	-20.24
10.	Bole	11.99	249.71	249.71	212.27
11.	Total	14.63	378.89	378.89	317.78

Appendix 13 – Agreement document

የአረንጓዴ ቦታ ለአልሚዎች ለማስተላለፍ የተደረገ ውል

ስምምነት

1. ይህውልዛሬ ----------ዓ.ም በአዲስ አበባ ከተማ ሁለቱ ተዋዋይ ወገኖች እና እማኞች በተገኙበት በነፃ ፈቃድና ስምምነት ተፈረሟል። ውል ሰጭ የተፋሰስና አርንጓዴ አካባቢዎች ልማትና አስተዳደር ጽ/ቤት

አድራሻ ---------- ክ/ከተማ----------ወረዳ----------

የመ.ሳ---------- የፋክስ ቁጥር ----------የስልክ ቁጥር----------

ውል ተቀባይ ----------

አድራሻ---------- ክ/ከተማ----------ወረዳ----------

የመ.ሳ---------- የፋክስ ቁጥር ----------የስልክ ቁጥር----------

አንቀጽ 1

የውልዓላማ

ይህ ውል በ----------ክ/ከተማ ወረዳ ---------አስተዳደር ልዩ ቦታው ----------ተብሎ ከሚጠራው አካባቢ በሚገኘው ስፋቱ----------ሄክታር ወይም ----------ካ.ሬ ሜትር የሆነውን ስፍራ ለማልማት፣ ለማስዋብና ለመንከባከብ በዚህ ለህብረተሰብ አገልግሎት ለመስጠት ወይም ምርቱን ለገበያ ለማቅረብ እንዲቻል የማድረግ አላማ አለው።

አንቀጽ 2

የውል ተቀባይ ግዴታዎች

ውል ተቀባይ

1. በውል በተረከበው ቦታ ላይ በውል ከተፈቀደለት ዓላማና ተግባር ውጭ ግንባታ ማከናወን ሆነ ሌላ ስራ መስራት አይቻልም፡፡ ቦታውንም ሆነ አገልግሎቱን ለሌላ ሶስተኛ ወገን ማስተላለፍ አይቻልም፡፡ እንዲሁም ውል ተቀባይ ፕሮጀክት ፕሮፖዛል ውስጥ ከተጠቀሱትና በውል ሰጪ ከፀደቁት ተግባራት ውጪ ማከናወን ቢፈለግ በቅድሚያ የውል ሰጪ ፈቃድ ማግኘት አለበት፡፡
2. በውሉ መሰረት በተረከበው ቦታ ላይ ቦታውን ከተረከበበት ቀን አንስቶ 1 ወር ጊዜ ውስጥ በፀደቀው ፕሮጀክት ፕሮፖዛል የተጠቀሰው ተግባር መጀመር አለበት፡፡
3. በውሉ መሰረት ስራው በሚከናወንበት ጊዜ የሌሎችን ጤንነትና ደህንነት በማይጎዱ እና በተፈጥሮአዊና ከማህበራዊ አካባቢ ላይ የሚደርስጉዳትን ወይም ብክለትን መከላከል የሚያስችል ሁኔታ አከባቢውን መንከባከብ እና መጠበቅ አለበት፡፡
4. በስራው ሂደት ያጋጠሙን ችግሮች ዶክመንቶችና መሻሻል በማመልከት በወር 1 ጊዜ ወር በገባ በ5ኛው ቀን ውስጥ ለውል ሰጪ ስራ አፈፃፀም ሪፖርት ማቅረብ አለበት፡፡
5. በሀገሪቱ የወጡ ወይም የተፋሰስና አረንጓዴ አካባቢዎች ልማት አስተዳደር ህጎችንና ልዩ ልዩ ፖሊሲዎችን በማይጥስ መልኩ ተግባርን ማከናወን አለበት፡፡የወሰን ምልክቶቹን እንዳይጠፉ ወይም እንዳይበላሹ መጠበቅ አለበት፡፡

6. ውል ተቀባይ የሚያከናውኑ የልማት ስራ ላይ በእፀዋት የሚሸፈነው መሬት(ground cover)ከተረከበው ቦታ ከ80% በታች መሆን የሌለበት ሲሆን በቦታው የሚገነባው ጊዜያዊ ግን ባታ መንገድን ጨምሮ ከተረከበው ከ20% በላይ መሆን የለበትም።
7. ውል ተቀባይ አከባቢ ለማልማት የሚተክላቸው ዛፎች እና ቁጥቋጦዎች ተስማሚ እና ስረዓተ ማህደሩን የሚጠብቁ ሆነው ብዛታቸው ባደጉዜ የላይኛው እፀዋት ሽፋን(canopy cover) 60% ያላነሰ እንዲሆን የሚያደርጉ መሆን አለባቸው።
8. ውል ተቀባይ የሚያከናውናቸው የልማት ስራዎች ስረዓተ ምህዳሩን በተፈጥሮ መሆን ሲኖርበት በሚገባው ሁኔታ እንዲቀጥል የሚያደርጉ መሆን አለበት።
9. በውሉ በተሰጠው ቦታ መለያ የሆኑትን የውሉን ምልክቶች ለማለፍ ማንኛውም ተግባር መከናወን የለበትም።
10. በዚህ ውል በተመለከተው መሰረት ውሉ ሲቋረጥ በቦታው ላይ የሰፈረውን አጥር ወይም ከውሉ ጋር ተያያዥነት ያላቸው ነገሮች ለማንሳት አይቻልም።
11. በዚሁ መሰረት ውሉ ሲቋረጥ ለውል ሰጪ ያስረክባል።
12. በተያዥ ውል የሚፈረም ለብርክ ፕሮጀክቱ አጠቃላይ 10% የሚሆን ዋስትና ማስያዝ አለበት።

አንቀጽ 3

የውል ተቀባይ መብቶች

ውል ተቀባይ

1. በውሉ ላይ ከተመለከተው ተግባር የሚፃረን ስራ እስካልሰራ ድረስ በቦታው ላይ በውሉ የተጠቀሱት መብቶች እስከ ውል ዘመኑ ማብቂያ እንደተጠበቁለት ይቆያል።
2. ውል ተቀባይ ለማልማት ከተረከበው ቦታ ላይ ለፕሮፖዛሉ ካቀረበው ስራ ላይ ተዛማጅነት ያላቸው ስራዎች ውል ሰጪን እያስፈቀዱ ሊሰሩይችላሉ።

አንቀጽ 4

የውል ሰጪ ግዴታዎች

ውል ሰጪ

1. በውሉ አላማ መፈፀም እና የውል ተቀባይ ይረዳ ዘንድ አስፈላጊውን የሞያ እና ስልጠና መስጠት ይችላል።
2. ውል ተቀባይም የመከታተል የመገምገም እና የመቆጣጠር ኃላፊነት ያከናውናል።
3. የውል ተቀባይ በውል የሰጠውን ቦታ የወሰን ምልክቶች ከኦርዲነቶች መቀመጣቸውን እና ማረጋገጥ የቦታውን ንድፍ መስጠት አለበት።

አንቀጽ 5

ውል የሚቋረጥባቸው ሁኔታዎች

1. ውል ተቀባይ በውል አንቀጽ 1 እና 2 ከተመለከቱት ዓላማና ተግባር ውጪ ቦታውን ለሌላ ተግባር ማዋሉን በተጨባጭ ማስረጃ ከተደረሰበት

   ሀ. ለመጀመሪያ ጊዜ ስህተቶችን እንዲያርም የፁህፍ ማስረጃ ይሰጠዋል

   ለ.አሁን ምስህተት የሚታረም ሆኖ ከተገኘ ያለምንም ተጨማሪ ማስጠንቀቂያ እና ላወጣው ወጪ ያለምንም የካሳ ክፍያ ውል ሰጪ ውሉን ለማቋረጥ እና ቦታውን መልሶ የመረከብ መብት አለው።

2. ውል ተቀባይ ስራውን ከመጀመሩ በፊትም ሆነ በኃላ ውሉን በራሱ ምክንያት ለማቋረጥ ከፈለገ ከ 1ወር በፊት በዚህ ውል በተጠቀሰው የዋዋዬች አድራሻ በፅሁፍ በማስታወቅ ውሉን ማቋረጥ ይችላል።

3. የውል ዘመን ሲያበቃ ውል ሰጪውሉን ለማራዘም ፍቃደኛ ካልሆነ ወይም ቦታውን መንግስት በአገልግሎት ከፈለገው ውሉ ይቋረጣል።

አንቀጽ 6 ውሉ ለማሻሻል

ይህ ውል ሁለቱ ተዋዋይ ወገኞች በሚያደርጉት የጋራ ስምምነት በማንኛውም ጊዜ ሊሻሻል ይችላል።

አንቀጽ 7 ጠቅላላሁ ኔታዎች

1. ይህ ውል በሁለት ቅጽ ተዘጋጅቶ በሁለት ተዋዋዮች እጅይ ቀመጣል
2. በተዋዋዮች መካከል አለመግባባት ቢፈጠር አግባብ ባለው ፍርድ ቤት ይታያል

3. ይህ ውል በፍታብሄርህግ ቁጥር 1731 እና 2005 እንዲሁም በስታንዳርድ መ/ቤቶች ውሎች 3131 መሰረት በተዋዋይ ወገኞች ላይ አስገዳጅ ህግ እንዲሆን ተስማምተናል።

አንቀጽ 8

የውሉ ዘመን

ይህ ውል በተዋዋዮች ከተፈረመበት ቀን ጀምሮ ለ 1 ዓመት የፀና ይሆናል።

ውል ሰጪ ውል ተቀባይ

ስም---------- ስም----------

ፊርማ ---------- ፊርማ ----------
ቀን ---------- ቀን ----------

እማኞች ስም

ፊርማ ቀን

1. ---------- ----------
2. ---------- ----------
3. ---------- ----------

Annex

Annex 1 - Implementation Manual

A. Introduction

Neighborhood parks serve neighborhoods and other residential areas of the city for a variety of active and passive recreation opportunities, near residents and employment centers. The importance of these Neighborhood parks has been discussed above in different dimensions. There are areas defined to serve as a neighborhood park in the cities of Addis Ababa as well as in the study area. Some development has been tried to be made on some of the sites. From observation and interviews, Neighbors try to develop the sites given to them, some with knowledge, but most of them are developed with limitation of knowledge and just from the desire to see the sites green as well showing ownership. As a result, in most of the neighborhood parks wide gap is observed in the plantation which takes place without selecting the appropriate plant material, how to plant it, and follow-on maintenance.

Rational of the manual

This paper has discussed what needs to be considered in the design of Neighborhood Parks and also made a practical design model of what it should look like. Unlike Building design, Landscape design needs more emphasis after the paper work; on the construction and maintenance part. The plant material selected to be used might affect the space positively or negatively. It cannot be left after planting; maintenance is very important. Since it has life, it needs to be managed while growing. Giving what it needs for its growth, shaping or guiding to what it is expected to be, and a follow-up is needed.

The main aim of this manual is to provide technical procedures for planning and implementation of the establishment and management of Neighborhood parks around residential areas in urban centers in the country. It will enable residents/committees to develop Neighborhood parks around private residential houses guided by a standardized manual that describes how to go about it from establishment to maintenance during and after establishment.

The objective of the manual

General Objective

The general objective of the manual is to facilitate the development and management of Neighborhood Parks around private residential areas in Woreda 7, Kolfe Keranyo Sub-city through the provision of technical guidance that should be used by the residents around them.

Specific Objective

The specific objectives of the manual include:

- To describe the techniques and procedures to be followed in the implementation of the design for different components of Neighborhood Parks around the residential area of the study area.
- To provide recommendations and considerations to be taken into account during plant species selection for different components of the Neighborhood Parks around the study area.
- To describe in detail the procedures for site preparation, planting, and aftercare for different components of the Neighborhood Parks in the study area.

- To describe the procedures, tools, and equipment to be used for the establishment and maintenance of the different components of Neighborhood Parks.
- To describe occupational health and safety precautions that need to be taken by the personnel involved in the development of Neighborhood Parks

Scope of the manual

The manual presents considerations to be made during site preparation; plant specious selection, planting, and care for plants during and after establishment is also included wherever applicable. The manual also gives a brief explanation of the gray components that should be present in Neighborhood Parks.

B. Site Preparation/ preparing the site for Planting

Site preparation is the first step for plantation. This activity is divided to structure and pace the implementation process to be ready for planting at the most suitable time, according to the specific climatic condition.

Mechanical field preparation

The mechanical or initial soil preparation concerns mainly the preparation of a field for further detailed preparation such as irrigation system installation, hole preparation, etc.

Actions if applicable to the area include:

A. Bush Clearing;
B. Removal of stone and rocks
C. Ripping; and
D. Leveling of the soil

Measurement of the slope of a site

A slope of a site can be shown as a percent relating the vertical rise of the land to the flat horizontal distance. The following formula and procedures are useful to determine the slope.

- Use a level and a yardstick to measure slope.

- Put one end of the level on the hillside (slope) and raise the other end until the bubble is in the center of the leveling vial. The level will now be level with the earth's surface.
- Use the yardstick to measure the distance from the ground to the bottom edge of the level.
- Measure both distances in inches.

- Determine the percent slope of the hill with this formula:

$$\textbf{Percent slope} = \frac{\text{Vertical distance}}{\text{Horizontal distance}} \times 100$$

Table 1: Recommended slop percent for different landscape components

Landscape component	Ideal slope percent	Maximum slope percent
Decks and patios	½ to 1	3
Lawns	2 to 10	30
Walks	1 to 4	8
Driveways	1 to 10	50
Slop with landscape plants	20 to 30	50
Wheelchair ramps	3 to 5	8
steps	33 to 50	66

Source: Biondo, J.Ronald, (2003)

Irrigation system Installation

The type of irrigation system to be used will be determined by the availability of water, topological, and soil conditions. When the initial soil preparation is completed, the installation of the required irrigation system will be implemented.

Types of Irrigation Systems

There are many different types of irrigation systems, depending on how water is distributed throughout the field. Some common types of irrigation systems include:

a) Surface Irrigation

Water is spread over and across the land by gravity, without the need of a mechanical pump.

b) Localized Irrigation

Water is distributed through a piped network at low pressure and applied to each facility.

c) Drip Irrigation

It is a type of localized irrigation in which drops of water are delivered at or near the root of plants. Evaporation and runoff are reduced in this method of irrigation.

d) Sprinkler Irrigation

Water is distributed by overhead high-pressure sprinklers or guns from a central location in the field or sprinklers on moving platforms.

e) Center Pivot Irrigation

Water is delivered in a circular pattern by a system of sprinklers that move on wheeled towers. This is a frequent system in flat terrain.

f) Lateral Move Irrigation

Water is distributed by a network of pipes, each with a wheel and a set of sprinklers that can be moved by manually or by a specially designed mechanism. The sprinklers move a certain distance across the field and then need to have the water hose reconnected for the next distance. This system is less expensive than others, but it involves more labor.

g) Sub – Irrigation

Water is spread throughout the land using pumping stations, canals, gates, and ditches that raise the water table. In places with high water tables, this method of irrigation is most effective.

h) Manual Irrigation

Manual labor and watering cans are used to spread water across the area. This system is very labor-intensive.

Soil Improvement

It is a trend to establish plantations on new soils. If new soils are considered, the soil improvement will mostly deal with:

A. The application of organic matter; and/or
B. The elimination of soil salinity.

Organic Material

The majority of soils have low organic matter content, and improving this situation has a significant impact on soil fertility. The following are some of the benefits of an increased humus content in the soil:

- Enhances crumb formation which improves the respiration of the roots;
- Increases the water infiltration rate;
- Increase the water holding capacity;
- Lowers soil compaction and crust formation; and
- Limits the harmful effects of alkalinity and improves the leaching of salts.

Salinity

In order to restore salt-affected soil, it's important to think about:

- The type of salinity/alkalinity,
- The drainage possibility of the soil profile,
- The origin or the source of salts,
- The quality of irrigating water and
- The leaching of salts from the soil.

Poor drainage normally goes hand in hand with soil salinity problems and therefore the improvement of the drainage potential should be addressed before any leaching treatment is applied. Mulching and applying organic material to the soil will increase water infiltration, resulting in better drainage (excluding soils with obstructive layers) In saline soils (soluble salts present as chlorides, sulfates, and/or carbonates of calcium, sodium, or magnesium), only leaching will be necessary to drain the excess salts. In the case of alkaline and/or saline-alkaline soils, sodium can be replaced through the application of gypsum or acidifying agents like sulfur. Once the sodium has been replaced, an action should be followed to leach it out.

When the irrigation water is poor quality, proper drainage and over-irrigation, without the development of a water table, is very important.

Hole Preparation

The actual digging of the hole is one of the last steps before planting, although it should be noted that this is not the final step in the planting process. This is the point where the required inputs such as gypsum and organic materials are worked into the soil and a start is made with the leaching. The reason why the leaching is only applied at this stage is because of the relatively small area that is occupied by the plant. If the total area had to be leached, it would become very costly. It is recommended that a hole be prepared and that the soil from the hole is mixed with the organic material and gypsum. The soil mix is then put back into the hole, where the site is marked for positioning the small plants.

At this stage, once the hole has been prepared and closed, it is irrigated and leaching is implemented. The water supply will then aid in the leaching of excess salts and contribute to the organic material's fermentation process. Irrigating the hole numerous times (2 to 3) before planting will also help the mixed soil settle in.

In most soils, the early rapid growth of plants is better when the holes are prepared one to two months before planting. Well-rotted manure can also be used in holes prepared and irrigates shortly before planting, but extreme care must be taken to put the manure (and fertilizers) deep enough to allow a layer of soil at least 15 to 20cm thick to be placed between the manure and the roots of the plant.

C. Planting Operation

This is probably the most critical phase in the establishment of a new plantation. Mistakes at this point may lead to poor rate of survival rate, regardless of the efforts put in during the preparation phases. The aim is to assist the plant grower to execute

the planting operation in a way that will ensure a high transplanting survival rate in the newly established plantation.

Types of plants available for planting

Plants are grown in nurseries in three types of forms. These include containerized plants grown in containers to marketable size; bare root (BR) plants grown in field nurseries bare rooted; and balled and bur lapped (B &B) plants. The choice of which type of plants should be planted depends on the time of the year and the budget available for the job.

Under the Ethiopian situation, the use of containerized plants might be preferable due to the simplicity of handling during transportation to the site. Thus, it is important to consider the water requirements, growth rate, hardiness, and nutrients, and pH needs.

Considerations to be taken during planting

i. Water requirement

Water requirement refers to the amount of water a plant needs to grow and live. Some plants need more water than others. Landscape plants that require less water are preferred. Plants that require a lot of water should be grown in areas with a lot of natural wetness.

- For drier regions, plant species recommendable include trees like *Delonix regia*, *Terminalia* spp, and different *Acacia* spp., *Azadirachta indica,* etc.
- For regions with abundant water availability, a wider variety of plants exists. For instance, *Persea Americana (Avocado)*, *Psidium Gujava* (Zeytun), *Mangifera Indica,* etc. can be selected.

ii. Growth rate and maturity

Trees and shrubs are classified based on height and spread. Plants must be selected and placed in a landscape based on mature height. Spread is the horizontal space needs of a plant. In selecting the species of plant to be installed, the available space must be considered. In terms of growth rate, most indigenous tree species of Ethiopia are slower than the exotic ones. In places where shade is very much important, planting fastgrowing species like Melia Azadrach, Azadirachta Indica, Schinus Molle, Persea Americana is recommended.

iii. Hardiness, heat-zone, and adaptations

Hardiness refers to how well a plant is adapted to the climate. Some plants withstand cold and are hardy while others are not, or vice versa for high temperature. Other plants demand full sun, while others thrive in partial light or shade.

Plants that can withstand high salt levels in the soil must be chosen in places where the soils are salty. In cool and humid regions, species such as Juniperus Procera, Hagenia

Abyssinica, and Podocarpus Falcatus are more adaptable. Similarly, in hot dry climate Annona Squamosal (Gishta), Mangiferainidca, Azadirachta Indica, etc. are some of the species that perform well.

Guidelines for selecting trees

The general appearance of a tree tells a lot about its quality and potential for success when transplanted. The following are some of the questions that should be asked at this point:

- Is the trunk straight and is the crown symmetrical?

- Does the tree show current signs of growth? Signs of viability include expanding buds, new leaves, and elongated shoots.
- Are there any signs of disease and insect damage?

- Shade trees should have a strong, well-defined central leader with equally spaced branches forming a symmetrical crown.
- Trees having multiple leaders, crossing, rubbing, or overly-crowded have not been pruned properly and are less valuable.
- Bark cuts and scrapes are also undesirable.

- Trunks with visible wood borer damage and those with signs of sunscald or cracking should be avoided.
- Container-grown trees should be well-rooted and firmly established in their containers.

- The root mass should retain its shape and hold together when removed from the container. However, if the roots circle and form a dense web, the tree may be pot bound.
- Pot-bound trees are often under stress.
- Bare root trees should be stored in a cool, shady area with their roots protected from drying by packing or burlap.
- In the case of bare-rooted trees, the root system should be protected from drying until they are placed in the ground.

Plant Spacing

It is difficult to prescribe definite plant spacing but specific factors are influencing the spacing such as:

- To allow for sufficient sunlight when plants are tall;
- To allow for sufficient working space within the plantation; and
- To provide sufficient space for root development.

D. Planting techniques for Trees and Shrubs

Growing trees and shrubs are very important. They have the potential for land stabilization, water quality improvement, shades, fruits, and the like. To get these benefits we have to get a clear image towards planting these trees and shrubs. They are provided in two forms, this is; container-grown trees or shrubs and bare roots. This subpart explains techniques for planting trees and shrubs.

Planting techniques for container-grown trees and shrubs

a) Handling trees before planting

- Handle the plants carefully in order not to disrupt the contact between fine roots and crack the soil ball leading to dislodging fine roots.
- Never pick a tree by the trunk; lift them by the root ball.
- If the tree is at a sapling stage, make sure that it will not roll round in a truck used for transporting.
- If transporting in an open truck, make sure that trees are irrigated at the time of loading to avoid wilting.
- Tie the branches together to the truck to avoid breakage of branches.

- Do not store plants at the planting site for long. It is advisable to plant them as much as possible the same day they arrive at the site.
- If you are not able to plant them immediately, prepare a holding area at the site.
- A plant holding area should be a shaded area and away from the wind.

This is a place where you care for plants until planting time.

- A plant holding area should also have an irrigation facility.
- The frequency of irrigation should be adjusted to the climate of the area. In hot or warm areas, irrigating twice daily may be necessary. But care should be exercised not to under or overwater the plants.

b) Planting the tree

- In well-drained soils, dig the planting hole as deep as the height of the root ball.
- Make sure that the top of the root ball is just at the soil surface. Planting too deep and overwatering are common causes of poor plant establishment.
- Always place the root ball on solid soil that has not been disturbed or loosened. If the root ball is placed on loosened soil, the tree often sinks deeper leading to the delayed establishment by suffocating the tree or even killing it.

  •In poorly drained and compacted soil, follow the same general guidelines as in the well-drained soil but take the following precautions: o Avoid saturation of the soil with water since in poorly drained clayey soils it kills the plant by suffocating the root system.

- To overcome this problem, plant the tree with about 1/3 of the root ball higher than the surrounding soil and by properly managing irrigation intensity.
- Before placing a container-grown plant in the hole, remove the container.

- Containers in which trees and shrubs are grown maybe a plastic bag of different diameters or a clay pot, a metallic can, or a paper bag.
- If the container is a plastic or paper bag, it is removed by tearing it from one or two sides with a hand or using a knife without disturbing the soil.
- If it is a metallic or clay nature, invert the container and tap its edge against a hard object. This will let the soil ball slide out of the container.
- Take care not to disturb the root system.

- Before placing the tree in the planting hole, check if there is root circling. Root circling, also called pot bound, occurs when the plant grows in a container for too long.
- If root circling is observed, cut the roots at the edge with a knife and spread them before planting.
- Place the soil ball in the planting hole and check for proper hole diameter and depth.
- Position the plant in the hole with the best-looking side toward the main viewing point.

Bare root planting techniques

- Follow the same general planting guidelines when planting bare root roses, fruit trees, or other bare-root plants.

- Remove and discard any plastic or other moisture-holding material from around the roots.
- Dig a hole as deep as the longest root and at least 12 inches wider than the root system.
- The bark or the stem of a bare root plant will normally have a stain marking the level of the original field height.
- The tree or shrub should be planted at the same depth as it was growing in the nursery.
- After removing the soil from the planting hole, make a cone-shaped pile of soil at the bottom center of the hole.
- Rest the plant crown, the junction between the roots and the stem on top of the soil cone.
- Then, carefully spread secondary roots to their natural shape.

- Break up all large soil clumps with a shovel before using them to backfill the hole.

- Partially backfill the hole, tamping the soil to help prevent air pockets from forming around the root system but do not pound the soil.
- After completing the filling operation, construct a soil saucer by creating a small berm around the edge of the planting hole slightly larger than the root system, with the extra soil from the hole.
- Fill the saucer with water and let it slowly wet the root system and the surrounding soil.
- The saucer will help the tree or shrub to retain irrigation or rainwater.

- Finally, clean up the planting area.

  It is important to note here that the construction of a plant saucer should be for sites with soils with lower water holding capacity (soils of sandy nature) and for all situations during dry seasons.

Supporting the plant by staking or guying

- Recent research shows that the trunk of a young tree is strengthened if it is allowed to sway freely in the wind.
- However, trees 15 – 30cm tall may require additional support after planting. Give this support as following steps.
- Divide two or three long wooden stakes next to the soil ball and attach a wire between the stakes and the tree trunk.

  Protect the soft trunk tissues by covering the wire with a short piece of rubber hose. This method of supporting a tree is known as staking.

- Shrubs may not require additional support.

  •Newly planted trees taller than 15 ft need cables or wires attached to three equally spaced stakes driven around the tree base for support. The tree trunk should be protected with a short rubber hose. This method of support is known as **guying.** Guying cables should be visibly flagged for safety.

Watering practices

Newly transplanted trees and shrubs need deep and thorough watering for the entire first year after planting. The following watering technique will thoroughly wet the soil 12 inches deep and is an easy way to provide adequate soil moisture for most plants.

- Slowly empty a 5-gallon bucket of water in the soil saucer of shrubs.

  Use two 5-gallon buckets of water on large shrubs and trees.

Groups responsible for the maintenance and management of amenity green spaces should continue this weekly practice for the first growing season on all landscape plants when no rainfall has occurred during the week. To reduce wilting after transplanting, spray the foliage of evergreen plants with an ant transpiring 2-3 days before transplanting.

E. Planting Techniques for Flowers

Flowers in front of shrubs in the planting bed create a flower border with shrubs. A flower bed is a planting bed that contains only flowers.

- Tall growing flower plants should be planted at the back of the flower bed and short ones at the front edge.
- Keep the flower bed design simple.

- Plant groups of the same flower together.

- To give color to the landscape, subgroups of annuals and perennials can be made.
- Establishing perennial flower gardens with properly selected perennial flowering plants gives a vast array of colors to the landscape.

- Colors and sizes of plants that create a balanced perennial garden must be selected.

- Perennials should be planted in the spring

- The flower beds should be free of all turfgrasses.

  Before planting the flowers, organic matter such as manure or compost should be added and tilled into the top 6 inches of the soil to improve soil texture and water holding capacity.

After-planting care

Flower beds need hand watering and require regular weeding. Immediately after planting apply a pre-emergent herbicide to prevent weed seeds from germinating into a flower bed. Weed seed germination could also be reduced by using mulch around individual plants. Mulches could be organic or inorganic. Organic mulch can be made from dead plant materials like grasses, while organic mulch could be made of gravel, crushed

F. Planting Techniques for Ground Covers and Vines

Ground Covers

- Ground covers are usually recommended for sites that have steep slopes to reduce soil erosion.
- They can also be included in the landscape under trees or shady places as living mulch that covers the soil and reduces weed growth and loss of soil moisture.
- In areas where lawns cannot be established or very expensive to manage, ground covers are preferred to cover the ground in the place of grasses.

- Since ground cover plants are planted in groups, it is necessary to separate the plants by spacing.
- This could help in the control of weeds which is otherwise a difficult task.

- Weed control in ground cover planted beds can be done only by pulling weeds manually.

- The use of herbicides that kill the weeds could also kill the ground cover plants themselves.
- The commonly recommended spacing ranges from 20-30cm on center; i.e., one plant will be planted at the center of this range from the next plant.
- Some ground cover plants may grow faster than others. Therefore, do not plant fast growers in a mixture with slow growers. For instance, *Aloe vera* (Eret),

Figure 1: A few species of annual and perennial ground cover plants adapted high land and midlands of Ethiopia.

Vines

- Vines may be relevant to grow close to walls and fences.
- Vines may be planted for their beautiful flowers or colorful fruits.
- Vines have three different methods of climbing a support structure: tendrils, twinning stems, and holdfast. Those with holdfast, penetrate wood or brick or mortar to secure them on the wall. Such vines might cause structural damage to the wall and therefore should be avoided or managed consciously.
- Common vines grown around walls and front parts include *Vitis vinifera* (grape), *Bougainvillea spectabilis*, in warm climates.

G. Maintenance

Fertilizing

A new tree or shrub has a very limited capacity for utilizing fertilizer until it becomes established. Because too much fertilizer in the root zone can be harmful, don't add it to the backfill or put it in the hole's bottom. Consider using a controlled-release or diluted liquid fertilizer on the soil surface if fertilizer is used at planting or during the first growth season. Young trees and shrubs should be fertilized between March and July.

Watering

Newly planted trees and shrubs should be watered well at the time of planting. Natural rainfall is frequently insufficient to meet the moisture requirements of newly placed landscape plants.

In general, young seedlings require at least one inch of rain every week. In exceptionally hot, dry, windy weather, newly planted trees and shrubs may need to be watered two or three times a week because their root systems are unable to absorb the amount of water required to restore the water lost through leaves. Watch for signs of wilting as one indicator that the plant needs water. However, keep in mind that some plants in chronically wet areas may wilt. Another approach to monitor soil moisture is to feel or probe in the soil surrounding the root ball. Slowly saturate the roots of newly placed plants with water. This is especially important for container-grown plants as their soilless mixes can dry or shed water while the bed or surrounding soil remains damp. A trickle watering system would be ideal if you have multiple young plants and shrubs. If you overwater, the amount of oxygen in the soil will be reduced to the point where roots will be damaged. Make sure that the time and patterns of lawn watering systems do not overlap into plant beds, and that there isn't too much water applied.

Mulching

Keep a four to six-foot, grass-free circle around young trees and shrubs for the first two to three years. Reduced plant competition for water and nutrients, as well as equal soil temperature and moisture, are all advantages of mulching to create a weed-free and turf-free region. Keep two to four inches of organic mulch, such as leaf mold, compost, bark, grass clippings, or straw, in the grass free circle. DO NOT use plastic under the mulch to prevent weeds. Summer heat and winter cold can damage roots when they are drawn to the surface. Landscape textiles that "breathe" and allow for gaseous exchange should be sought out from a nursery or garden. Avoid using rock mulches, which transport heat to the roots directly, or limestone chat, which releases calcium into the soil. Do not mound mulch up against the trunk of trees or shrubs. Keep the mulch two to four inches away from the trunk; this is particularly helpful in preventing rodent damage during the winter months. Excessive mulch around a trunk might create an environment that is conducive to disease and insect assault.

Pruning the New Tree

Avoid over-pruning new trees. Do not prune or cut back shade trees at planting. It is harmful to the plant and frequently results in an unsightly fork in the main trunk. When planting trees or shrubs, do not cut top growth in an attempt to compensate for root loss. According to recent study, this approach is ineffective and possibly even harmful. Excessive pruning during planting reduces leaf area, lowering the amount of plant energy needed to establish a healthy root system. The only pruning required when transplanting woody plants is the removal of broken or damaged branches. Over pruning may also result in sunscald and inhibit tree growth. If feasible, keep lower limbs intact for the first several seasons. Thin-barked species will benefit from the shade provided by small lower limbs, which will shield them from sunscald harm.

Remove injured or diseased branches only. Pecan trees are the exception to this rule. Their survival is greatly increased if the trunk or branching is cut back to 50 percent of its total length at planting. If you want your young fruit trees to serve as yard trees, you should prune them back to encourage branching. However, avoid low branching as the harvest comes but once a year; whereas mowing and other routine activities around and under the tree may be nearly year-round. Staking Stake when possible, young trees sparingly and briefly. Staking a tree for an extended period of time might be damaging to its growth.

Staking

Materials are frequently used to injure or girdle trees. Stake when top-heavy or planted in windswept areas. If a tree needs to be staked, use no more stakes than necessary. Leave the tree as much freedom to move as possible. As the tree flexes or "exercises," it develops greater strength faster (trunk broadens faster when sway is allowed). Do not make the trunk rigid. Also, do not run wires or anything else around the trunk. Instead, choose a broad, smooth, and moderately elastic cloth. Stakes should be placed into the solid ground far enough away from the tree so that the tree does not rub against it in the wind. Stakes should not be driven into the tree's root ball, since this may cause root damage. Use straps of chair webbing made of plastic or cotton fiber available commercially that already have grommets inserted through the ends. The wire should next be threaded through the grommet and tied to a stake. This soft webbing material is less abrasive than the hose and wire method in common use. Triple staking provides more protection against a strong wind. After one growing season, support stakes and guy wires should be removed. If staking is left in place for more than two years, the tree's ability to stand alone may be reduced, and the chances of girdling injury are increased.

Trunk Protective Materials

Young, thin-barked trees such as ash, birch, linden, maples, and others often sunscald unless protected. The twigs that shade the trunk should be left but cut back a few inches so they become denser. Tree wraps are preferred to a twiggy trunk, but not all trees have enough twigs, and leaving lower limbs isn't always practicable or aesthetically acceptable.

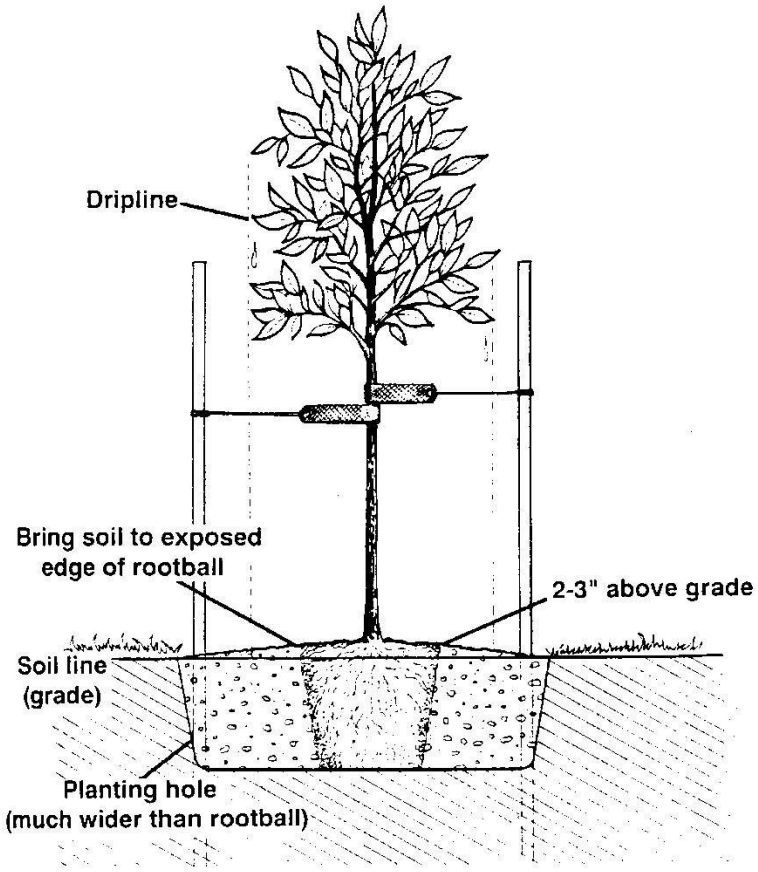


Figure 2: Trunk Protective

This method in no way damages the tree trunk, unless the webbing is too abrasive or if the wind bangs the tree against the stake.

Protective wraps are available and may protect by modifying temperatures for thin barked trees. Plastic wraps may provide better protection than paper wraps against

lawnmowers, weed-eater, and rodent damage. However, if applied incorrectly, damage can result in trunk girdling or constriction, insects, illnesses, and excessive bark wetness.

Planting period may not necessitate the use of protective wrapping. Use based on the type of protection needed. The normal application of tree trunk wraps is October to March for the first two growing seasons. Wraps should be removed each spring before spring growth. During spring growth, the trunk expands and increases in size. Wraps too tightly wrapped or left on during this time may result in constriction to the trunk. Tree wraps should be applied loosely from the base up to the first branch by overlapping for a shingle effect. Plastic coverings should be loosely fitted and have openings or vents for air circulation.

Inspect the wraps for trunk damage and insects on a regular basis. Seedling trees and shrubs or young plants may need shelter from weather extremes during either the winter or summer. You can use cheesecloth, burlap, or a variety of other windbreaks.

Summary

- Check soil drainage and correct problems found
- Use no amendments in the backfill soil
- Mulch with organic matter such as pine bark or straw
- Do not put plastic under mulch
- Keep a grass-free circle around young trees for two years
- Do not prune back the tops of trees except to remove narrow “V” forks in the main trunks

- Fertilize trees and shrubs on the soil surface only if necessary, as determined by a soil test
- Stake only if necessary

Good trees, when properly planted, will reward the planter and the next generation with luxuriant growth, shade, and shelter. This method in no way damages the tree trunk, unless the webbing is too abrasive or if the wind bangs the tree against the stake.

Figure 3: Wrapping Young Trees

Figure 4: Protect young plants from wind and sun

H. Establishing turf grass

In lawns, playing fields, and other areas, beautiful, green turf grass is appealing. It is an integral part of the landscape. Turf requires the same care as other plants. Lawn establishment is the process of establishing turf on previously bare ground or on land that has been cleared of existing vegetation such as trees or shrubs. Beautiful, green turf grass is appealing in lawns, playing fields, and other places. It is an integral part of the landscape. Turf requires the same care as other plants. Lawns that are improperly or badly managed are less functional in terms of aesthetics and recreation, may result in wasteful use of precious natural resources such as water, and are more likely to be sources of pollution.

Pre-planting decisions

- To achieve optimum results, make a plan before undertaking lawn establishment, renovation, or over seeding.
- The more time spent on the initial planning, the less time and money will be spent on lawn maintenance.
- Take sufficient time in planning, to have a healthier lawn that is less dependent on pesticides.

Considerations in the planning stage

1. What is the climate of the area where lawn establishment is intended? This helps in deciding on the species of turf grass to be selected.
2. What are the site conditions? Sun or shade?
3. Are there areas of poor drainage?
4. Is the soil high in clay or very sandy?
5. Do conditions vary throughout your lawn?

6. Should you seed or install sod?

7. How much foot traffic will the lawn receive?

8. Will this be a play area for children?

9. Does the soil need to be amended?

10. Has the topsoil been removed due to new construction?

11. How much time and money do you have to devote to your lawn?

12. Will partial renovation or over seeding be sufficient to improve the quality of your lawn, or must you undertake complete lawn renovation?

Methods of establishing turf

Four different methods can be used for establishing turf grasses for lawns, namely:

- Seeding
- Sodding
- Plugging
- Sprigging

Establishment by seeding is the most common method in cool humid regions as it is the least expensive method. In warm climates, sodding, plugging, and springing turf grass species are common. There are advantages and disadvantages to both sodding and seeding methods of lawn establishment.

Lawn establishment by seed

The establishment of lawns by seeding provides advantages of a greater selection of seed cultivars, development in the environment in which they must ultimately survive, and lower establishment costs.

The following factors need to be considered for good seed germination and growth:

a) High-quality viable seed

b) Adequate soil moisture

c) Sufficient soil warmth

d) Adequate soil aeration

In Ethiopian conditions, seeding should be done during the wet season to minimize the cost of water application.

- The seed could be prepared in blends or mixtures.
- A turf grass blend is a combination of several different cultivars of the same species.
- Blends should have cultivars that are similar in appearance and competitive ability.
- Planting only one cultivar may create favorable conditions for a disease which could lead to the death of the entire lawn.
- A turf grass mixture is a combination of two or more different turf grass species.
- The species to be mixed should have a more or less somewhat related morphology.

•The idea is that at least one of them should adapt to the local conditions.

Site preparation

Proper preparation of the planting site can reduce future problems. Among the most important considerations are drainage, soil aeration, soil pH levels, and other soil fertility issues. These issues should be properly addressed before planting as it is harder to rectify them once the lawns are established.

Steps in lawn site preparation

1) Controlling existing weeds at the planting site

2) Rough grading the site to improve surface drainage. Generally, a 1-2 percent slope away from buildings may be enough.
3) Removing debris from the planting site

4) Adding topsoil if needed

5) Conducting soil test and applying soil amendments as necessary

6) Thoroughly mixing the amendments into the top 10 to 15 cm of soil. When good topsoil is not available improve the existing soil by adding sand and compost
7) Compacting soil with a water-filled roller

8) Establishing the finish grade for the site.

9) Keep the soil level a few centimeters below the level of the sidewalk or driveway.

Planting the grass seed

- After choosing a high-quality seed, determine the seeding rate. This information may be found on the label of the package.
- Different seeds have different seeding rates depending on the size and weight.
- Avoid over seeding as it will lead to weak and overcrowded plants that could be susceptible to disease.
- After broadcasting the seeds, make sure there is a good seed to soil contact.
- Do so by using a leaf rake to lightly rake the seedbed and mix the seed to the upper soil.
- Then, roll the seedbed with a roller half-filled with water.
- Apply mulch on the seedbed to reduce soil moisture loss by using a thin layer of clean straw.
- Do not make the mulch very thick; it will be sufficient with a thin layer.
- Do not remove the straw layer after the seeds have germinated since the seedling can grow through the thin layer of mulch.
- After planting the seed, heavily water the entire seedbed.
- On the following day, start light daily watering to keep the top 1.5 cm wet.
- Continue irrigation during the germination period, which can take several weeks.
- Waterless frequently but more thoroughly (deeply) as the seeds germinate.
- Avoid overwatering since that will reduce soil aeration.

- Also, avoid too much foot traffic on the newly seeded lawn as it can reduce seed germination.
- Limit the amount of traffic on a newly seeded lawn until the new lawn is mowed several times.
- The first mowing should be carried out when the turf grass is approximately 2.5cm higher than the height at which it will normally be maintained. For example, if the lawn will be cut at 6 cm, mow the lawn for the first time at 8cm height.
- The general rule is not to remove more than 1/3 of the turf grass leaf blade at a single mowing.
- Make sure that the mower blade is sharp to avoid ripping, shredding, and pulling out small turf grass seedlings, a situation that could make them susceptible to diseases and other problems.

Vegetative propagation

Vegetative propagation of turf grass plants can be done in three different but popular techniques (sodding, sprigging, and plugging).

- **Sod** is the surface layer of mature turf that includes grass plants and a thin layer of soil.
- Sodding is a common technique for establishing lawns in cool humid and warm humid areas.
- It is a useful technique to provide instant lawn to the landscape.

Figure 5: A picture of ready to plant sod

Steps in sodding

- Steps in site preparation for sodding are the same as for seeding a new lawn area.
- Before laying the sod, dampen the prepared planting area.
- Once the sod is cut and made ready, transport and install as soon as possible (within 24 hrs).
- Handle sod pieces with care to avoid tearing and stretching.
- Place individual sod pieces close to each other.
- Use a roller half full of water to ensure good sod soil contact.

- Ensure availability of sufficient irrigation water for the grass plants to be established in their new location.

Figure 6: Picture of a recently installed lawn with sod

Advantages and disadvantages of establishing lawns by sodding

Advantages:

- A high-quality turf is available for use much more quickly than with other methods and there is less investment of time and work by the users.
- Installing sod lawns have a greater rate of success and face weeds and other problems than those using other methods.
- Sod can be installed almost any time of the year provided the ground isn't frozen from mid-April through the end of October.

- Avoid installing sod so late in the fall that the root system doesn't have time to penetrate the soil adequately before the soil freezes.
- Sod provides immediate erosion control on a steep slope or terrace.

Disadvantages:

- The higher initial cost of sodding.
- The choice of turf grass species and cultivars is limited. For example, if the shade is a problem and shade tolerant sod is not available, you should oversee the sod after it has been established with shade-tolerant grass.
- More labor required for installation
- Sod may not be readily available

A plug- is small about 6cm square or round piece of sod that is about the same thickness. The procedures for site preparation are the same as for seeding or laying sod.

- Prepare a small hole about 6cm deep in the site prepared for lawn establishment
- Get the cut plugs of sod ready for planting
- After planting, firm the soil around each plug and keep the area moist for 23 weeks.
- The plugs will grow and cover the entire area in one season.
- Plugging is already practiced in Ethiopia, maybe not so widely, at sites that hard to rehabilitate otherwise.
- Species that are commonly used in Ethiopia include *Cynodon dactylon (*Sardo),

Kikuyu grass (*Pennisetum clandestinum).*

Figure 7: A plug of sod (left) and a lawn planted by plugging.

Sprigs- are special grass stems called runners or stolons with roots attached. They consist of three to four nodes (joints). Sprigging is accomplished by making shallow furrows 5-7.5cm deep and approximately 25-45cm apart in the planting area. The sprigs are planted in the furrows and the soils are firmed around the stems.

- After sprigging, top dress the sprigs by lightly covering them with good topsoil.
- Lightly firm the soil and topdressing by rolling and tamping.
- Water the lawn area after sprigging and continue to keep the soil wet until the sprigs grow and cover the entire area.
- Mow the newly sprigged lawn when grass plants one inch taller than the lawn's normal mower height.
- Establishing a lawn in a landscape is commonly practiced in Ethiopia when other methods are not deemed suitable. The most commonly used grass in sprigging includes *Cynodon dactylon (*Sardo), Kikuyu grass (*Pennisetum clandestinum).*

Figure 8: A stolon grass that is used for sprigging (left); newly sprigged lawn (right)

I. Maintaining turf grasses in the lawns

Turf maintenance involves using appropriate grass management practices to maintain attractive and healthy turf grass. The management practices help to maintain the turf grass at the desired level of quality.

Soil and nutrient analysis

One of the basic steps to be taken is to have the soil and nutrients analysis including the soil pH done. Following that, it is important to make the necessary amendments if needed. Nutrient deficiencies can be addressed by applying the appropriate type of fertilizer.

Mowing

- Mowing is the practice of keeping the height of turfgrass at the desired level.
- Mowing height and frequency are the two most significant aspects of mowing.
- The preferred height for all species in a lawn is 6-8 cm.

- Mowing lawn grasses to less than 6cm can result in decreased drought and heat tolerance (due to shallow rooting and reduced photosynthesis) and encouraged weed invasion.

Figure9: Well managed amenity / communal lawn

- Mowing lawn higher than 8cm encourages insects, diseases, and weeds.

- The general rule is not to remove more than 1/3 of the height of the grass at a single mowing.
- The frequency of mowing should be every three to four days during the active growth period, but only once every seven to 10 days at other times of the year when growth is slowed by heat or drought.
- Always mow the lawn at the same height all year.

  Unless they are to be used for mulching elsewhere, let grass clippings fall back onto the lawn while mowing.

- Grass clippings decompose quickly and provide a source of recycled nutrients (equivalent to one to one and a half fertilizations per year) and organic matter for the lawn.
- Grass clippings do not contribute to thatch accumulation.

Figure 10: Lawn mowing using a gas-powered lawnmower

Mowing can be done by manual or motorized mowers.

- There are different types of them; but one can choose among them based on the budget, the size of the area to be mowed.
- Lawnmowers may be manual or gas-operated.

- They may be driven like a tractor or pushed by a person.

Safety precautions in operating power lawnmower machines Pre-use precautions

- Thoroughly review and understand the information provided in the lawnmower operator's manual with particular attention given to descriptions of safety procedures.
- Before using, always inspect the power lawnmower for damage or disrepair and make sure all shields and guards are securely in place.
- If a power lawnmower fails the pre-use inspection, remove the mower from service.
- Read warning labels and check safety features. There are dangers associated with operating any power equipment, so pay attention to all warning labels and safety features on your mower.
- Check the safety guards and devices to ensure that they are in proper working condition.
- Never operate your mower if your safety guards and devices are not in place.

Operating Precautions

- Always wear safety glasses or goggles when using a power lawnmower.
- Besides, hearing protection should also be used since engine noise from a power lawnmower is at about 90 decibels.
- Wear long pants and sturdy shoes (i.e., no sneakers or sandals) when using a power lawnmower. Do not wear loose clothing.
- Always start a power lawnmower outside. Do not operate a power lawnmower inside an enclosed space (i.e., sheds or garages) where carbon monoxide exhaust gas can accumulate.

Before starting, inspect the area to be mowed and pick up all loose objects (i.e., sticks, stones, pieces of glass/metal, etc.) that could be thrown by the power lawnmower.

- Shut off the power lawnmower engine and disconnect the spark plug wire before performing mechanical adjustments, maintenance, or repairs or clearing/unclogging the discharge chute or underside of the mowing deck.
- Exercise caution when mowing near trees or shrubs with low-hanging branches.
- Always shut the power lawnmower off before emptying the grass clippings catch bag.
- Never pull a power lawnmower behind you. Always push the power lawnmower.
- Mow across the slope of a bank or hill.
- Always shut off a power lawnmower before leaving it unattended.
- In regions receiving low rainfall and during the dry season in all areas, it is important to provide irrigation water.
- To avoid damage to the grass plant, it is recommended to install a rain gauge to track the level of precipitation.
- After 7-10 days without rain, turf grass may begin to suffer from water stress. For effective watering of turf grass, apply a sufficient amount of water to wet the soil to a depth of 15cm. This can be achieved by keeping sprinklers running in one location for 1-2 hrs.

- Water can be applied at any time during the day but the grass leaves must get dry before dark. If it gets dark before the leaves are dry, it created ideal conditions for turf grass leaf diseases.

Figure 11: An example of watering lawns using a water sprinkler

The sources of water and means of delivering

- For the sustainable and successful establishment of lawn and other green components of the communal green spaces, there should be a reliable source of water.
- The possible sources of water could be the use of groundwater, rainwater, supply from rivers and lakes whenever available and if resources permit. In

areas where the groundwater table is high and where salinity is not a problem, there should be dug holes to serve as a source of water during the dry season.

- Where water is scarce, lawn size should be minimized due to scarcity of water.

As an additional facility, a water tanker or reservoir of reasonable volume should be installed or constructed to store rainwater.

Thatch control

Thatch is the term used to describe an accumulation of excess grass stems and roots in the turf. If excess thatch layer accumulates in the turf, it prevents the passage of water, fertilizer, and air to the root zone. Controlling thatch requires physically removing excess plant growth and adapting maintenance practices to avoid the build-up. This can be done by using power rakes or thatching machines. All the thatch material must be removed from the lawn. A precautionary measure that can be useful is to apply less fertilizer in order not to stimulate excess thatch accumulation.

Weed control

A good weed control strategy comprises three different techniques:

- Planting weed-free grass seed mixtures and preventing weed seed production in the turf.
- Remove weeds, especially newly introduced weeds, by hand when appropriate.
- Prevent weeds from going to seed in lawns, adjacent gardens, and border areas.

- Consider weed seed levels in the selection of materials such as soil, amendments, compost, topdressing material, sod, and other plant material.
- Use certified seed for the establishment, making repairs, reseeding, and over seeding
- Use high-quality, low weed level sod during renovation and establishment.

- Collect and remove clippings that contain weed seeds when appropriate.

  Set height of cut at a maximum acceptable height.

- Reduce compaction and wear areas by re-routing traffic.

- Natural competition making conditions more favorable for the desired grasses and unfavorable for the weeds.
- Use of herbicides against weeds when they are at the most vulnerable growth stages. Herbicides can be applied to turf either before the weed seeds germinate or after they germinated.

J. Guidelines for Safety and occupational health in green space development

In this guideline, the word employer hereafter refers to the permanent or temporary employee to carry out work related to the management of trees, shrubs, and turf grasses in publicly managed green spaces.

The following are the most pertinent aspect of safety and occupational health issues that need to be addressed to avoid or reduce injuries and illnesses to employees

involved in green space management.

(a) There must be injury and illness prevention to protect the personnel involved in the job.

(b) Each work location where tree trimming, tree repairing, or removal is to be done shall be under the direction of a qualified tree worker.

(c) Employees shall be trained and instructed in areas that include, but are not limited to the following:

(1) The hazards involved in their job assignments.

(2) The proper and safe use of all equipment, including, but not limited to, safety equipment and personal protective equipment.

(3) The identification of, and preventive measures relating to, common poisonous plants and harmful animals.

(4) Operations that include pesticide and fertilizer applications

(5) The recognition and avoidance of electrical hazards applicable to employee job assignments including the instructions and training for tree work performed in proximity to energized power lines and conductors. (d) A job briefing shall be conducted by a qualified tree worker before each work assignment is begun. Such job briefing shall include the description of the hazards unique to the work assignment, the appropriate work procedures to be followed, the appropriate personal protective equipment needed, and any other items necessary to ensure that the work can be accomplished safely. Additional job briefings shall be held if significant changes that might affect the safety of the employees occur during the work.

(e) All equipment shall be operated by qualified persons, and where required, qualified tree workers.

(f) All equipment and safety devices shall be inspected before daily use by a qualified tree worker and any found to be defective shall be immediately repaired or removed from service.

(g) The employer shall establish rescue procedures and provide training in emergency response.

K. The gray components

Pavements

- Pavements in amenity green spaces should be made of permeable materials that allow percolation of rainwater except for walkways.
- The design of pavements should be such that rainwater from paved areas flows into the unsealed areas.
- The materials needed for preparing permeable pavements in driveways and walkways could be the use of red ash and firm it with machines to make it comfortable to walk or drive.
- Alternatively, cobblestones could be used if financial resources allow.

- Around communal green spaces, it is advisable not to cut the area with a lot of walkways.
- If necessary, walkways should only be those that lead to the green area

Figure 12: Different types of pavement: cobblestone (left) and tiles (right)

Strom water management

- If the walkways are already paved with impervious materials such as concrete, the rainwater that flows as run-off should be distributed to the unsealed areas
- Small PVC tubes could be used to direct storm water generated at the site to the unsealed open spaces (lawns, planting areas) at different locations to minimize surface run-off.
- Another way by which storm water from the built-up area could be managed is by raising the slope of the walkways and driveways slightly higher than that of the unsealed areas so that water naturally flows into lawns. However, care must be exercised in order not to over flood the lawns

Lighting

Lighting is an important element in green open spaces. It enhances safety, nighttime aesthetics, accessibility, and security. Place the appropriate type of lighting at suitable locations of amenity green spaces by giving due consideration to the costs. It is possible

to choose whether to use solar light or hydroelectric light. Lighting for private home lawns and communal green areas could be different given the extent of dangers of vandalism and abuse. For lighting private lawns, light bulbs installed on short poles may more attractive than those installed on tall poles.

Figure 13: Lighting for lawns

Sculptures, monuments, and fountains

It is recommended to include if possible public art or heritage features like a statue or some kind of sculpture that makes an area unique and represents the culture and history of the surrounding community. This can be achieved through discussion with the local community.

The inclusion of fountains at an appropriate location in the communal green space would increase the visual pleasure of the site. Expensive structures might be costly and therefore should be decided cautiously.

Seats

Seating facilities, such as benches, should be integrated within amenity green spaces. They should be placed around corners of amenity green spaces to help the community members to socialize. They should be placed close to the shaded areas as well as open sites to entertain the needs of visitors at different times of the day or season. Depending on the local conditions, seats should be prepared from locally available materials. They may be wooden structures or concrete.

Figure 15: Fixed metallic seat

Figure 14: An example of a fountain in an amenity/communal green space

Litter bins

- An adequate number of litter bins should be kept in all places in the amenity green spaces to encourage the visitors to keep the area clean and tidy.
- To ensure the safety of the workers taking care of the garbage, polyethylene/Plastic bags must be placed inside the litter bins so that it can be emptied just by removing the plastic bag followed by placing a new plastic bag. This is a common practice in western countries.
- Litter bins should have a well-secured lid to protect the collected waste from being spread by wind, wild animals like monkeys, etc.
- Litter bins must be resistant to extreme weather conditions.

Fences

- It is recommendable to make some kind of fence that marks the boundary of the space without compromising the beauty of the area.
- Fences to be built in communal green spaces should be live in the long run, but a wooden or metallic bar may be used to protect the lawns and the trees and shrubs from animals.
- There has to be somebody to look after the green area from abuses until the community can care for it.

Facilities

Playgrounds

Playing is considered by many authors, a basic activity for almost all later learning. Therefore, playgrounds are the most favorable form of open spaces for children's playing and that is why they are extremely important and necessary in the housing estates. Children need playgrounds that challenge their faculties and capabilities and offer the possibility to develop new ones. Moreover, play is essential, not only for the physical but also for the mental health. Playing improves the development of social, emotional, and cognitive abilities in children.

In addition to the playground equipment, a playground should:

- Provide seats/shelter for parents or supervisors to encourage them to stay in the area.
- Be situated so that it can be seen from adjacent houses and streets.
- Be located in a manner that enables it to be publicly supervised by passersby, authorized body to manage the communal green space or neighborhood watch schemes.
- In some situations, have restricted or controlled use.
- In certain areas, the playground should be closed at night.

Types of a playground and their advantages and disadvantages

1) Traditional playgrounds

The traditional types of playgrounds are the most widespread and they comprise swings, seesaws, slides, and other standard equipment.

Their advantage is that they satisfy the need for physical activity; while their disadvantages are that they do not offer many opportunities for cognitive and social development. These playgrounds limit, to an extent, the potential for outdoors playing and so direct the children's attention and activities to the standard equipment, which deprive the children of the right to explore the natural environment.

2) Modern playgrounds

The modern type contains the so-called composite play structure which comprises various apparatuses and types of equipment interconnected in a way that they form a unity (superstructure).

Their advantages are children love them more than the traditional ones because they are more interesting and challenging. Also, they promote the educational forms of playing. Their disadvantage is that they are not numerous and expensive.

3) Creative type of playgrounds

The creative (adventurous or exploratory) type comprises various materials– sand, water, vegetation, junk, etc. This variety of elements offers a potential for the playing which promotes creativity, exploration, manipulation with different materials. Such playgrounds

enable the children to form their playing objects and provide great flexibility in that. They stimulate cognitive, physical, and psychical development. The spaces are informal and natural in the playgrounds like this, so they stimulate a high quality of unimpaired playing and exploratory learning.

L. Conclusion & Recommendation

This manual can be help full for developing a Neighborhood Park. The manual has tried to cover the basic points in the park development. The main topics tried to be raised in this chapter are Site Preparation, Planting Operation,

Planting Techniques for Trees and Shrubs, Flowers, Groundcovers and Vines, Maintenance, Establishing Turf Grasses, Maintaining Turf Grass in the Lawn,

Guidelines for safety and Occupational health in green space development and the Gray Components. As to the very important topics, Neighborhood Park Developers are recommended to use this manual to utilize their parks for Social Interaction and Recreation.

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Annex 2 - Manuscript

Utilization of Neighborhood Parks for Social Interaction and Recreation; In the case of Kolfe Keranyo Sub City Woreda 7

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Abstract

Neighborhood parks are located in residential areas throughout the city. Their existence is extremely important. They are an essential component of a thriving, healthy city. They continue to play an important role in building infrastructure for cities – which is essential for creating healthy lifestyles, enhancing the values of urban settings, and providing dynamic and attractive recreation opportunities for citizens. However, from a preliminary study, the existing open spaces expected to serve as a Neighborhood Park are not serving as targets. The main objective of the research is to identify the challenges in the utilization of the Neighborhood Parks and to come up with a recommendation, design, and implementation manual for the utilization of the parks for social interaction and recreation. This research used both qualitative and quantitative data as a methodology. The sample size was calculated using a Raosoft sample size calculator software. The neighborhood parks were classified into three strata and a random sampling method was used to pick samples from each stratum. The data was collected by Observation, questionnaire, interview, focused group discussion, and literature review. The cluster analysis method was used to analyze qualitative data, narrative analysis was used to

narrate field level observation while statical analysis method for the quantitative data. The result suggested that most of the community is not using neighborhood parks. The community has mentioned their reason for park nonuse. On this basis, Neighborhood parks can be activated for social interaction and recreation by fulfilling the need of the community.

Key words: Neighborhood, Neighborhood Parks, Parks, Social interaction,

Recreation

Introduction

Parks are important components of a city. Parks contribute to community identity, provide active and passive recreational opportunities, appeal to all ages, contribute to health and wellness of community, create valuable green space (Paul, 2006). Parks are beneficial to humans for many reasons, and they are also beneficial to native plants and animals. Especially in urban areas like cities, parks are an effective area to encourage native flora and fauna to grow. This will make the area more inviting and safer for wildlife to enjoy, as well (Paul, 2006).

There are different types of parks. The classification varies in different countries based on the criteria they set. In Addis Ababa, Ethiopia parks are classified into four; City Park, Sub-city Park, Woreda Park and Neighborhood Park. Among this, Neighborhood parks are the type of green spaces which are less than 0.3ha. They serve neighborhoods and other residential areas of the city for a variety of recreation opportunities, close to residents and employment centers. They are located to serve local residential neighborhoods, broader residential communities, and urban employment or mixed-use centers. For people who don't have a yard or don't have one, neighborhood parks provide

open space. The user experience at neighborhood parks may be casual and informal, geared toward social interaction, play, and outdoor enjoyment, or maybe more structured to support organized sports and park programs. (Rakhshandehroo et al 2017).

The existence of these parks has a great role in increasing social interaction. The social interaction creates an active community which in return creates a safe and secured environment. As a result, the community will develop a sense of living. (Byrne et al, 2010).

Therefore, enough emphasis needs to be given in the utilization of Neighborhood parks to create an active community by increasing the social interaction and a safe and secured environment.

Problem statement

The lack of utilization of Neighborhood Park is the major challenge faced in the study area. It is observed that the new expansions incorporate some lands around residential areas that are left open to serve as a Neighborhood Park. These open spaces are expected to serve the different needs of the community and the environment. However, from a preliminary study made, the neighborhood parks in the study area which are found in three levels of development; developed, developing, and not developed area not serving as targets. The lack of utilization observed can be discussed in two categories. (1) lack of utilization by **not developing the spaces provided** for the community as a neighborhood park and (2) lack of utilization of the parks categorized under the level of developing and developed spaces by **not using them for social interaction and recreation**.

The main problem in most of the developed parks is hindering social interaction. The spaces don't invite all age groups to use the space equally. The Parks which are not developed have a greater side effect on the community and the environment. In the study

area, some development has been made on some of the spaces but it is not satisfactory and could not meet the desired goal. Its development could not create the interaction of the community as it should. As a result, the community cannot be active and free from stress, due to the lack of recreational space nearby.

General Objective

The main objective of the research is to identify the challenges in the utilization of the Neighborhood Parks and to come up with a recommendation, design, and implementation manual for the utilization of the parks for social interaction and recreation.

Scope

This paper focused on the study of neighborhood parks found in Kolfe Keranyo Sub

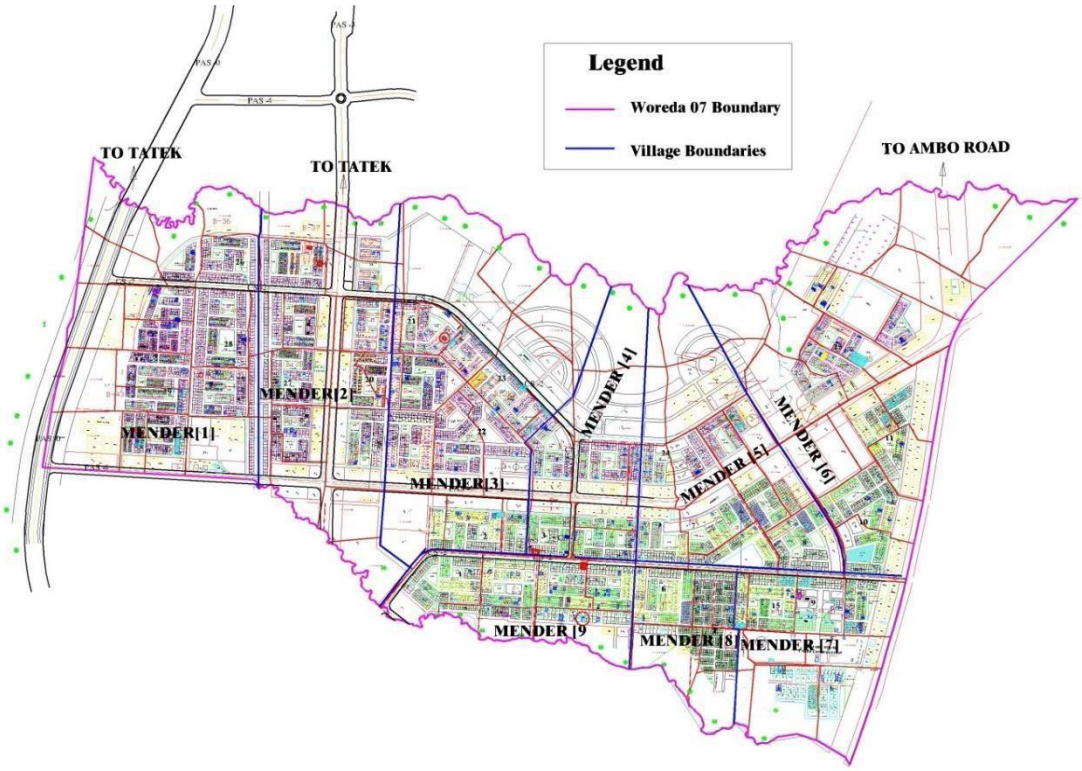
City, Woreda 7. Social interaction and recreation are the main themes of the paper. Further, this research paper assessed the understanding of different communities living in Woreda 7 about the use and the need of neighborhood parks.

Materials and Methods

This study area is found in Addis Ababa, Ethiopia, Africa. Addis Ababa is currently classified into 11 administrative areas called Sub-cities and 116 Woredas. Kolfe Keranyo is one of the Sub-cities. Among the 15 Woredas found in Kolfe Keranyo Sub city, Woreda 7 is one of the newly urbanized areas relatively with a high number of neighborhood parks to deal with. Kolfe Keranyo is also known for its high population among the Sub-cities. It is located in the northwestern part of Addis Ababa. Woreda 7 has got 82 neighborhood parks. From the assessment made through observation, the parks are found at a different level of development. Criteria were designed to know the

current status and stratify the parks into three groups: developed, underdevelopment, and not developed.

The case study area Woreda 7 is divided in to 9 villages by the Woreda administrators. These 9 villages has got different size of population. There are a total of 82 neighborhood parks in the villages.



Woreda 7 Village division

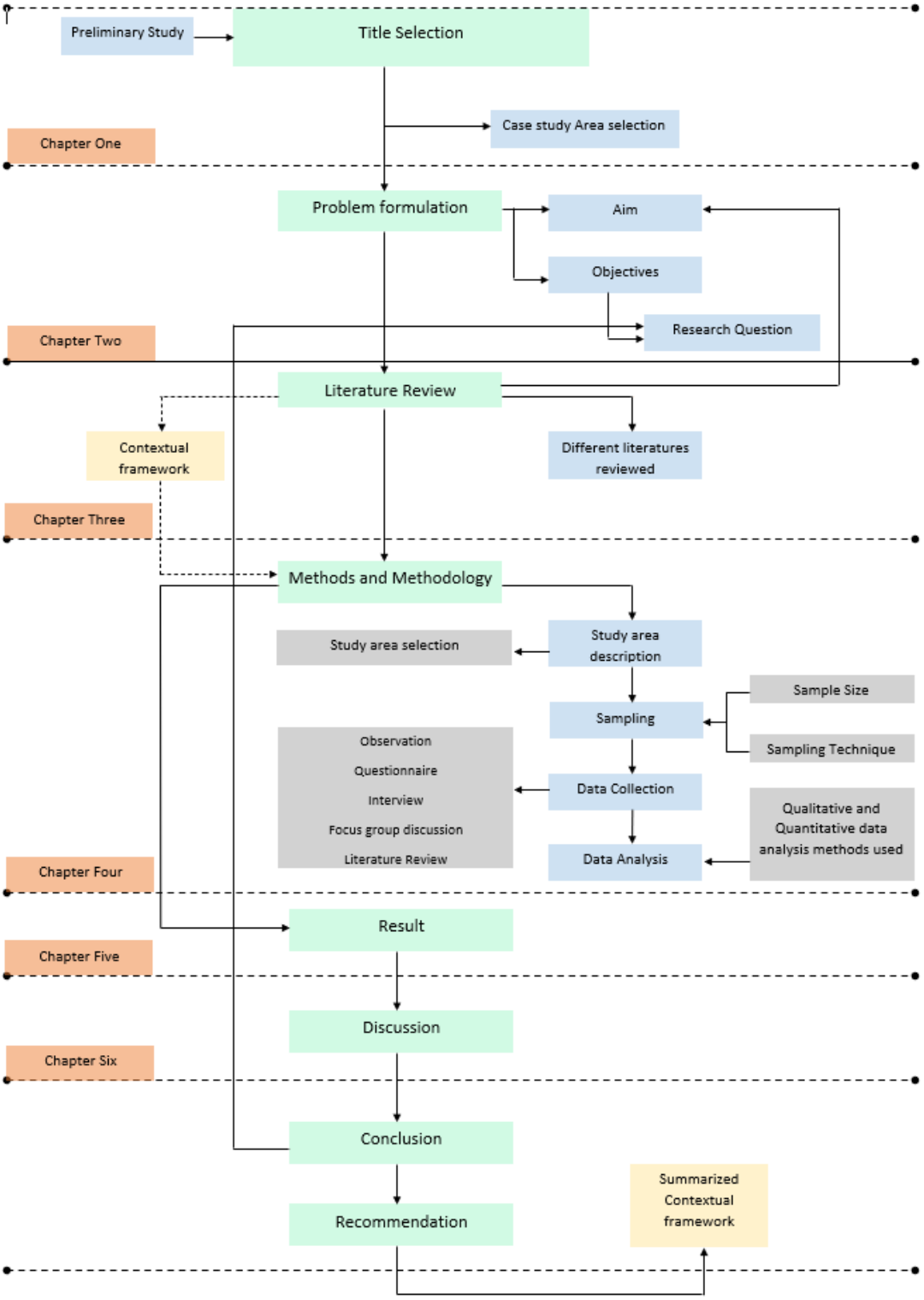
(Source: Kolfe Keranyo Woreda 7 Administration urban beautification and green development office)

Methodology

The method mainly focuses on the case study approach. It is qualitative and quantitative. Related literature reviews on Neighborhood Parks are taken as a reference point. Side by side survey is made using a checklist to understand the level of development of all

parks in the study area. Secondly, following the consultation of the different sources; questionnaires, interviews, and focused group discussions have been conducted. Finally, analysis of the data gathering from the questioner, interviews, and focused group discussion have been made which leads to the proposal based on the findings for the utilization of Neighborhood Parks for social interaction and recreation.

Research Design



Sample Size

The total population of 82 Neighborhood Parks was involved in this particular study.

From the population of 82, with a 5% margin error; 95% of the level of confidence, and 50% variability; the recommended sample size is 45. The researcher has implemented a sample size of 45 (http://www.raosoft.com/samplesize.html) - sample size calculator.

Sample Techniques

In studying the samples, committee members and the community were randomly picked. The community sample includes both children and adults.

From the population of 82 the recommended sample size is 45 (Raosoft sample size calculator)). To get proportional sample size among each strata the sample size (45) was divided by the total population (82) gives 55%. This was applied to each strata.

To get the information about the Neighborhood Parks, 3 informants (community) from each sample and 8 committee members from 8 neighborhood parks were picked randomly. This gives a total number of 143 informants.

Data Collection Method

Data collection was conducted using different techniques. The first one is observation; this helped to categorize the parks into three strata studied in this research. Two groups were applied for the interviews, one for the park user community (both children and adults) and the other for the park development committee by developing a questionnaire. A focused group discussion was also held with the Woreda Administrative. A comprehensive literature review was conducted on park usage.

Further, one of the parks was picked and a sample landscape design and implementation plan is prepared to make the study more practical.

Data Analysis Techniques

In this study, both qualitative and quantitative data analysis methods were utilized. Cluster analysis was used to conduct the qualitative method. In addition, a narrative analysis was applied to narrate the field-level observation. The whole population was observed to classify them into the three groups. A set of criteria was established to determine whether a particular neighborhood park is developed, underdeveloped, and not developed.

One of the quantitative methods applied for this study is statistical analysis. All the data collected through observation, interviews, and questionnaires are categorized and entered in Microsoft excel in the already designed data entry table. Especially the questionnaire was categorized and coded so as data entry is possible for each set of responses from each respondent.

From the entered data, using statistical tools, basic data information of the character of each respondent were analyzed and studied. The data was presented in tables and graphs. Finally, the results were discussed.

Results

- Most of the respondents do not have a private garden.
- Most of the time, the community members are not visiting neighborhood parks.
- Most of the respondents, children, and adult do not spend their time in the park.
- Most of the visitors visit the parks two to three days per week.
- Most of the respondents, who visited the Neighborhood Parks, spent their time in the park more than an hour.

- Children spent their time in the Neighborhood Park playing games with the equipment provided and/or using their play materials and toys.
- Most of the adults spent their time sitting, relaxing, and socializing.

- The majority don’t visit the site because of the lack of facilities and amenities in the site.
- The presence of dogs and the throwing of waste into the Neighborhood Parks have mentioned sources of a nuisance.
- The community values Neighborhood parks as very necessary.

- The safety and security, and accessibility of Neighborhood Parks were rated as excellent; on the contrary, the provision of seats and children's play equipment was rated as poor.
- The majority of the community needs the provision of seats/benches/tables and children's play equipment.
- The committee’s faces challenges in developing the Neighborhood Parks.

- The local administrations are supportive in the development of Neighborhood Parks

DISCUSSION

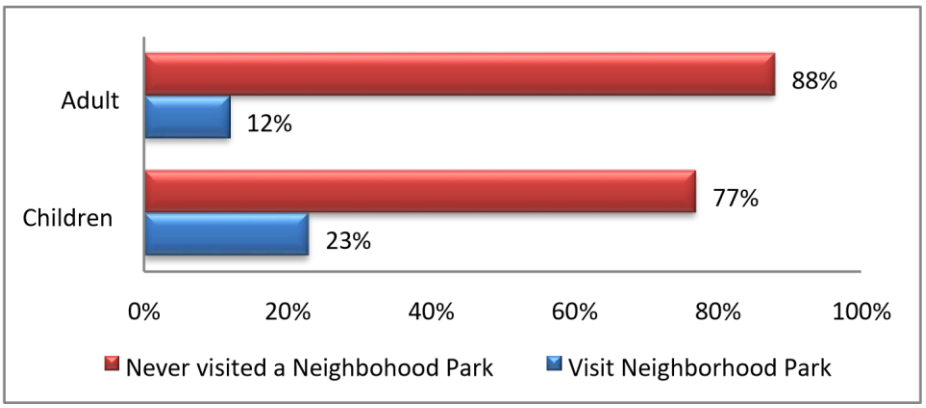
Current Condition

In the study area, almost all of the community (99% of the respondent) doesn't have a private garden. This implies that the only source of green space for the community is the nearby Neighborhood Parks. Since Neighborhood Parks are the only source of green space for the community, enough attention should be given to its development.

As per the survey, it is found that the majority of the community doesn't visit a

Neighborhood Park. Only 23% of the children and 12% of the adults visit Neighborhood Parks. Out of those visitors, majority of the children and adults visits only for 2 and 1 day per week respectively. This implies that the level of park usage both by children and adults is not satisfactory.

Leisure time refers to the time free from work or duties (Merriam-Webster). In simple words, it refers to free time. The majority of the children and the adults spend their leisure time in their home. This indicates that the level of park usage is very low. The most valued parks are the intimate and familiar ones which play a part in people's daily lives rather than distant ones far from home" (Burgess, Harrison, & Limb, 1988). As Burgess said, this study suggests using nearby parks is very important. If the community starts using neighborhood parks as their leisure time spending place, people tend to focus on the development of the neighborhood parks.



Neighbourhood Park Visit

According to the analysis made, among both children and adult visitors, the majority of the children (68%) and the adults (67%) spend more than an hour while visiting the Neighborhood Parks. This implies either the majority of the park users are satisfied with the parks they are using or there is no alternative green space in their surroundings (it is important to recall that 77% of the children and 88% of the adults never visited the Neighborhood Parks).

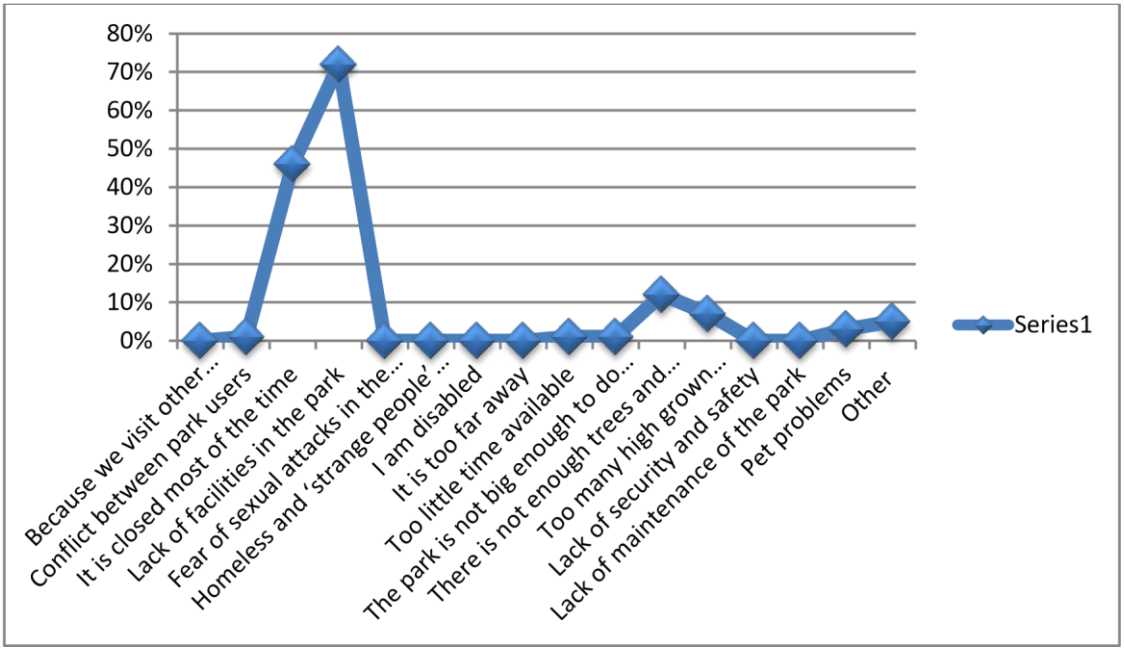
There are two types of Activities performed in the Neighborhood Parks by the visitors. The Analysis shows that the majority of the children are engaged in active recreation while the adults engage in a passive recreation.

From the analysis, it is found that Neighborhood Parks should integrate both passive and active recreational opportunities. Integrating both active and passive recreation helps to increase park usage both by children and adults.

Challenges

Challenges refer to difficulties faced by the users of the Neighborhood Parks. As Maleka et al quoted (Maleka, Mariapanb, & Shariffc, 2012) (Willie, 1992), Quality is not solely about techniques and procedures but including people who use them. This section is a way paving towards understanding the challenge and need of the community to create a quality Neighborhood Park.

According to the analysis, it is found that the majority of the community doesn't visit the Neighborhood Parks because of the lack of facilities in the parks. In this context, facilities in the park refer to the seats, playing equipment, walkways, shading trees, etc. As the community raised and the observation made, most of the Neighborhood Parks do not fulfill all the facilities needed by the community. Missing one of the needs might lead people to use the park less.



Reasons for not using the parks

Nuisance is a factor that unpleased the park users. It is one of the obstacles that hinder the community from visiting the Neighborhood Parks. According to the analysis, the main nuisance is the presence of dogs. Another factor considered as a nuisance is throwing of wastes into the Neighborhood Parks. Maintenance level refers to the effort of the assigned committees. The assigned committees should work on the maintenance of the park.

Public Perception

In the study area Neighborhood Parks are the only sources of green space. According to the assessment made it is found that the community values Neighborhood Parks as very necessary. This implies that the community awareness of the importance of Neighborhood Parks is substantial. Therefore, this can be taken as an important component towards the development of Neighborhood Parks.

The key components used to evaluate the quality of services and facilities are the accessibility of the Neighborhood Park, general cleanliness, personal safety and security, play equipment for children, seats/benches/tables, shaded areas, state of grass/trees/plants, and overall maintenance. Dissatisfaction with any of the services and facilities can be considered as one of the major factors for most of the community not to visit the Neighborhood Parks.

The collected data implies that majority of the community might not be visiting the Neighborhood Parks because of the lack of good provision of seats/benches/tables and play equipment for children. They also required for the provision of seats/benches/tables and play equipment for children in a higher rate than other facilities. Therefore, emphasis should be given to the provision of seats/benches/tables and play equipment for children.

Committee Members

The Neighborhood Park development committees are the bridge between the community and the Woreda administration. They are responsible for managing the resource organized by the community and the support provided by the Woreda administration.

The committee's role is short-term to establish the park, but there is a sustainable issue. The neighborhood park is developed by the community only. This creates a lot of challenges especially in raising funds for the development and provision of important facilities. Even though the Woreda administration is supportive, most of the parks are not developed professionally.

Administrative bodies

In Woreda 7, the urban beautification and Green development Office oversees the overall monitoring, such as the use, development, and control of the neighborhood parks in the Woreda.

There are two agreements, the agreement to be signed between committee members and the Woreda office, and the agreement to be made among the community to form committee members. These tools are very helpful and can serve as a commencing document towards neighborhood park development at the community level, although may lack logical guidance. Regardless of this, the Woreda office is very responsive and supportive. They are willing to give guidance regarding the specified tools and any technical support.

Conclusion

To conclude, the overall park usage in the study area is very poor; even though, the community doesn’t have a private garden. The community has responded their reason for dissatisfaction with the parks such as, lack of amenities like seating spaces, children's

Playground, and lack of maintenance. The interest of the community to use the parks is high. However, the community cannot get the best out of the parks because of the mentioned reasons.

The community needs a well-designed Neighborhood park that is with full amenities: - Seating Spaces, Children Playground, Shading Trees, Sports Facilities, Reading Spaces, ornamental plants. Some respondents demanded the provision of cafés and library in the parks. However, the Neighborhood park development guideline issued to the communities; by the Sub-city allows only 20 % of the parking area to be a hard surface and the rest 80% should be covered with green as stated in Article 2 number 6.

Neighborhood parks are very important and need to be designed by fulfilling the key standards to activate them. These are accessibility, facilities for physical activity, amenities, shading, cleanliness, graffiti, playing surface, security, and lighting. From the study, it is shown that parks can be activated by meeting those standards.

The role of the committee member is vital. They serve as a link between the Woreda administration and the community. They are neighborhood park development frontrunners. They can benefit both society and environmental conservation if relevant and adequate resources (money and skills) professional designs are provided. Both the community and Woreda administration should support the committee members.

Therefore, this study is helpful in directing the key standards as well as a sample design and an implementation manual for neighborhood park developers and Woreda administrative bodies to develop the parks in a professional manner.

Recommendation

Based on the results and discussion made in the previous sections of this study, recommendation is made in relation to better park usage. The recommendation is grouped into different categories. It tries to cover the basic points towards the Utilization of Neighborhood Parks for social interaction and recreation.

- The location of Neighborhood parks should be at the center of the residential areas to be used by the community.
- The size of the park should consider the capability of the site to accommodate the different needs of the community. There should be enough space to meet the need of the communities.
- The government should be giving care in planning the urban. Parks are one of the basic components in the planning of the urban. The delivery of Parks and recreation services must be seen as equally important as other services
- There should be a well-designed park management framework. Proper management and regular maintenance are one of the factors for regular park usage.
- Parks should be aesthetically appealing to use and spend more time there.

- Vegetation should be carefully selected and planted.

- Maintaining existing as well newly planted vegetation, such as mowing the grass regularly is very important.
- Creating clear awareness to the community and inviting them to participate in the development of the parks
- Create safe park environments by adding the following: - Fences with gates to control free access, appropriate lighting, park personnel, and security guards.

- Remove unwanted park elements and antisocial characters (homeless people, vagrants, vandals, drunks, and thieves, teenagers who drink, smoke, and use drugs) from a park regularly.

Design Recommendation

This section shows how to integer the elements that should be included in the designing of a neighborhood parks. A sample site for the design was picked by setting criteria.

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