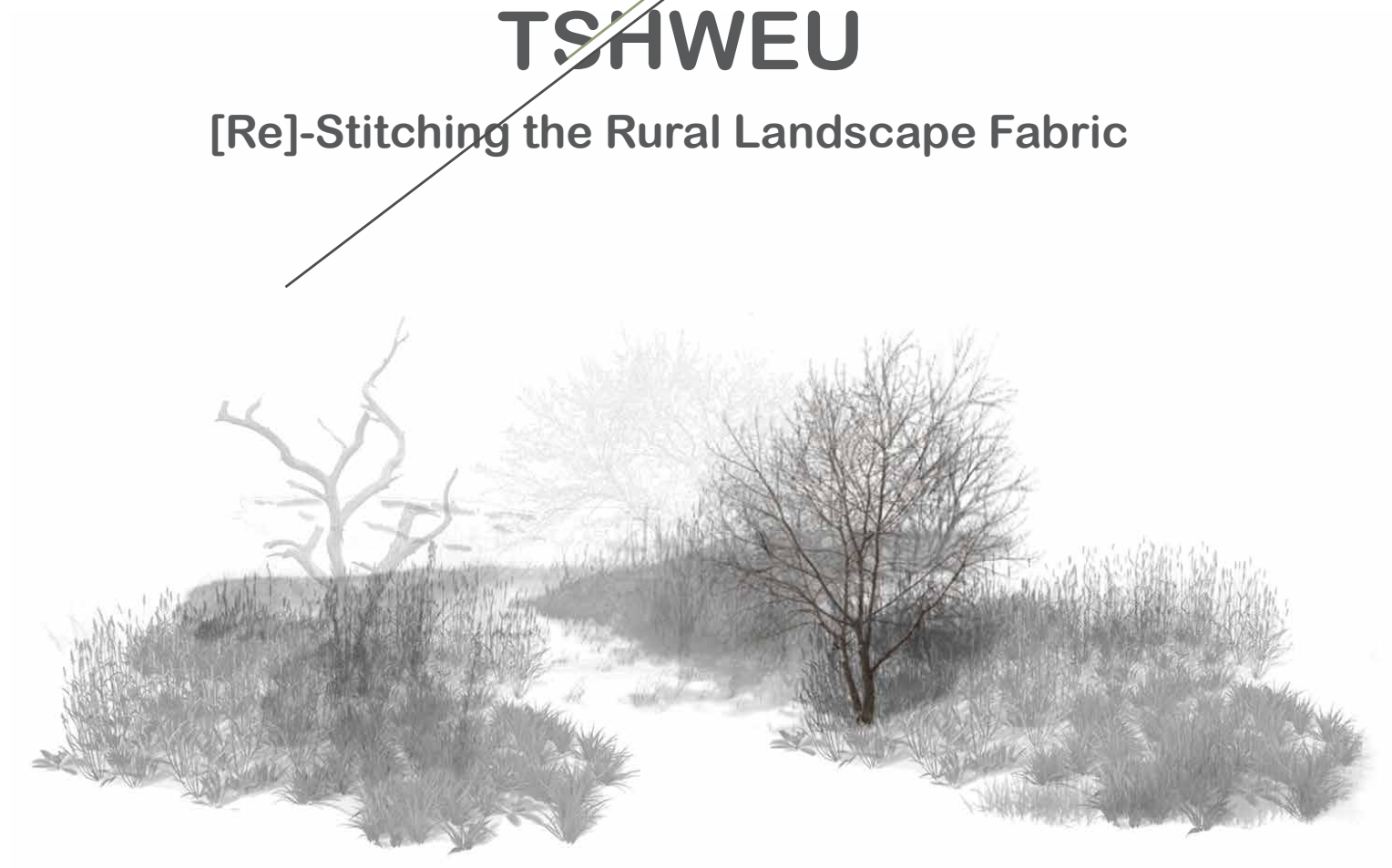# TSELA TSHWEU

[Re]-Stitching the Rural Landscape Fabric

LANDSCAPE ARCHITECTURE DISSERTATION [2020]

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Dissertation by : Leonard Sebotsi (2020)

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Submitted in fulfilment of part of the

requirements for the degree Master of

Landscape Architecture (Professional)

Department of Architecture

Faculty of Engineering, Built Environment and Information Technology (EBIT)

University of Pretoria

Dissertation title: Tsela-Tshweu:

[Re] stitching the fragmented rural landscape

*"*Tsela –tshweu*" is a Pedi phrase which means "go well"

Furthermore, it refers to a farewell phrase which means that " which ever path one is to undertaking may all go well for that person and may they remain

blessed throughout the journey".

In the Pedi culture after a visit or before one embarks on a journey or a trip the family wishes the person well by saying "*Tsela –tshweu*" the phrase with a deeper meaning that may God and the Ancestors open and brighten the way for that person.

Site description: A rural landscape with three villages under the Moletjie traditional precinct. The study area is ruled by the

Moloto dynasty of the Moletji e tribal authority.

Users: The community members residing in the three Moletjie villages and possible tourists.

Client: Moletjie tribal authority

GPS co-ordinates: 23o 36' 26.04" S;   29o 15' 07.37" E.

Research field: Socio cultural Landscapes: Heritage, Social and Productive Landscapes

Editor: Mrs K.Malatjie

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In accordance with Regulation 4 (e) of the General Regulations (G57) for dissertations and theses, I declare that this dissertation, which I hereby submit for the degree Master of Landscape Architecture (Professional) at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at this or another tertiary institution.

I further state that no part of my dissertation has already been, or is currently being submitted for any such degree, diploma or other qualifications.

I further declare that this dissertation is substantially my own work. Where reference is made to the work of others, the extent to which work has been used is indicated and fully acknowledged in the text and list of references.

Leonard Sebotsi : 10 November 2020

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RE-STITCHING THE RURAL LANDSCAPE FABRIC

Abstract

Democracy, post the apartheid era promised a better life for native Black Africans in South Africa, better living conditions for all and especially those living in townships and rural areas.

Fast forward into 2020, a lack of economic opportunities, under-developed areas, and continuing lack of infrastructure is still a sad reality for many people living in rural areas in South Africa. Rural parts of South Africa are thus generally poor and the majority of these areas are characterized with poor service delivery and lack of access to resources.

Nevertheless, such places are rich with culture, tradition and a sense of community. The study area of this dissertation is in the rural parts of Limpopo, with special focus centered around the Moletjie tribal villages.

Most of the rural areas in the Limpopo province are still under the leadership of traditional authorities and depend on livestock and subsistence farming.

The rural landscape fabric within the villages in the Moletjie area and other parts of South Africa share a similar trait of being dispersed and fragmented in nature.

Due to the lack of infrastructure and resources, residents are forced to share these scarce resources. Sharing also means that residents walk long distances to places of importance on long, tedious and physically uncomfortable pathways.

Environmental issues such as erosion, overgrazing and deforestation are a concern within the study area.

It is also worthwhile to mention that the author of this dissertation grew up in the study area. This provides a unique opportunity to explore how intimate knowledge of space about a place can factor into the design of a place.

However, it should be emphasized that the dissertation does not aspire for an easy fix solution with regards to rural development issues; it rather subtly looks into how to improve rural conditions, rurally. In other words how can rural lives together with the rural environment be sustain-ably developed while preserving rural identity and heritage.

Figure A(Author, 2020)

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Definition of Terms

Rural areas- recognized as spaces where human settlement and infrastructure occupy only small patches of the landscape and most of the land is dominated by fields and pastures of wood, forest, water and sometimes dunes or soils (Wiggins and Proctor, 2001).

Furthermore rural areas are- 'land-spaces with culturally defined identity; situated within a place statutorily recognized as non-urban; and occupied by settlers predominantly depending on primary sources of labour for their livelihood' (Chigbu, 2013b:10–11)

Rurality- a concept denoting the conditions of rural people and the environment of rural places, it originates from and reflects traditional or locals living in rural areas.
It is also defined as a condition of place-based homeliness shared by people with common ancestry or heritage and who inhabit traditional, culturally defined areas or places statutorily recognized to be rural (Chigbu 2013:815)

Place- is not merely settings for lives, but includes participants, as vibrant, living aspects of memory, tradition, history, and meaning (Donohoe 2014,xi – xxi).

Place-Based Design approach- The design approach manifests through cultural values constructed from a given perspective in time and space, it possesses an intimate relationship with the genius loci of the place, the combination of the cultural values with the regional characteristics of the space to create environmental sustainable spaces.

Landscape- Bernard Lassus (1998:88) defines landscape as "a cultural construction of the mind, restating from the perceptible and aesthetic considerations forming on a natural given, while the environment is a state of things able to be improved technically and scientifically"

Indigenous knowledge systems - refers to the complex set of knowledge, skills and technologies existing and developed round specific conditions of populations and communities indigenous to a particular geographic area. IKS constitute the knowledge that people in a given community have developed over time, and continue to develop Noyoo (2007:167). Indigenous knowledge is embedded in community practices, institutions; relationships and rituals (Centre for Indigenous Knowledge Systems, 2005:1).

Critical regionalism- As a theory, critical regionalism emerged from the theory of regionalism, which was deeply rooted in culture and identity within the architectural discourse as explained by Tzonis and Lefaivre (1996). It was a powerful medium of resistance, resisting the alienating and dehumanizing assault of place-less-ness and universal standardization (Frampton 1990:333).

Equity- the situation in which everyone is treated fairly and equally (Cambridge dictionary)
Equality- the right of different groups of people to have a similar social position and receive the same treatment (Cambridge dictionary)

Rainwater harvesting- is the process of capturing rain and making the most of it as close as possible to where it falls. Examples include enhancing local food security, passively cooling cities in summer, reducing costs of living and energy consumption, controlling erosion, averting flooding, reviving dead waterways, min-

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imizing water pollution, building community, creating celebration and more." (Lancaster, 2008) "Rainwater harvesting, in its essence, is the collection, conveyance, and storage of rainwater. The scope, method, technologies, system complexity, purpose, and end uses vary from rain barrels for garden irrigation in urban areas, to large-scale collection of rainwater for all domestic uses" (Texas, 2005)

Genius loci: the prevailing character or atmosphere of a place.

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'Space of any kind is defined by the ideas of those inhabiting it and by the ideas of those Inhabitant's Interactions' (Erzberger 2011:352).

Figure B (Author 2020)

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Figure B

Prologue

'A Space of any kind is defined by the ideas of those inhabiting it and by the ideas of those inhabitant's Interactions' (Erzberger 2011:352).

The study area in this dissertation is a place that I have been able to call home for the last 24 years of my life.
In the search for the identity of this place, so as to guide the design process, I got to know myself and my roots a lot better.

The stories (His- and Her Stories), which are referred to in this dissertation as narratives, influence the design process directly. This kind of design process would, if implemented, allow the people telling the narrations to be able to relate to the final design product.

Throughout the design process, I got to understand that for one to understand a place one has to understand both the tangible and the intangible characteristics of the place together with their interactions.

A place without a story is not a place but an empty shell.

Figure 1 Depicting the Spirit of place: image adapted from Qunu grazing (Bostch 2013)

01

Introduction

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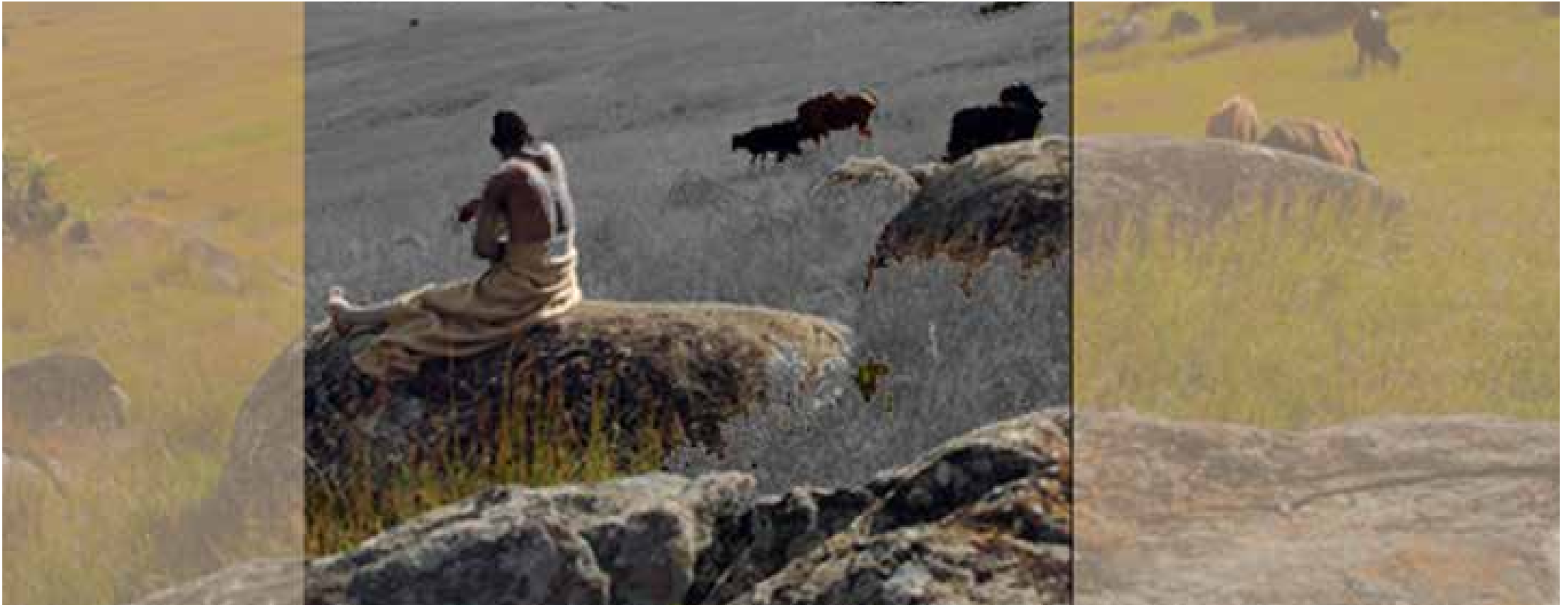
Introduction

"I am an African.
I owe my being to the hills and the valleys,
the mountains and the glades, the rivers, the deserts, the trees,
the flowers, the seas and the ever-changing seasons that define the face of our native land.
My body has frozen in our frosts and our latter-day snows.
It has thawed in the warmth of our sunshine and melted in the heat of the midday sun.
The crack and the rumble of the summer thunders, lashed by startling lightening,
have been a cause both of trembling and of hope.
The fragrances of nature have been as pleasant to us as the sight of the wild
Blooms of the citizens of the veld. The dramatic shapes of the
Drakensberg, the soil-coloured waters of the Lekoa,
iGqili noThukela, and the sands of the Kgalagadi,
have all been panels of the set on the natural stage on"
Extracts from Thabo Mbeki (2001) I am An African speech
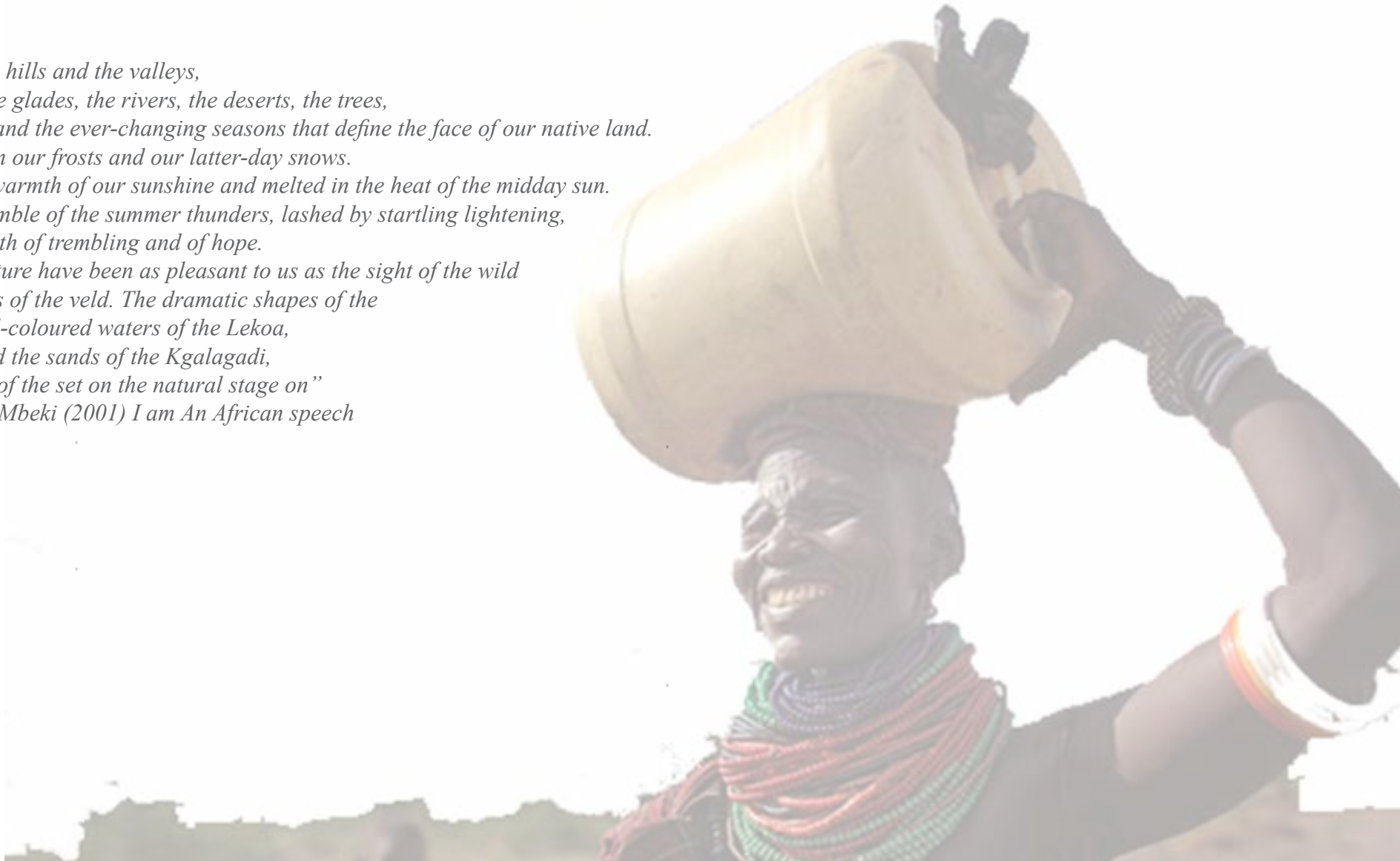
Figure 2 Africa my instigation (adapted from @google images, 2020)

Former president Thabo Mbeki described the sublimity of the African landscape as a commodity that Africans should embrace and be proud of.
Africans are not only surrounded by the landscape described above but are a part of it, it defines them. "I am African because she is the cradle of our birth and blessed us with ancient wisdom; she is the land of [today] and tomorrow" Visser (2016:3).

The landscape contains transcripts of those who existed before the current inhabitants of the African landscape. The landscape tells the story of beauty and indigenous knowledge over hundreds of years.
The rural landscape in South Africa can thus be described as that which is shared by the former president. The beauty of the hills, the valleys, trees, grasses and water bodies shape the rural landscape where the inhabitants depend on the landscape for their survival.

Figure 3 African soil (Adapted @google images 2020)

Figure 4 The rural valley landscape @google images

Figure 5 The sky pathway

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The Rural Landscape

1.1 The Rural Landscape

Rural landscapes are rich with peaceful experiences, adventure, heritage and history. Figure 6 below shows the beauty and tranquility observed in a rural village in Limpopo called Ga-Nailana. Most importantly the landscapes carry significant and sacred meanings within both their natural and their human created context.

May 1987 marked the first time the American Society of Landscape Architecture (ASLA) published an information series on landscape architecture in the rural landscape (Coen et al. 1987). From then on, landscape design in the rural setting has been a concern in the American landscape architectural profession, with the call for landscape architects and scholars to cover work in rural landscapes. This has been an ongoing study in rural America. However, there is comparatively little South African literature on this topic. The author found the following two studies. A recent dissertation "Pula: A ene" by a University of Cape Town (UCT) graduate Lesego Bantsheng and a heritage assessment (Magoro phase 2) by Habitat Landscape Architects.

Due to a lack of literature and project information, it is evident that rural landscapes have been overlooked and marginalised in the profession of landscape design, academia and general development in comparison to urban and semi-urban areas.

According to UN's data and World Bank statistics, about 38% of South Africans live in rural areas. This equates to about 19 million dwellers in comparison to urban areas which are home to 64, 3 % of the population equates to about 34 million dwellers living in urban and semi-urban areas (SACN 2009). The urban population continues to increase because of the increasing rate of rural-urban migration; this is due to rural inhabitants seeking a better life and economic opportunities in the urban sector (SACN 2009). It is estimated that about 70% of the Black Africans living in urban and township areas in South Africa originate from rural areas. (SACN 2009).

From the author's own experience, many rural inhabitants have left their homes over the years. Some of these individuals have gone back only to find how little the places they once called home have changed, or how living conditions keep deteriorating.

Landscape architecture has been introduced both in urban and semi-urban areas, various interventions and studies have taken place in these areas. Results have shown a significant impact on the livelihoods of the inhabitants. Examples includes the Moretele Park in the township of Mamelodi, east of Pretoria, which offers both social and economic benefits.
According to Koohsari et al (2009) development, in a post-apartheid South Africa, ought to involve and improve the lives of everyone, including the lives of the most disadvantaged. He further reiterated that development should take everyone forward in a self-conscious win-win process. Development should move everyone forward in terms of access to employment opportunities, improved livelihoods justifiable environmental living conditions.

One of the justifiable environmental interventions includes the implementation of well-designed public open spaces in rural areas. The public open space is an important spatial component of any community settlement; it is often a shared space which can meet various needs for various users.

Figure 6a The rural landscape of Ga-Nailana Village (Author 2020)

Figure 6b The rural landscape of Ga-Nailana Village

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Koohsari et al (2009) explains the public open space as a place to secure ecologically sustainable development and offers the exposure to natural resources while promoting justifiable economic and social development opportunities.

Furthermore, it is a place where culture meets tradition, activity meets tranquility and as a result, it becomes a platform for multiple activities and self-expression.

1.2 The beginning of the study

The study developed as a response to the literature which illustrated inequitable access to open spaces in various urban and rural areas. Cilliers et al (2015) unpacked this issue extensively noting the disparities of access to open spaces in the aforementioned areas. In studying these disparities it was evident that rural areas are the most affected in terms of access to public open spaces.

Besides the fact that public open spaces are not equitably accessible in rural areas as compared to urban areas, those that exist are not always well or appropriately designed. Furthermore, there is also an imbalanced emphasis on the Eurocentric design which leads to the inauthentic landscapes. Therefore, as a point of departure in this dissertation, it was then understood that to effectively design better environments, it is important to understand the place well. Thus, a place-based approach became an important approach.

Finally, having lived in the area where the design is focused, the author seeks to test how intimate knowledge about a place impacts on the design process and the outcomes of that place.

Figure 6c The rural landscape of Ga-Nailana Village (Author 2020)

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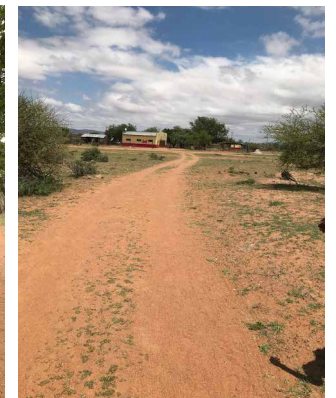
Introduction to place

1.3 Introduction to place

1.3.1 Site Selection

The site was selected based on its rural setting. Thus, initiating the main argument in this dissertation that advocates for better designed living environments through landscape architectural interventions. Most importantly, the study area is where the author grew up and it is interesting to see how intimate knowledge of a place affects the design process and the overall design outcome.

1.3.2 Study area Background

The majority of villages in South Africa are still under the leadership of traditional authorities. The power of this ruler-ship have remained in a specific family for decades. This sometimes hinders development in rural areas based on what the traditional leaders think is best for the villages, as noted by Ntsebenza (2004). This dissertation does not aim to challenge the traditional leadership structure and the pros and cons of traditional leadership. On the contrary, the project considers the authorities and community members as stakeholders in a win-win place-based landscape architectural proposal.

The study area is located in Limpopo Province, within the Capricorn district municipality. The study area is within the Moletjie tribal land, which consists of eighteen villages (18). From the eighteen villages only three villages, make up the study area, namely Ga-Rankhuwe, Monyoaneng and Madigorong villages.
The area falls within the Savanna biome, which is dominated by bush-veld that contains a mixture of grasslands and trees (Low & Rebelo; 1996).

Figure 7 Map 01 Locality: Savanna Biome

1.3.2 The Moletjie tribal precinct

The Moletjie tribal village is understood as a traditional precinct with several villages under the ruler-ship of one royal dynasty, the Moloto dynasty. The area is the land of the baPedi ba Moletjie. As already stated above, Moletjie falls under the Capricorn district municipality,
which is currently made up of four local municipalities, namely, Blouberg, Lepelle –Nkumpi, Molemole and Polokwane local municipalities respectively.

Moletjie used to be part of the Aganang local Municipality but following the discontinuation of the Municipality, it was merged into the Molemole, Polokwane and Blouberg local Municipalities. Therefore, some villages within the Moletjie traditional precinct belong to different local municipalities.

Blouberg municipality is predominantly an agricultural, mining and tourism area with attractions, such as the Dalmyn mine, Blouberg nature reserves and Mapun-gubwe heritage sites(IPW 2016/17-2021:54). The Lepelle-Nkumpi, Molemole and Aganang local areas are predominantly rural areas and characterized by a lack of infrastructure. Lastly, the Polokwane local municipality is 23% urban, 71% rural and 6% comprises of smallholdings and institutional, industrial and recreational land experiencing a high rate of population growth due to rural-urban migration patterns. (IPW 2016/17-2021:54)
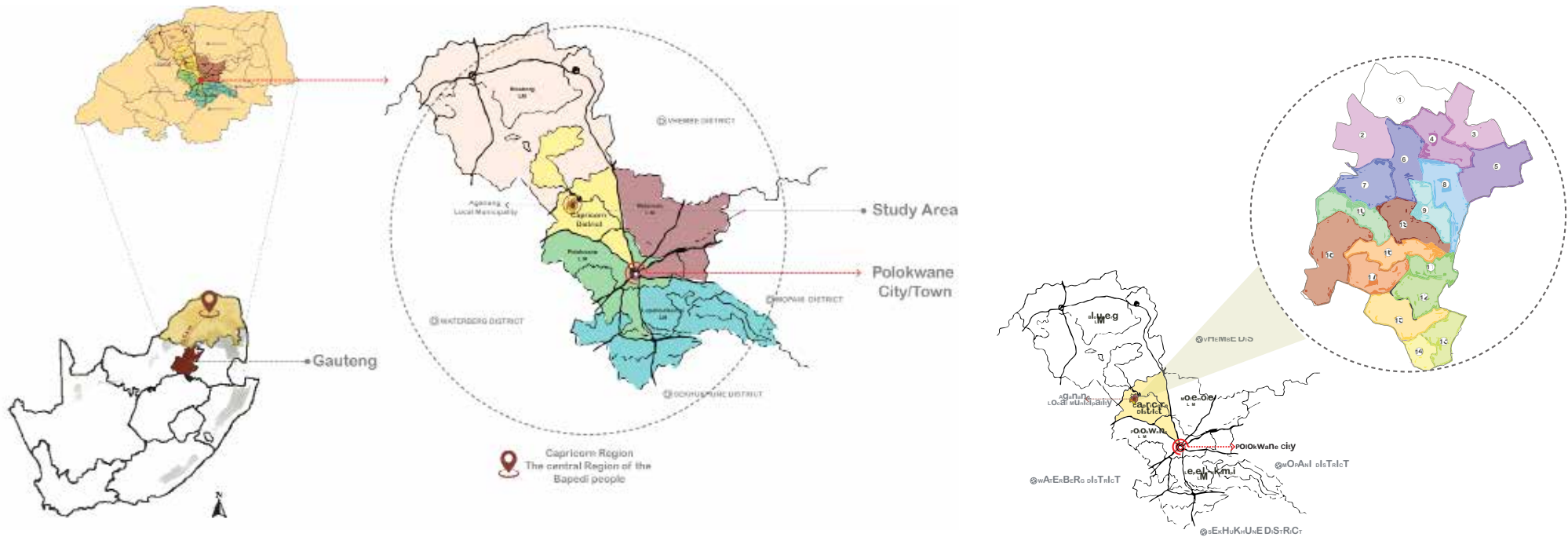
Figure 8 Map 02 Capricorn district (Author 2020)

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Moletjie consists of about 18 villages in total and although many share similar traits, three of these villages will be the main focus for this dissertation, as already stated above.(See figure 09) .hh One King rules the entire Moletjie tribal precinct, (Kgosi Kgabo Moloto III). However, the king has appointed chiefs (MaNtona) to head each village.

Through an interview with one of the residents, it was understood that, for better governance purposes and the sharing of the land among head chiefs, villages in this area are placed apart from each other (J Phukubje 2020, personal communication, 26 July).

As a result, the rural landscape is fragmented and the villages are placed 3 to 5 km (minimum) apart. However, these villages still share some of the same resources and infrastructure such as schools. This in turn forces the rural inhabitants to walk long distances from one place to another to access these resources and infrastructure.
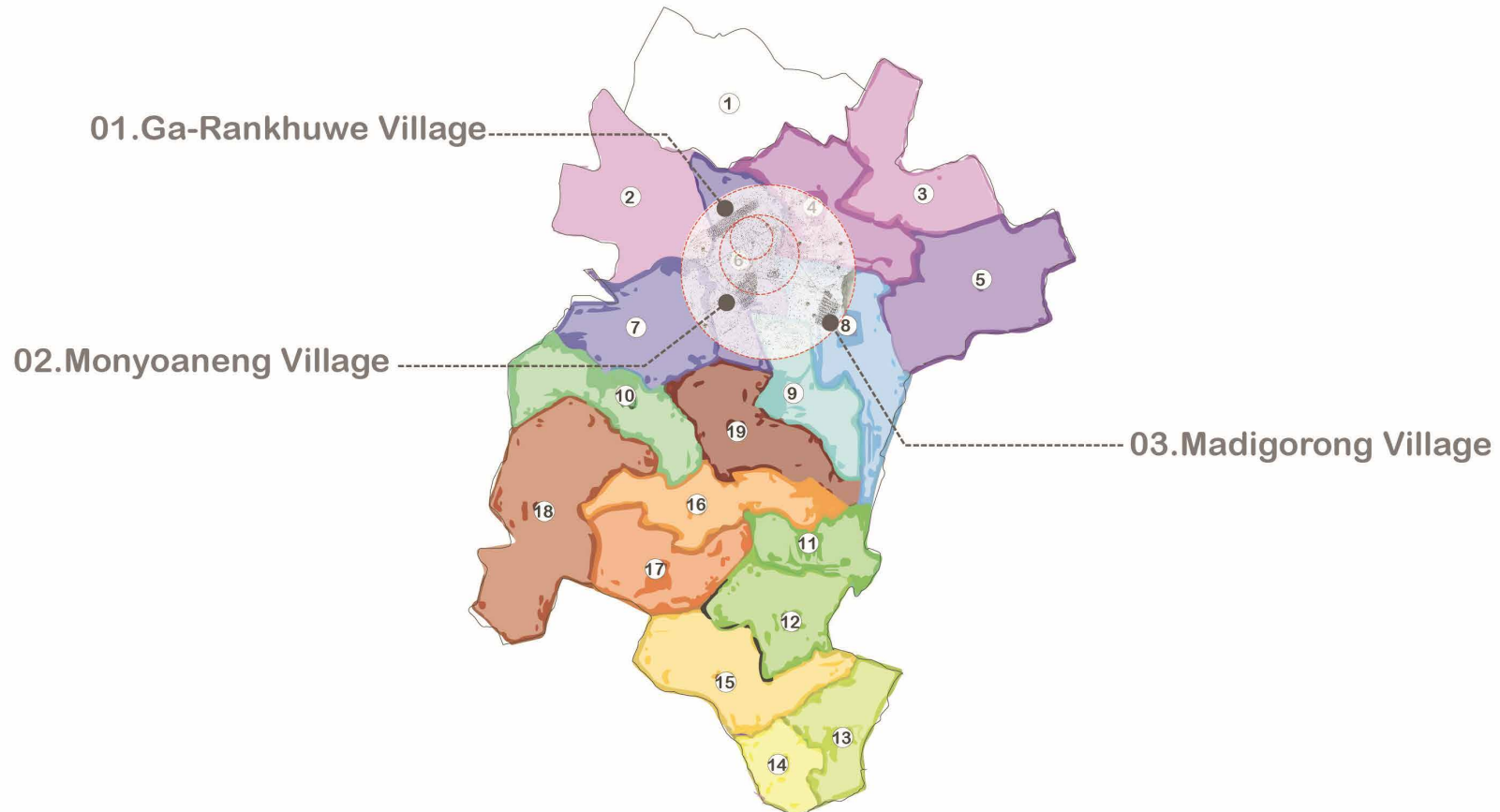
Figure 9 Map 03 Moletjie Tribal Villages (Author 2020)

Figure 10 a Map 04 Study Area Villages (Author 2020)

Agricultural Fields

**Village 01
Ga-Rankhuwe Village**

8KM

High School

MOLETJIE MOSATE ROAD

Agricultural Fields

Agricultural Fields

1:10,000

**Village 02
Monyoaneng Village**

**Village 03
Madigorong Village**

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Problem Statement

1.4. Problem Statement

The problems identified in this dissertation range from social to environmental issues which ultimately affect the economic aspects of this community. These problems, therefore, create a context for the landscape architectural issue.

1.4.1 Social Issue: Fragmentation and Sprawl

The rural area inhabitants within the study area depend on walking as a means to access different places and spaces. The biggest challenge is the fragmentation and sprawl of the villages. (Refer to Figure 10). Meaning that common resources have to be centralized to benefit everyone within the communities.
Due to this fragmentation and the placement of resources and facilities, inhabitants have no choice but to walk long distances from village to village and from village to places of importance, such as schools. To access such places they use footpaths which are constantly exposed to harsh climatic conditions. Furthermore, this leads to the footpaths being experienced as very long, tedious and physically uncomfortable spaces.

01.Ga-Rankhuwe Village

Existing High School shared by pupils from the three villages

3km Walking Distance

4km Walking Distance

03.Madigorong Village

Study Area-Tribal Land of the Moletjie Villages
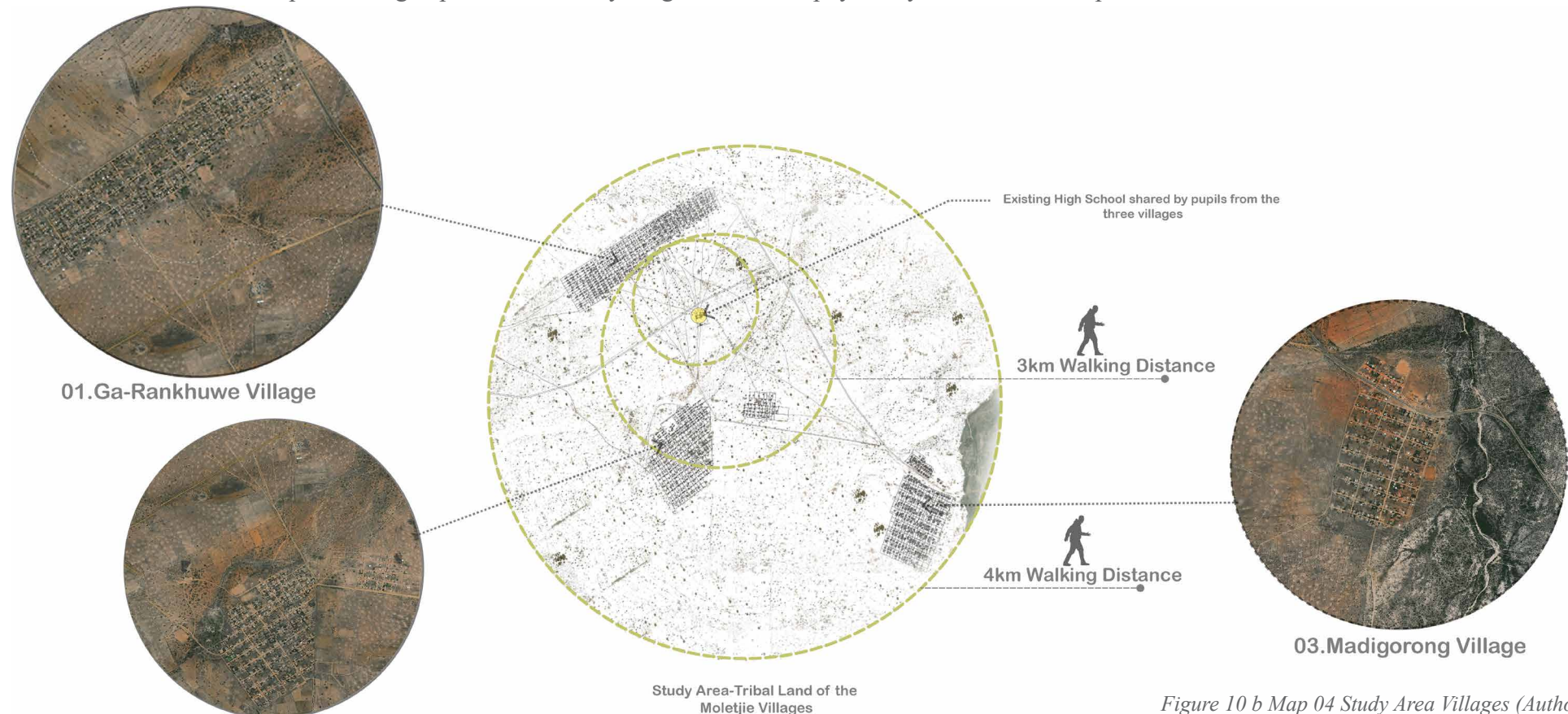
Figure 10 b Map 04 Study Area Villages (Author 2020)

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Ga-Rankhuwe village

Monyoaneng Village village

Ga-Madigorong Village village

A

B

C

Figure 11a Existing Footpath conditions (Author 2020)

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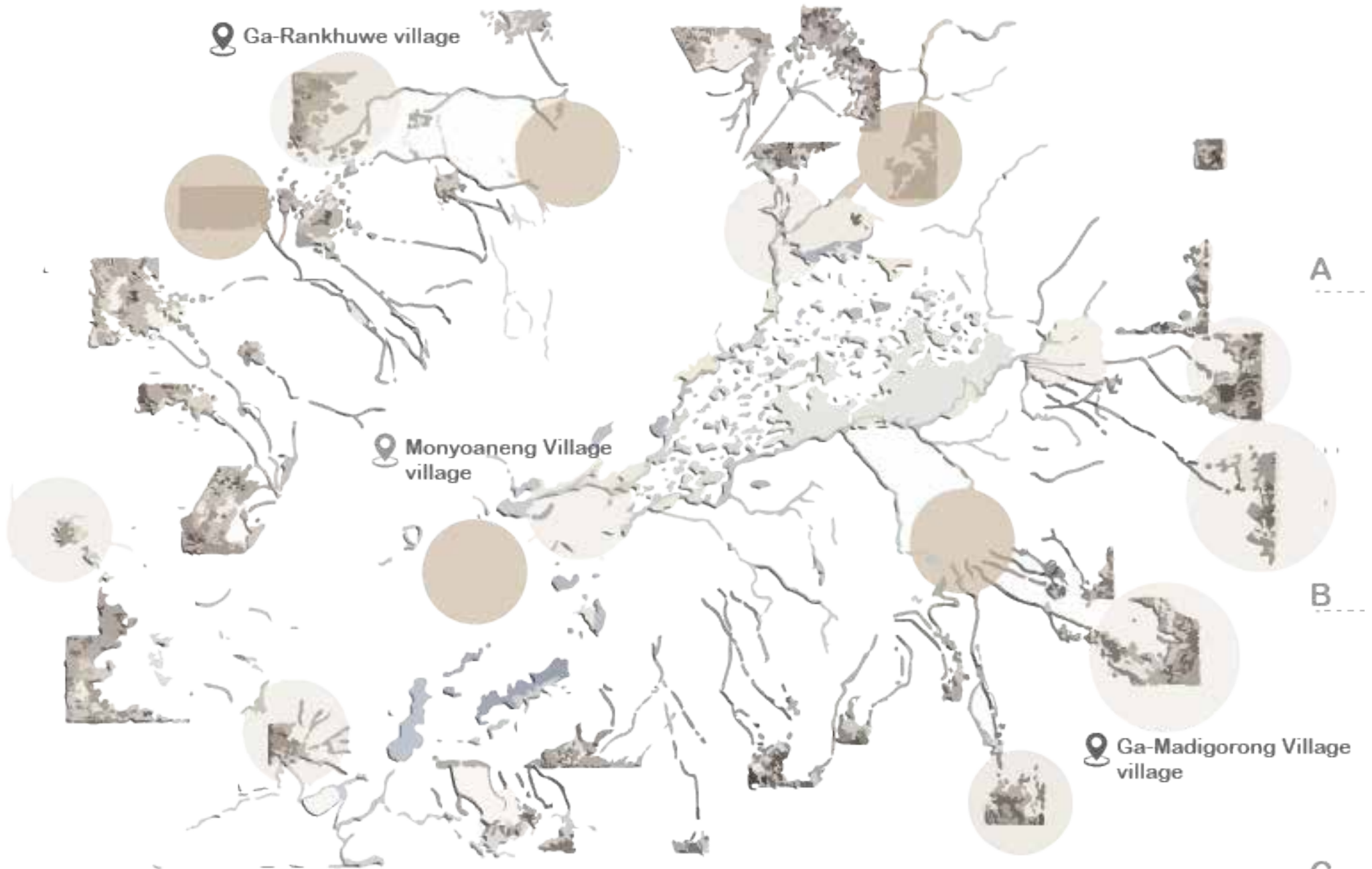
Prospects arise for the walkways to not only become networks that connect different spaces, but also, for the walkways to become and to create live-able, vibrant spaces. The landscape design question then can be posed as follows: **"how can walkways become social spaces and stitch the tangible and intangible qualities of this rural landscape?"**t of their daily activity. The majority of the inhabitants do not own vehicles and public transport is costly. In some parts of these rural areas, vehicles cannot reach the deep forests and other inaccessible terrains.

Although considered a mundane activity, walking is a form of art. The art of walking, even though not appreciated by everyone, exposes one to nature, peace of mind and it is poetic to a certain extent.

Figure 11a Existing Footpath conditions (Author 2020)

Figure 12 Prospects of the footpaths as social and productive spaces (Author 2020).

1.4.2 Cultural issue: loss of heritage

Cultural landscapes are ephemeral in nature, they are rich with memories and personal experience which gives the landscapes its vast profound meaning. Carl O. Sauer (1925).
New generations are replacing older generation which as a result makes tradition and culture to slowly fade away in the study area. The design approach in this dissertation aims to find a way to re-incorporate culture and tradition as well as to educate newer generations about their roots.

Mitchell (2015:14) states that landscapes contain a palimpsest of human actions over time and create a tangible link between what we are, what we become and the people who were involved in the creation of that place. Similarly, the landscape around the Moletjie villages was shaped by the indigenous inhabitants of this area. Thus, the knowledge and associated traditions need to be passed on to the newer generation.

Therefore, the question arises on how can cultural landscapes in this particular area be re-imagined and depicted through landscape architectural interventions?
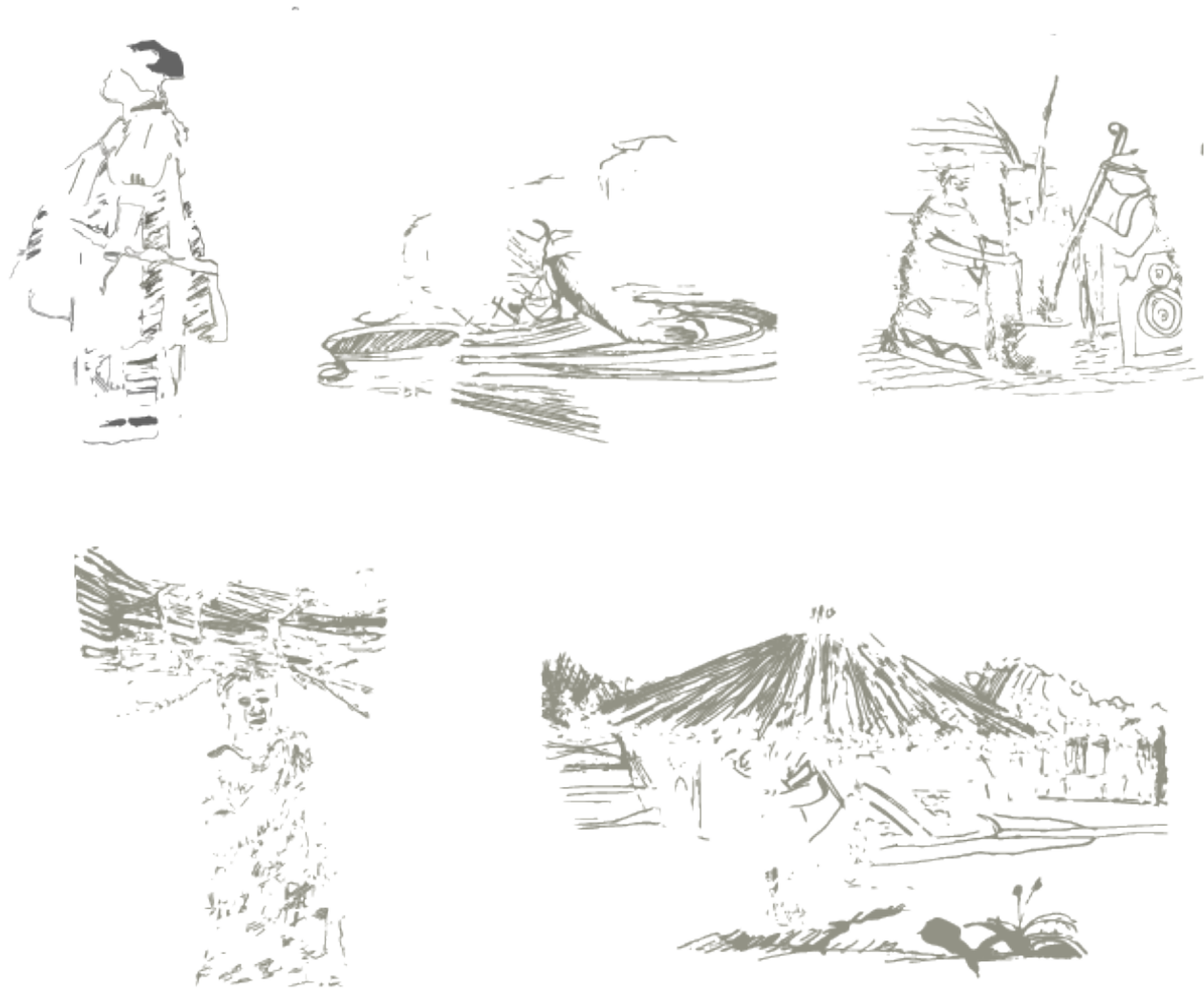
Figure 13 Fading cultural practices- (Author 2020)

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1.4.3 Environmental Issue: De-Forestation, Erosion and Over-grazing

Land degradation, deforestation and desertification are among the most critical environmental issues in South Africa and are closely related to food security, climate change, poverty and biodiversity loss (Global environmental facility, 2019).

Deforestation and overgrazing pose a huge environmental threat in this community as a lot of important plants species are cleared in large quantities for domestic use such as being used as an energy source (firewood). Integrated sustainable land management practices are vital and cannot be ignored in the design process of this proposal.

Firewood is one of the essential resources for rural inhabitants within the study area. But if it is over-harvested and plants are cut down carelessly , this creates huge environmental risks such as the loss of plant species, animal habitats and exposes households to extreme weather conditions, such as strong winds.

Most Moletjie residents have always been subsistent livestock farmers, using livestock to feed themselves and their families. The tradition is slowly fading away because of the loss of good grazing land. Subsistence livestock farming is one of the major economic contributors in the area, but is currently under threat, because of the afore mentioned environmental issues.

Compacted and eroded soils are also a major environmental concern. Nevertheless, storm water runoff increases due to the lack of infiltration in compacted soils. However, an opportunity also arises to capture and reuse this storm water to support the proposal.

Figure 14 Deforested rural landscape-(Author 2020)

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Research and design questions

1.5 Research and design questions

Main research design question: How can footpaths become social spaces and stitch the
tangible and intangible qualities of this rural landscape? Furthermore how can walking as a landscape design informant stitch the fragmented rural landscape within the Moletjie villages?

 Sub Questions

(I) What is rurality and how does it influence the process of design in the Moletjie villages?

*(II) Subsequently, how can cultural landscapes (connected by the footpaths) be
 re-imagined and depicted based on tradition, memory and identity?*

(III) How can place-based solutions and indigenous knowledge systems influence the design of   the existing footpath networks?

(IV) How can the intervention deal with environmental issues such as deforestation, overgrazing and Soil erosion?

(V) How can the intervention address flooding and water shortage issues through indigenous knowledge systems practices?

(VI)How can the intervention provide placed-based solutions while maximizing agricultural productivity?

(VII) How can public open spaces encourage social cohesion and promote community bonds?

1.6 Project intentions

In the current context of rural South African landscapes and settlements, landscape architects need to be a voice for the voiceless. They need to promote equity with regards to live-able and environmentally just open spaces in rural parts of South Africa.
This requires a new way of thinking about problems, a way which follows understanding problems as systems rather than as individual parts (Caruso and Frankel 2009). Understanding these problem means understanding the people. Dr Finzi Saidi emphasised that responding to social problems should be the number one aspect of the design processes and it should be incorporated within the architectural academic curriculum (Saidi 2005).

This dissertation aims to understand social issues from a perspective of the inhabitants and employ these as design informants to come up with place-based solutions. These perspectives were collected in several ways, including previous and current lived experiences (personal) through interviews with current residents. The two afore mentioned can be collectively referred to as narrations. The narrations become the cornerstone for a place-based approach which
aspires to produce design interventions that depict the culture, tradition and the way of life of the rural inhabitants.
Therefore, the design intention, firstly, needs to address walking as a poetic experience, an opportunity to create and connect meaningful spaces. Secondly, to re-imagine cultural landscapes in this specific context, and lastly, an attempt to resolve the environmental issues mentioned above.

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1.7 Research and design methodology

1.7.1 Introduction

The research questions highlight the need to apply a place-based design approach, which is based on both historical and current narratives deeply rooted within the culture and tradition of the inhabitants of the study area. This research requires a special research methodology, which is the reason the interpretative methodology approach is utilized. Hence, the combination of the intangible [narratives] qualities and tangible environmental aspects. The interpretative approach does not map out what is seen on the surface, but it goes beyond the physical aspects.

1.7.2 Research strategy

Following Muller and Gibbs (2011) techniques of mapping cultural landscapes and storytelling, this research employs these techniques to unravel the intangible component of the study area. Moreover, this is conducted through understanding narratives that form the place and sets it apart from any other place. These narratives inform the way of life of inhabitants in the area and they have the potential to inform the design process. These narratives are identified through interviews with participants of different ages and gender.

1.7.3 Mapping the intangible

The interviews aims to understand the identity of the place, and memories shared within the study area. Cao (2013) explains that African landscapes are ephemeral in nature and thus take form through social experience and ritual practice. Therefore spaces formed in the manner described above tend to be called cultural heritage landscapes. These landscapes are formed through collective and individual knowledge, passed on as narrations. The author looks into finding out about these narrations and how they can influence the design process.

The interviews were set as follows:

   (I) Interviews with two older male community members between the ages of 60 and 65 years within the study area.
  (II) Interview with two older female community members between the ages of 60 and 65 years within the study area.
  (III) Interview with two young community members between the ages of 18 and 35 years within the study area.

The interviews were conducted during a one on one session to allow the participants to share their narrations or memories of the space they get to call home.

1.7.4 Mapping the tangible

Inhabitants have no choice but to walk a long distance to gain access to essential services and resources. However, Schultz (2014:6) indicate that walking stimulates the complex, interactive components of the landscape; it allows engagement with the natural landscape and promotes flow and reflection. Spatial moments along footpaths are mapped to tie in the existing landscape features with the proposed landscape features. Footpaths are mapped to deduce the hierarchy and how frequently they are used.

02

Background

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RE-STITCHING THE RURAL LANDSCAPE FABRIC
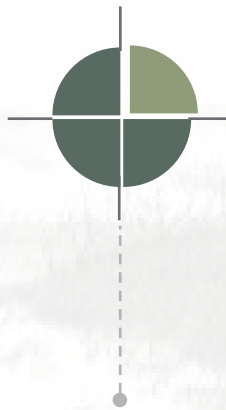
Background of Study

2.1 Background of Study

Landscape Architecture as a discipline has been in existence for many years. European landscapes have been the epitome of landscape design. The impact of the profession on the social and general livelihoods of people living in urban areas is evident. A clear example dates back to the 20th century with the development of public parks in Britain.

Chadwick (1996) gave insights of a park in Wirral called the Birkenhead's park, which was a public open space, it contributed to private gain and further increased the property value in the neighborhood.

It would be appalling to speak about landscape design and an increase in property value without mentioning the case of Central Park in New York. According to Chadwick (1996) Central Park was established as a powerful tool for social and economic development. Where rapid growth in nearby property was noticed right after its implementation in 1963. However, these social and economic attributes are in most cases relevant and observed in urban areas and often neglected within rural areas.

In the case of South African urban and semi-urban areas, many parks have improved the livelihoods of users in different settlement areas. Examples include the Bara Central Precinct public square in Soweto by Newtown Landscape Architects, which offered both economic growth opportunities for residents and improved the overall social experience (NLA 2013). Another example is the Sasol Park in Sandton by In-site landscape Architects which increased the property value of the building (In-site 2014). This dissertation seeks to understand whether the same can be said in rural areas.

Chigbu (2014) discovered that there is an assumption that rural areas are eager for modernisation. While this is a rather simple and straightforward solution, he suggests that it may perhaps not be the best approach and in most instances, such solutions fail as they become place dis-orientated. Rural areas are naturally peaceful, a place where one can be away from the city traffic, loud noises and construction sites. There is no doubt that rural areas in South Africa are still in need of better roads, better healthcare facilities, and infrastructure. In most instances such services take long to be delivered. Many have even died without experiencing change and a better living environment. Therefore, when it comes to the landscape design approach of such areas, a sensitive approach is required to retain such qualities that make rural areas special, while still developing such areas to further benefit the communities.
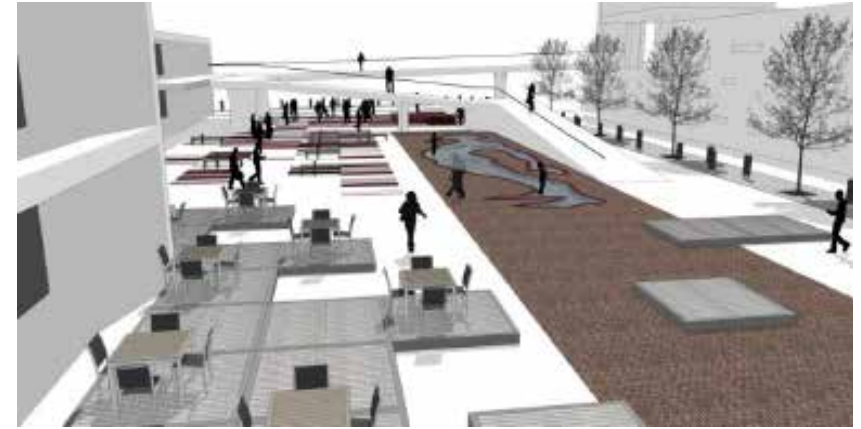
Figure 17 Render of Bara Central public square by Newtown Landscape Architects.

Figure 18 Sasol Park in Sandton by In-site Landscape Architects

Rural and Rurality

2.1.1 The concept of Rural and Rurality

To understand the concept of rurality, it is important to provide an understanding of what rural means. The term rural is rather ambiguous, scholars often argue about what it means or what rural areas should have. Wiggins and Proctor (2001) point out that there is no exact definition to define rural, but rural areas are clearly recognizable. He further explains that rural areas are dominated with fields, pastures of wood, forest, water, sometimes dunes or soil. Hence, they are recognized as spaces where human settlement and infrastructure occupy only small patches of the landscape (Wiggins and Proctor, 2001).

Ward and Brown (2009:1239) further elaborate that rural areas are identified as "places of tradition rather than modernity, places of agriculture rather than industry, places of changelessness rather than dynamism'. The description, however, is not entirely true because even if the change might be slow and not as abrupt as that which is observed in urban areas, it is a fact that all rural areas at some point do undergo some kind of change, be it spatially, economically, demographically or socially. The inhabitants spend more time working in their agricultural fields as the majority of them are dependent on subsistence livestock and farming for survival. The South African Government also indicates that the agricultural sector is the exclusive economic sector in rural areas. Although this should be embraced, other opportunities that can contribute to the rural economy should not be neglected (The Government of South Africa 2002).
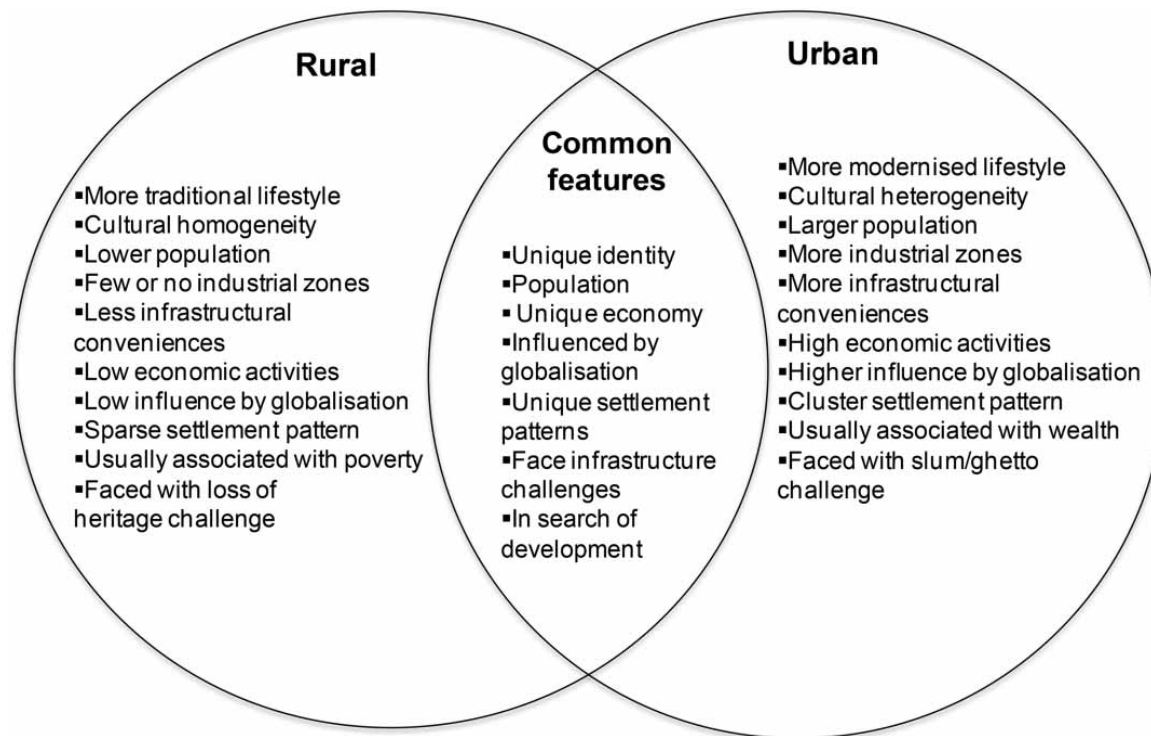
A comparison between rural and urban areas adapted from Chigbu (2013) is provided in figure 19 to further understand rural areas.

Hoggart (1990) tied rurality partly to the physical, political and economic impressions found in rural areas or in partly rural places.

Rurally eliciting symbols and physical representations of life in rural places are considered part of rurality. Simply put the concept of rurality denotes the conditions of rural lifestyle and the rural environment.

The way of life in the Moletjie area can be summarized in the pictures above which show common traditions and rituals.

Figure 19 Understanding 'rural' by emphasizing its differences and commonalities with urban (Chigbu 2013b:11)

Figure 20 Rural women collecting firewood in Daba Nayra village (Mohamed Almahady ,2019).

Figure 21 Farming in a rural area in limpopo (@google images, 2020)

Figure 22 Fetching water – (Frank Maponya , 2019)

2.1.2 Rurality as Place-based Homeliness

Chigbu (2014) describes rurality as the condition of place-based homeliness shared by the people who have common ancestry, heritage, tradition and culture. Place-based homeliness becomes special because, it manifests psychologically in their feelings, socio-cultural patterns, values, attitudes and customs which are directly linked to their collective origin or heritage of rural people (Chigbu 2014).

Heritage is an important aspect of rurality because it is 'closely related to the spiritual life', value systems, social practices of the inhabitants and it embodies their cultural identity. (Aikawa-Faure, 2008:96).

Rurality is an inherent and unique condition that can be experienced in rural areas. Chigbu (2013) elaborates that the concept of rurality involves "people-to-people and people-to-place relationships" within a rural geography (Chigbu, 2013a).

Figure 23 Depicting the Spirit of place: image adapted from Qunu grazing (Bostch 2013).The above statement manifests through the design process observed later in this dissertation. Rural inhabitants in the study area, just like any inhabitants elsewhere, are acclimatised to their environment.

This rural life and activities has become an integral part of their lives and most tend to accept the state of their environments.
The above statement manifests through the design process observed later in this dissertation. Rural inhabitants in the study area, just like any inhabitants elsewhere, are acclimatised to their environment. This rural life and activities has become an integral part of their lives and most tend to accept the state of their environments.

One of these activities accepted as part of rural life in the study area is the inevitable ritual of walking. Rural inhabitants in the study area walk for almost everything. Walking to other villages, places of importance, to fetch water and firewood. It can be summed up that they walk for survival.

Walking has become the most important part of rural livelihoods and a primary means of getting from one place to another in this fragmented rural setup. Thus, it becomes a subject of inquiry that cannot be neglected.

Walking as a design informant for experience, exploration and as a functional system are further investigated in this dissertation.

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Rurality is defined as the condition of place-based homeliness shared by the people who have common ancestry, heritage, tradition and culture. Place-based homeliness becomes special because, it manifests psychologically in their feelings, socio-cultural patterns, values, attitudes and customs which are directly linked to their collective origin or heritage of rural people (Chigbu 2014).

Figure 23 Depicting the Spirit of place: image adapted from Qunu grazing (Bostch 2013)

Background of Study

2.1.2 The rural life in Moletjie villages (study area): Perspective of the Author

"What I defined as a home was mostly the vast open space around me and within
our fence where we spend most of the time and the small house that provided shelter from rain and darkness." (Nkambule 2016)

*"Dark narrow streets full of shadows of trees and mud huts and concrete built houses.
Clear skies, the moon and the stars shine bright on a cold winter day.*

It is five in the morning 'they' rise before the rising sun and before the sun shows its nose, they are back with a heavy load of firewood from their most trusted shrub "Mphato" carried on their heads, some with wheelbarrows while others use donkey wagons.

Its Children, Mothers , fathers and grandparents all striving for the survival of the family. (Tsatsi le thlabile!) The sun has risen!! The birds sing as to welcome the new day.

Its time!! Badishi (Cattle Herders) open up the kraals it's time feed for the cattle to feed on feed on the green grass of your forefathers land.

As you let the cattle into the fields for feeding don't forget to Milk the cows while you let some out into the fields.

As the cattle heads over to the fields they excrete their digested matter in the kraal and all over the streets, the old lady with a bucket in hand collects the dung joyfully.

The dusty village streets are filled with joy and laughter of the children playing from dusk till dawn. As I glace I see children pushing wire cars, on the other side boys are playing soccer with a ball made out of plastic while others are playing "molenze, fosti le Kotu" nothing matters to them but play.

It is a small community in the outskirts of Polokwane everybody knows everybody, the art of sharing prevails.

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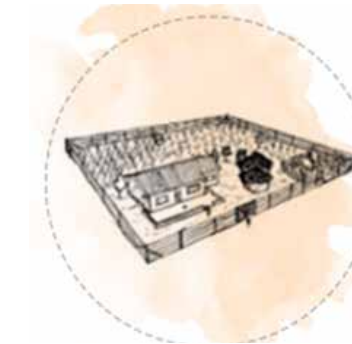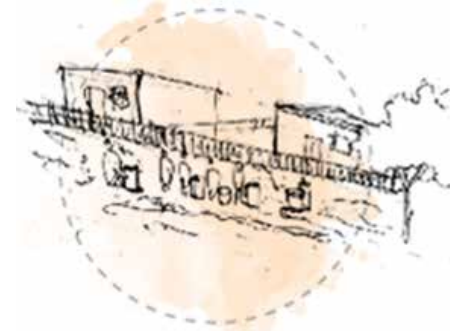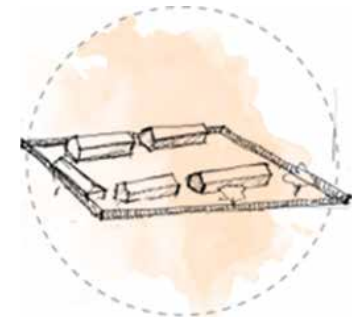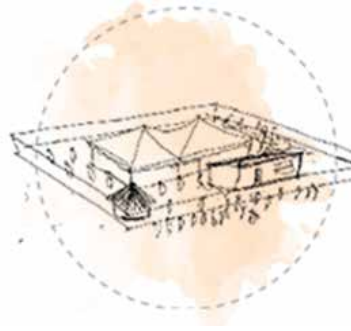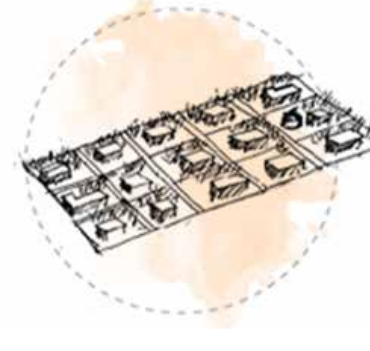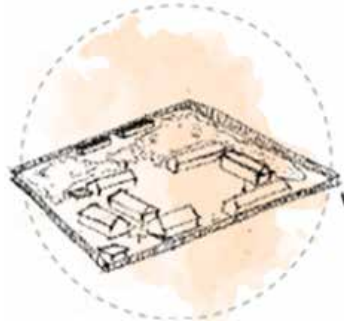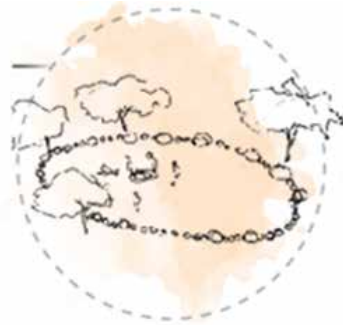
Walking is the order of the day on a daily; they carry their buckets and bottles as they wait their turn to harvest water from the nearest tap. Schools are far away as and there is no choice but to walk 2-4km daily for the village scholars.

Their determination for a better future is unmatched. Come rain, hot days, cold days, and windy days nothing stops their determination.

"You will eat from the sweat of your brow":'the villagers are indeed living proof of this. The villagers live vicariously through the working in the agricultural fields planting, Mabele, Mebidi, ditlogo, marotse and so forth.

The rain from the ancestors and God nurtures and grows the crops. The rain washes away all the worries-bearing with it prospects of the future. Badishi (The herders) bring the cattle back home passing through the community dam, they fight on who came first with his cattle as the cows quench their thirst through the signals of whistles.

It's a happy day, on a weekend, the streets are full of life, the tent is erected, the fest is prepared, it's a wedding and invitations are null, it's a day of celebration ,a cow is slaughtered, families are united.

It's a new day, a very sad one, every man in the community goes to the graveyards to prepare a new home for the deceased, every woman in the community goes to helps as the families prepare food for the masses to come, the masses as one group walk one along a path just outside the village to accompany the deceased to their final resting place, again invitation is null.

The deceased is celebrated, comforting hymns are sang, the masses wash their hands, it is done just as the sun disappears into the moon it will rise again tomorrow for the spirit of the warrior guides us through the darkness and strengthens our souls. And that is the rural way of life. One people .one language, one love."-(Author 2020)

"I was born was born in Gauteng, in a township called Germiston in the year 1995. Both my parents were born and bred in a village in Bochum (not very far from the village I now call home, Ga-Rankhuwe). Seeking economic opportunities my parents moved to Germiston where I was born. At the age of four, in 1999 my parents relocated to a village called Ga-Rankhuwe in the Moletjie region, where I spent almost most of my life ,the only home I can remember vividly. That is the place I learned core principles of sharing, indigenous systems and my journey to manhood. Most of the villages if not all within this region they speak the Pedi language and associate as Bapedi ba Moletjie. Similar to most of the rural inhabitants in this area, I grew up with my Mother telling tales (dinonwane) and stories around the fire at night, I recall this best time of the day for me. The tales were both thrilling and educational but, most importantly, a way to instill knowledge and discipline to the children".
(Author 2020)

Figure 24 The rural life sketches (Author 2020)

03
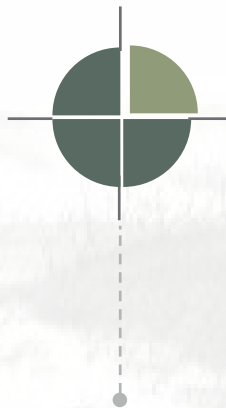
THEORY AND LITERATURE REVIEW

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Introduction

3.1 Introduction and Literature Review

Rural areas and urban areas appear as two opposing extremes. With the comparisons of characteristics explained by figure 19 above, one could even argue that rural areas are everything urban areas are not and the semi-urban (or the township) areas lie somewhere in between these two extremes.

The definition of 'rural' has already been discussed at length in the introduction and described as 'spaces that are recognized with areas where human settlement and infrastructure occupy only small patches of the landscape and most of the land dominated by fields and pastures of wood forests and sometimes dunes or soils' by Wiggins and Proctor (2001:51). Therefore, with this definition in mind, urban areas can be described as spaces where human settlements and infrastructure overpowers the natural landscape and characterized with fast-paced development.

A glance at the pre-democratic era, Donaldson (1999) reveals how Black African communities in South Africa were divided and excluded from urban areas and placed in rural areas and township areas, where they were automatically stripped of economic opportunities and infrastructure.

According to Nkambule et al (2011) since the end of apartheid, rural development has been on the margins and side-lined as compared to development in urban and township areas. This was despite the government's attempt at addressing rurality and rural development. Such efforts include programs enlisted in the comprehensive rural development model drafted my Gwanya (2010), the programs included:

(I) The creation of sustainable livelihoods and decent working areas in rural areas not solely in the agricultural sector.
(II) Amendments of land reform programs that ensure that more land is utilized by the rural poor, together with the skills transfer programs and other financial beneficial
programs.
(II) Measures to improve the farming sector and housing conditions (through the Reconstructed Development Program)
(IV) Since 2010, the Government has employed the Comprehensive Rural Development Program (CRDP) intending tho create a "vibrant, equitable, sustainable rural communities with food security for all."
(Gwanya 2010:2)

Fast forward to the year 2020, and the state of rural areas in South Africa show very slow progress and in most areas no progress at all. Furthermore, poor rural conditions keep deteriorating.
Landscape architects can play a vital role in the development of rural areas as multiple interventions across the world by landscape architects have proven to have an impact on social, economic and environmental aspects of urban and semi-urban areas as shown in chapter 2 with the two examples given.
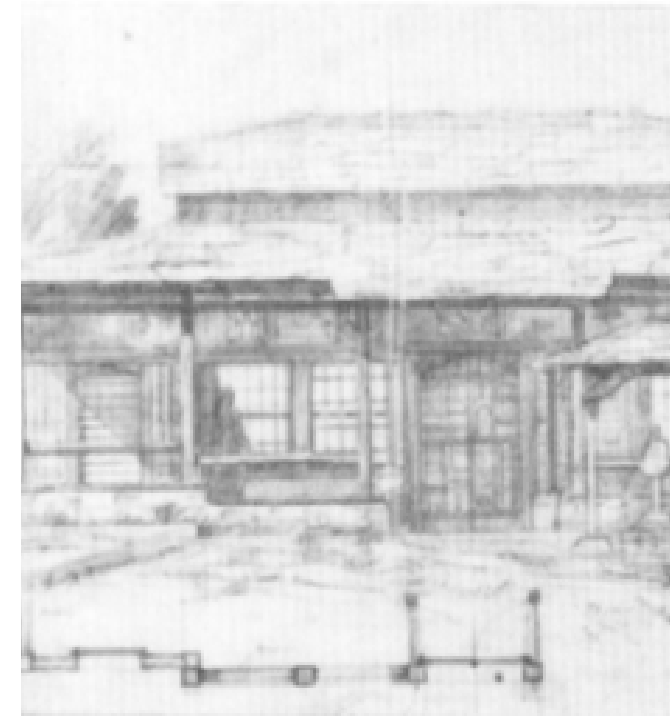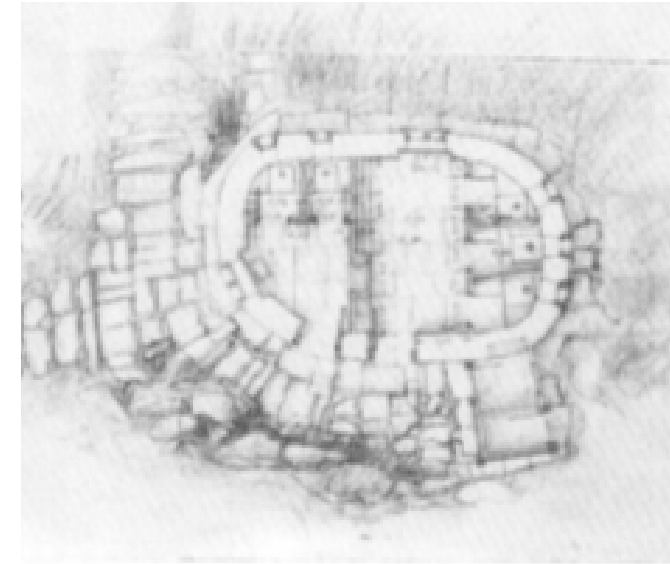
Landscape Architecture in urban areas

3.2 Landscape architecture urban areas

The power of the landscape architecture profession in urban areas has been proven in many cases. Such cases include cities dealing with unhealthy living environments and degraded ecological systems, due to industrialisation and urbanisation, with the need to recover "lost" green spaces within the city (Melcher, 2007:76). Landscape design interventions, including the planting of trees within cities, to reduce the amount of energy used in buildings, is an example of how green infrastructure and design improve urban environments (Dwyer, McPherson, Schroeder, & Rowntree, 1992).

Hiesura (2004) further indicates that functional urban open spaces in the New York City such as central park created an opportunity for art festivals, music concerts, and sports competitions that brought about the significant positive economic contribution to the communities and created employment for local communities.

Therefore, even though rural inhabitants also deserve better open spaces and green infrastructure it would be inappropriate for landscape architects to adopt the same approach with regards to the design of these above mentioned different contexts.

In hindsight, the following questions become relevant to this project; firstly, can rural open spaces also achieve the above mentioned urban attributes, if so how?

Secondly, how will the design response and approach be different from that of the urban context? The value of well-designed, habitable, and environmentally just open spaces still, however, remain relevant in all contexts.

The following theoretical investigations look into an approach to be considered when dealing with rural landscapes, a place-based design approach. Finally, three theories that the author deem as important and relevant for the proposal are discussed.

Figure 25 Central Park-Biodiversity (Dunn 2009)

Figure 26 Central Park-Nature into the city

Figure 27 Central Park –Sport competitions (Dunn 2009)

Figure 28 Routunda Linear Park (NLA 2019)

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A Place-Based Design Approach

3.3 Place-based design approach

One cannot speak of a place-based design approach without mentioning the importance of understanding the concept of "sense of place", the attachment to place and its meanings; as well as identity of place, explains Williams & Patterson (1999).

The approach is important in understanding the user and space, for place-making. Williams & Patterson (1999) further elaborated that it is a platform for one to gain deeper knowledge about space and to en-gage the public.
The approach further calls for an interactive unity between people and place. To further understand a place-based approach in landscape design, the place is understood as a social phenomenon. Angwe and Duncun distinguished three categories of place, they explained place in terms of location, locale and sense of place (Angwe and Duncun 1989).

(I)Location - the spatial distribution of social and economic activities.
(II)Locale – a place can provide the setting or backdrop for everyday activity.
(II)Sense of place - French poet Noel Arnaud explained sense of place as follows, "I am the space where I am". He further explained the concept that an individual's or group's identification comes from an interaction with a certain [place] (Lavoie 2005).

3.3.1 Sense of place

Landscape architects often view sense of place as inherent to the place and something that can be physically mapped (say by pen and paper) by a trained observer. However, the author argues that the landscape character has to be understood through the perspective of the user. In most cases, the true essence of the sense of place come from the intangible attributes that cannot always be mapped out, but rather explained through narrations and lived experiences of the inhabitants of that particular place.
According to Muller (2011) these narrations and stories (Her-stories and His-Stories about a place) translate meanings which are socially constructed. Most importantly, they are emergent from a place and are passed on from generation to generation. They are socially constructed vicariously through experience. Kruger and Williams (2007) further substantiate that users cannot be separated from the place, because they define the place's day-to-day experiences; thus, the spaces evolve as generations come and go.

The author further argues that a sense of place solely relies on the socio-cultural meanings together with community experiences of a particular place, which makes that space unique and special.

3.3.2 The Goal of a place-based design Approach

The goal of this theory, according to Galiano and Loefarffler (1999), is to allow landscape architects to understand the significance of these meanings and use them as guidelines for the design (Galiano and Loefarffler 1999). Eisenhauer et al (2000) further expressed that a place-based design approach is a grass root movement founded on the belief that by understanding identity, meaning and narrations of places, designers can make well-informed designs which will result in the users/inhabitants preserving and taking ownership of their own space.
He further stated that the approach is also important because 'people create bonds with the locale based on the sense of place, which involves sentiments extending beyond the use of space'Eisenhauer et al (2000:4380).

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In conclusion, the author establishes five positive opportunities of employing this approach into the current design scheme in conjunction with the ideas of Ackerman (2014)

(I) A place-based approach offers an opportunity to empower community members and strengthens community bonds during and after the intervention.
(II)The approach also engages the community in inherent activities or allows the community to carry out their rituals within the intervention.
(II)A design which is appropriate to the local community and speaks to the character of that place; is more likely to foster care within the community as they can attribute meaning to it.
(IV)The approach also raises awareness and the opportunity to re-tell narrations (His-and Her- stories) to ensure their longevity.
(V)Furthermore, Ackerman (2014) emphasizes that a place-based design approach is that which explores the connection between the natural and man-made realms together with the user.
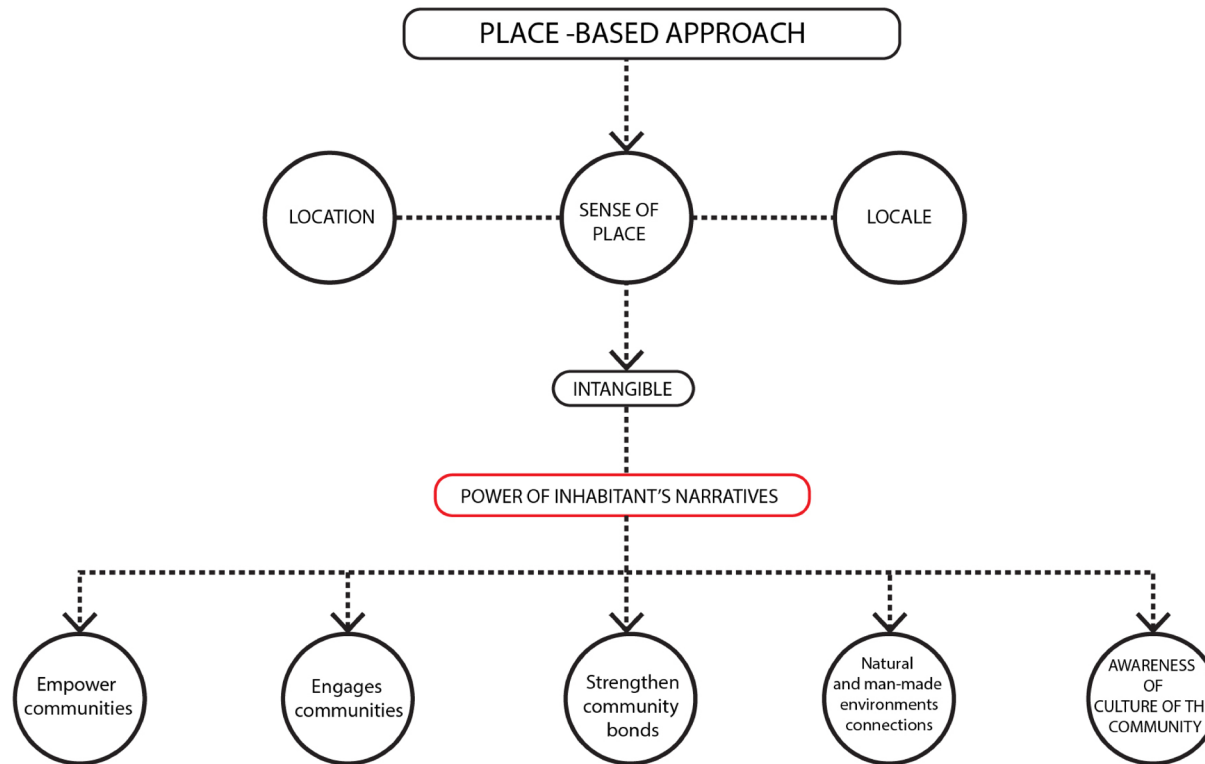
Figure 29 A place-based approach (Author 2020)

Critical regionalism

3.4 Critical Regionalism

While originating from the field of architectural theory, critical regionalism is also strongly related to landscape architecture. Borrowing and Swaffield (2004) wrote about it in one of the four volumes of the Landscape Review article, "Think Global, Think Local: Critical Regionalism and Landscape Architecture". As a theory, critical regionalism emerged from the theory of regionalism, which was deeply rooted in culture and identity within the architectural discourse as explained by Tzonis and Lefaivre (1996). Regionalism has a long academic history, "dating back to the writing of Vitruvius and Strabo "(Tzonis and Lefaivre 1996:2003). Kenneth Frampton was undoubtedly at the forefront of the critical regionalism theory, this theory critically analyzed what it meant for a design to be regional. Tzonis and Lefaivre (1981) argued against regionalism when they defined it as that which "upholds the individual, local architectonics features against more universal and abstract ones, but it also has its limitations".

Figure 30 The critical approach merging of regional traditions and newer "ways of doing" Painting by (Georgia O'Keefe, Dark Mesa and Pink Sky, OU on canvas, 1930)

The theory of critical regional-ism advocates that using local natural materials alone is not sufficient. Tzonis and Lefaivre (2003:21) explained that the theory became critical "because it was exposing and evaluating the implicit presuppositions of an argument to the idea that modernism was to become a new way of thinking, the theory proposed a new way of thinking critically". This was clearly observed in the designs of pioneers of this movement such as Dimitritus Pikionis as he incorporated regional methods of building and infused them with modern principles (of the time) as it is seen through (figure 31) in the design of the Demetrius Lombardaris Church and Pavilion.

The theory spread like wildfire, and Kenneth Frampton in his 1983 article would argue that a critical regionalism approach was a powerful medium of resistance, resisting the alienating and dehumanizing assault of place-less-ness and universal standardization (Frampton 1990:333).

Critical Regionalism is not only a matter of using the most available local material, or copying some simple form of construction that our ancestors used from centuries ago, Mumford (1990) elaborated. He continued to say that critical regional forms are those which "closely meet the actual conditions of life in a particular community and succeed in making people feel at home in their own space or environment" (Frampton 1990:333).

However, the author argues that, whilst regions could arguably reflect a sense of belonging to a cultural or language group, this is not always the case as regions can also be a deliberate political creation. Therefore, in the case of such a community, it becomes paramount that the beginning of the design dis-course starts with the people because they define the region.

Nonetheless, to sum it all up the theory in its simplest form emphasizes that architecture identifies, ab-stracts, and merges local physical and cultural characteristics with more ubiquitous practices and technologies together with economic and material conditions of a specific place.

Figure 31 Pikionis drawings of St Demetrius Lombardaris Church and Pavilion (Pikionis , 1993)

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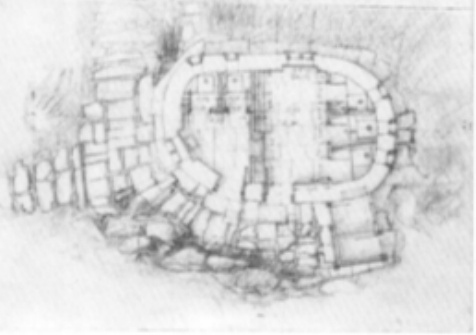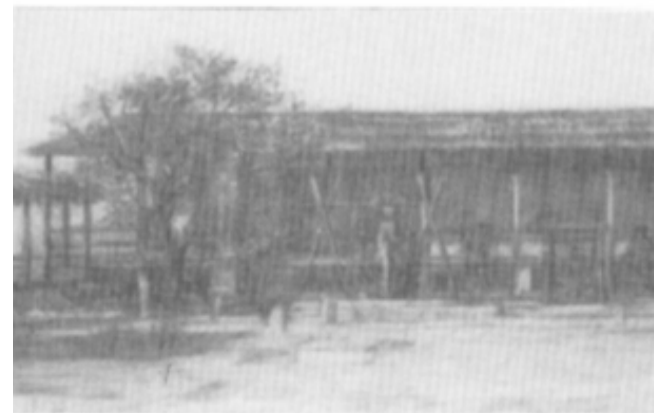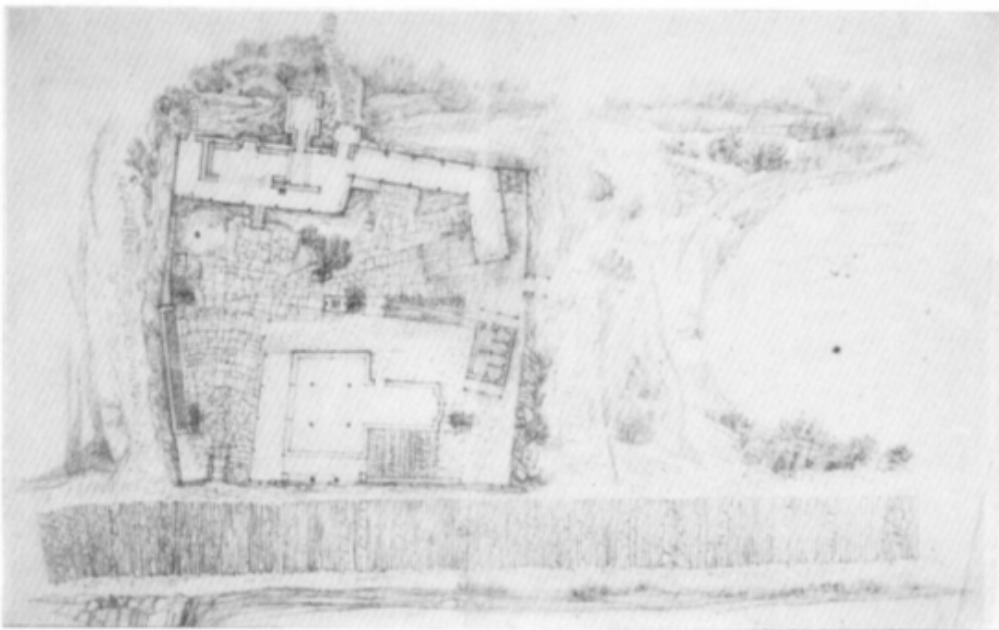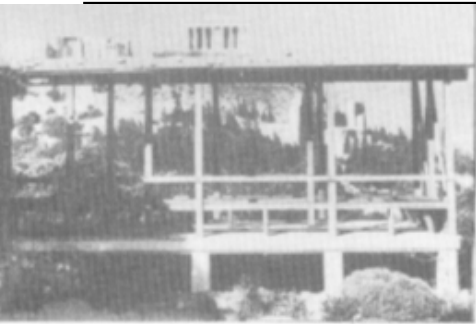
3.4.1 The influence of Critical regionalism on Landscape Architecture

Although the landscape architectural field has now been recognized within the critical regionalism discourse, Borrowing and Swaffield indicated the biggest challenge about Critical regionalism. That, it has always been discussed within the architectural context (Borrowing and Swaffield 2004). The discourse of critical regionalism has been focused on architecture, and probably because it is expected of landscape design to be "critically regional" in any case. Tzonis and Lefaivre (1981) noted four important points from Frampton's critical regionalism approach that forms a redemptive strategy and are the key principles of critical regionalism.

(I) Sense of place: phenomenology
Phenomenology is a fundamental ideology of critical regionalism, highlighting the importance of direct and reflective experience in capturing the particularity of a place or a particular region (see figure 32). This, according to Frampton, is how a design can be executed more precisely in terms of 'place', thus resisting the imposition of universal culture (Frampton 2000:78).

Figure 32 . Dimitrus Pikionis's use of stone and wood as regional materials(Pikionis ,1993)

Gobster (1999) further observed the importance of creating landscape [patterns] that expresses and responds to both ecological and hydrological processes with elegance and innovation.

Gobster (1999) further observed the importance of creating landscape [patterns] that expresses and responds to both ecological and hydrological processes with elegance and innovation.

(III) Borrowing indirectly

Borrowing and Swaffield (2004) expressed the idea that materials and aesthetics are part of a universal vocabulary, while the cultural syntax is part of a particular region. Therefore, borrowing certain technological advancement from different contexts and re-appropriating them is also a fundamental component of critical regionalism.

(IV) Sense of history: memory, narratives and stories

Other components of Frampton's critical regionalism theory were narrative and memory, for their connotations are sentimental and add a deeper layer in understanding space through the perspective of the community and individuals.

Figure 34 Attention to regional details (Pikionis,1993)
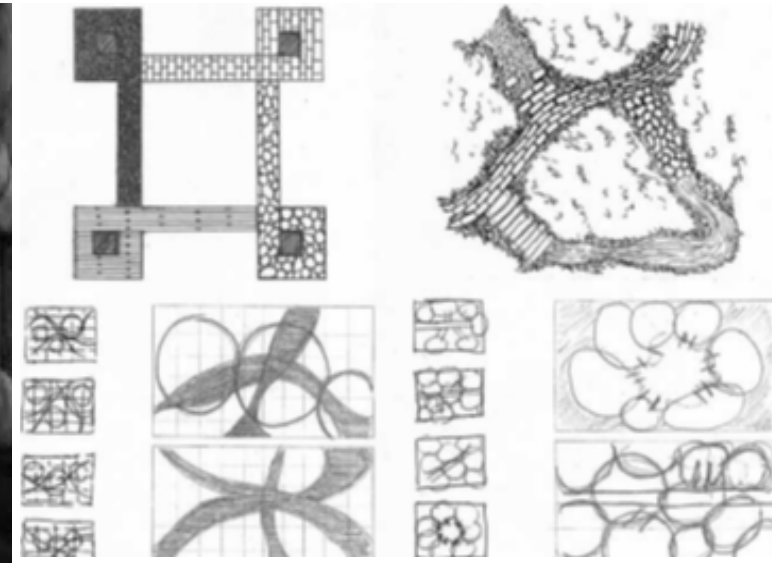
Figure 34 Stone walkways detail (Pikionis 1993)

Figure 35 .The carefully detailed pathways to the Acropolis (Pikionis 1990)

Indigenous knowledge systems

3.5 Indigenous Knowledge Systems

Fernandez (1994:01) describes indigenous knowledge systems as "a unique knowledge confined to a particular culture or society. It is also known as local knowledge, folk knowledge, people's knowledge, traditional wisdom or traditional science. This knowledge is generated and transmitted by communities, over time, to cope with their own agro-ecological and socio-economic environments."Indigenous knowledge systems are the epitome of place-based designs and local traditions. Cultural practices in many communities rely on these knowledge systems for their continuation. Brouwers (1993) emphasizes that knowledge is generated through a systematic process of observing local conditions, and materials and experimenting with solutions and identifying solutions to solve their environmental issues, socio-economic issues and technological situations.

In most cases, particularly in this project, indigenous knowledge is passed from generation to generation. Usually by word of mouth and cultural rituals or demonstration by the elders or those who know more about that particular aspect, as articulated by Senanayake (2006). The knowledge has been applied over hundreds of years and had been the basis for agriculture, food preparation, conservation, health care, and education. According to Senanayake (2006), indigenous knowledge is considered the social capital of the rural poor. Thus, it remains an asset to invest in the struggle for survival, production of food, provision of shelter and protection from extreme weather conditions.

Moreover, through the advancement of technology, innovation, indigenous knowledge is slowly losing its value in society and ultimately disappearing as things change. However, it is also noted that change is inevitable. Thus, it is argued that change should be embraced with by the locals same way as the existing ways of doing things. Furthermore, indigenous knowledge should be part of academia and taught on a greater platform.

3.5.1 Indigenous knowledge systems and Natural Resources Management

Rural areas, as indicated earlier in this document, are rich with natural resources such as forests, wet-lands and wildlife. Steiner and Ovledo (2014) emphasized that indigenous knowledge offers effective systems of resource management that ensure that these resources not only survive but also increase while being used rationally – ultimately, contributing to sustainable rural development. Steiner and Ovledo (2014) observed that many rural areas derive both their cultural and spiritual identity from the land they occupy. This phenomenon is also observed in the study area where land is appreciated as a gift from the ancestors together with the natural resources the inhabitants rely on. The respect of the land and the environment they live in is evident in how the rural inhabitants protect their environment. According to Steiner and Ovledo (2014), indigenous practice is based on a sense of harmony with the natural environment, which results is the suitable use of natural resources.

3.5.2 Indigenous knowledge systems and technology

According to Sibisi (2004), indigenous knowledge is today considered irrelevant and is underestimated in many contexts where technology and science seem to have taken over the value of indigenous knowledge. However, its contribution to science and technology is evident. According to Sibisi (2004), many indigenous methods have been appropriated by modern technologies today. However, the fundamentals of the original practices are still evident and valuable.

The truth is that times are changing and there are indeed better or new ways of doing things. Indigenous knowledge and modern science can complement each other in many ways, in agriculture and the preservation of natural resources as highlighted above. A rising concern raised by Sibisi (2004) is the fact that much of indigenous knowledge is rooted in oral traditions and is not systematically documented in written format but is largely held in the custody of the elders in a community and usually not shared across communities.

Hence, the challenge of this project becomes the idea of bridging the gap between technology and indigenous knowledge systems. In other words, ways in which indigenous knowledge is preserved and passed on to the next generations while still keeping up with current technological advances.

Conclusion

Landscape architecture is indeed a profession that can influence change for the better and provide advanced opportunities for people in all parts of the world. The literature review above has established the impact of landscape architecture on the social, economic and environmental aspects of urban and semi-urban areas. Thus, it is argued that there is no reason why landscape architectural interventions cannot do the same for rural areas in South Africa.

A place-based design approach is vital in the development of rural areas or any area for that matter. This approach does not only yield habitable and environmentally viable spaces, but spaces that are relate-able on a personal level, and defined by meaning.

Thus, intangible characteristics such as cultural connotations, myths and customs have influenced tangible characteristic meanings of such spaces.

The design interventions are personalized because these meanings have been socially constructed over long periods in that specific community. It is an important design inquiry for landscape architects to understand spaces in terms of their meanings.

The meanings can be told or passed on as narrations and these narrations require the designer to fully immerse themselves, understand the people and their experiences in the space.

The dissertation follows three attributes mentioned by Ackerman (2014) with regards to a place design approach:

> (I) A **place-based approach** offers an opportunity to empower community members and
> strengthens community bonds during and after the intervention.
> (II) The approach also engages the community in the inventory activities that are inherent
> from the community.
> (III) The approach also creates awareness and the opportunity to re-tell narrations (His-
> and Her- stories) that younger generations and other people, some never heard of before.

The narrations directly contribute to the "ways of doing" of a particular community; this is the **indigenous methods** and knowledge systems applied for their survival. The knowledge is of utmost importance because it lives through generations and generations.

As technology and science keep evolving more and more efficient "ways of doing" are introduced, the indigenous knowledge systems need to keep up with the current technologies without completely deviating from their fundamental concepts.

The application of this process calls for a **critical regionalism** approach which emphasizes the need for indigenous and regional "ways of doing" that are combined with current technologies.

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These fundamental concepts of indigenous systems and newer technologies ought to be combined care-fully with considerations of five elements stated by Tzonis and Lefaivre (2003) for a well-informed design response.

(I)   A sense of place;
(II) A sense of Nature;
(III) A sense of History;
(IV) A sense of craft;
(VI) A combination of modern technologies and indigenous methods.

Figure 36 Five elements expressed by Tzonis and Lefaivre on a good design response (Author 2020)

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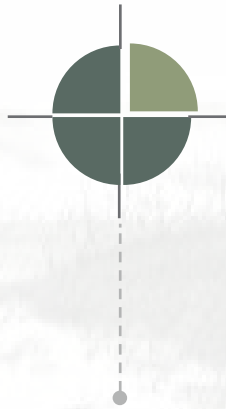
Context and Historical Background

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Regional political and historical context

4.1 Regional political and historical context

The following sections illustrate the historical and political context from which the study area emerged. The oppressive nature of South Africa's political history was a major role player in how the study area was established.

4.1.1 The Historic development of the dispersed settlements pattern

Donaldson (1999) highlighted that colonial racial segregation (which was later formalized into the apartheid regime) had a direct effect on the spatial form, administrative functions, economic disparities and social composition of South African cities, towns, townships and rural areas. Polokwane (the capital city in Limpopo) is a result of this type of spatial planning. The development of Polokwane into the city it is today significant because it is located at the heart of Limpopo province and influenced the settlements around it. According to Donaldson (1999:36) since its inception Pietersburg (now known as Polokwane) 'it has been closely associated with racial prejudice and different living spaces for different cultural groups and races'.

Therefore, the analysis of the historiography of Pietersburg as a colonial and segregated city sets the scene of interpreting spatially fragmented rural areas as a result of colonial racial segregation. The spatial layout of Pietersburg followed the model of the apartheid city, where urban areas and city centres were reserved for white inhabitants and the closer peripheries for Black African labourers as well as Coloured and Asian communities, while further peripheries reserved for native black African communities.

4.1.2 Racial Identity and Segregation

The Bill of 1908 referred to Black South Africans as "Natives", the word was defined as any person belonging to any of the aboriginal races or tribes, or any person whose parents belong to any such race or tribe. (Government Gazette, 13 May 1908). These African communities were relegated to the homelands and out of the urban areas.

1800 The establishment of Pietersburg(Polokwane)

1890 The establishment of segregation laws in Pieterburg

1909/10 The union era and the formalization of r

Moletjie people traveling up North from Botswana

1909/10 The Moletjie people established their
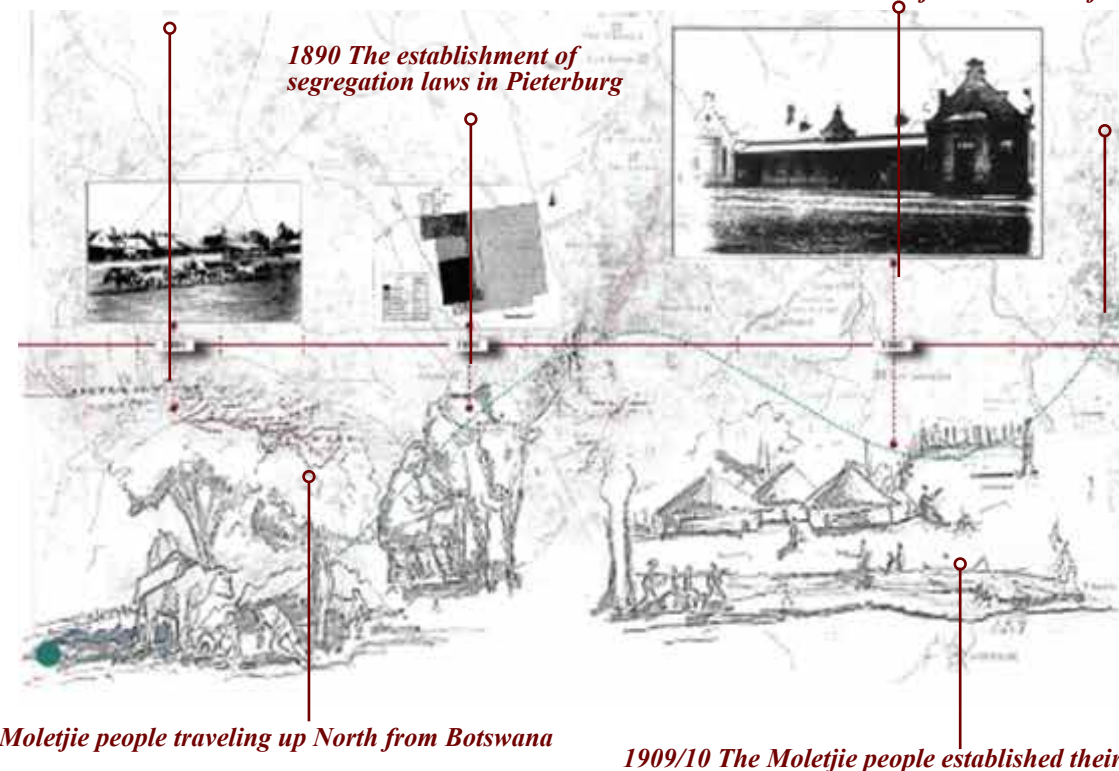
Figure 37 Timeline of the development of rural areas within the study area.(Author, 2020)

Around Polokwane specifically, three satellite townships were established in the early 1970s, Lebowakgomo, Mankweng and Seshego (Donaldson 1999). Lebowakgomo was established as a political Sovereignty to the Pedi /Northern Sotho speaking people and as an administrative centre. Mankweng was established as a place for African higher education, thus, the establishment of the University of the North (currently known as the University of Limpopo).

In the early 1950s, the National Party introduced a new method for the governance of African communities through the introduction of the Bantu Authorities Act no.68 of 1951 (Donaldson 1999:66).

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acial segregation
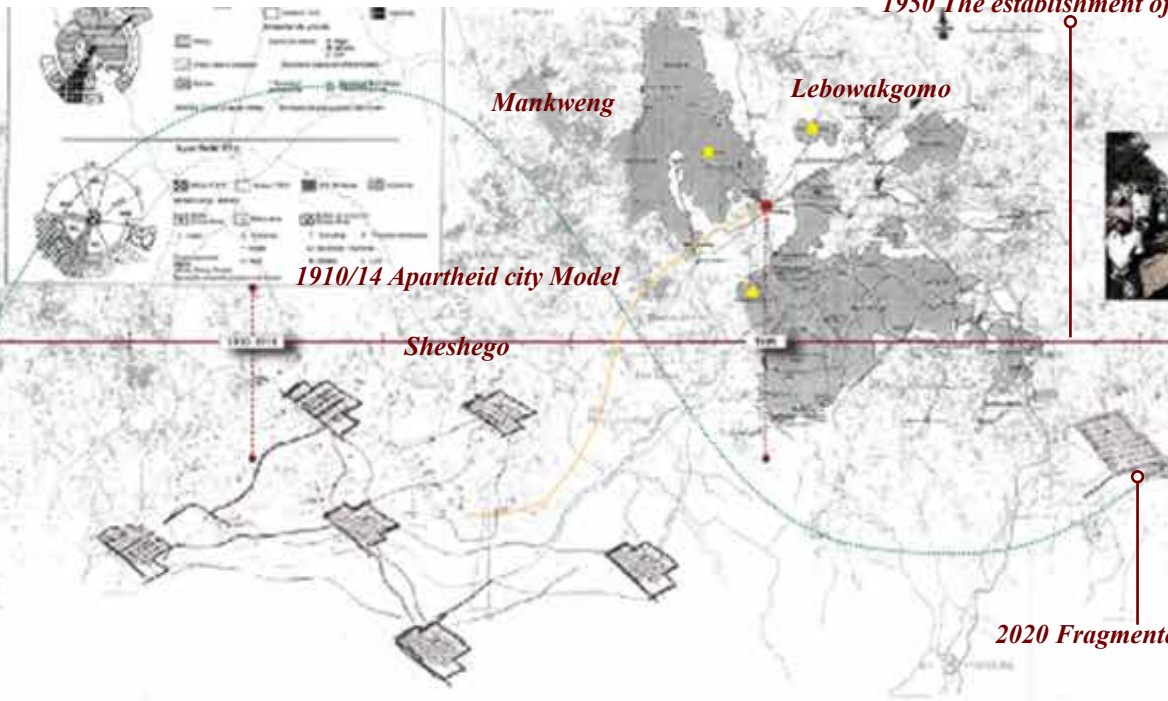
1950 The establishment of villages within the study area

Mankweng

Lebowakgomo

1910/14 Apartheid city Model

Sheshego

2020 Fragmented rural landscape

Villages divided according to tribal authority

r settlement on the

The policy entailed the grouping of African communities into different ethnic groups based on their home languages. Different homelands emerged from this act and in the early 1960s, although many black communities were grouped according to their cultural affiliation; it now became a law for one to live within one's cultural grouping.

At this time, the establishment of kingdoms and chiefdoms was already an existing cultural norm for African communities. Ultimately, this is how the villages developed under the leadership of tribal leaders. Moletjie Tribal Land is a result of these political and cultural occurrences in South African history.

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History of the Moletjie Tribal Land

4.2 History of the Moletjie Tribal Land

"Re ba ena bakwena baila lehlaka bo moroka a meetse a pula".
"Ke rena bantlhoma wa marumo bomoletjie wa mabokanya ba kgona ke phefo le tlala
Ge ele marumo ona a thlakane le ge gosena mabele seshungkwane se gona sehlašana sa modinkwane re ka dikela ka sona".
(Self –praise of the Moletjie kingdom clan extracts)

According to Mokgethle (2012:16), the Moletjie kingdom emerged as a result of triumphant battles against other nations. These conquered nations used to weep for the land of the Moletjie kingdom: "e letsa batho ke Moletši ya mabokanyana e kgona ke phefo le tlala ge ele marumo gona ga o thlakane" meaning they were such powerful people that they made other nations cry, therefore, only strong winds and hunger could stop them but not any man's spear.

The Moloto dynasty (Bahlaloga kwena) presides over the villages within the Moletjie traditional precinct. The Bahlaloga history dates back to the 15th century before the ancestors of the current community settled in the current Moletjie land.
According to Mokgethle (2012), the chief elaborated (in an interview) that the Moletjie clan originates from the Batswana people who were nomadic cattle farmers in search of good lands for grazing for their herds of livestock.

Eventually, they settled in the current Moletjie area because the area had good grazing lands for their livestock, ample water supply and good soils for growing their crops (Mokgethle 2012). Moletjie started as a village but was eventually established as a precinct which included other smaller communities (sub-villages), which today is referred to as villages.

Figure 38 Timeline showing the history of the development of the Moletjie villages (Author 2020)

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The Villages and Local cultural practices

4.3 The Villages and Local cultural practices

The villages within the study area developed in the mid-1900s. The following section is based on the information given by one of the interviewees who has been a resident in the villages for more than 60 years. The interviewee who has been a resident for more than 60 years in the village has shared the fol-lowing information in the next section. (Phukubje, personal communication, 26 July 2020) explains that for one to become a resident in one of the three villages in the study area, one would have to come to the village with what is called a 'trek pass' which is a referral letter from the village they came from to show that they had clean records and that they were not fugitives. If the chief approved the move, he would allocate a stand and an agricultural farming plot for the resident to be able to plough, and thereby, sustain their families. Cow dung was reused as energy sourc-es to make fire, to prevent erosion through dunging floors and most importantly as organic manure (Mmutedi). The compacted cow dung from the kraal would be col-lected and transported to the agricultural fields and applied to the soil which in turn would produce ex-ceptionally good crops. Once applied, the villagers would still be achieving good crops for the next 3 4 years. Furthermore, it was important to take care of livestock and feed them accordingly. Green grass was in abundance around villages. So, grazing was relatively easy and the cattle were well fed. Thus, they reproduced quickly, and produced high-quality milk and meat as well as per-forming other duties such as ploughing. Collecting wood was also essential as there was no electricity at that time; the locally indigenous mphato plant *Gymno-sporia senegalensis (Lam.)* was collected and many villagers trusted it. Thus, it is illustrated how livestock and farming have always been important for the survival of the inhabitants within the study area.

4.3.1. Cultural life of the inhabitants

The cultural life of the inhabitants within the villages in the 1960s was deeply rooted in indigenous practices and ancestral beliefs. Ancestors were believed to give success to the inhabitants; homage was paid to the ancestors upon the birth of a child, and success within families. The rain was asked for, and when received homage was also paid to the ancestors. This ritual is called "Go phasa badimo" (Phukubje, personal communication, 26 July 2020). A ceremony called "Malopo" was practised every week when new traditional healers went through initiation "Go thwasa"; this was also an opportunity to heal the ill. Dinaka and Mmapadi were and still are cultural dances that the villages observed in as celebration and social gatherings.

Figure 39 Mmapadi traditional dance (Phukubje 1990)

Figure 40 Dinaka Traditional Dance (Phukubje 1990)

According to (Phukubje, personal communication, 26 July 2020) traditional healers also played an important role in the conservation of the natural landscape and plants. The culture was diluted with the introduction of Christian churches in the early 1970s. This caused some divisions amongst the villagers in terms of beliefs, but the sense of community and neighbourly spirit remained. The first church to be introduced in the area is the Modise church "kereke ya Modise", followed by The Dutch church, later the Apostolic church followed by the ZCC church. Most of these newly introduced religious beliefs preached against ancestral worship, thus, a clash of ideas among the residents emerged (Phukubje, personal communication, 26 July 2020).

Today, it is observed that older generations' culture and identity are fading away; the newer ones are replacing them. Thus, the project attempts to represent these cultural rituals and indigenous methods as a landscape design informant.

4.3.2 Walking for education

According to the memory of (Phukubje J, personal communication, 26 July 2020), before the first school was built, learners in this area used to be taught under a Morula tree situated in a centralized position for all three villages within the study area.

The tree was approximately 2-3km from each of the villages, the learners walked this distance daily to go attend school.

Phukubje (2020) further iterates that from 1899 to the mid-1900s, learners around the villages within the study area attended school under a tree until the first high school was established in the centralized village called ga-Phago. The school was named Karabi Senior Secondary school; and was built by community members from the surrounding villages. They walked distances between 2-12 km fetching water and natural building materials to build the school.

Around the 1950s the villages around the study areas emerged with a result of the influx of people from nearby villages. The learners in the study area, from the time the villages were established in the mid-1900s, walked daily, to the high school which was located approximately 6km- 12km from the village. Following a precedent of Karabi Secondary school, the parents and learners followed the same method and built a primary school with their own hands and established in 1970, a school named Seetla primary School which was much closer to the villages. According to (Phukubje, personal communication, 26 July 2020) in 1984 the Government then built the current local high school which is approximated 3-4km from the three villages. The Mochedi High school is currently identified as a place of importance within the study area.
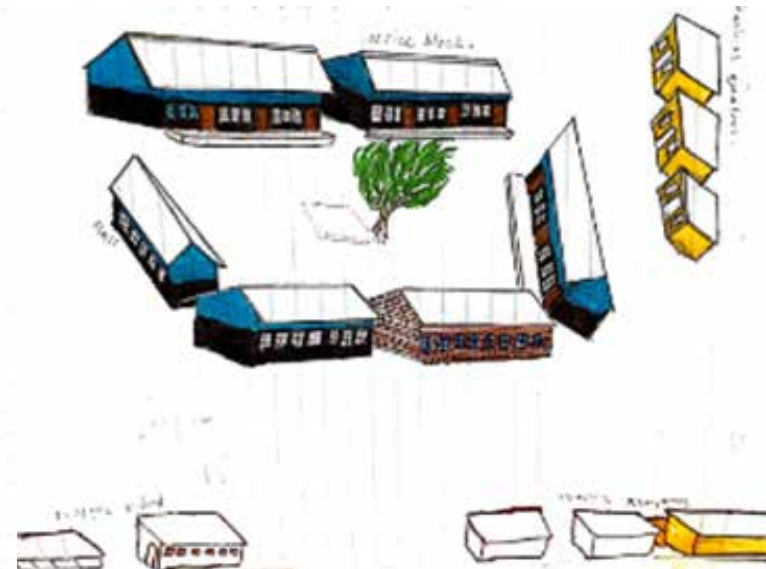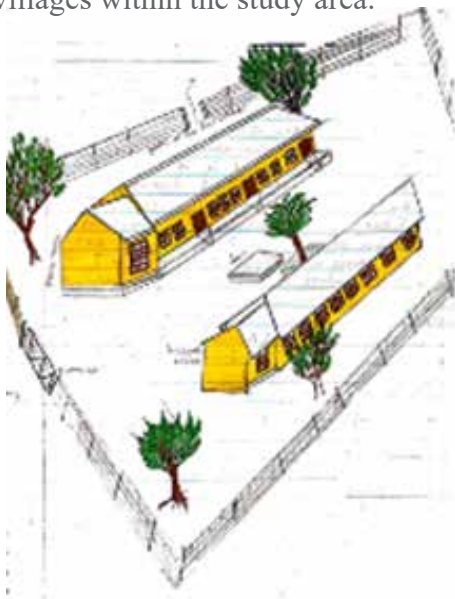
Figure 41 Seetla P.School Drawing by J.Phukubje

Figure 42 Mochedi High School-Drawing by J.Phukubje

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4.3.3 Walking for agriculture and farming

The agricultural fields as seen in figure (41) are situated outside the village and quite far from the villages.

According to (Phukubje, personal communication, 26 July 2020) Inhabitants walked long distances to work in their agricultural fields to support their families.

This included the ploughing and reaping season.
The inhabitants mainly grew wheat, mealie meal, groundnuts, pumpkin, wild spinach, watermelons and others.

During the reaping season inhabitants took their products to exchange them at a farm nearby which was over 4km-5km. They would either carry these bags or sleep in the forest if they had, to walk to and from the farms. Some who had cattle carried their bags using cattle
wagons to go to the farms.
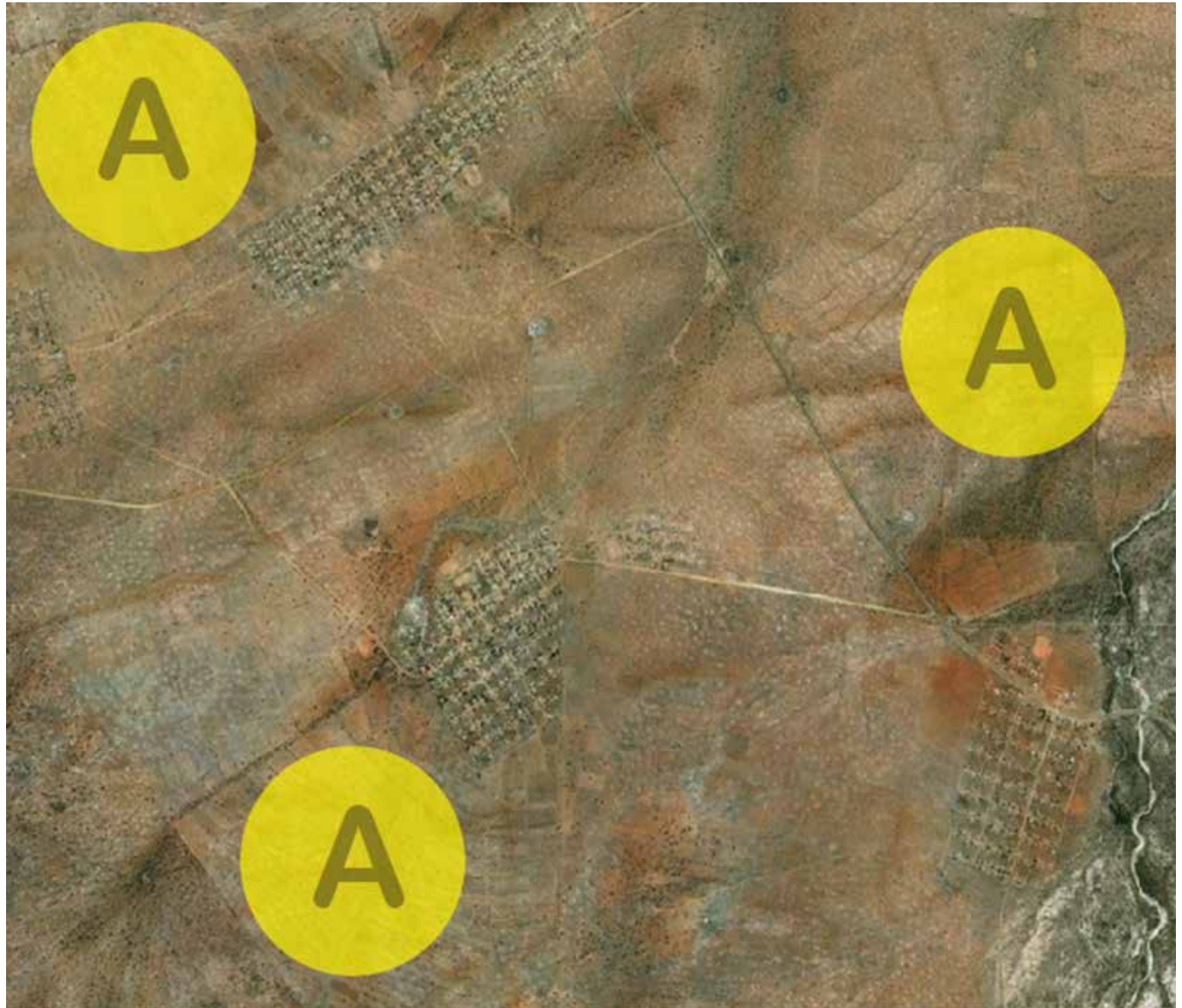
Figure 43 Agricultural fields placed on the outskirts of the villages (Zoom Earth, 2020)

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The significance of totems

4.4 The significance of totems in the culture of Bapedi ba Moletjie

"Re ba ena kwena baila lehlaka bo moroka a meetse a pula"

Totems and clan self-praise are important aspects of Moletjie community because they help identify one within this community. The ruling tribal authority may have their self-praise clan, but within the smaller communities (the villages) the inhabitants also have their totems as a form of self-praise and self-identification. According to Mokgethle (2012), the majority of the totems get their names from an animal which it is believed to have helped the community in the past and now they respect and pay homage to that animal by affiliating with that animal, this is called "go ena" in Pedi.

Conclusion

In summation, the narrative above forms, an important foundation in setting the project in place. Understanding the cultural background and the existing conditions become the principles of this design scheme without foreign design principles and techniques. Following the famous quote by Marcus Garvey, "a people without the knowledge of their history of origin and culture is like a tree without roots" –Garvey, retrieved 29 October 2020 [online].
The importance of the sustainable use of resources, both natural and from animals is the core of the lifestyle of the people within the study area. It will later be seen how this enriches the design process and contributes to better land management practices.
Furthermore, walking as shown above has been a fundamental ritual for people in the area. Thus, as much as things have changed over the years in the area; the issue of walking from place to place in harsh conditions has remained constant. How walking as an experience can be addressed and made enjoyable and refreshing will be seen later in this dissertation.
Finally, in terms of cultural representation and identifying with each other, it was observed how significant totems are for the people in the area. Therefore, translated to landscape design, totems are observed on how they inform the creation of spaces that have meaning.

05

Site Findings: Narratives

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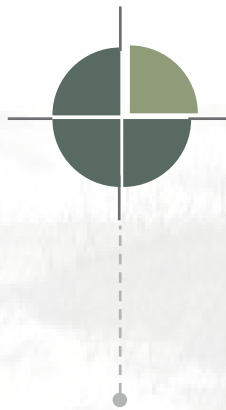
Site Findings: Narratives

5.1 The Narratives

As elaborated in the theory section above, the project follows a place-based design approach. The approach, as Galiano and Loefarffler (1999) indicated, it allows landscape architects to understand the significance of a place from the narrations of inhabitants living in that specific area and to further use the interpretations of these narratives as informants for design.

Similarly, Eisenhauer et al. (2000) further expressed that a place-based design approach is a grassroot movement founded on the belief that by understanding identity, the meaning, narrations of places, and designers can create well-informed spaces. Spaces which will result in the users preserving and taking ownership of their own space. Furthermore, unique knowledge confined within this area (Indigenous knowledge) sets the design in place.

The following section draws the reader's attention to the stories related to the study area; the narratives emerged from interviews with residents. It will later also be illustrated on how these narratives influence the design process. The interviewees were given generic names such as "Koko"(70) meaning grandmother, "Rakgolo"(65) meaning grandfather and "Buti" (27) meaning brother. These narratives are different from the above historical narratives as they seek to find out current site issues and how they can be addressed. While the historical narratives rather focus on a broader understanding of place and of course the overlap between the narratives is how they interlink to create informed landscape spaces.

5.1.1 Narrative 01

"For as far as I can remember I have lived here almost all of my life, you youngsters don't herd cattle anymore, all you know is this technology things of yours it is like we live in two different worlds,
I guess to some extent this is true 'wena' Molwantwa, you know livestock, especially, cattle are important to me and now, that I am old and will soon die. Cattle are your heir that you can pass on to your children, you will get married by means of cattle when your son goes to University, you can sell them to put your kids through school.
Back in the days, almost every household had a kraal, now, very few people in the village have cattle this is because the good grazing grass is far and sending your cows there is almost just like giving them away to thieves for free." –Rakgolo (2020

Figure 44. Narrative 01 by Rakgolo (Author 2020)

5.1.2 Narrative 02

"Fetching fire-wood was like a lifestyle back in the day, it was non-avoidable, and you had to do it. Of course, I do not go that often now because I cannot walk for a long distance. But yes, there is one Shrub in particular that we harvested for firewood it is called "Mphato" the area where my son stays now is nicknamed after this tree/Shrub. When you found good ones they grow up to 2, 5 meters high. We loved and still love this Shrub because it burns very well for long periods of time whether dry or wet. The thorns are not that aggressive and cattle do not feed on this Shrub. Back in the days we fetched it quite easily and the plant was abundant, but today all that is no more. People cleared the land, we now go very far to get that specific plant for firewood, and I do miss those days."-Koko (2020)

Figure 45 Narrative 02 by Koko (Author 2020)

5.1.3 Narrative 03

"Yeah, look I am a bit younger so I will tell you only what I can remember, I am sure you remember...
This is because you were there, in 2006 there was a very strong storm which was so aggressive, it blew peoples roofs off...It was a sad day Man, but yeah I remember the veld rangers blamed the...
Fact that we cut down too many trees but, I tell you we don't have a choice we got to eat and oh yeah I heard that it was not the first one. Another one occurred in 2000 and caused the same damage and I am scared for the Future you know."-Buti (2020)

Figure 46 Narrative 03 by Buti (Author 2020)

06

Site Analysis

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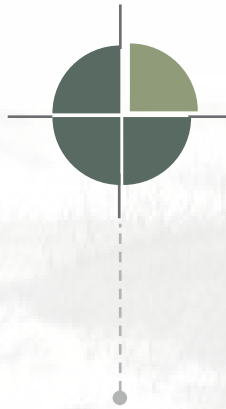
Context analysis

6.1 Context analysis

The focus area of this study is situated within three villages, which are between (2-4km) from each other. Smaller communities exist within a larger community. Meaning that from the
Moletjie tribal precinct each village has formed its own smaller community within the larger precinct.

More than nine thousand people reside in this area. Most of the inhabitants around this area are older people between the ages of 35-95. The younger people from these areas are between the ages of 1-20 years, with fewer people between the ages of 25-35. The networks of footpaths constitute the study area and connect them to various spaces of importance. The overall landscape is under duress, due to low rainfalls and unsustainable land management strategies.

Figure 47 A view of the landscape from Mochedi High school facing north, towards Ga-Rankhuwe Village. (Author, 2020)

Compacted Plinthic Catena Yellow Soils

Poor vegetation Structure due to

Ga-Rankhuwe Village (2km away)

Densification of the top soil

Existing Footpaths-Physically Uncomfortable ,exposed and often flood

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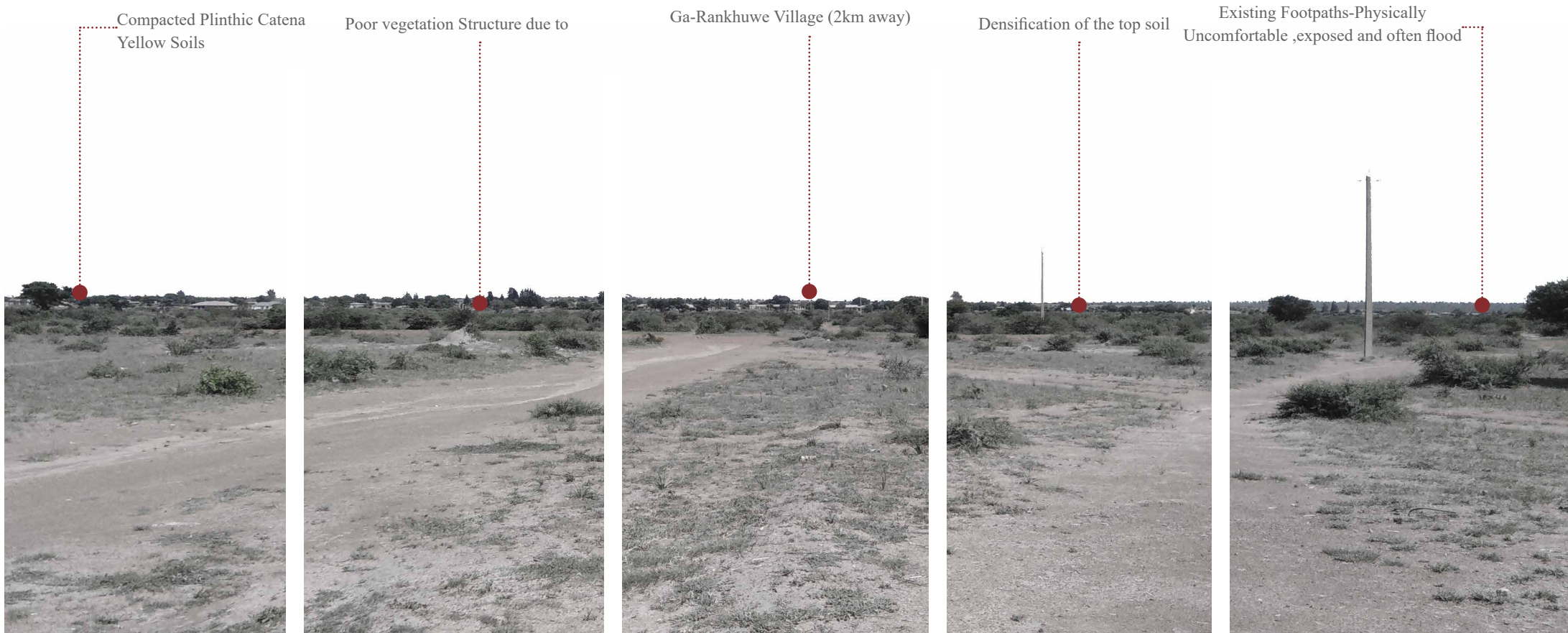
6.2 Soil and Vegetation analysis

Therefore, hardened and eroded existing soils are an environmental concerns. Plinthic catena eutrophic red and yellow soils dominate the rural landscape within these Moletjie villages (Aganang municipality 2010). The soil structure in this area has deteriorated over time. It has undergone densification and as a result, is prone to erosion and unable to support vegetation. This is supported the findings by Duely et al (1939). He calls this process the seal formation which involves the compaction of the soil profile and leads to a decrease in the infiltration rate. As a result, the soil surface generates more runoff from the site, which dams up in roads and footpaths. Thus the soil is unable to support the vegetation structure.

Figure 48 Context map showing different vegetation units and places of importance (Author 2020)

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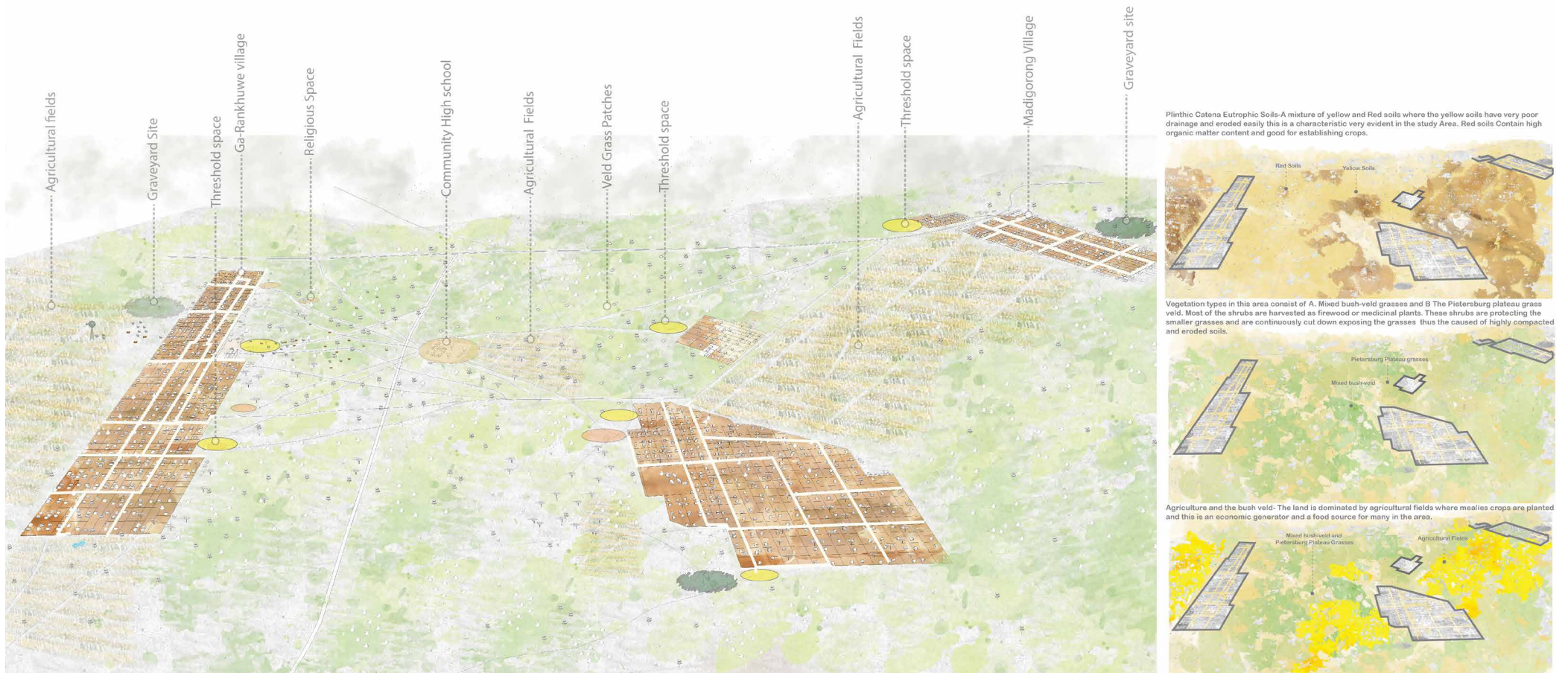
The vegetation structure consists of the patches of mixed bush-veld and plateau grass veld. The grasses die, because of the poor soil conditions and the over-exposure to adverse weather conditions. The exposure of the soil to adverse weather conditions is also caused by deforestation and overgrazing in the area. Trees and shrubs are cut down for firewood in households. The Marula and Acacia trees are constantly cut down without any sustainable landscape management practices.

01 Ga-Rankhuwe Village

> Eroded existing man-made Footpaths

> Network Destinations

Pietersburg Plateau grasses

Mixed Bush-Veld

Agricultural Land

02 Monyoaneng Village

03 Madigorong Village

Forested and Good grazing land

SITE YEAR : 1999
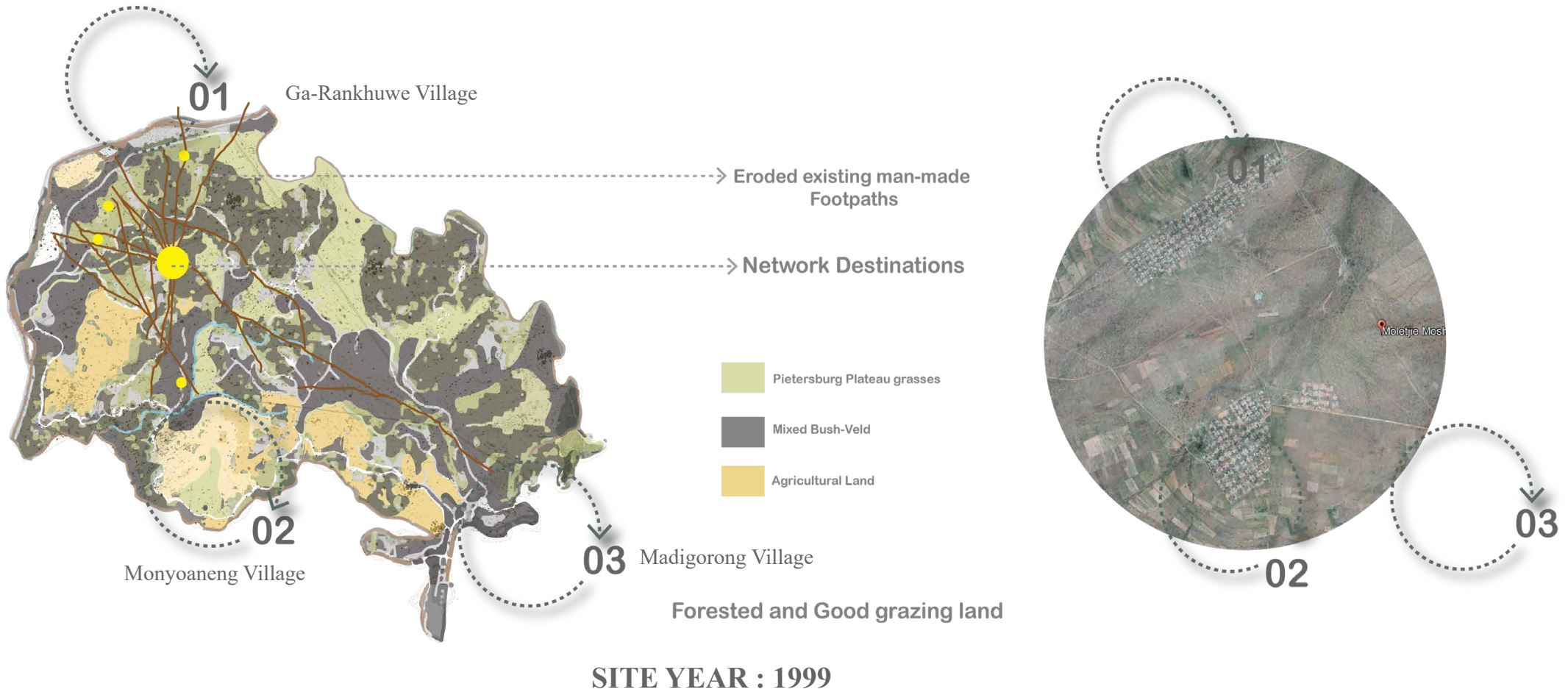
Figure 49 . The vegetated rural landscape undergoing change from (1999) as a result of deforestation and poor landscape management practices (Author 2020)

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Ga-Rankhuwe Village

01

Eroded existing man-made
Footpaths that can become destination areas

Pietersburg Plateau grasses

Mixed Bush-Veld

Agricultural Land

De-Forested, eroded
Fragmental Rural fabric

**Opportunity to create
More destinations**

**Opportunity to re-forest the
Eroded landscape**

Madigorong Village

02

03

De-Forested and Hardened lands.

SITE: YEAR 2020

Monyoaneng Village

**Opportunity to increase crop production
With the use of African often crops**

Figure 50. Present day 2020 showing the eroded pathways and had undergone the Seal formation Author (2020)

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Figure 51. Uncontrolled animal grazing, cutting down of trees and eroded soils also poses a huge environmental issue (Author 2020)

Cutting Down of trees and large shrubs
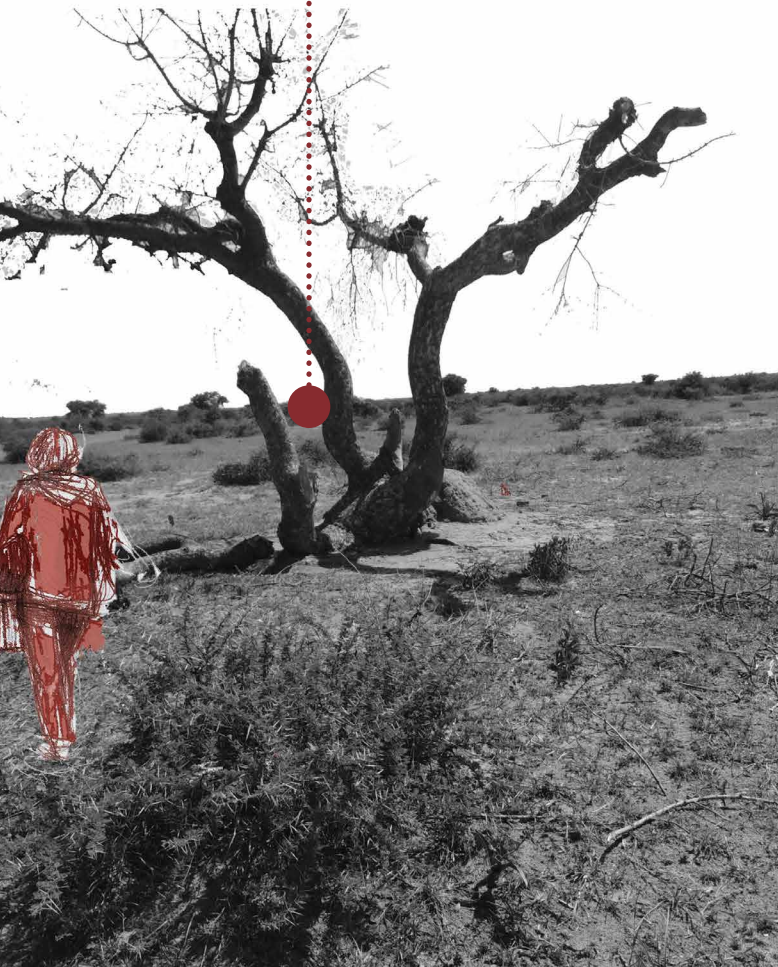
Eroded Top Soil

Uncontrolled Overgrazing

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Dumping of rubble from rural homesteads

Opportunity to reuse dumped rubble

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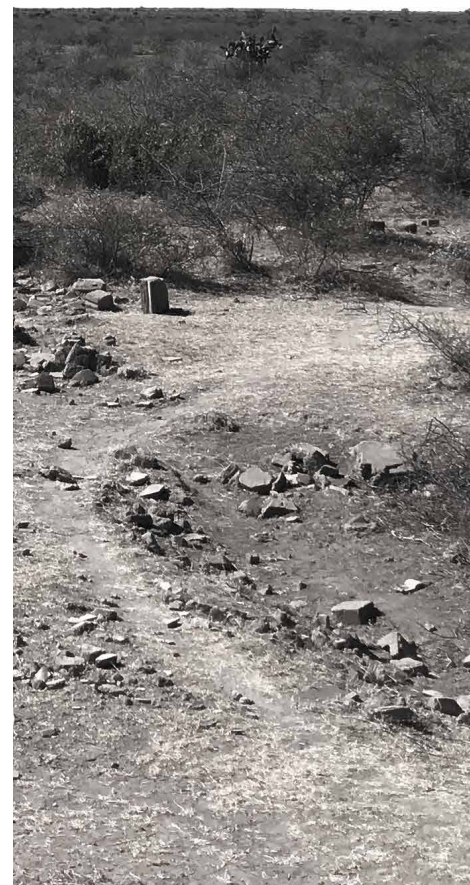
Footpath networks

6.3 Footpath networks

The footpaths connect spaces such as the graveyards, religious spaces and institutions of learning. They contribute to the overall experience of the rural landscape. They frame views, they hide and reveal specific moments along the paths. These footpaths are dusty, long and physically uncomfortable and thus become tedious. The footpaths are eroded and become un walkable during adverse weather conditions, such as heavy rains and extremely hot days. As the drawings below illustrate, due to the erosion caused by foot traffic, the footpaths often flood during heavy rains. It therefore becomes difficult for the rural inhabitants to walk from one place to another. As mentioned in the introduction, walking is a very important aspect of rural life. The inhabitants within the study area depend on walking for survival this includes walking to fetch firewood, walking to schools and places of importance and so forth.

Cattle let out in the open field creating Overgrazing issues.

Residents walk long distances in the tedious and physically uncomfortable pathways

Foot paths often flood and thus Difficult to walk from one place to the other

Religious Space

Existing Footpaths

Existing High School Shared by pupils from the Three villages

Access Nodes to the village

Moletjie Moshate Road To Polokwane

Figure 53 Map 05 indicating the dusty walkways of the villages and site amenities (Author 2020).
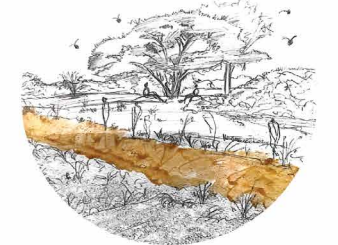
Native Morula and Acacia trees as meeting Areas and they resting places.
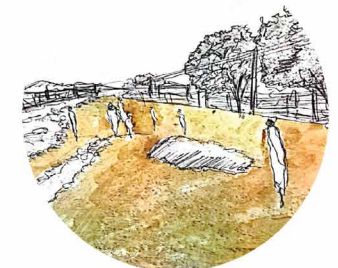
Walking as an important aspect of Rural livelihoods.

Vehicular Routes

Primary School

Primary School

Prevailing Winds

Agricultural Fields

Existing Vegetation

RE-STITCHING THE RURAL LANDSCAPE FABRIC

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TSELA-TSHWEU   71

As shown in the map (05) above, places of importance are indicated and connected by footpaths through this dusty semi-arid landscape. The landscape is fragmented as depicted in the illustration (figure 54), thus, the need for stitching the existing elements that make up the landscape. The village households are laid out on a grid pattern, but it is interesting however how free movement patterns are established by the inhabitants in the form of footpaths connecting different spaces on site. Therefore, these footpaths become a very important aspect of the design.

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Contamination of Natural Systems

6.4 Contamination of natural systems

There is an issue with the contamination of natural systems such as natural wetlands, within the study area. From the image below it is illustrated that an existing natural dry wetland is being filled with rubble from building materials and litter from the nearby villages. The wetland has the prospects of retaining water, which can be drank by cattle and can enhance the rehabilitation of wetland plants. Once the wetland is rehabilitated it gives an opportunity for habitat creation.

Figure 55. The dumping of rubble in ecologically sensitive areas (Author 2020)

The study area presents several opportunities can enhance the place and make the footpaths less tedious, allowing them to become social spaces. The existing recreational space has the potential to become a public open space that can offer both, social and economic activities. This space also has the potential to introduce users from the village to the footpaths or vice versa (see figure 57). It has the potential to become a well-articulated threshold leading into the footpaths. The footpaths can stitch both the tangible (different spaces on site) and the intangible (narrations and culture) together.
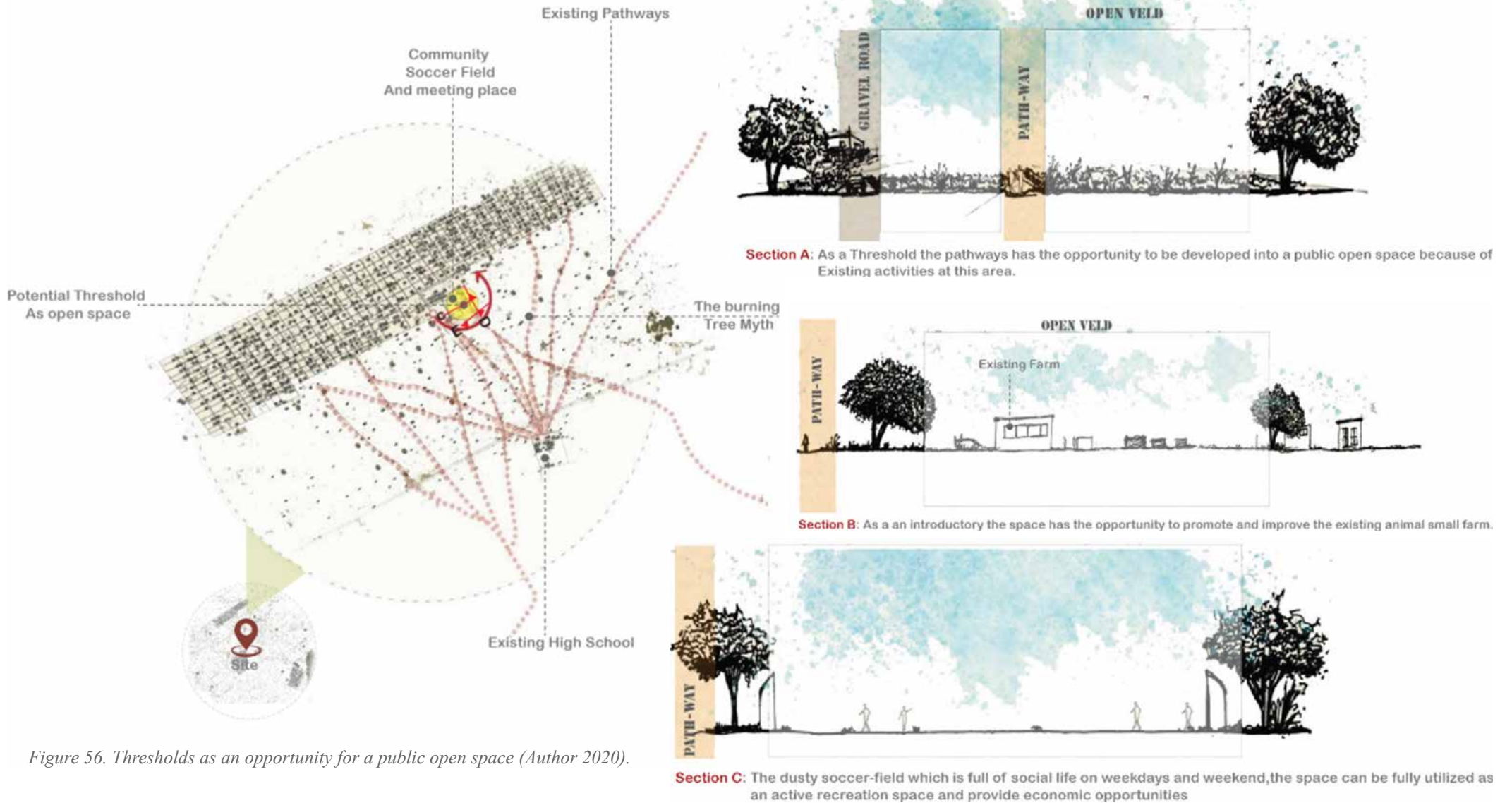
Figure 56. Thresholds as an opportunity for a public open space (Author 2020).

Section A: As a Threshold the pathways has the opportunity to be developed into a public open space because of Existing activities at this area.

Section B: As a an introductory the space has the opportunity to promote and improve the existing animal small farm.

Section C: The dusty soccer-field which is full of social life on weekdays and weekend,the space can be fully utilized as an active recreation space and provide economic opportunities

The footpaths have the potential of not only becoming thoroughfares, but also offering moments of respite. The footpaths can have the potential to create an ecological experience as the footpaths interact with rehabilitated natural wetland.

Figure 57 Sections showing the potential of pathways as water catchments (Author 2020).
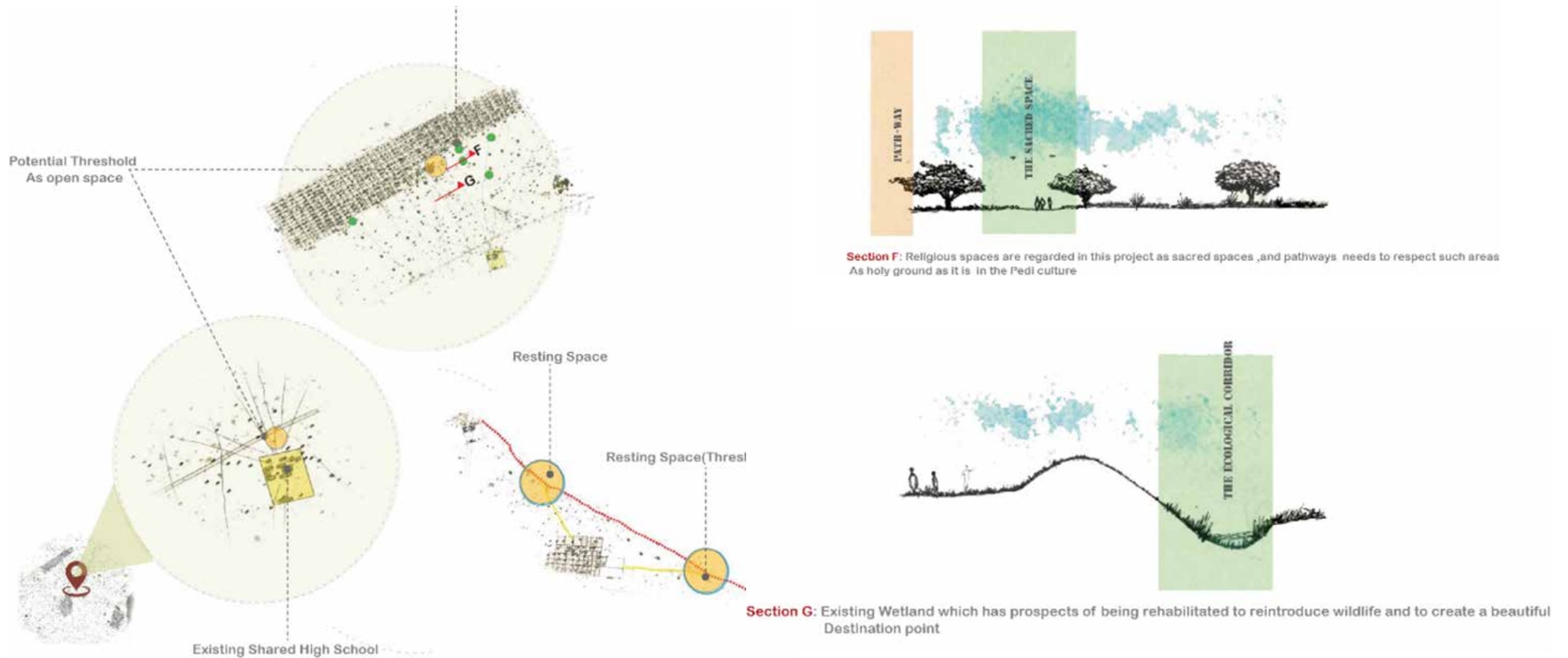
In summation, the tangible qualities of the spaces can be enhanced further with the diagrams below showing different experiences along the footpaths, such as smell changing of views and others indicated below. Furthermore, the existing stitches (footpaths) should have the ability to carry cultural meanings and educate the younger generations about culture and tradition. This intangible component is the opportunity to introduce ideas of temporality and permanence as a result of the spaces along the footpaths which can become dynamic instead of monotonous. The footpaths also have to potential of playing an important role in rain water harvesting in this semi-arid environment, see figure 58 and 59.

Site Opportunities

Connection
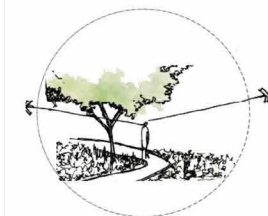
Views

Hearing
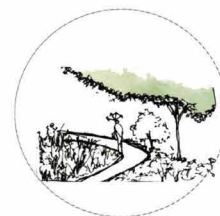
Smell

Figure 58 Footpaths also have the potential of becoming storm water catchments (Author 2020)

The Opportunity to create different experiences along connecting footpaths and footpaths becoming the generators of different spaces.

Cultural and Heritage Spaces

Public Open Space
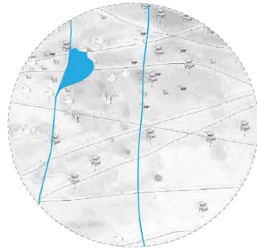
Storm water Harvesting And re-use
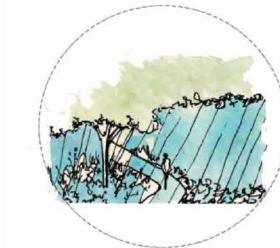
Reforest-ration for Collection of fire wood and grazing
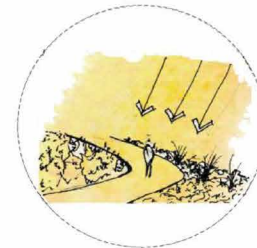
Creation of agriculturally Productive spaces
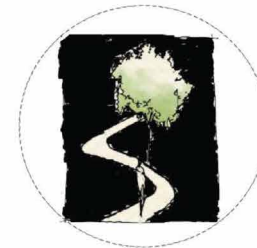
Connection to Spiritual/Religious spaces

Ga-Rankhuwe Village

Existing eroded Footpaths as Storm water catchments

1160
1140
1120
1100
1120
1180
1200
1220
1140
1200
1160
1180
1220

01
02
03

Figure 58

Possible Rainwater Storage areas

Storm Water direction

Madigorong Village

Monyoaneng Village
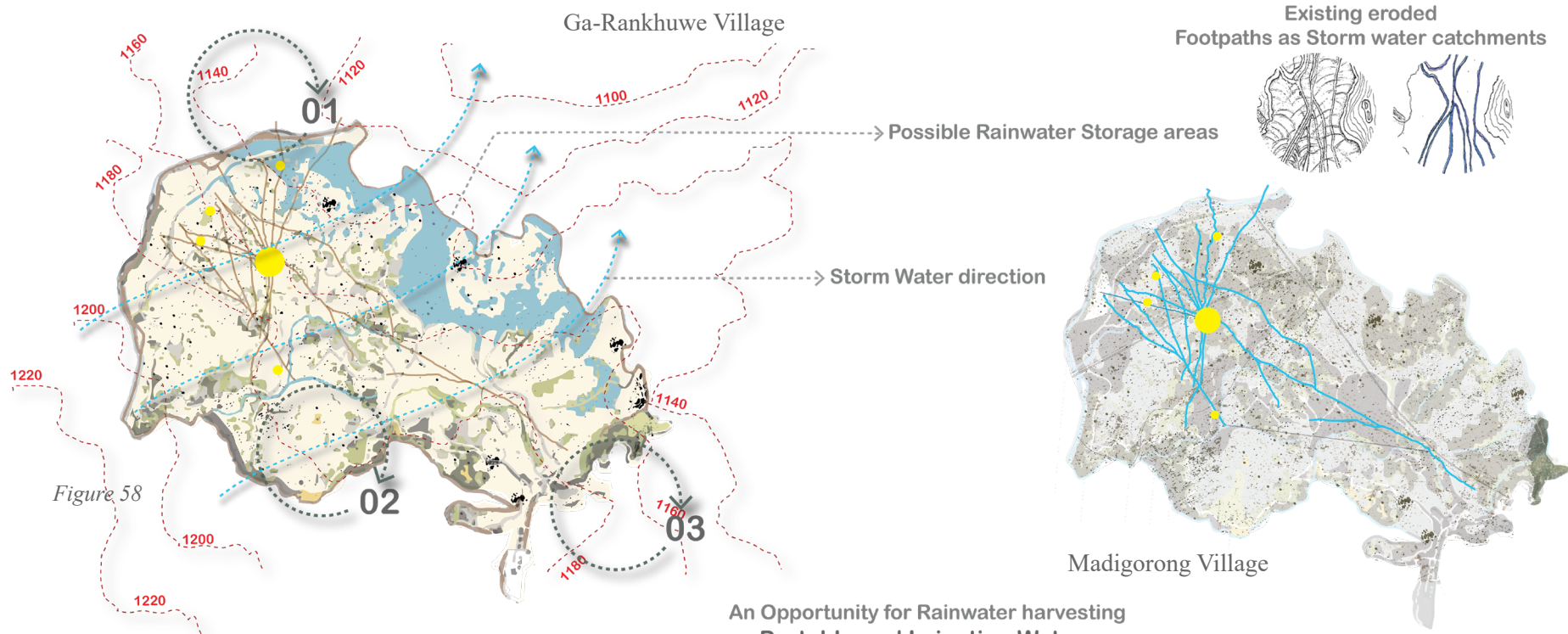
An Opportunity for Rainwater harvesting Portable and Irrigation Water

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Site Opportunities Summarized

6.5.1 Site Opportunities Summarized

The site opportunities can thus be summarized with the diagram below; a vastly fragmented landscape connected by footpaths where an opportunity arises to create moments of respite within this interconnected spaces.
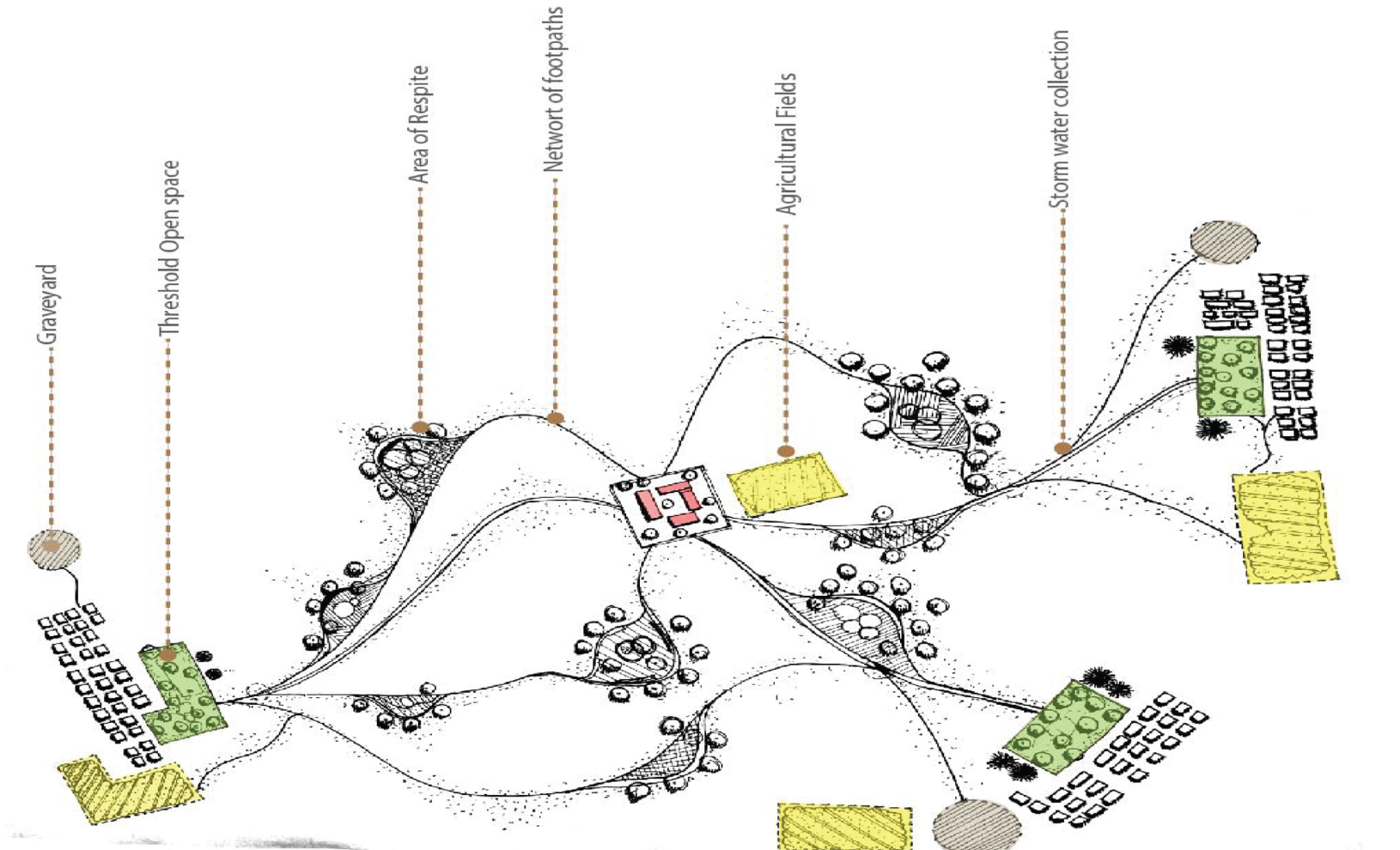
Figure 60 Site opportunities summarized (Author 2020)

Analysis of the Intangible

6.6 Analysis of the intangible

Culture and Tradition Analysis

The Bapedi people living in this area like any other tribe in South Africa have their own set of cultural attributes that set them apart from other tribes. There is a lot of cultural aspects that can be discussed and analyzed but for this dissertation, the author looked into specific traditional affiliations such as clothing, bead-work and rituals. This was done with the end goal of setting the design into place and allowing the place and its inhabitants to inform the design.

6.6.1 Attire and Beadwork

The attire of the Bapedi people is an important facet of the culture of the people living in this area. The attire is well respected with bright blue, white, pink and yellow colours. The attire is normally reserved for special occasions. These special occasions include weddings where the bride and groom dress in their traditional regalia to celebrate their union in what is called the traditional wedding. The inhabitants' other events include the unveiling of tombstones, the famous Heritage Day where the colourful clothing and beadwork are worn proudly. The bead-work made by hand also shares the same colour pallets as dresses and shirts. Older women in the area wear their traditional regalia daily not only on special days.

6.6.2 Rituals

This ritual of dunging the floor is depicted in drawing on the right. It includes the mixture of cow dung and water applied on the floors and low veranda walls or mud houses. The application is not only for aesthetic purposes but also to prevent erosion.
The forms and patterns created from this ritual influences patterns on dresses, pottery and is a skill taught by the older women to younger women in the community.
The act itself is called "Go Kgopha" in Sepedi and cow dung "Boloko" is the key ingredient and involves applying interconnected hand patterns using the cow dung mixture.

Other traditional rituals include the making of traditional beer depicted by (figure 63), this ritual goes hand in hand with the ritual shown in figure (64) "Go phasa badimo", ancestral worship ceremonies which include the making of traditional beer to either thank or ask the ancestors for blessings. Women sweeping the yard in the morning (figure 65), can be considered a ritual and mostly, in the area only women do it. The inhabitants conducted food preparation rituals for survival and food production. Therefore, other rituals include the collection of firewood, ploughing in the fields and the grinding of mealies or wheat to create make mealie-meal.

"Moaparo le dipheta"
(Attire and Beadwork)

Figure 61. The Pedi Attire (Author 2020)

"Go sila mabele"
(Grinding of mealies)

Figure 63 Traditional beer (Author 2020)

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Figure 62 Dunging the floor (Author 2020)

Figure 65 Sweeping (Author2020)

"Go phasa Badimo"
(Ancestral ceremonies)

Figure 65b Collecting Firewood
(Author2020)

Figure 64 Ancestral ceremonies
(Author2020)

6.2.3 Totems and Clan names

As it has already been alluded to in chapter 4, the Pedi people generally belong to a specific clan for the sake of identification within a community. They praise and embrace themselves by reference to different totems (meano) which are derived from certain animals; surnames, thus, carry a lot of weight when it comes to identifying with a certain clan. Those who share a totemic animal consider themselves as having the same roots in society (Mojalefa 1995).

Monning (1988:23) summarised it by stating that people who share the same totem regard themselves as related agnatically, which is the feeling of being obliged to assist each other. A perfect example is that which Monning (1988 :23) described that if a person arrives destitute among foreign people he will try to establish if there are people in that area with the same clan and will expect to find refuge from them. Below are prominent totems within the study area.

"Tau"-Lion
"Heroism and Courage"
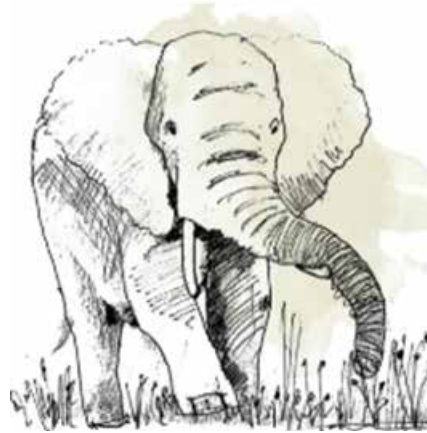
Associated with Power and Heroism

"Nkwe"-Tiger.

"Noko"- Porcupine
A small unique animal: Dangerous when provoked but disciplined.

"Lehlalerwa"-Wi
Social and ability to share

Patience and fierce

Figure 66 Totems and their representation (Author 2020)

07

Design Projections: Setting the scene

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Design Projections

7.1 Design Projections

This part of the dissertation investigates the genius loci of place. The projections express what spaces along the pathways can become and how the spatial experience can become poetic.

A walk is never finished, only abandoned ..."lefoko le telele le lapisha mmoledi..fegelwana e khutshisha mmoledi fegelwana efa sebaka sa go khut-sa...fegelwanala ke mathomomomayo a go to hlahla dikwi tsa motho"- (Author 2020)

The existing footpaths are compared to a long sentence without Commas; the sentence becomes long, tedious and tires the reader or speaker. The same analogy is applied to space where multiple commas are to be created as comfort zones that not only create comfort for the user but also offer new opportunities and moments of respite with the footpaths.

Figure 67 Painting depicting the harsh landscape and the footpaths which have the potential of can turning a mundane activity such as walking into a poetic experience through creating moments of respite (Author 2020)

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The Poetics of Walking

7.2 The Poetics of Walking

Walking as a self-conscious cultural Act and aesthetic experience

Artist Romantic Weltanschauung speaks about the experience of walking, as the art that engages one's emotion, imagination and senses (Woodsworth Book XII). The author draws from his real-life experiences in the study area (where he grew up), "There was always a sense of peace in the long walk from school to home, especially in days where a lot of people are not using the footpaths. The scent produced by plants constantly makes one aware of their surroundings, while your mind wanders off to one's aspirations of the future" (Author 2020).

Most importantly, the projection also focuses on the aspect of rural inhabitants, walking for survival becomes much deeper than that. It draws from what William Wordsworth refers to as the experience of walking, "it stimulates one's imagination, it becomes part of a spontaneous and emotional journey" (Wordsworth Book XII).

It is no longer a mere movement from point A to point B, but rather serves as a link between different spatial moments of reflection, beauty and cultural expression. Walking is seen as an underlying continuity; it forms and shapes the landscape. The footpaths begin to create an overall sensory experience which hides and reveals certain spaces, some have clear meanings, and some the meanings that become allegorical.

Figure 68 Footpaths connecting, congregating spaces, sacred spaces and spaces with a representation of culture (Author 2020).

Storytelling forms a huge component of the Pedi culture; it has been a long-standing tradition for many years. Historically, children and adults sat around a fire at night to tell and listen to stories. Which are teachings, and a means of passing on tradition and knowledge.

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This is still the case today, though per-haps not as prevalent as before. In addition to the above, while herding cattle, men and women in the area played indigenous games in congregating spaces, hence, they were important spaces.

The figures above and below are explorations of these important cultural spaces, which could be linked to the pathways – as the "commas" alluded to above, in the otherwise tedious
journeys from A to B.

Walking -As-Ritual and Tradition

The walk expresses the space and freedom as well as the imagination of the user.
The user gets into their own headspace and in somecases a deep appreciation of nature and the surrounding.

Figure 69 A space for contemplation, meditation and imagination (Author 2020).

The spaces discussed and explored above are important cultural and social spaces. However, individuals take the journey alone.
Thus, it is necessary to allow spaces of contemplation, meditation and imagination, also breaking up long journeys. Here, the user gets into their head-space with a deep appreciation of nature and the changing surrounding. Lassus (1999) described the changing landscape as Geschehen, a steadily changing landscape experience.

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THRESHOLD
THE GATHERING SPACE

Mobility
The transcendence

SACRED SPACE
THE SPIRITUAL SPACE

RESTING
THE IMAGINATIVE +REFRESHING

SENSORY
THE IMAGINATIVE

THRESHOLD
REPRESENTATION
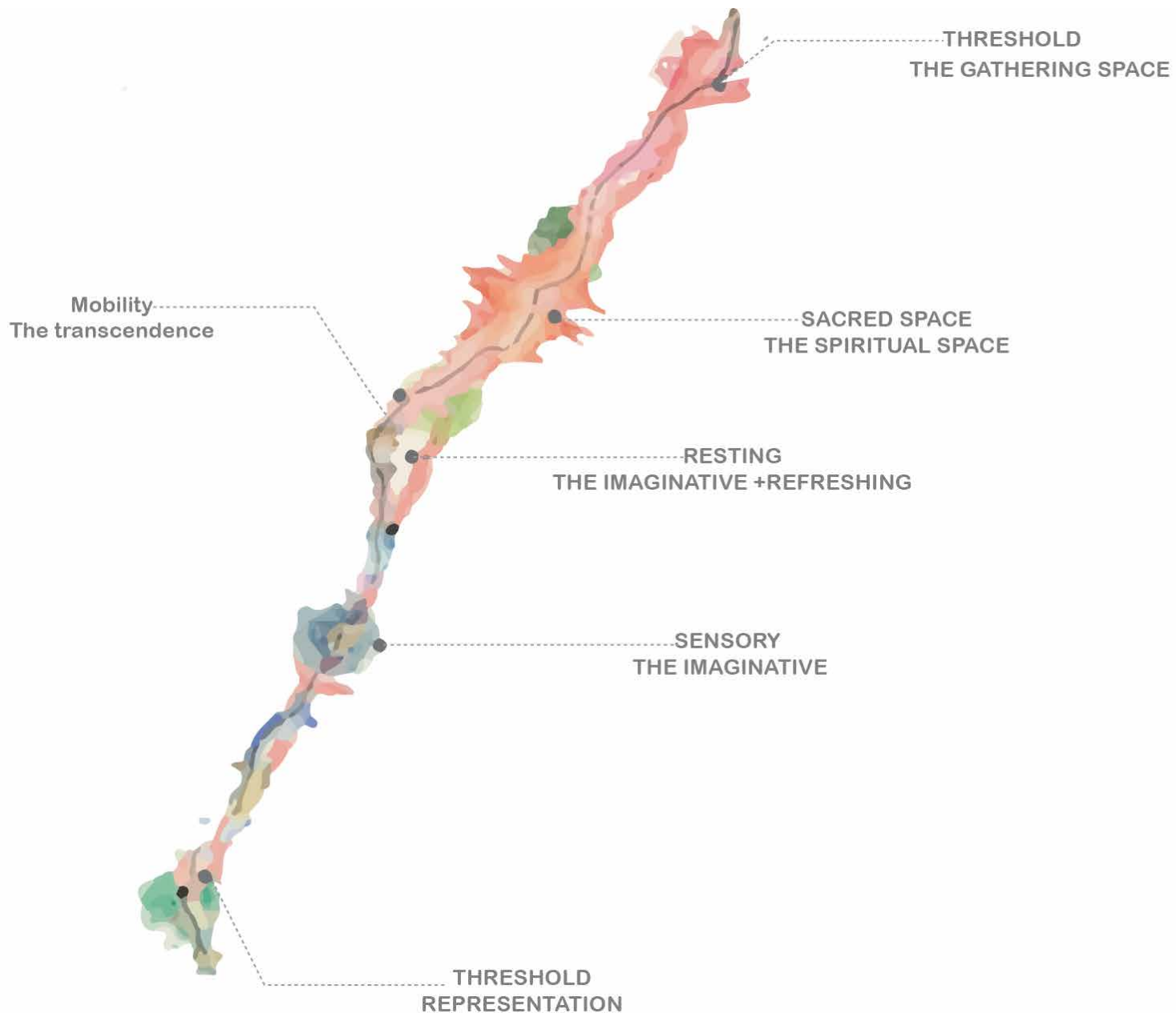
Figure 69 b Exploring the walking experience (Author 2020)

The Poetics of Walking

Walking as a self-conscious cultural act and aesthetic experience
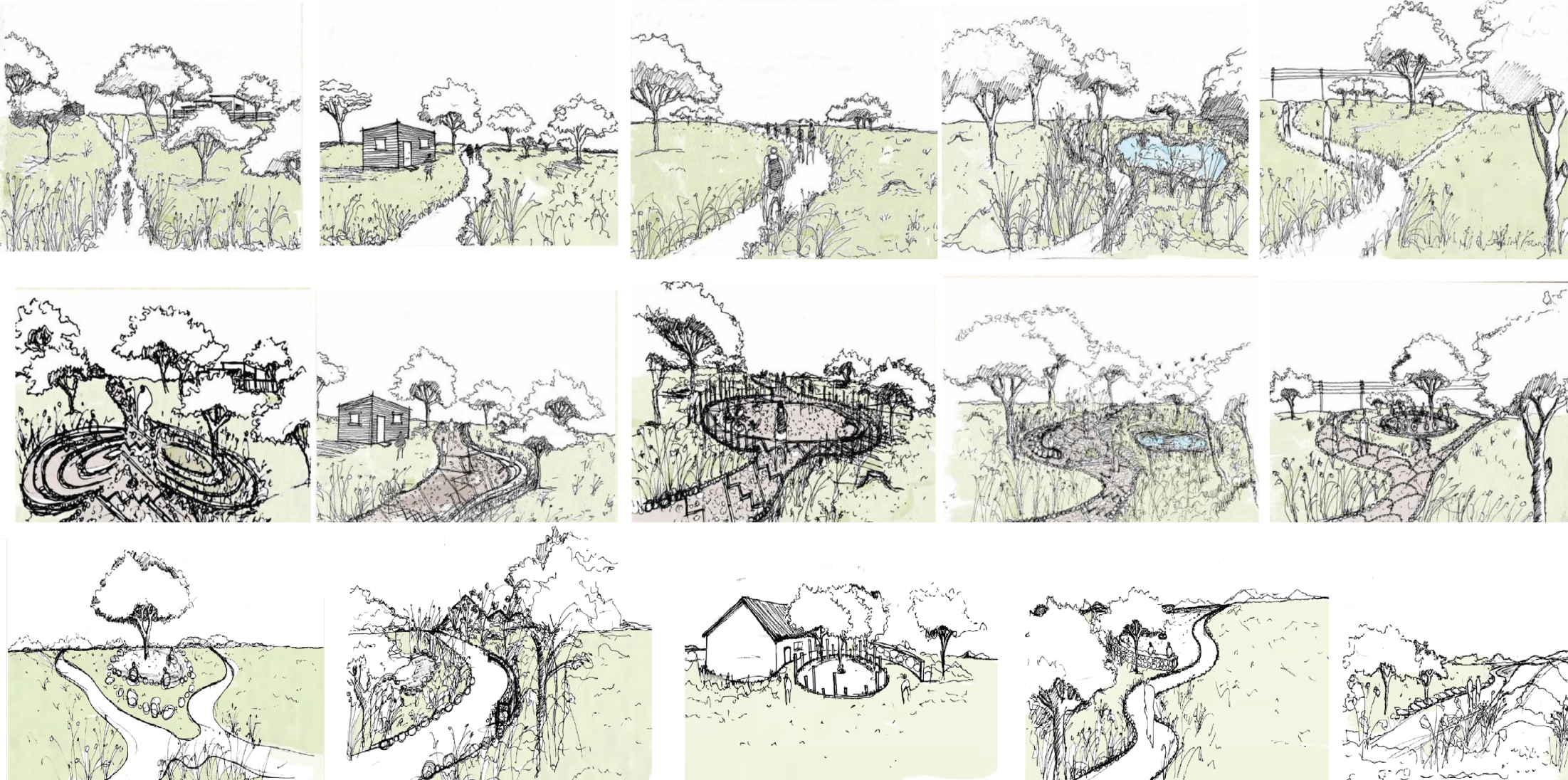
Figure 69c Exploring the walking experience (Author 2020)

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08

Program, Planning and User

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School Children

Walkers

Joggers

Community
Children

Soccer
players from
community clubs

Local
vendors

Community
Agricultural fields
workers

The ECONOMICAL

The Social
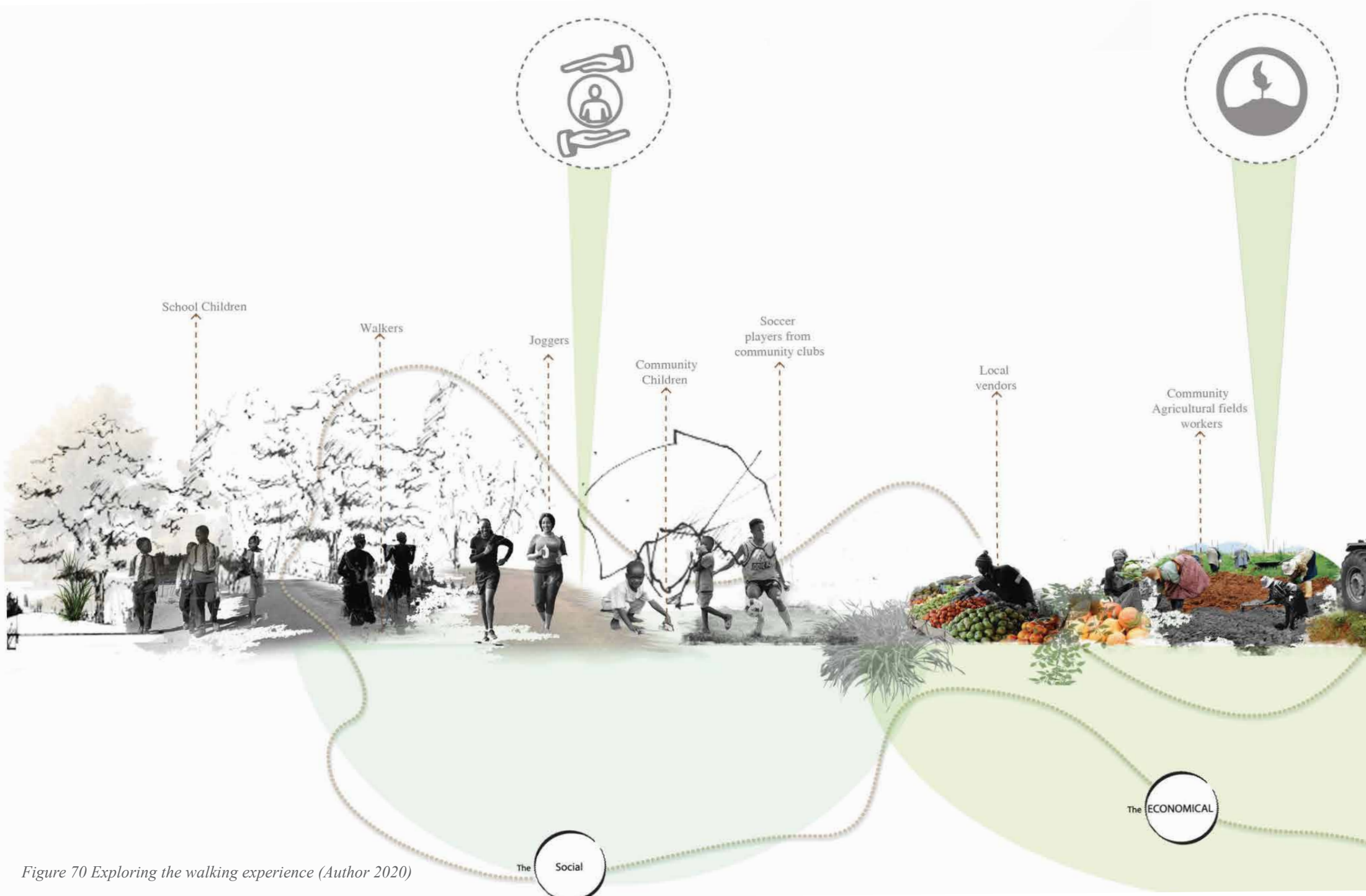
Figure 70 Exploring the walking experience (Author 2020)

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RE-STITCHING THE RURAL LANDSCAPE FABRIC

Local farmers

Traditional healers

Local laborers

Collectors of firewood
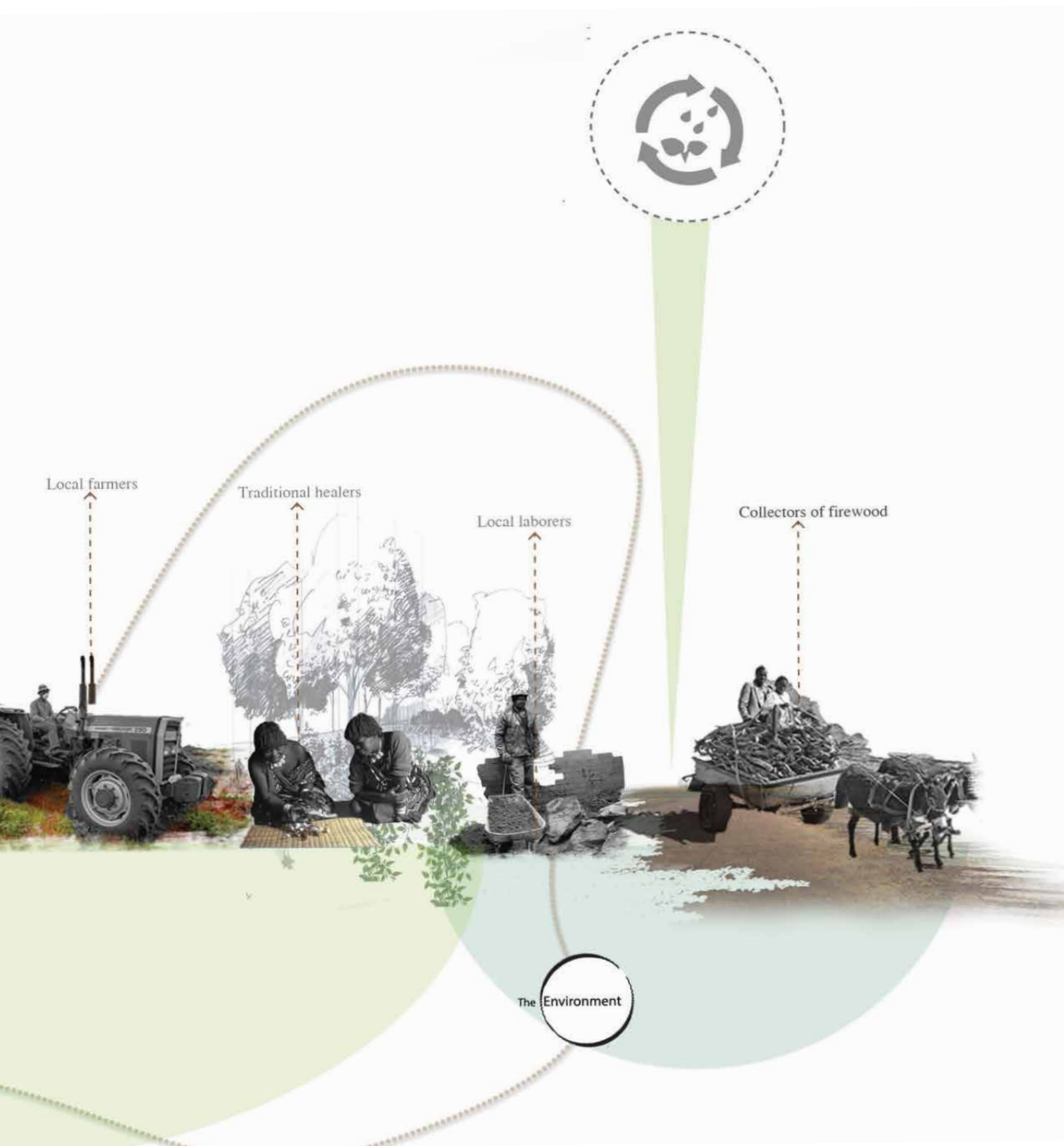
The Environment

This part of the dissertation sheds light to the users of the space and the programs incorporated in the proposal. Figure 70 indicates the importance of the proposal to incorporate the social, economic and environmental benefits in an attempted to create live-able outdoor space.

Site Program

8.1 Site Program

The social, economic, and environmental

The day to day user of the space is paramount in every landscape architectural project. The user and purpose of space inform important inquiries in any landscape architectural intervention. The design aims to incorporate all users in the villages, the old, middle-aged, the youth and children. The intervention aims to accommodate school children, random walkers, joggers, athletes, traditional healers and collectors of firewood. Three program informants were employed for this project, the economic, social and environmental sustainability of the intervention. Kluwer (1999), emphasized that planning regimes (in this case landscape design projects) should focus and normalize enhancing of the natural environment, its efficiency in terms of addressing social ills and the economic development of that particular area. The scheme attempts on doing that but with a clear consideration of place-based solutions and indigenous methods.

8.1.1 Economic development
Kluwer (1999) emphasized that economic sustainability influences productivity and balances a community in terms of monetary capital over a long period, thereby eradicating poverty. The site has an opportunity to introduce recreational activities that can create jobs and generate revenue for residents. The open space also has a potential to introduce food gardens, which will feed families, and the residents can generate income from it.

8.1.2 Social benefit
The intervention contemplates to develop opportunities for people to use the space in a win-win situation where their social needs are met and represented. The intervention aims to support an economic development program while addressing the nexus between social ills and environmental decay.

8.1.3 Environmental sustainability

Kluwer (1999) further discusses that environmental sustainability requires one to think about the natural environment as both an economic and social source. Furthermore the enhancement of the environment should benefit the rural inhabitants in both economic and social ways. This also means that systems put in place through the intervention should be self-sustaining.

8.2 Design Strategies

The figure below indicates a strategy for how to address the local landscape to incorporate the above -mentioned principles. It thus becomes a framework with various elements that can be incorporated in different configurations to allow the overarching aims of schemes to manifest in the landscape. This is discussed in more detail below.

DESIGN STRATEGY

Connect
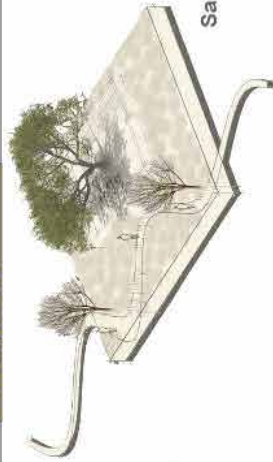
Sacred Spaces
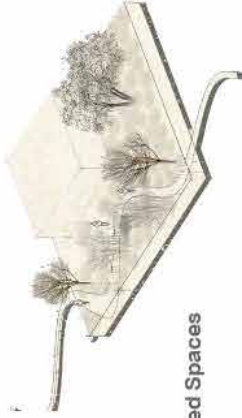
Experience
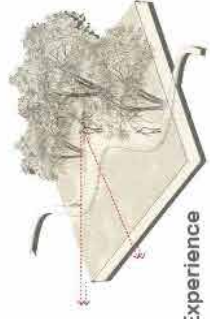
Trails connecting

Public Open Space

Active
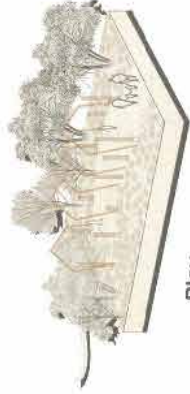
Play

Passive

Recreational Space

Food Production

Crops A-Season 01

Crops B-Season 02
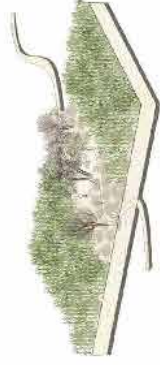
Crops C-Season 03

Productive landscape

Wind Breaks
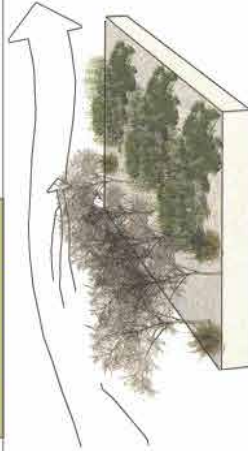
Strategy A-Against Crops

Strategy B-Against Crops And Households

Strategy C- Against Households

Protective landscape

Fire-wood Collection
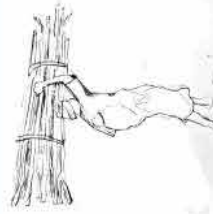
Regulated collection of firewood
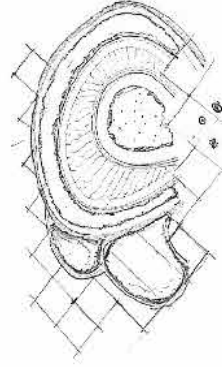
"Mphato" Year one

"Mphato" Year Two

Sustainable landscape

Grazing Control

Season A

Season B

Season C

Animal Grazing Control

Environmental Concern

Footpaths Connections –Typologies

8.2.1 Footpaths Connections –Typologies

The design strategy involves the footpaths connecting different points of interests within the study area, such as sacred spaces; thus, the footpaths contribute to a poetic experience of the landscape. According to Bernard Lassus's approach to connectivity, a footpath seeks to reveal different dimensions of a space such as the non-visual and the visual (Lassus 1998). This aspect of the design strategy seeks to investigate those dimensions, which allow one's senses to take over and guide one along the footpaths.
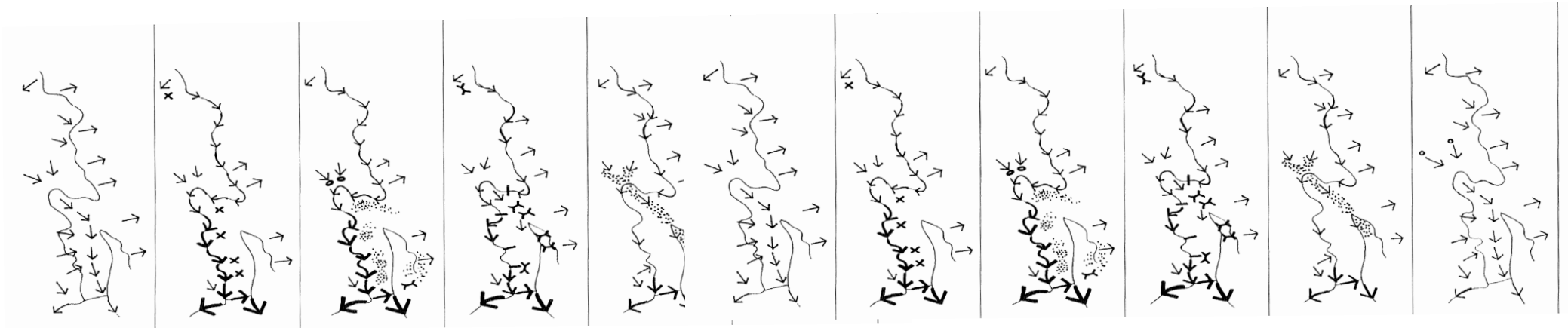
Figure 71 Footpaths experience as an integral part of the landscape (Hester and Rudolf, 1989)

Sacred Spaces
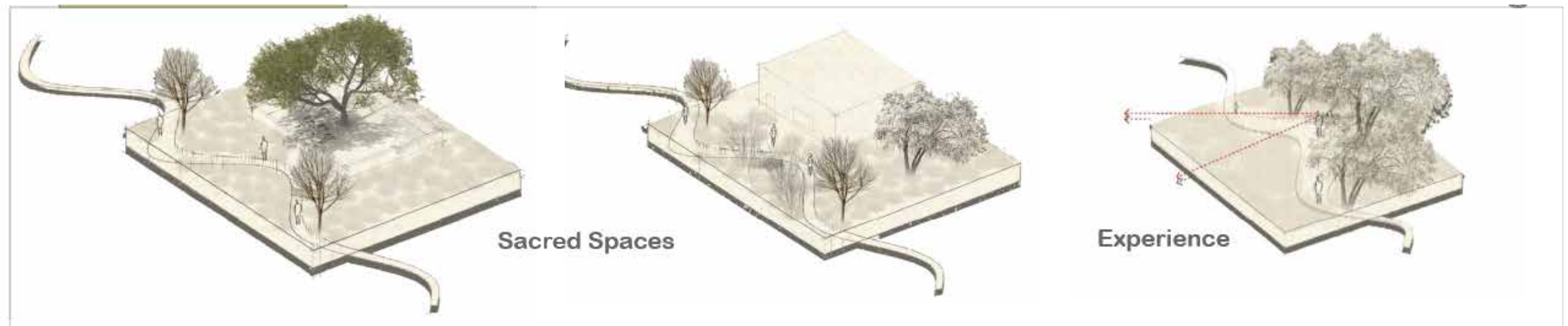
Experience

Figure 72 Footpaths experience typologies within the Moletjie rural landscape (Author 2020).

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8.2.2 The Public open space

The public open space has to become an integral part of that community; but, any future development in the community should represent the users and their social values. Hester (1989:01) mention five qualities of a successful public open space. Firstly, it has to become a machine of recreating; secondly, it has to serve as a consumer item, thirdly, as an economic resource.

Fourthly, it ought to serve as a medium of reconnection between the natural environment and the community. Finally, the spaces need to have elements of topophilia, to represent the desire to be connected to places in an emotional, and to a certain extent, in a sacred way. This part of the strategy is investigated in proposals to develop and enhance the existing open spaces.
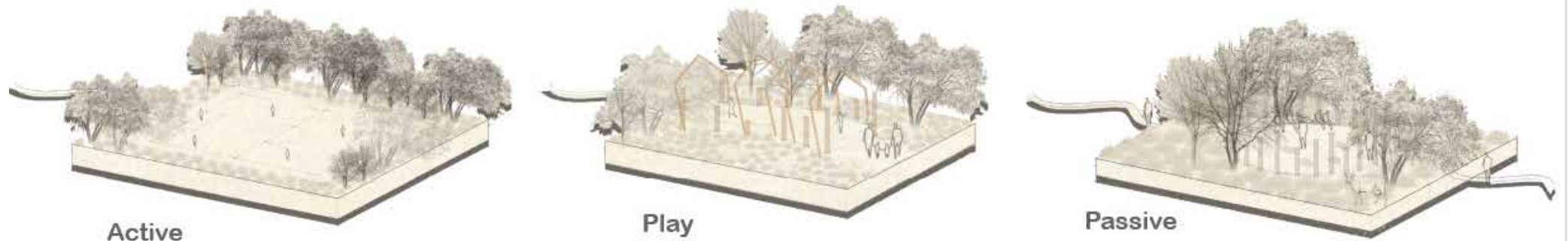
Figure 73 .The public open space typologies within the Moletjie rural landscape showing the recreational, play and sacred space (Author 2020).

8.2.3. Food production

The majority of households in the study area are characterized as low-income rural households and depend on access to land for survival and economic benefit. Many people in this rural area are identified as subsistence farmers who understand both the concept of arable and livestock farming. Access to land in the study area is not a problem; the biggest issue is a proper plan and approach to farming and attaining maximum food production, which can also benefit users economically. It is within this context that innovation is crucial, newer methods of farming and "ways of doing" need to be explored. The strategy employs these methods or "ways of doing", which is directly associated with the people's ability to accommodate and respond to change in the area.

Crops A-Season 01
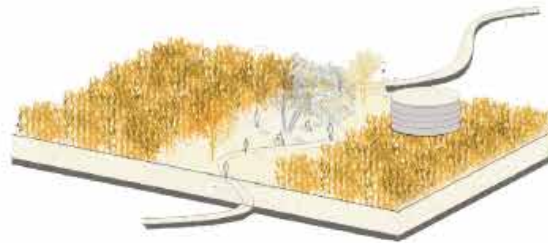
Crops B-Season 02

Crops C-Season 03

Figure 74 African often crop productive landscape typologies (Author 2020).

8.2.4 Landscape Management: Functional Units

Ciliers (2015) emphasizes that inhabitants understands the value of the natural green spaces differently and perceive them differently. This is evident in rural environments where the natural environment has unique challenges, such as deforestation and soil compaction, but, to the inhabitants, it is the nature of the environment. Another example is a beautiful acacia tree with a beautiful crown, to an outsider looks poetic and aesthetically pleasing. While to some people living in the area, this tree represents perfect firewood. There is a serious need for environmental management processes in the area such as controlling deforestation and over-grazing, but it has to be in response to the inhabitant's social needs as well.

This part of the strategy focuses on sustainable landscape management practices interwoven within the design process.

Regulated collection of firewood

"Mphato" Year One

"Mphato" Year Two

Figure 76 Firewood control (Author 2020)

Season A

Season B

Season C

Figure 75 Grazing control typology (Author 2020)

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Wind Breaks
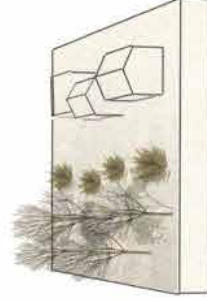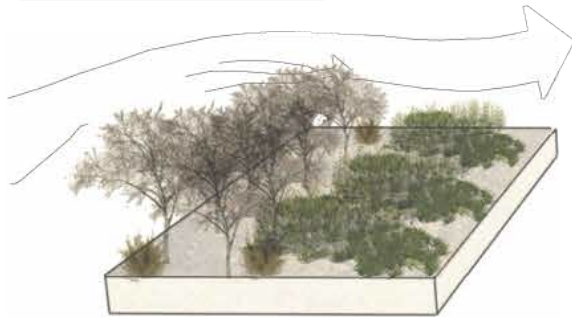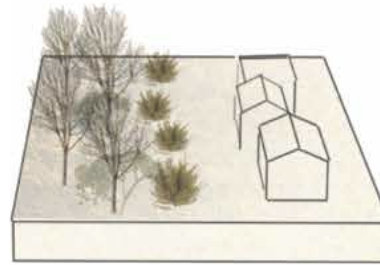
Protective landscape

Strategy A-Against Crops

Strategy B-Against Crops and Households
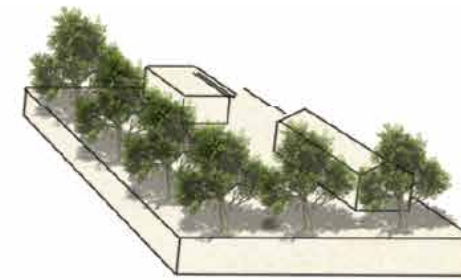
Strategy C- Against Households

Figure 77 Wind control and Rehabilitation (Author 2020)

09
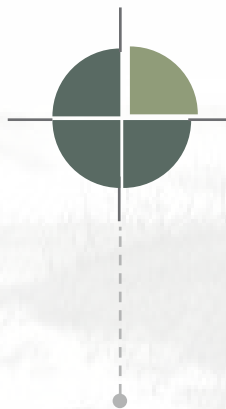
Concept Development

9.1 Re-stitching the rural fabric

Moreover, existing footpaths connect different places of importance that are isolated from each other. The emphasis of these connections becomes an important tangible component in stitching this rural landscape. However, there are underlying or existing intangible qualities of the space that connect the landscape fabric inherently. Those are the cultural attributes shared among the inhabitants. These cultural customs or 'way of doing' things seem to be fading away as generations come and go. The rural way of life revolves around the idea of resource sharing and the spirit of 'Ubuntu'. Therefore, the concept is to look into both the tangible and the intangible qualities of the spaces in to stitch the rural fabric together with both physical and spiritual qualities.

One of the inspirational cultural rituals or rather indigenous knowledge systems is that of dunging the veranda, which is called "Go Kgopha", described in Chapter 6. The practice itself includes making of aesthetically interconnected forms with cow dung, using bare hands to create the patterns. The system is also functional as it prevents erosion. The form and the practice (dunging the floor) itself is created based on the interconnectedness of the patterns and that is where the beauty is created as a result component depends on another too create a holistically beautiful pattern.
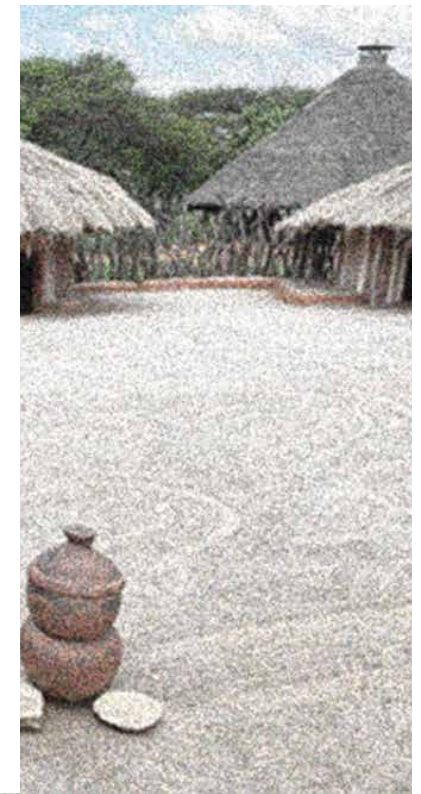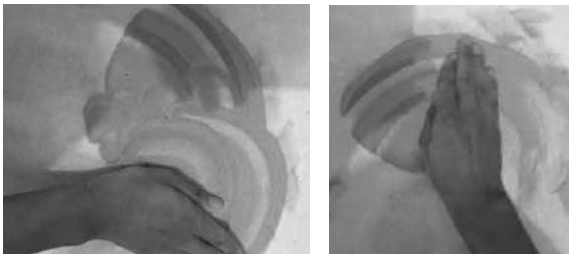
Figure 78 Shows how cow dung is used in the veranda of many households to prevent erosion of the underneath soil layers and keep the interior house floors clean (Author 2020).

10

Design Development

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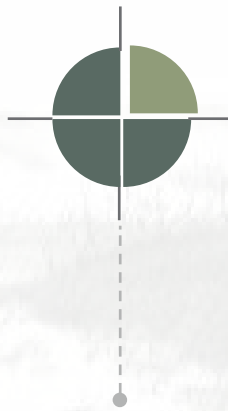
Form Generation

10.1 Form generation

Moreover, building onto this research and explorations of the chapters above, this chapter and series of diagrams illustrates the process of unpacking and exploring the concept further, to draw from generation informants from the process.

10.1.1 Exploring Topography and Footpaths
Exploring topography and the interconnectedness of footpaths through the harsh semi-arid landscape.
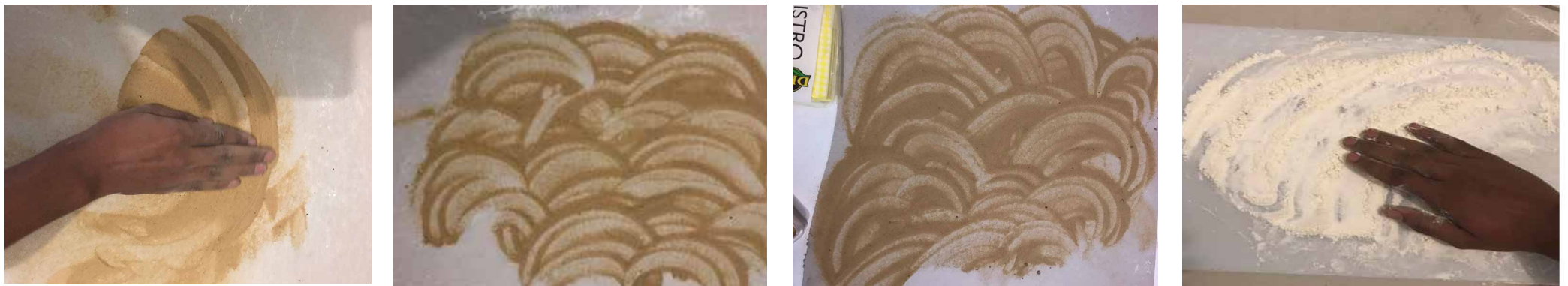
Figure 79 The form is applied to the landscape to start investigating level changes and interconnected-ness of different space using sand (Author 2020).

Due to the dryness of the landscape and incapability of the soil to retain water sufficiently for the current and proposed land uses, walkways were tested as a means for capturing and dissipating water. The explorations look at the idea of footpaths becoming more than a thoroughfare and consider how the footpaths can be used as storm water catchments.
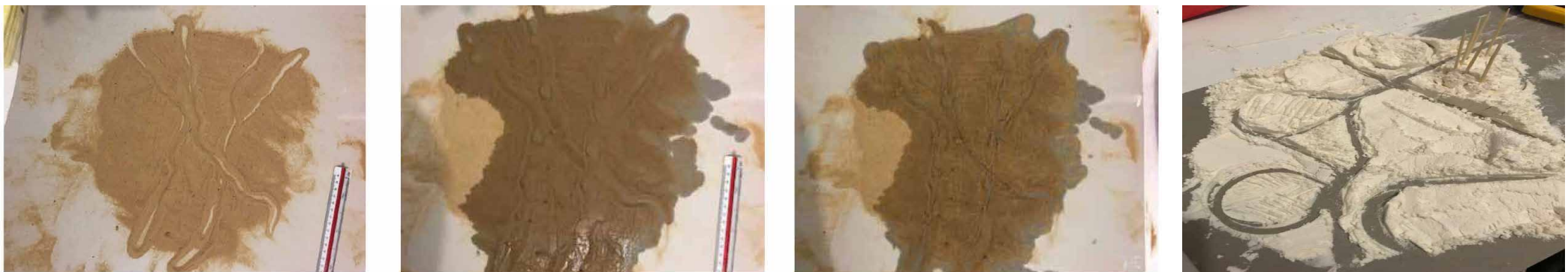
Figure 81 Figure 80 The search of landscape form- using sand and flour (Author 2020).

Figure 82 Exploring topography-Moulding and folding the landscape to create space (Author 2020).

Existing Footpaths are explored not only as thoroughfares that frame spaces but also as functional elements that can harvest water from this dry area, for irrigation and other uses.
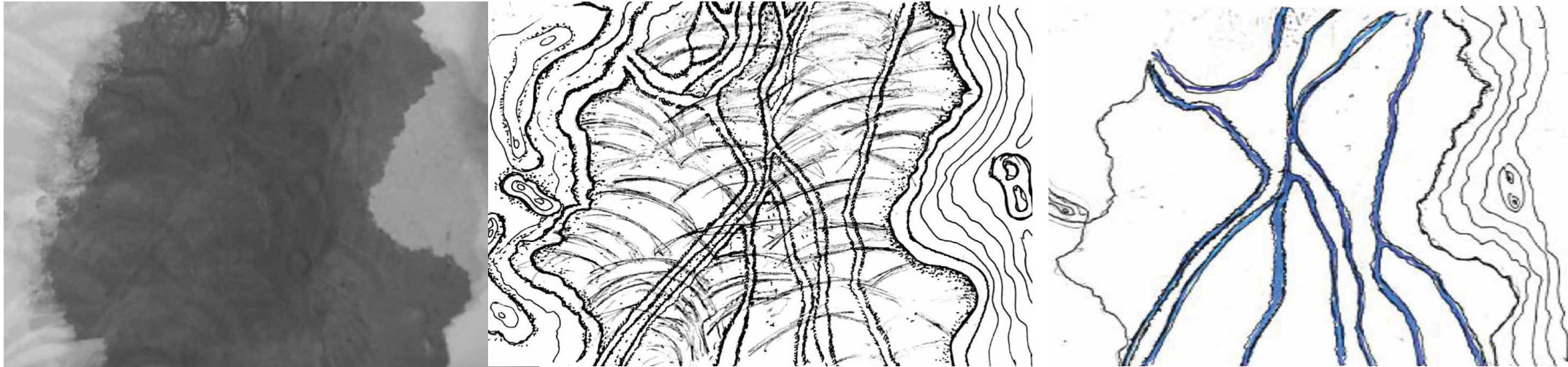
Figure 84 Connecting spaces and pathways to generate form (Author 2020)   *Figure 84 Exploring footpaths as spaces and water harvesting channels (Author 2020*

Furthermore, borrowing from Bernard Lassus's design of pathways, the design of pathways in the study area starts to evoke sensations, only experienced when journeying by foot, such as ascents, descents, obstacles, roughness and softness of materials which are related to the temporal scale (Lassus 1999). The footpaths do not exist only for functional use but also create a sensory experience, offer views, and moments of respite.

Figure 85 Connecting spaces and pathways to generate form (Author 2020)
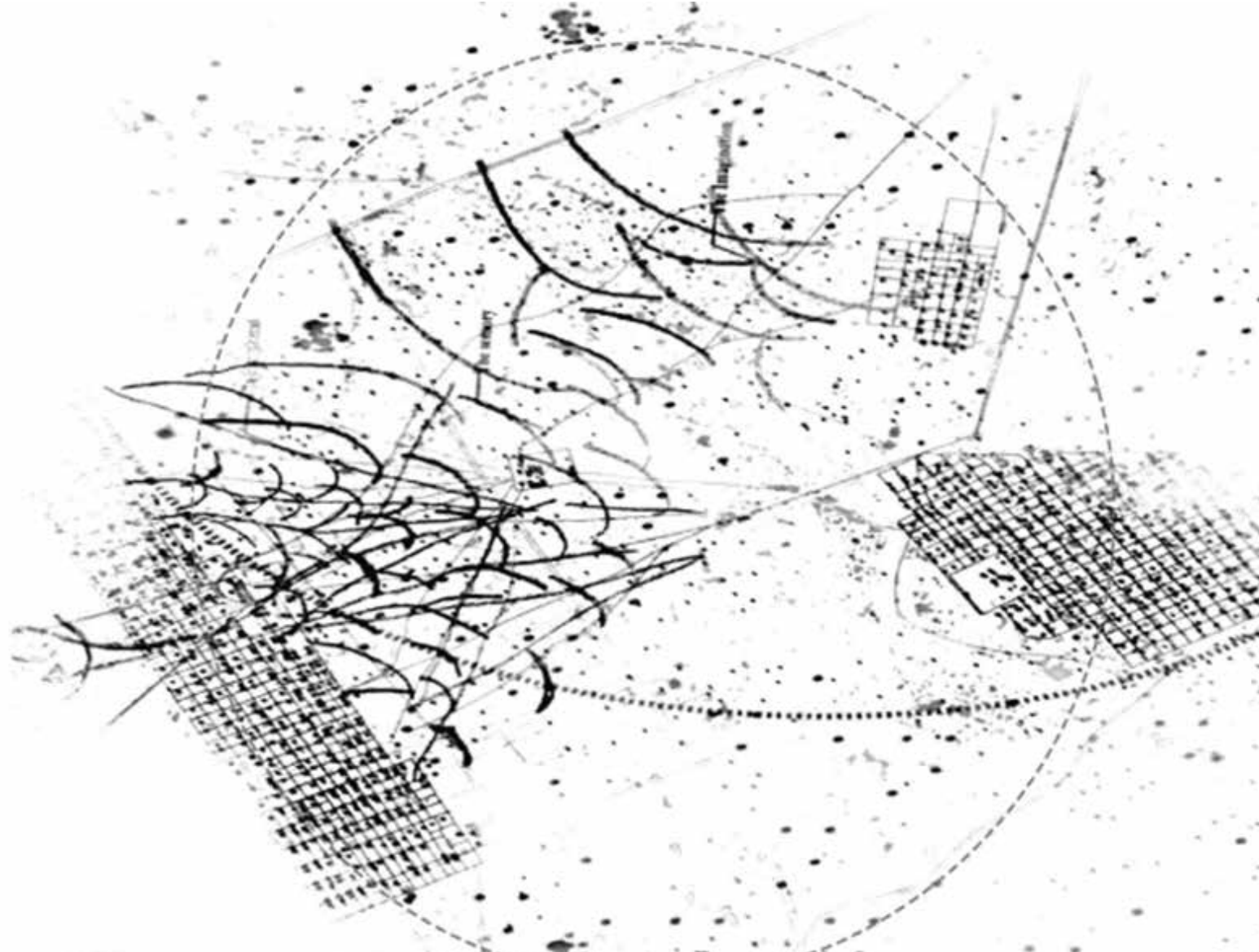
The landscape is by its very nature cultural,Lassus describes it as "a construction of spirit born of senses, it is more non-visual than visual, a play of seen and hidden,directly perceived,remembered and imagined"-Lassus (1998)

Design Iterations

10.2 Design Iterations

The following part of the dissertation focuses on design principles that informed the design.

10.2.1 The Grid and the Module

The households in the three villages in this area are set out on a grid system which makes it easier for residents to walk around the village. The household's yards are minimum 45m2, which is inherited from the planning system observed in the nearest town, Polokwane. The contrast between the human-made patterns is evident; the footpaths break the grid and start connecting different places freely without any geometric rule. With a critical regionalism approach, the intervention attempts to merge the two patterns. Furthermore, the iterations use the module of the yards by creating a moment of respite after each fourth households as a resting point.

Pathways Creating spaces

45m   45m

Household as a modular interval

A walking person needs ast least 100m rest intervaals
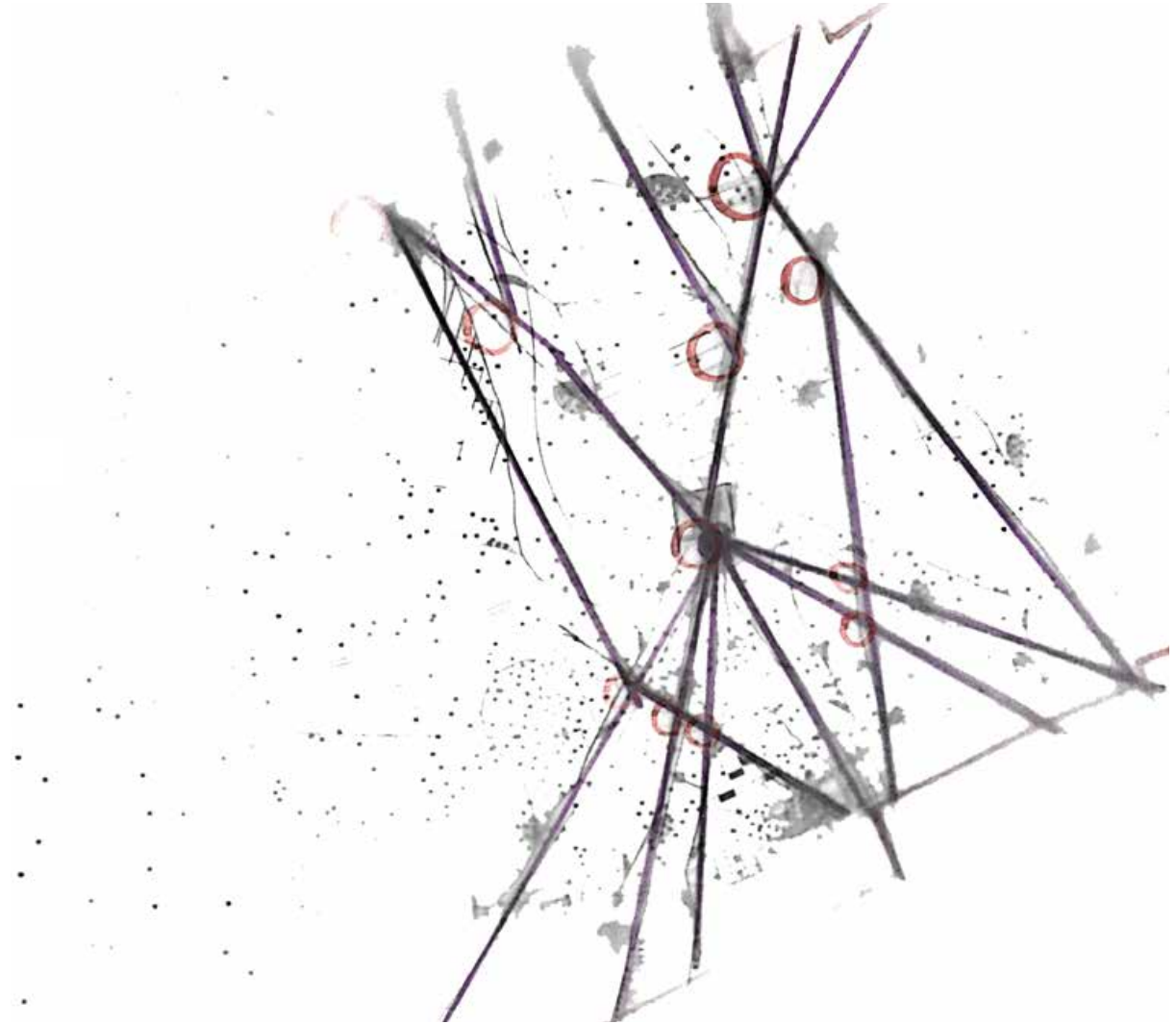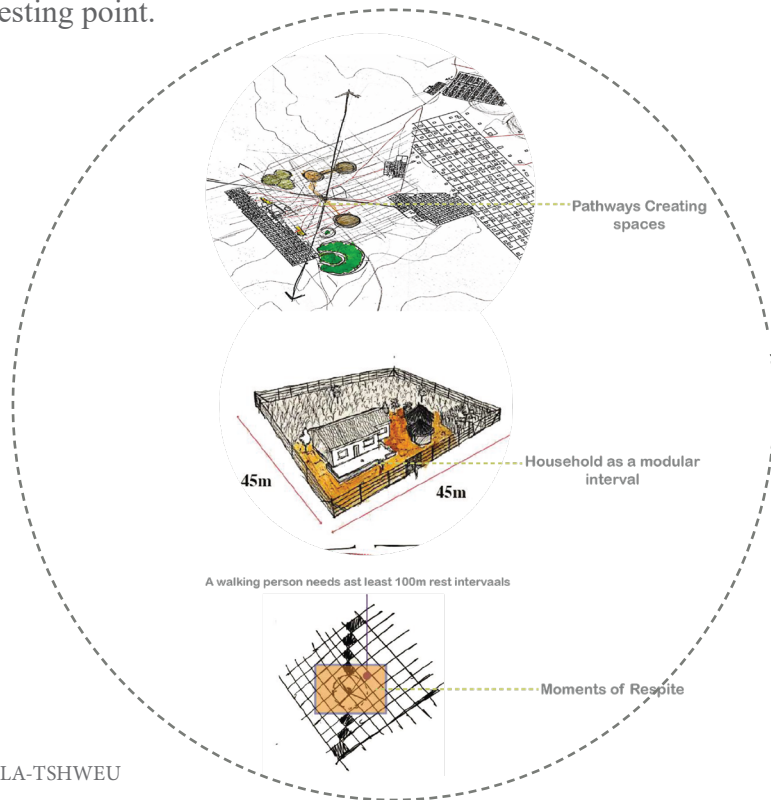
Moments of Respite

Figure 86-Understanding footpaths as palimpsest (Author 2020)

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Design Iterations

Connecting Footpaths

01.Grazing Control

02.Firewood Plantations

03.Public Open Space

04.Wind Breaks
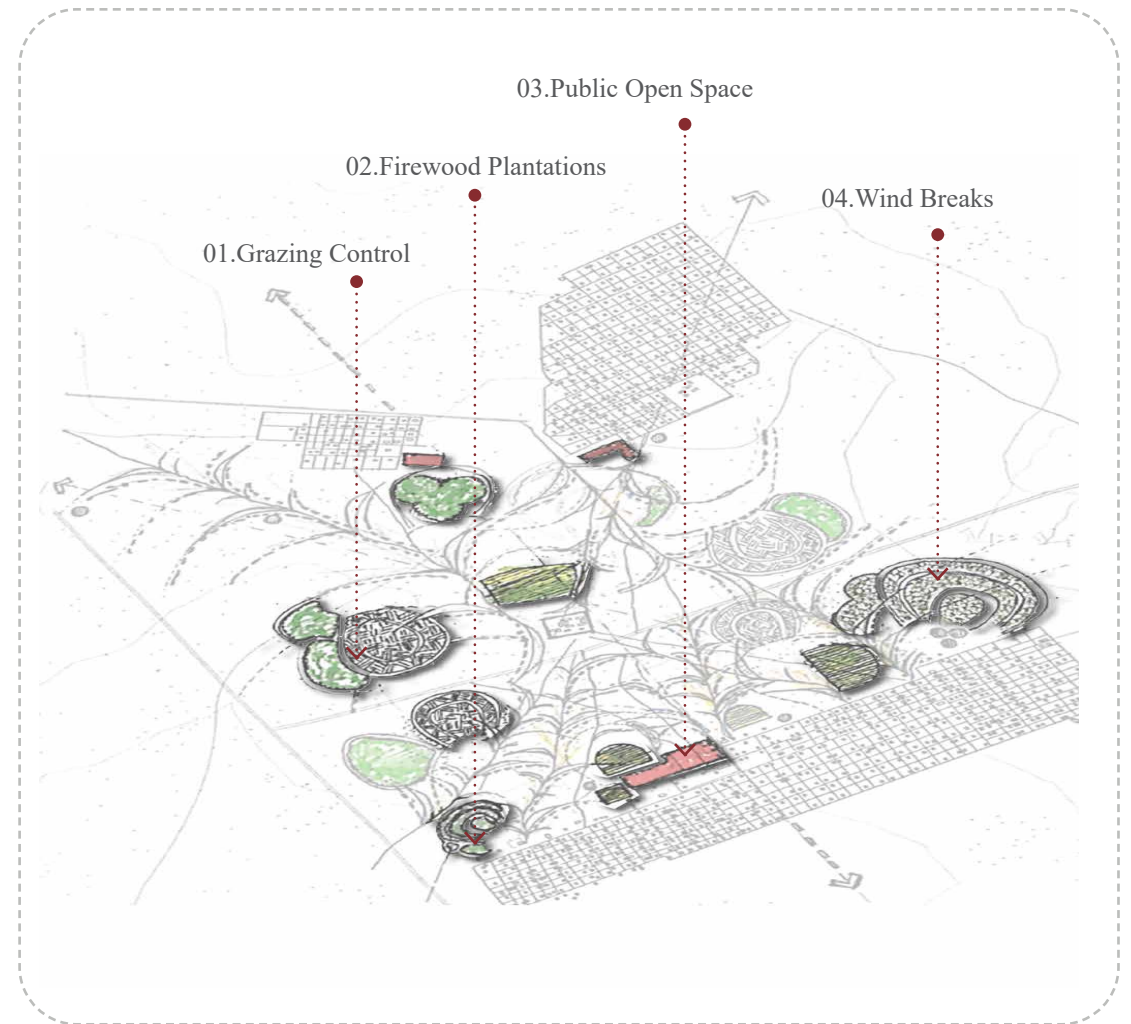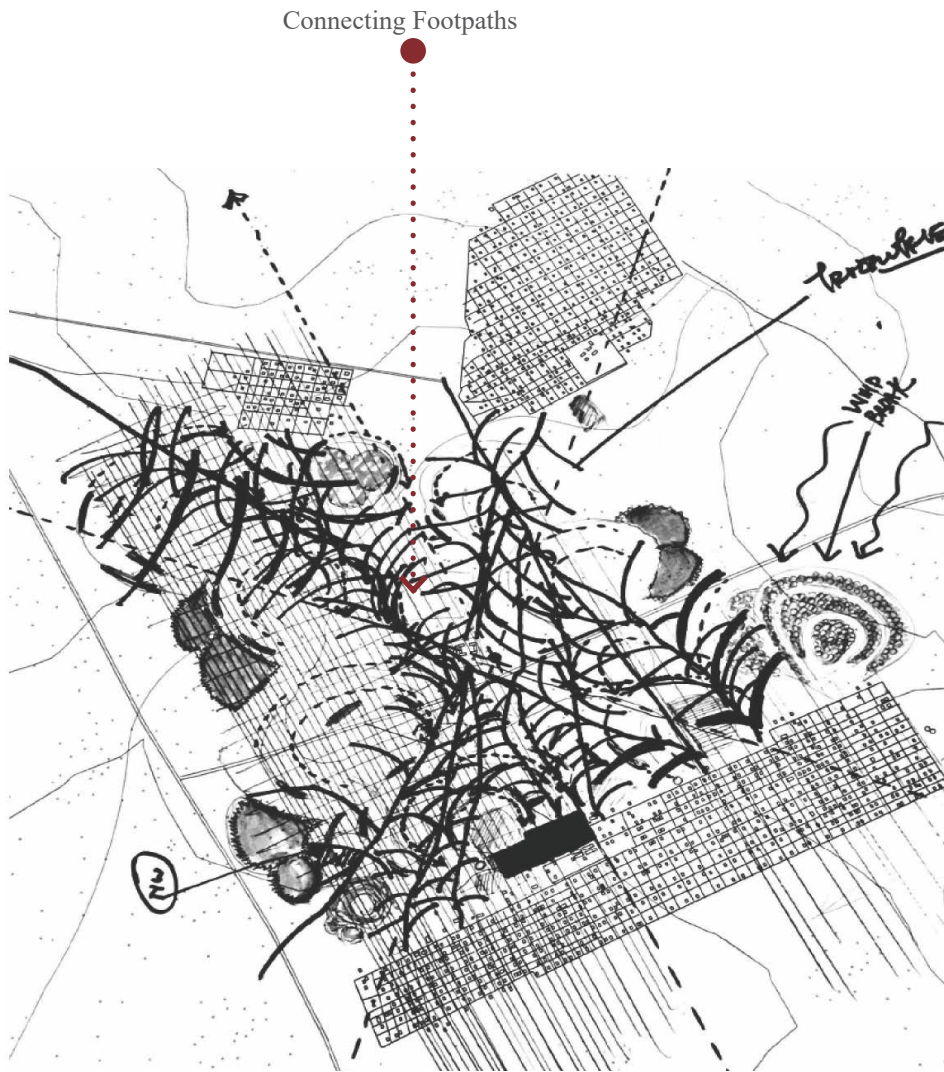
Figure 87-Footpaths connected to functional units to create to create moments of respite along the footpaths (Author 2020)

Functional Units

10.3 Functional Units

Therefore, with a response to the site narratives, a need for better environmental landscape management practices with regards to deforestation, erosion and over grassing were mandatory for the overall land-scape experience. The Landscape management practices mentioned above are viewed as functional units of the design and are incorporated with the ongoing changing landscape. The need for well-articulated open spaces is also one of the functional units and arose from both the analysis and some of the participants. Most importantly, these functional units follow the design strategy captured in chapter 8

10.3.1 Functional Unit 01: (The threshold) The public open space
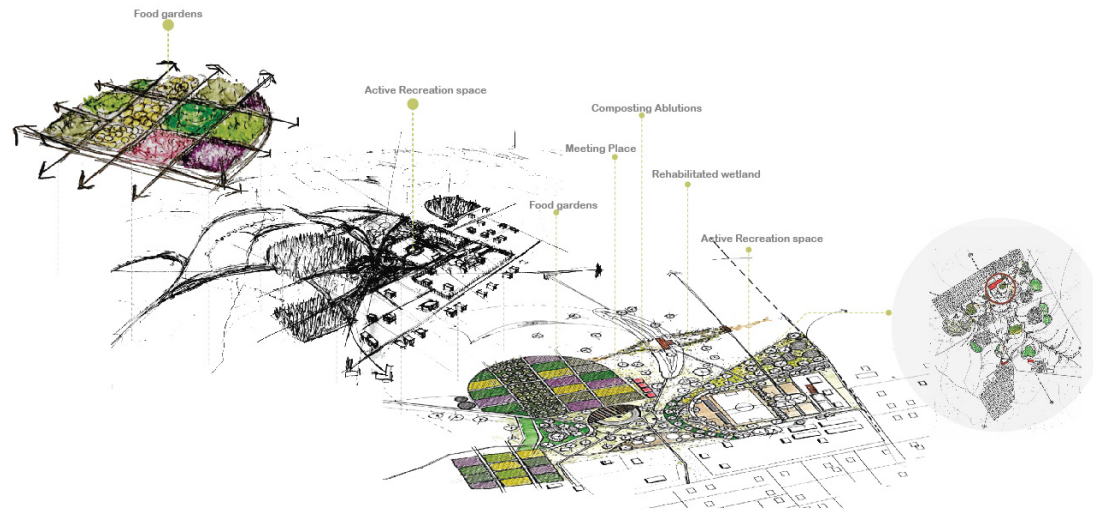
Figure 88 Public open space (Author 2020)

A space is created as the edge between the beginning of the footpaths and the households which is the existing a meeting place for residents. This is therefore called a threshold as it introduces inhabitants to the footpaths through this space. The approach is to make the public open space an integral part of that community that represents the users and their social values.
It is designed based on five qualities mentioned by Hester and Rudolf (1989).

Firstly, a component of recreation, which had already existed here, in the form of a soccer field. The redesign of this space now offers recreational activities such as play areas, soccer grounds, multi-courts and meeting areas. Space also contributes to an economic source as local traders can sell goods during events.

The open space also serves as a medium of reconnection, between the natural environment and the community through the rehabilitation of the wetland area, which has the potential of becoming a destination, photography and other social functions. This also increases its social value and creates opportunities for sustainable rehabilitation of the wetland for habitat creation.

10.3.1.1 Food production

The introduction of food gardens allow the rural inhabitants to farm and sell their produce while also transferring indigenous farming knowledge to each other. This also consists of a waste management strategy, which turns waste into plant supplements.

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10.3.2 Functional Unit 02: Firewood Plantations

Based on Koko's narrative of the Mphato plant plantation, an area where the Shrub used to grow is now full of grass patches. It is proposed that this same location is where the plant will be replanted and controlled. The logistics works in such a way that there is a season for growth and seasons for harvesting plots. It is proposed that this can be enough for the villagers in each season, and they can collect firewood in managed times to allow the plant to regrow after being harvested.

Figure 90 Firewood plantation for the residents informed by site narratives and location where the plant existed previously (Author 2020)
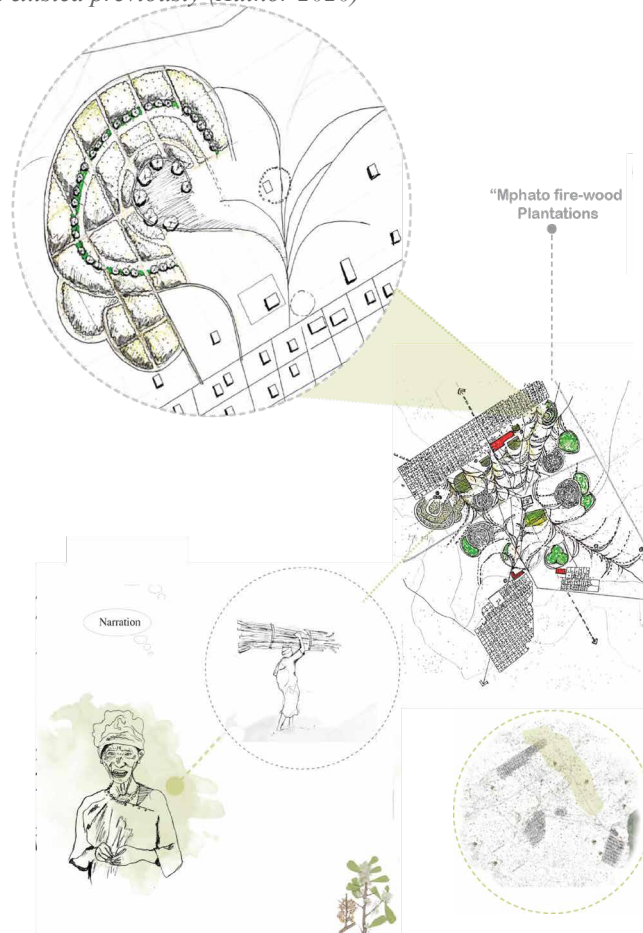
10.3.3 Functional Unit 03: Wind Breaks

Similarly, based on Buti's narration, following a disaster that happened in 2006, households were destroyed, because they were exposed to extreme weather conditions due to deforestation. In response to this, windbreaks are proposed as part of the design, in the form of windrows of protected plants to protect households from extreme conditions. This is done with the idea that if firewood is providing through the functional units it will minimize the cutting of all other trees or shrub species.

Figure 91 Wind break informed by site narratives and prevailing winds direction (Author 2020)

10.3.4 Functional Unit 04: Grazing Units

Rakgolo also alluded to the importance of livestock in the Moletjie community, but as has already been established – it was taking place in unsustainable ways and posed a real environmental threat. Grazing units are proposed, to create areas of grazing in particular seasons and to rotate animals to preserve the grasses.
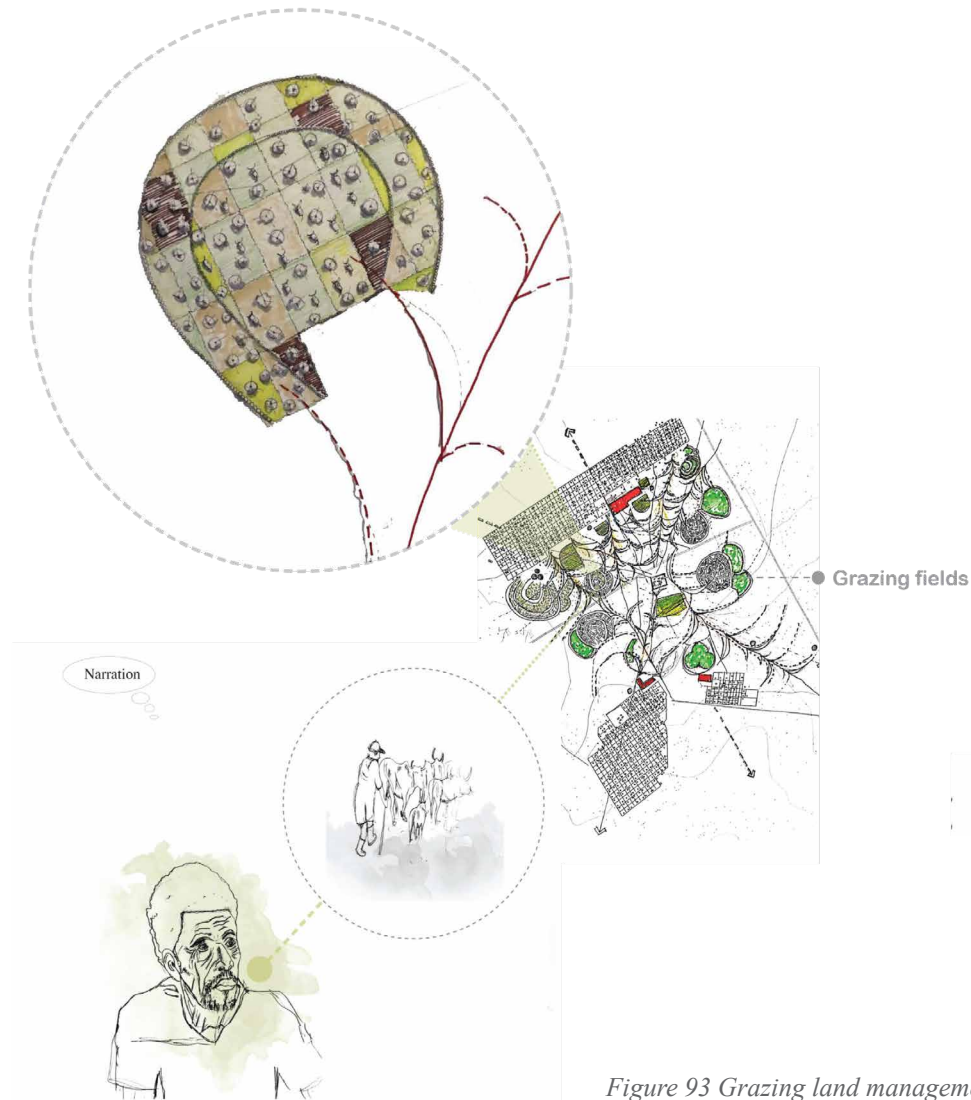
Figure 93 Grazing land management informed by site narratives (Author 2020)

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10.4 Master plan iterations

Building onto the form explorations and design typologies discussed above, the following series of drawings show the culmination of the design informants discussed above.
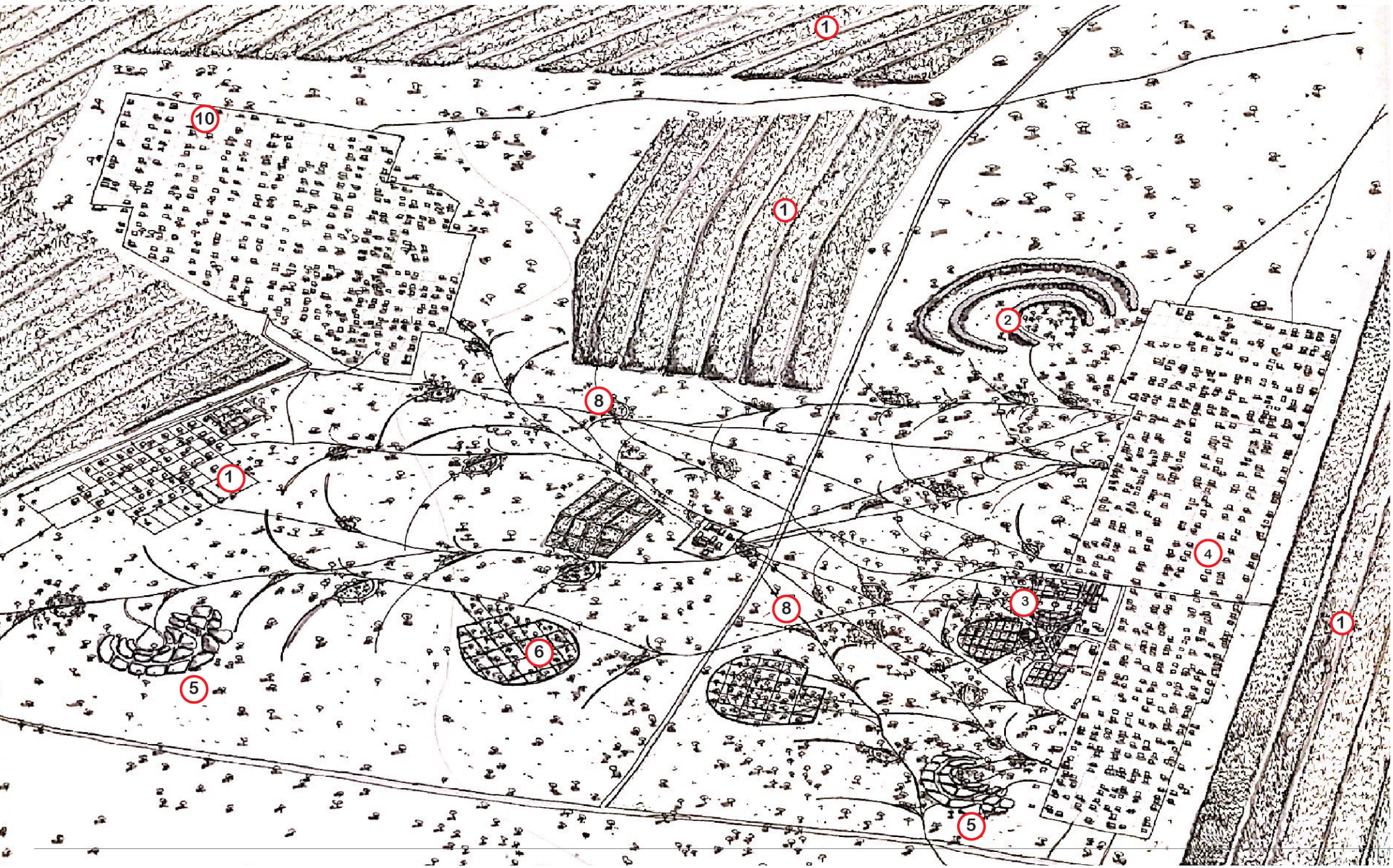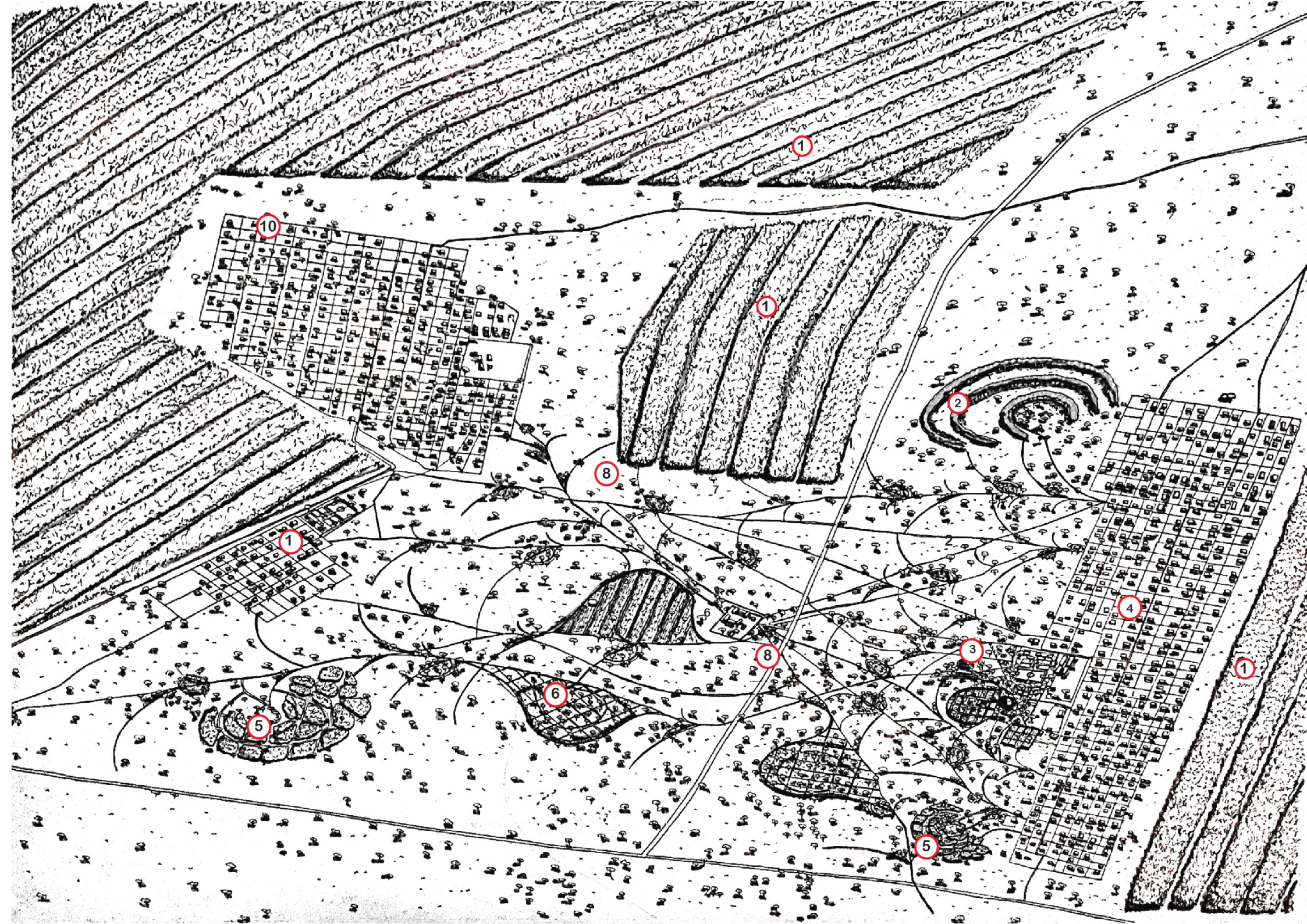
1. Existing Mealies Agricultural fields
2. Wind break
3. Public Open space
4. Ga-Rankhuwe Village
5. Mphato plantation
6. Grazing fields
7. Food Gardens
8. Pathways
9. Madigorong village
10. Monyoaneng Village

Functional Units

Vegetation

Pathways+ Stormwater collection

Existing Mealies Agricultural fields

Final conceptual Framework

Master-Plan

Master plan iterations

More specifically the footpaths as the main spine interconnecting different spaces. The master plan iterations depicted in the drawings below are informed by both the intangible (narratives and culture and the existing tangible site elements (such as pathways)

Figure 94 Master Plan Iterations (Author 2020)

FUNCTIONAL UNIT 01

10.6 Functional unit 01
THE THRESHOLD AS A PUBLIC OPEN SPACE.

Storm Water Storage tanks

Food gardens

Gathering and Meeting place

Rehailitated wetland

Picnic Area

Composting Ablutions

Active Recreation space

Community animal Farm

Play Area

Existing Primary and Pre-School

Food Garden Shed

Local Supermarket

Community Households

Figure 96. Proposed public open space consisting of a productive landscape and recreational spaces (Author 2020).
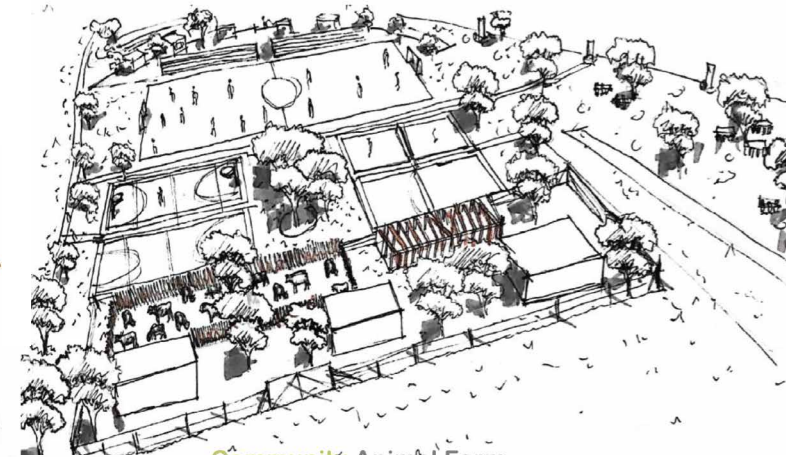
Active Recreation Area

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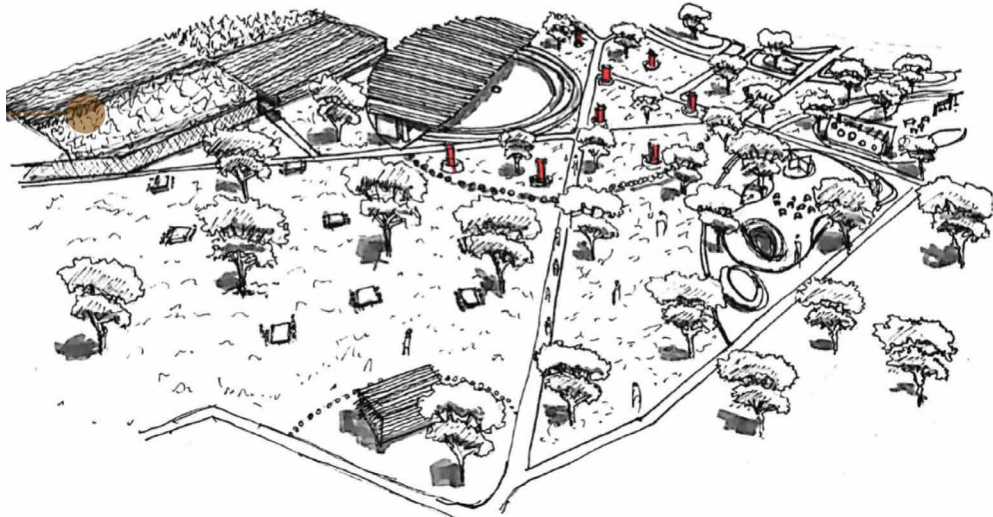
Community Meeting and Gathering Area
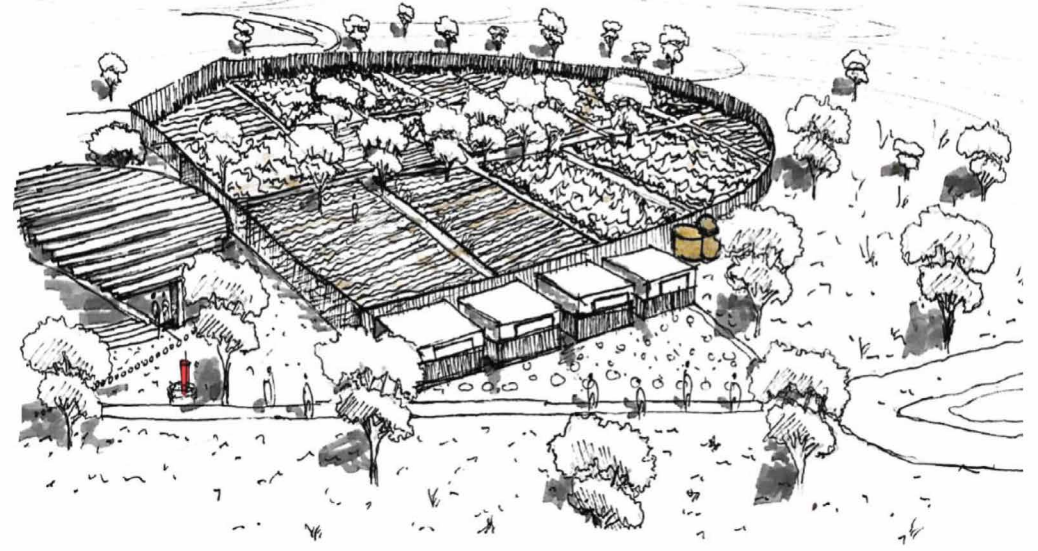
Composting Ablutions

Figure 97. The incorporation of a recreational space and the development of existing local animal farm to further enhance economic activity in the area.

Rehabilitated Wetland
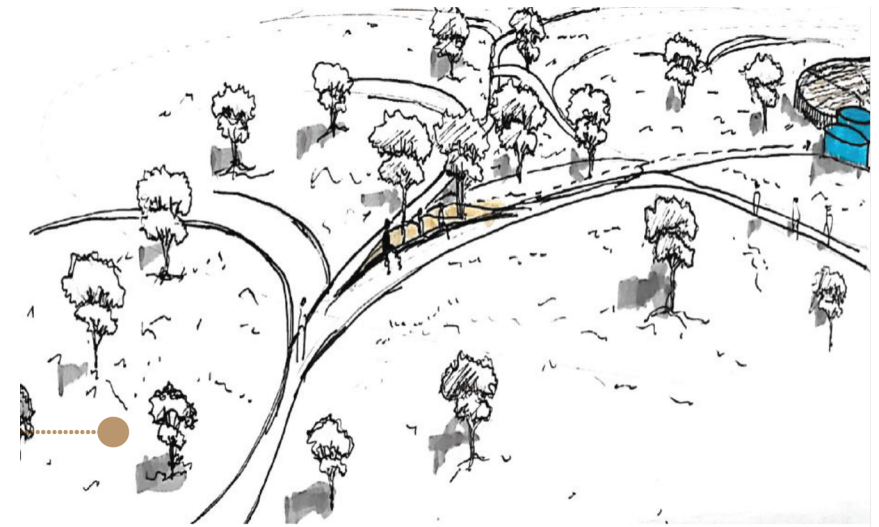
Open Space meets Pathway

Figure 98. Rehabilitated wetland area as a destination point as well as establishing connections of the public space to footpaths.

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Figure 99. A poetic moment through the productive space within the public open space (Author 2020).
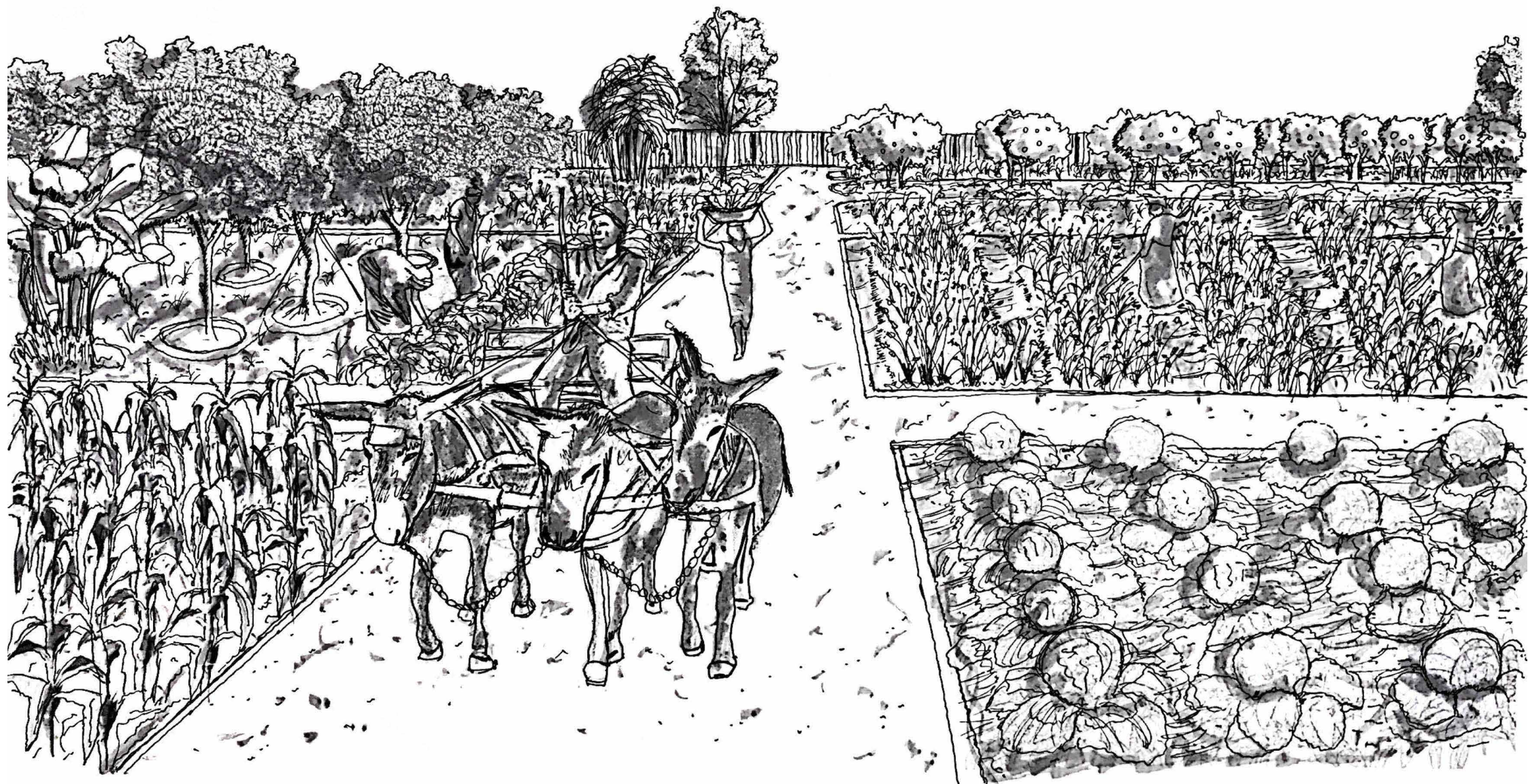
Figure 100. A poetic moment through the public open space (Author 2020).

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Functional unit 02

10.7 Functional unit 02
Firewood plantations
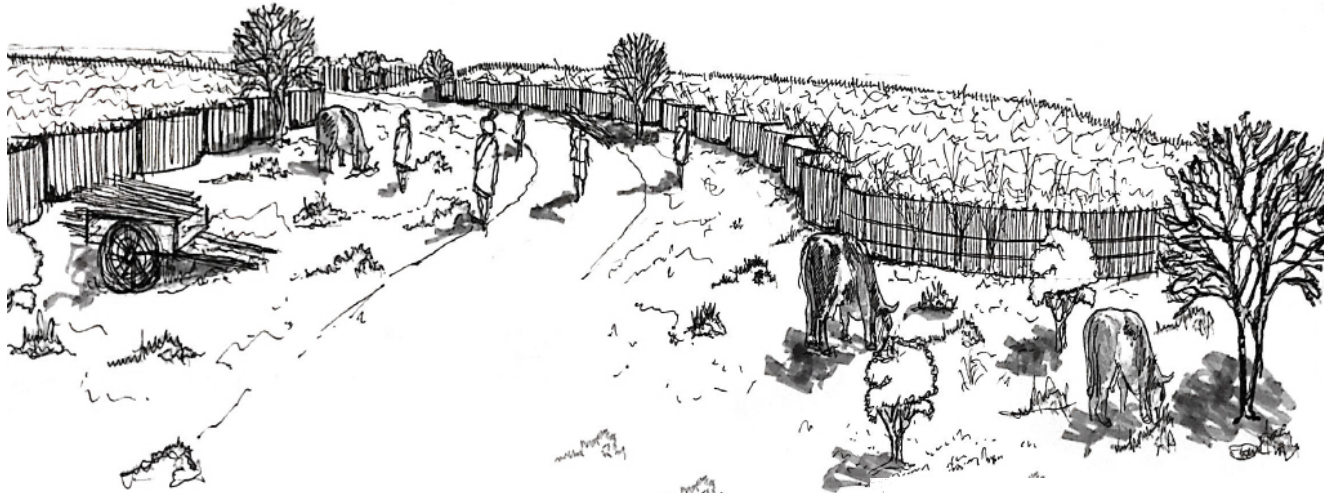
Figure 101. Proposed "Mphato" firewood plantations informed by site narrations (Author 2020)

Narration
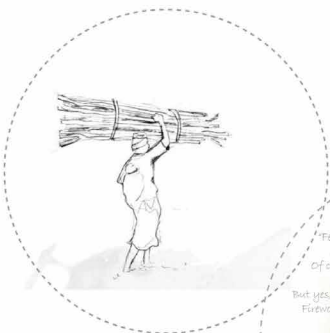
"Fetching fire-food was like a lifestyle back in the
Day, it was non-avoidable ,you had to do it.
Of course i do not go that often now because i can no
walk for long distances.
But yes, there is one shrub in particular that we harvested for
Firewood it is called "Mphato"the area where my son stays
Now is nicknamed after this tree/shrub.
When you found good once they grow up to 2,5 meters high,
We loved and still love this shrub because it burns very well
For a very long time weather dry or wet .
The thorns are not that aggressive and cattle
Do not feed on this shrub.
Back in the days we fetched it quite easy
And there was an abundance of the plant
But today is a different story people
Cleared the land ,we now go very far to
Get it .I really do miss those days."

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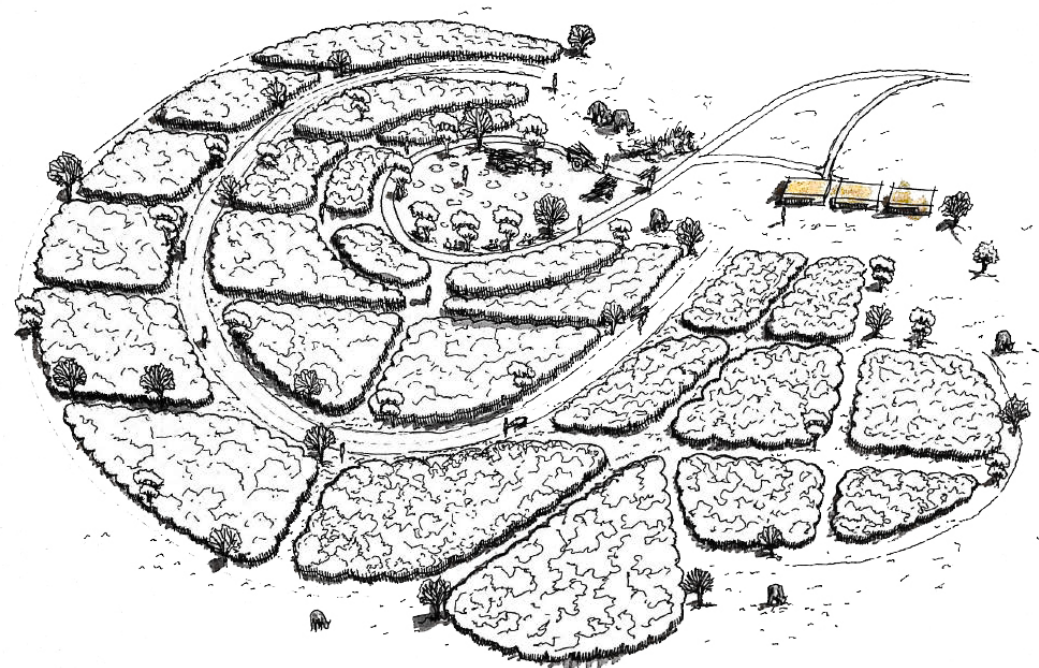
Figure 102. Poetic moment through the firewood plantations area (Author 2020)

Functional unit 03

10.7 Functional unit 03
Windbreaks
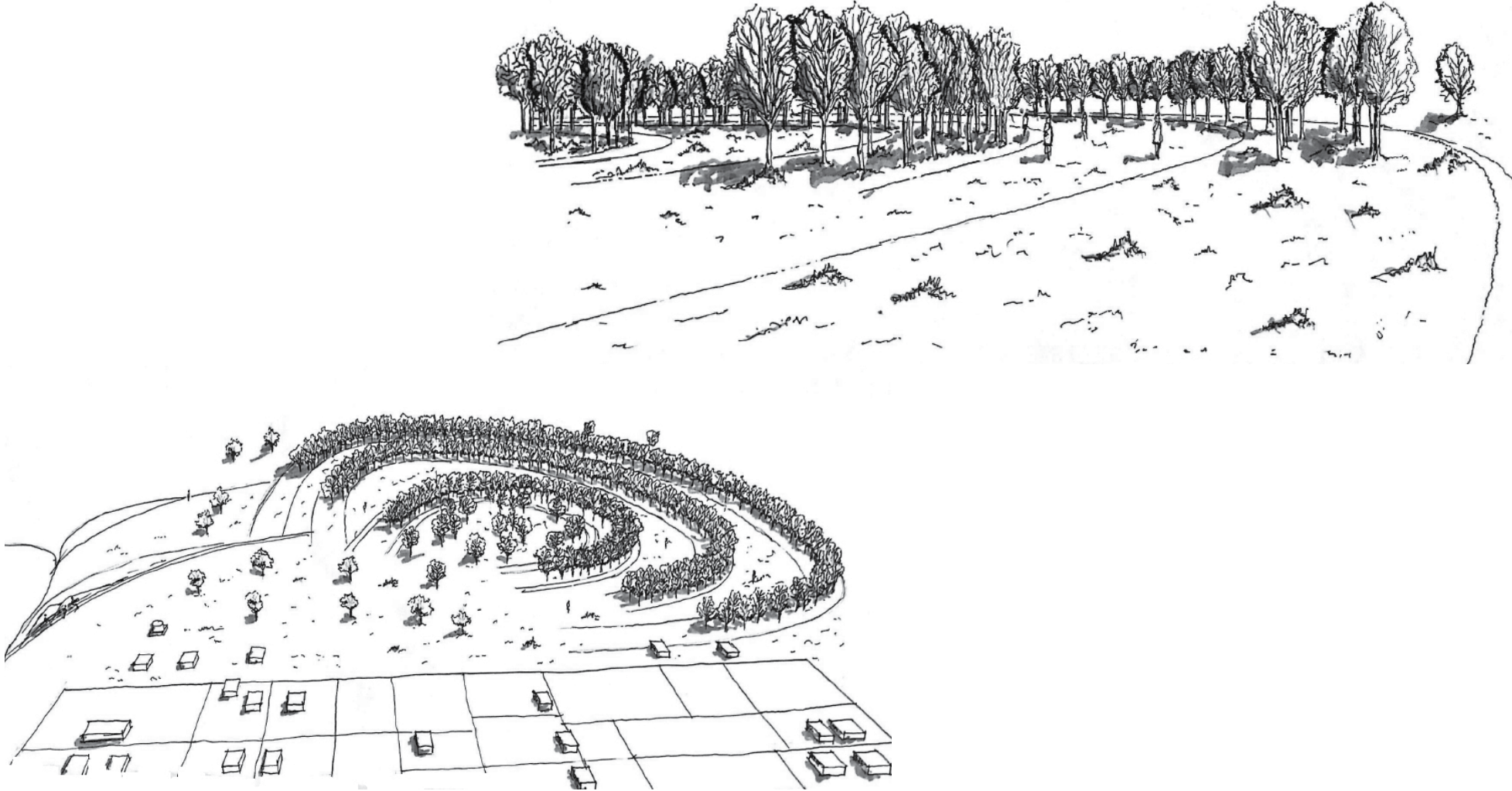
Figure 103. Proposed wind breaks informed by site narrations (Author 2020)

Figure 100

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Figure 104. Poetic moments through the windbreaks (Author 2020)

10.7 Functional unit 04
Rotational Grazing
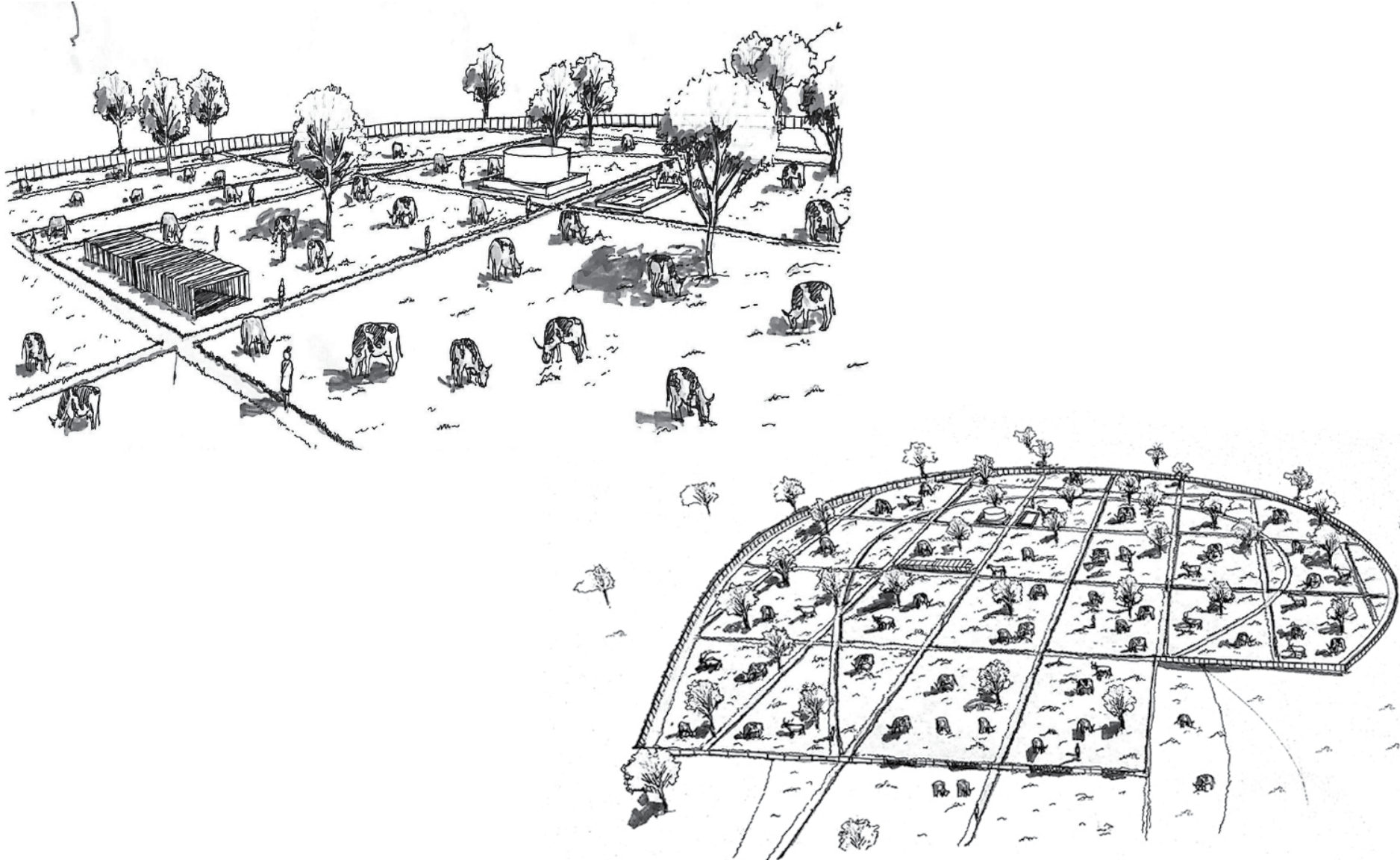
Figure 105 Proposed rotational grazing units informed by site narrative (Author 2020)

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Sacred/
Spiritual/
Religious
Space

The Burning
Tree

Mobility/
Route

Contemplation/
Sensory
Space

Threshold
Representation
Space
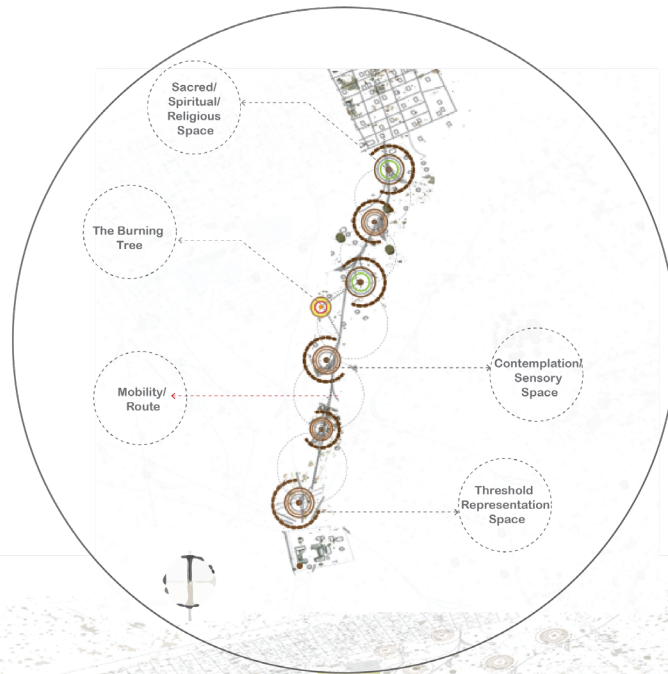
Figure 106 Proposed moments along the footpaths (Author 2020)

Poetic Moments of Respite along footpaths

Figure 106 Proposed moments along the footpaths (Author 2020)

Footpaths moments of respite

10.10 Footpaths moments of respite

(Author 2020).

Exploration 01: Respecting sacred spaces along footpaths
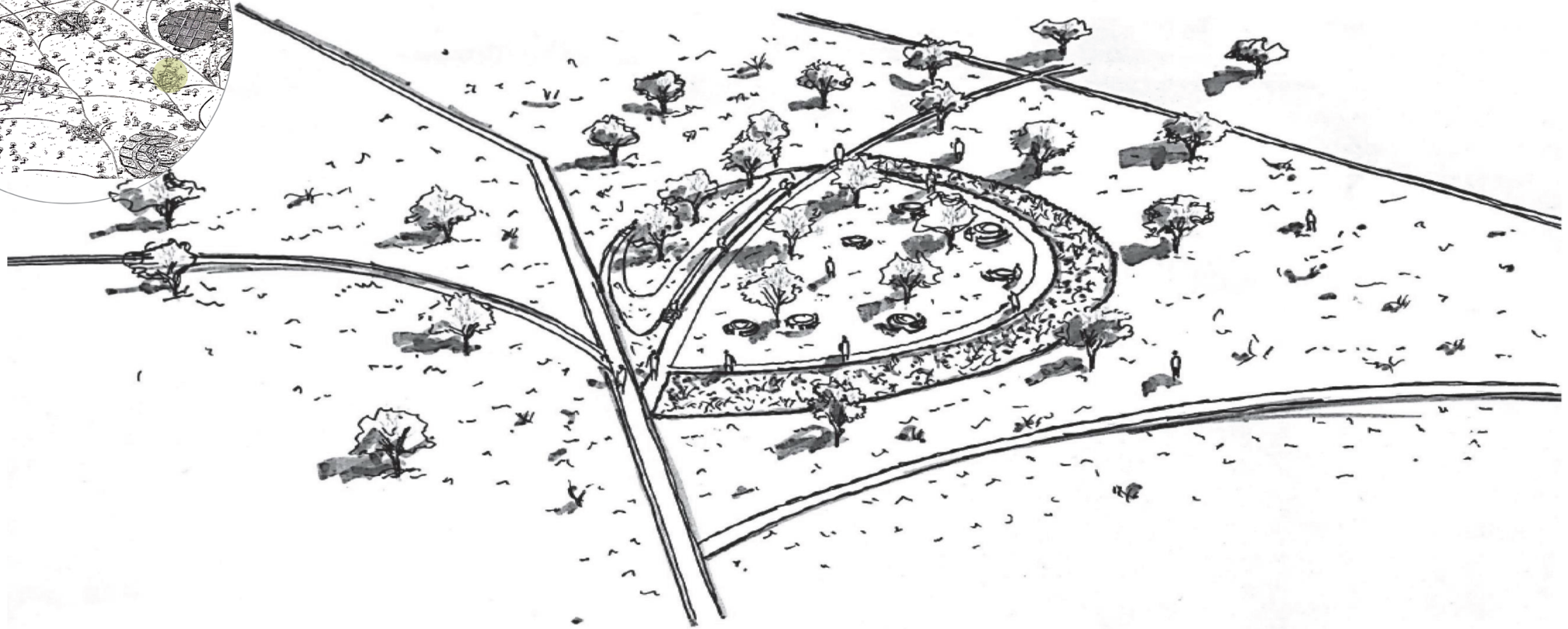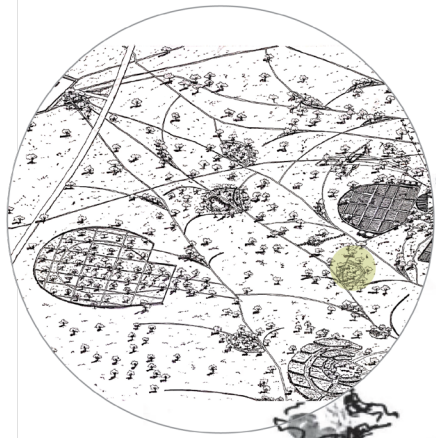
(Author 2020).

Exploration 02: Sensory Spaces

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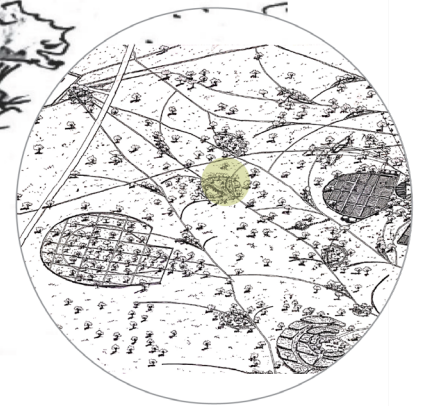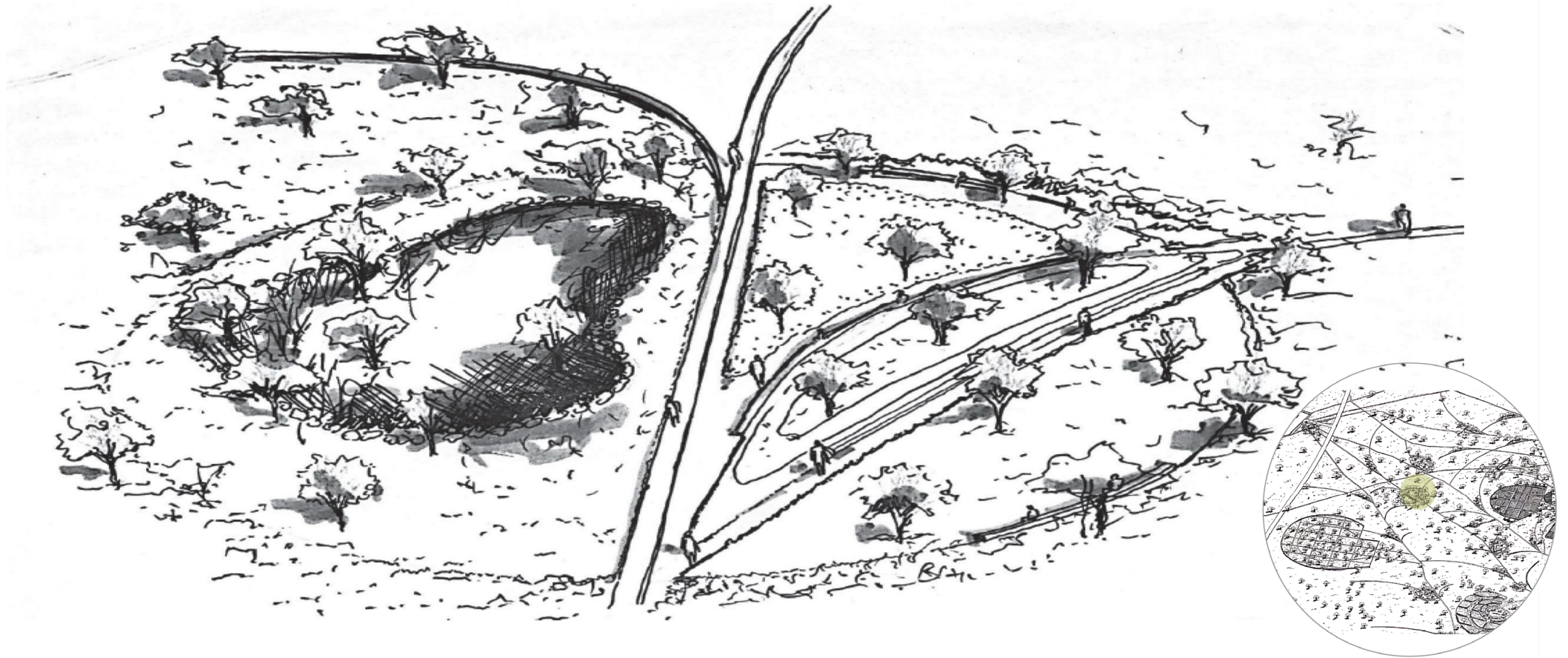
(Author 2020).

Exploration 03: Space for cultural representation

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Exploration 04: Space for cultural representation

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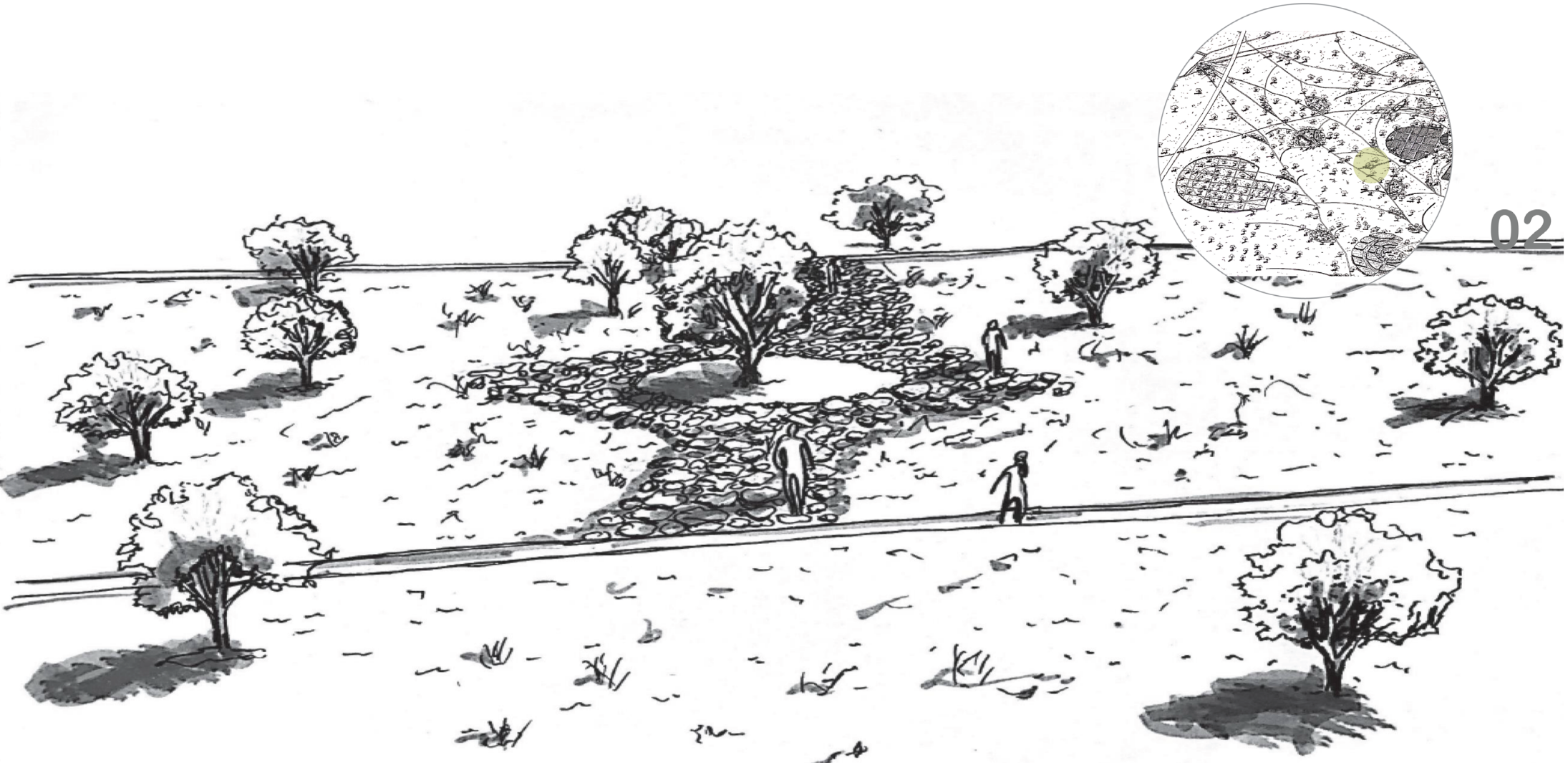
(Author 2020).

Exploration 05: The Burning tree-Space for allegory meaning
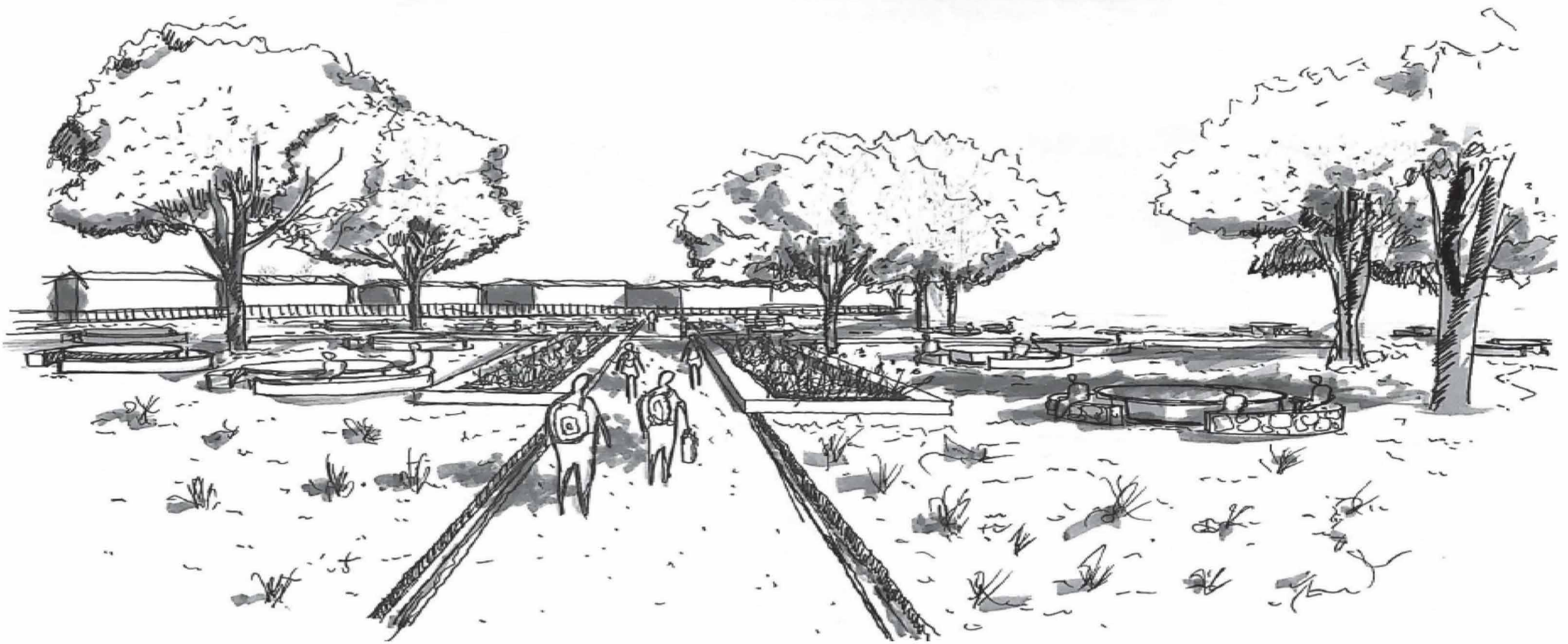
(Author 2020).

Exploration 06: School gathering area

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Figure 107. Poetic moments footpaths (Author 2020)

Poetic Moment through Footpaths

RE-STITCHING THE RURAL LANDSCAPE FABRIC
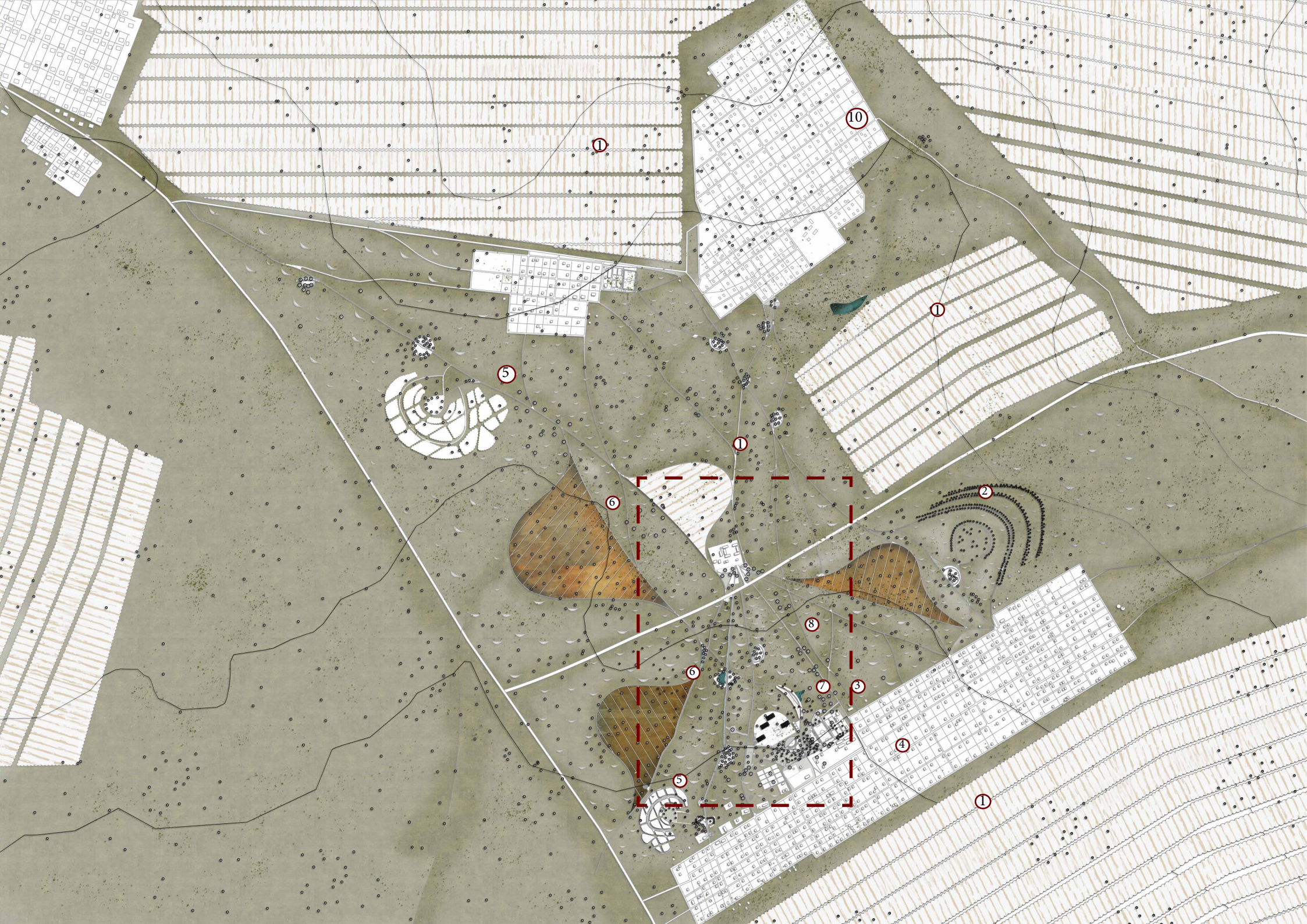
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Legend:
1. Existing Mealies Agricultural fields
2. Wind break
3. Public Open space
4. Ga-Rankhuwe Village
5. Mphato plantation
6. Grazing fields
7. Food Gardens
8. Pathways
9. Madigorong village
10. Monyoaneng Village

Functional Units

Vegetation

Pathways+ Stormwater collection

Existing Mealies Agricultural fields
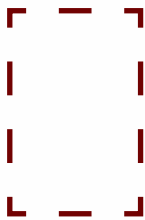
Focus Area

Final conceptual Framework
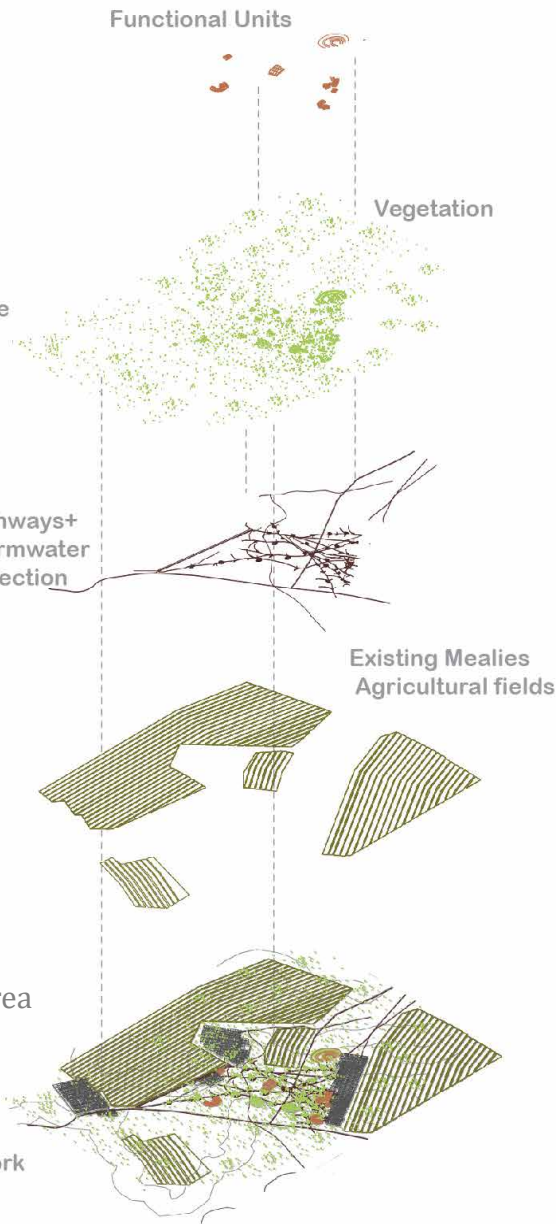
Master-Plan

Final Master Plan

Finally the iterations led to a final master plan or framework consisting of spaces informed by a place based approach, critical regionalism ideals and the intangible as well as tangible characteristics of the site connected by the footpaths.

Therefore the master plan attempts to show how the footpaths are re-stitching the rural landscape fabric, in other words re-stitching both the tangible and intangible characteristics of the study area.

11

Technical Resolution

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RE-STITCHING THE RURAL LANDSCAPE FABRIC

Conceptual Technical Approach

11.1 Conceptual Technical Approach

To further re-iterate the importance of responding to the design issues of rural areas. One cannot avoid the harshness within the study area due to both human-made interventions and extreme weather conditions. Water is scarce in this area ,especially water for irrigation.

Many households in the area are now serviced with water taps in their yards. Previously, the rural inhabits had communal tabs on the streets, where the community members shared the taps. However, water is still not enough to support the proposed intervention. Therefore, a water harvesting strategy becomes paramount for the proposed food gardens to become self-sustaining.
Secondly, uncontrolled runoff has caused soil erosion in the area. This further contributes to the gradual deterioration of the soil structure.

According to Agassi (1996) the soils have undergone the process known as the seal formation which is identified with a dense surface of the topsoil layer forming on soils. The soil is unable to support the vegetation and patches of unevenly growing grasses are then observed. This process affects the infiltration rate and the soils lack moisture to support plant species. Therefore, water is an important resource in this area not only because of its scarcity but also because it contributes to the concept of stitching the rural landscape and that of self-reflection explained in the previous chapters.

Low-tech systems approach

Indigenous land management practices in this area are the core of maintaining and preserving natural re-sources for people in the study area.

Such knowledge passed down from generations to generation as songs or myths is what Julia Watson in her publication, Lo-Tek expressed as a cheaper, sustainable and a symbiotic design process that aims to benefit both the local people and the ecological systems that they depend on (Watson 2019).
Without these methods, looking primitive and undeveloped, this dissertation influenced by a critical regionalism approach combines both indigenous place-based knowledge and "low tech" systems to resolve the aforementioned environmental challenges. The project aims to establish a combination of natural biological systems such as bio-swales and indigenous methods of soil re-profiling to increase the infiltration rate, soil structure and improve vegetation. These systems as described by Watson are anything but simplistic; they represent the site-specific and long term solutions to various environmental challenges (Simms 2020)

Figure 108. Planting Pits in Uganda (Mbowa et al 2020)

Figure 109. Planting pit (Mbowa et al 2020)

Figure 110. Indigenous water harvesting mechanisms (Author 2020)

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11.2 Learning From Precedents

Water harvesting techniques in Uganda.

Rural communities in Kyannamukaaka Sub County (Uganda) due to surface runoff that either just flow away to only evaporate in time employed water harvesting techniques to capture as much rainwater as possible to increase productivity and soil structure. The indigenous technique employed here is the simple banana planting pit (Mbowa et al 2020). These small free-standing structures or mounts are 10-30cm in diameter and 5-15cm deep with distance and sometimes wider or deeper, depending on the requirements of planting. This method is used in areas just like the study area with low rainfalls (350-750mm) but with deep soils. The pits catch the water runoff and concentrate soil moisture around the roots of the plants thus retaining soil moisture and improving the overall soil structure.

Figure 108a Smaller planting pits (Mbowa et al 2020)
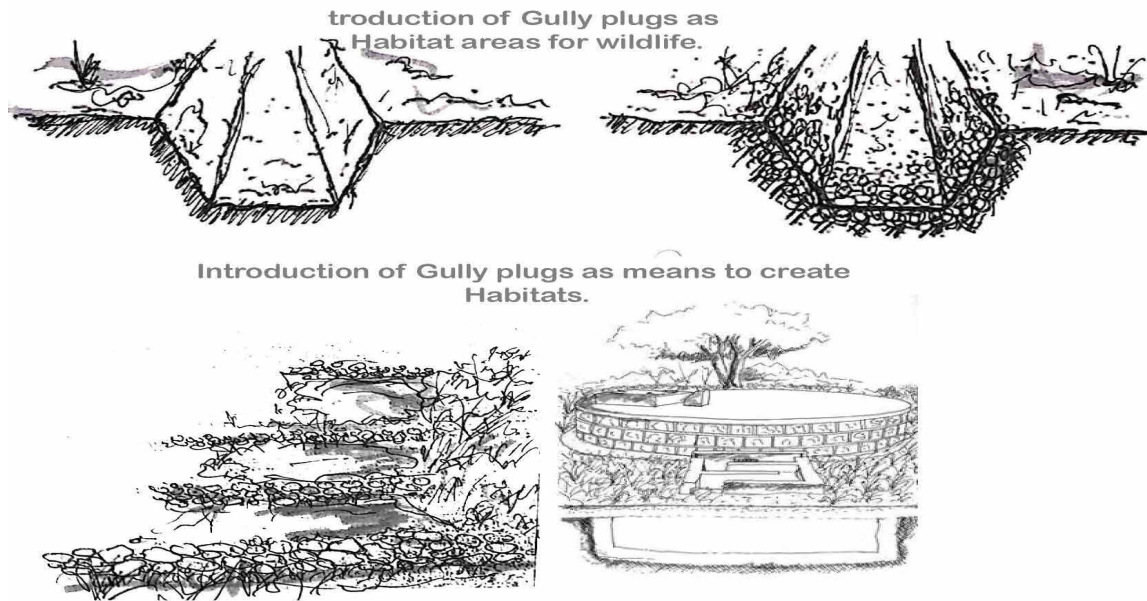
Figure 109 Introduction of gully plugs and low tech rain harvesting tanks (Author 2020)

Figure 108 b. Planting Pits in Uganda (Mbowa et al 2020)

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Learning from Indigenous Methods

Within the study area

11.3 Learning from Indigenous Method

Micro Basin Tillage is a method observed in the rural households of the study area where mealies and other crops are planted. This method works very efficiently in semi-arid areas such as the study area, the author has experienced this throughout the years lived in the area. Through the tillage process using donkeys or tractors, the inhabitants create micro–catchments for retention of water during rainfall events, especially heavy rains. This method is called furrow-dicking or tie ridges (Brhane et al 2006).

The main purpose of the technique is to turn vast open the unproductive lands into productive lands with the idea to retain as much water as possible for both grazing and agricultural land over long periods, especially in areas such as these of low rainfalls.

Figure 110 Furrow-dicking method (Brhane et al 2006)

11.4 THE VALUE OF INDIGENOUS KNOWLEDGE SYSTEMS

Local indigenous methods become effective and their products stand the test of time because they are not foreign to the space and are well adaptable to the area. Indigenous knowledge systems have made, and can still make, a significant contribution to resolving local, ecological, sustainability problems and conservation of natural resources.

Figure 111. Furrow-dicking method within the study area (Author 2020)

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The proposed water harvesting strategy

11.5 The proposed water harvesting strategy

Due to the scarcity of water within the study area, the proposed intervention needs to be self-sustaining. This includes using resources wisely. Therefore the harvesting of water needed to support the intervention was undoubtedly an inquiry of design that could not be ignored in this scheme. The strategy shown above (Figure 110) shows the harvesting water and the dissipation of that water to places of storage and areas that are to utilize that water.

Figure 112 Water harvesting strategy (Author 2020)

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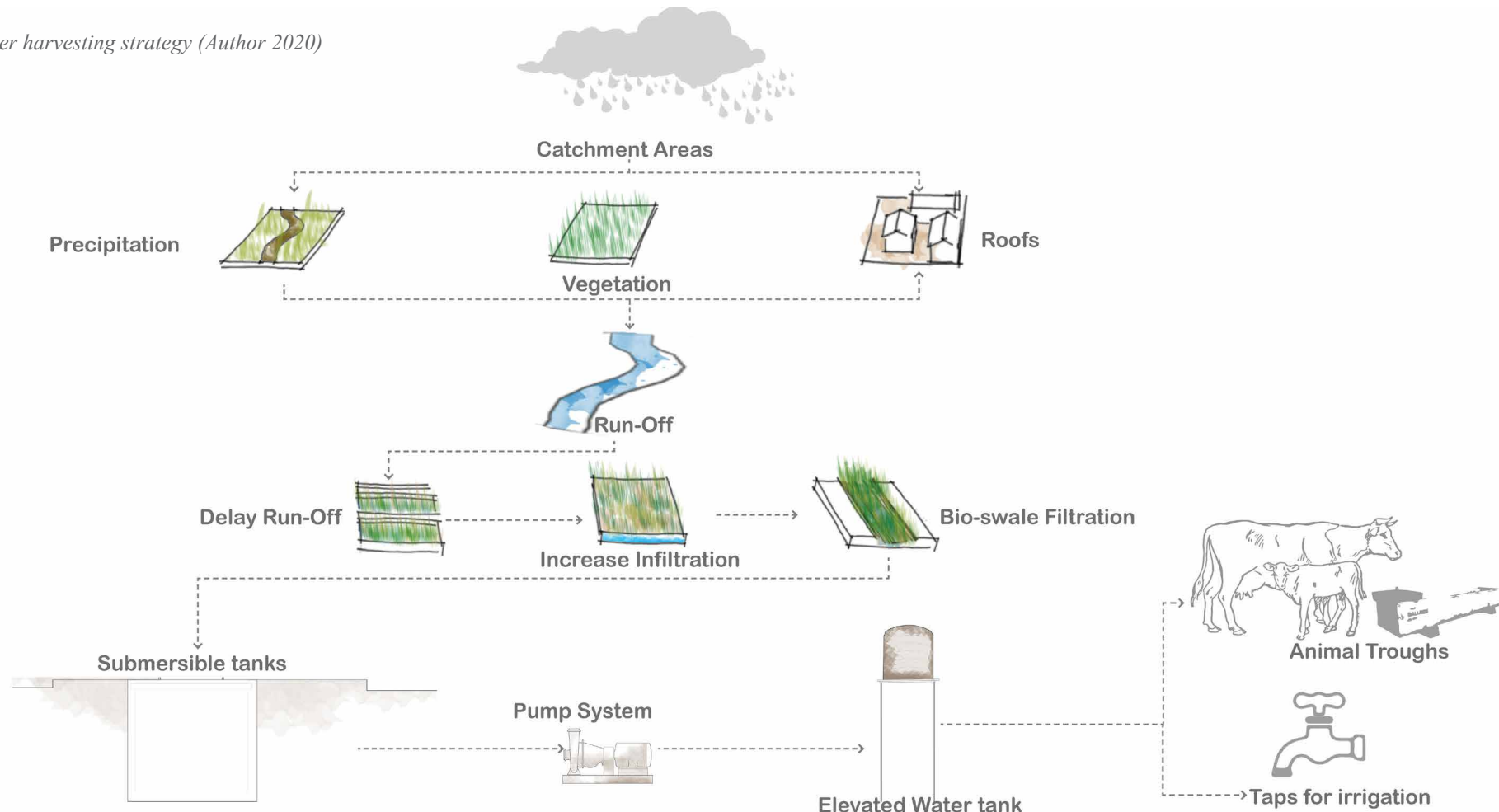
Technification Concept

11.6 Technification Concept

The concept includes using the existing footpaths as catchment channels where the water is stored in tanks and dissipated for irrigation and feeding the cattle.

Furthermore the process of technification in this project also includes the rehabilitation of the degraded soil structure and vegetation.

The strategy emphasizes the use of naturalized plants and local materials found on site to make the system as sustainable as possible (See figure 110).
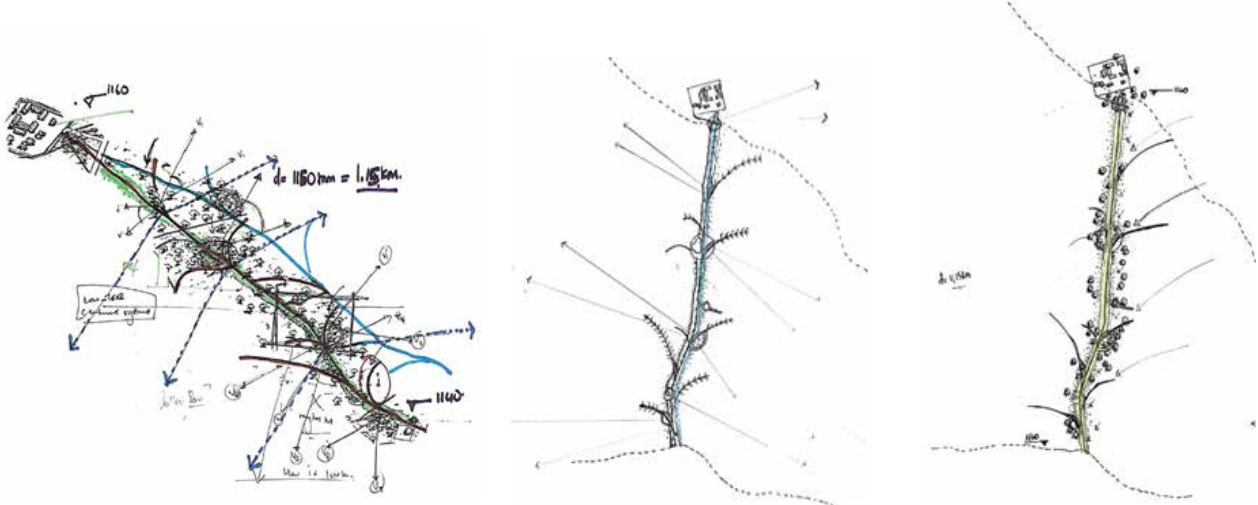
Figure 113. Footpaths as water harvesting channels and creating habitats through bio-filters (Author, 2020)

Indigenous Knowledge system
Go-Kgopha-Dunging the veranda

Storm water
Chanel along walkways

Patterned
Protective finish layer

Graded Layer

Compacted site soil layer

Compacted rock layer

Diagram 01

Ancestral Plant

Cow dung+Water
(Prevent compacted from from erosion)

Compacted native soil leveled
(with a special stone called 'Titelo'
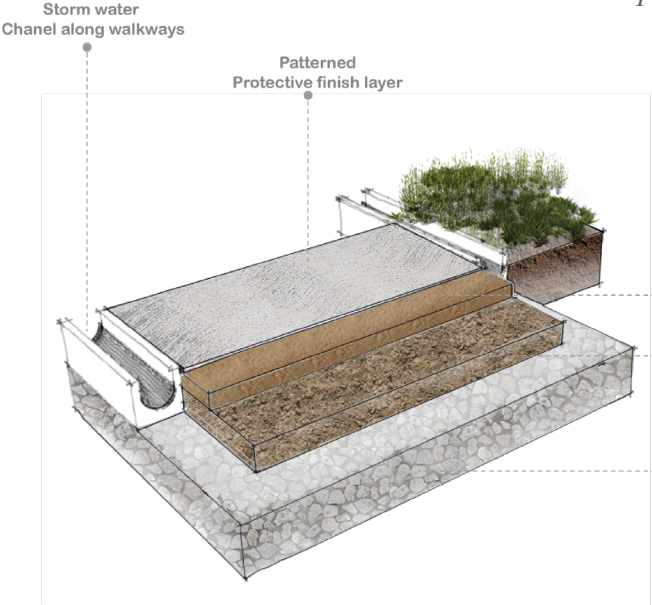
The sub base layers are compacted
with what is called "sebato"
The process is known as "go diila"
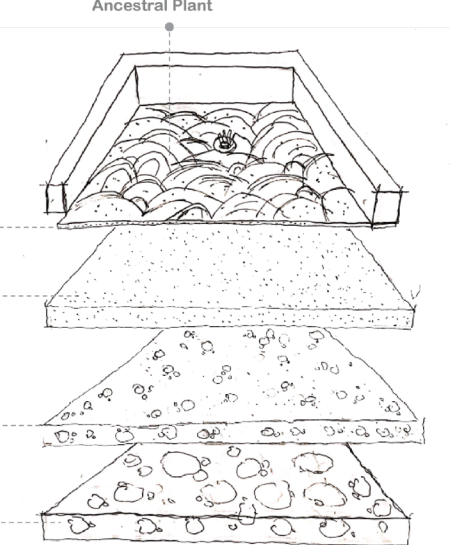
Figure 114. Combination of local indigenous knowledge and modern technologies-A critical regionalism approach .(Author, 2020)

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11.7 Systems development

The system involves delineating rain water and channeling it into bio-swales. The water is then stored in semi submerged tanks to be transported to areas that need irrigation and grazing areas for animals to drink (See process depicted in figure 112)
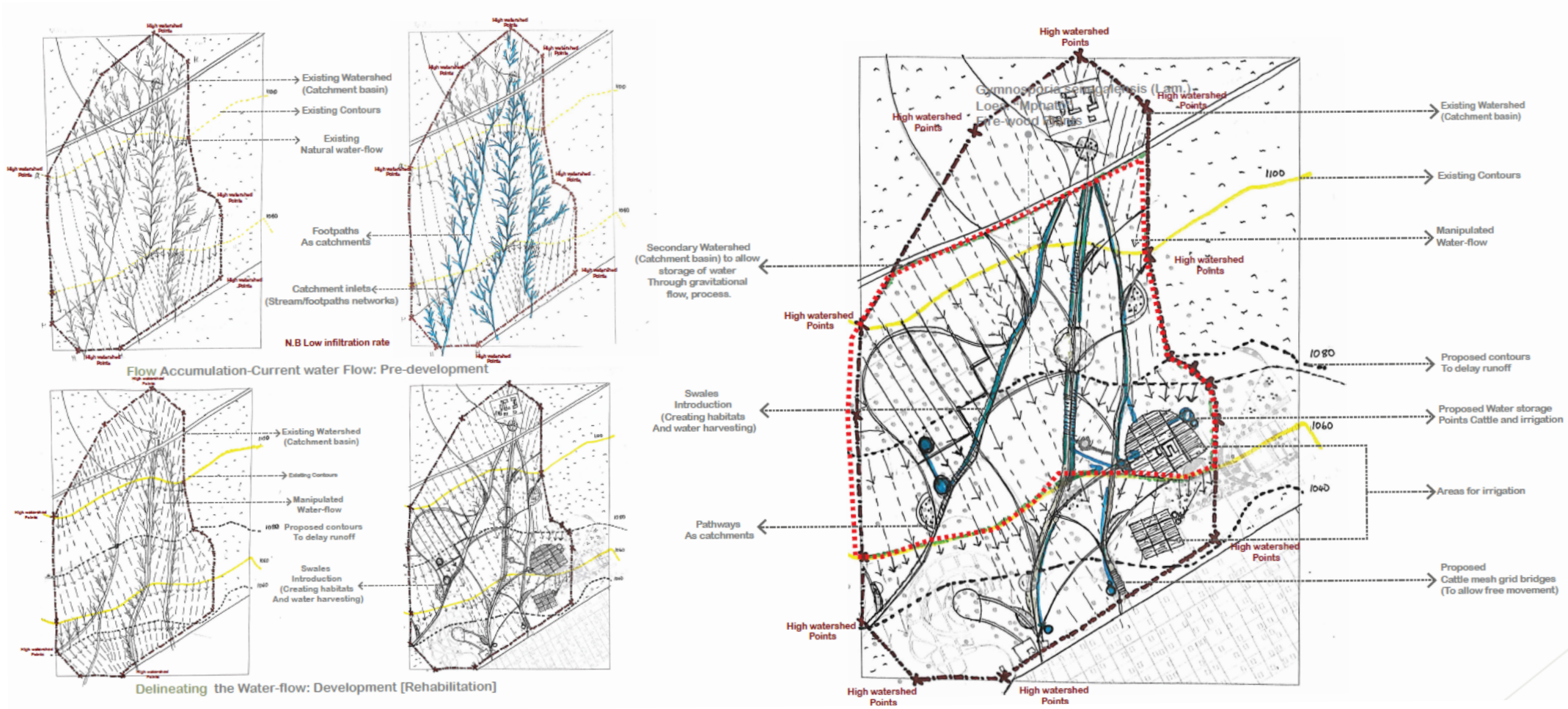
Figure 115. Quantifying water harvesting strategies-Systems development diagrams (Author 2020)

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Technical resolution focus area

11.8 Technical resolution focus area
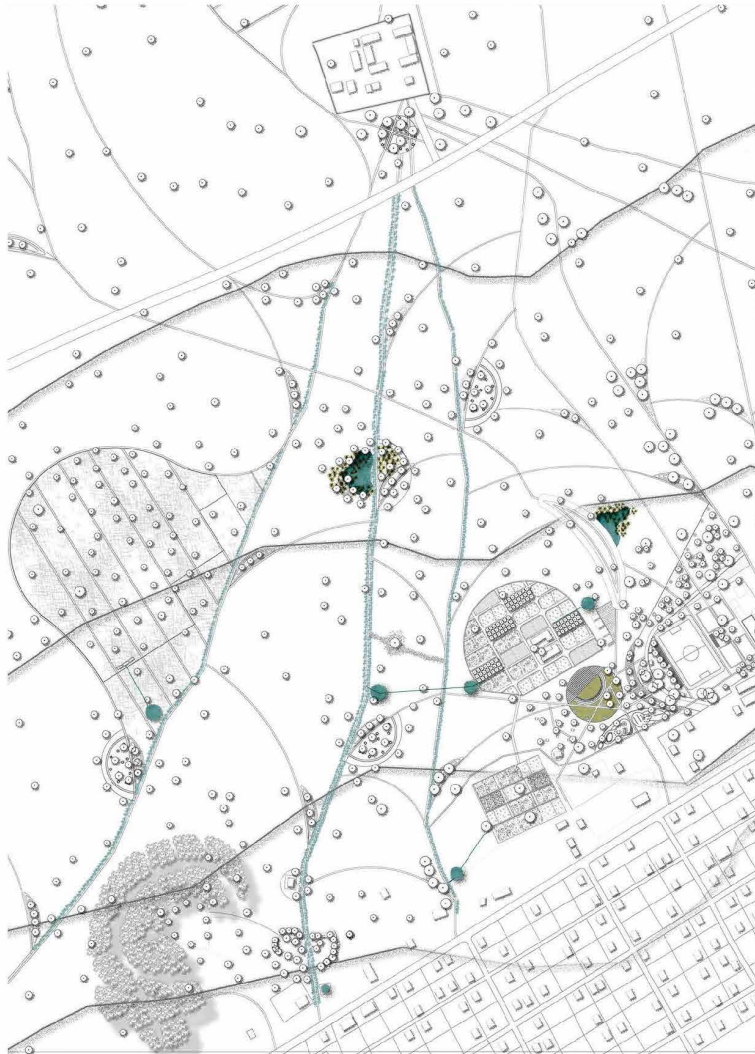
Rehabilitation of soils
Storm water Harvesting and Mitigating Erosion

Soil Re-Profiling and Change in topography increases infiltration rate promoting grasses growth.

Proposed vegetation to mimic the naturalized plants in the area

Footpaths as catchments

Bio-swale along side pathways connect to the natural water systems.

Figure 116 Focus area showing harvesting of rainwater strategy and the rehabilitation process (Author 2020)

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Storm Water Harvesting System

Rehabilitated Grassland

Overgrazing Control Grassland

Proposed vegetation to mimic existing vegetation

Existing Water System

Poetic Moments of Respite

Food Production Landscape to be Irrigated

Figure 116 Focus area showing harvesting of rainwater strategy and the rehabilitation process (Author 2020)

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Systems into spaces

Water Collected through Bio-swales

Wetland Plants

Rehabilitated Grasses

Water is stored in half submerged underground Tanks

Catchments

Reduced distance water pumped in the grazing unit

Treatment of Drinking Water before it is stored in the lower tank

Reduced distance water pumped in the productive landscape

Reduced distance water pumped in the productive landscape

Connection to natural wetland and Pond

❶ Catchment: Bio-Swale

❷ Main Catchment: Bio-Swale

❸ Catchment: Bio-Swale

Figure 117 Pathways and bio-swales as catchments (Author 2020)

Soil Re-Profiling Strategy

2020

Rational: The eutrophic red and yellow soils are hardened and very prone to erosion.
The idea is to re-profile this soils in the process of rehabilitation of grasslands and prepare cultivated areas .

Step 01 — **Improve Soil texture**

2025

Step 02 — **Improve the clay/organic matter content**

kraal manure from village households

Step 03 — **Improve the soil water depth**

Inter-cropping

Step 04 — **Improve moisture content: Increasing infiltration**
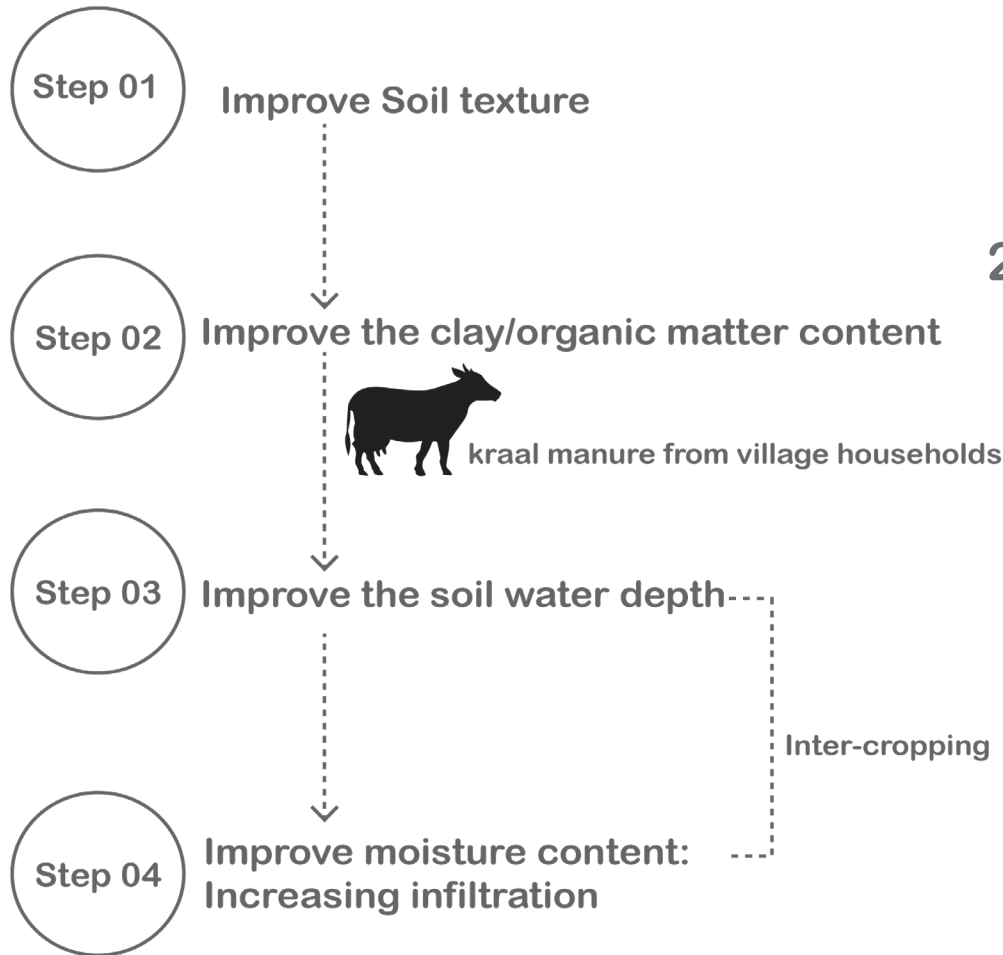
2030

Figure 118 The rehabilitation of soil and planting process using indigenous practices (Author 2020)

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Planting Strategy

11.9 Planting Strategy

11.9.1 Plant Identification and potential

As with the water strategy, the proposed intervention needs to stand on its own and enhance the natural existing context.

The following planting strategy highlights how native naturally occurring plants in this area are doing just that.

Furthermore the native plants contribute into creating a sense of place and more importantly creating personal ties between the community and nature.

The plants used in this scheme are native naturalized plants within this region that are acclimatised to the weather conditions. The plants are selected based on the bio-region of the study area which is the Savanna central bush veld.

According to (Bayraktar 1980), the native plants create natural wildlife habitats, complement the geological structure, soil, climate and hydrological structure. Moreover they are crucial for landscape architecture in terms of the conservation, developing, restoration and management of landscapes .

The following planting strategy builds on the above mentioned concept by identifying prominent native plants in the area that can be utilized in the proposal.

It is also important to note that the plants were identified with their distinctive features as part of creating a place-based homeliness design feel throughout the proposal.

Sclerocarya bimen   *Sclerocarya bimen (male)*   *Vachellia karoo*
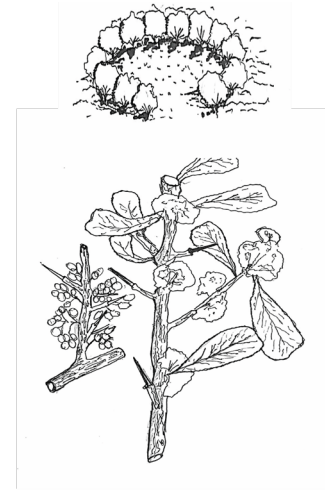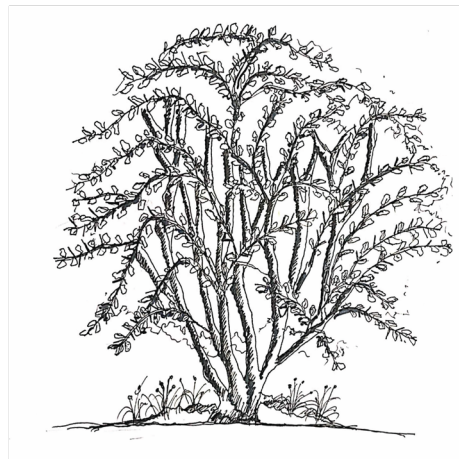
Gymnosporia senegalensis (Lam)-Mphato plant: utilized in the wood plantation area.

Figure 119 Existing naturalized plants to be utilized in the scheme (Author 2020)

The above elaborated upon naturalized, native and indigenous plants help create poetic moments within the landscape and the plants are seen in context through poetic moments shown within the proposal highlighted above.
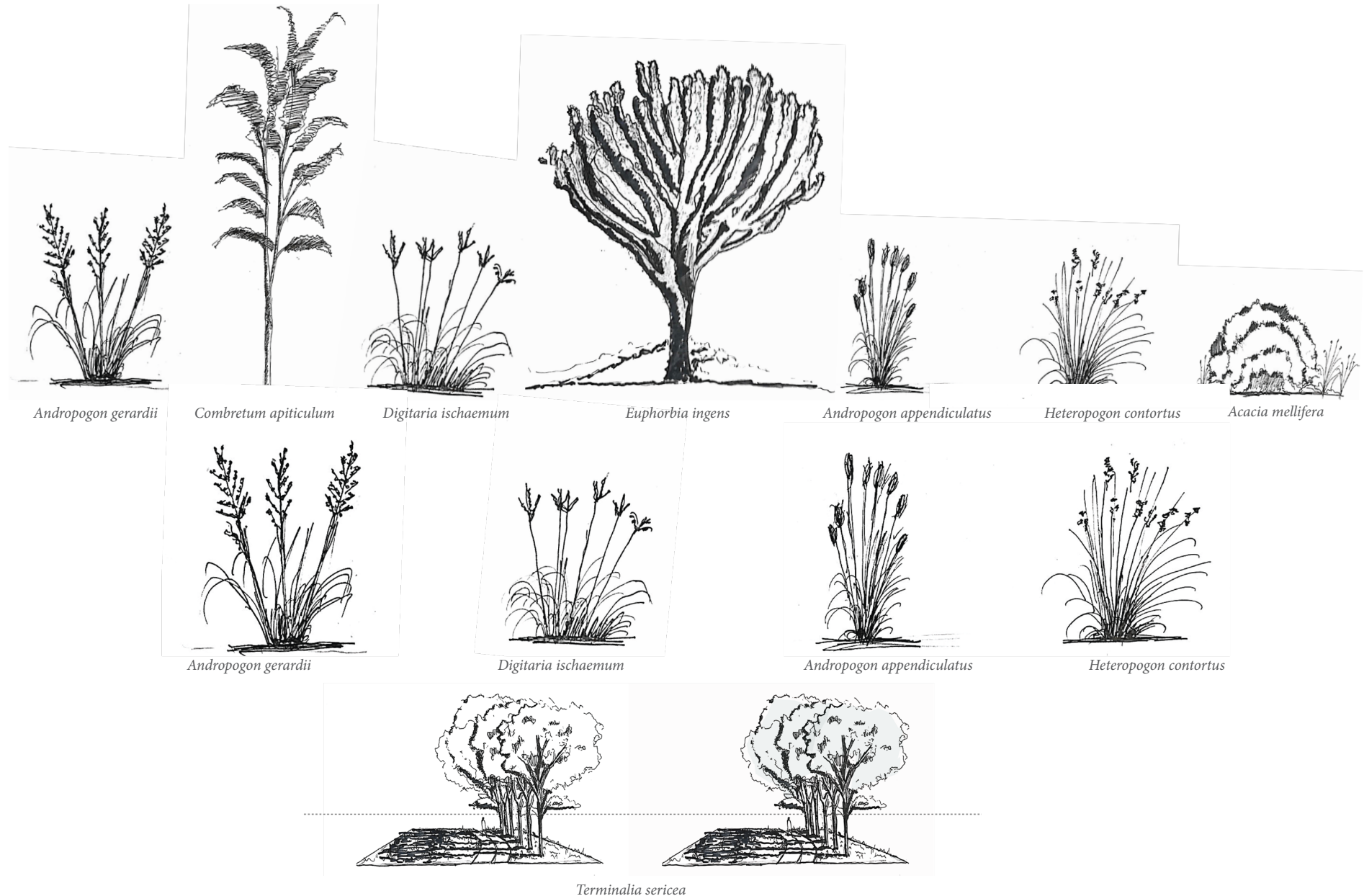
Andropogon gerardii	*Combretum apiticulum*	*Digitaria ischaemum*	*Euphorbia ingens*	*Andropogon appendiculatus*	*Heteropogon contortus*	*Acacia mellifera*

Andropogon gerardii	*Digitaria ischaemum*	*Andropogon appendiculatus*	*Heteropogon contortus*

Terminalia sericea

Figure 119 Existing naturalized plants to be utilized in the scheme (Author 2020)

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High Level Planting Plan

11.9.2. Planting Plan
The culmination of the above selected plants forms a well-informed master planting plan which is shown in figure 121.
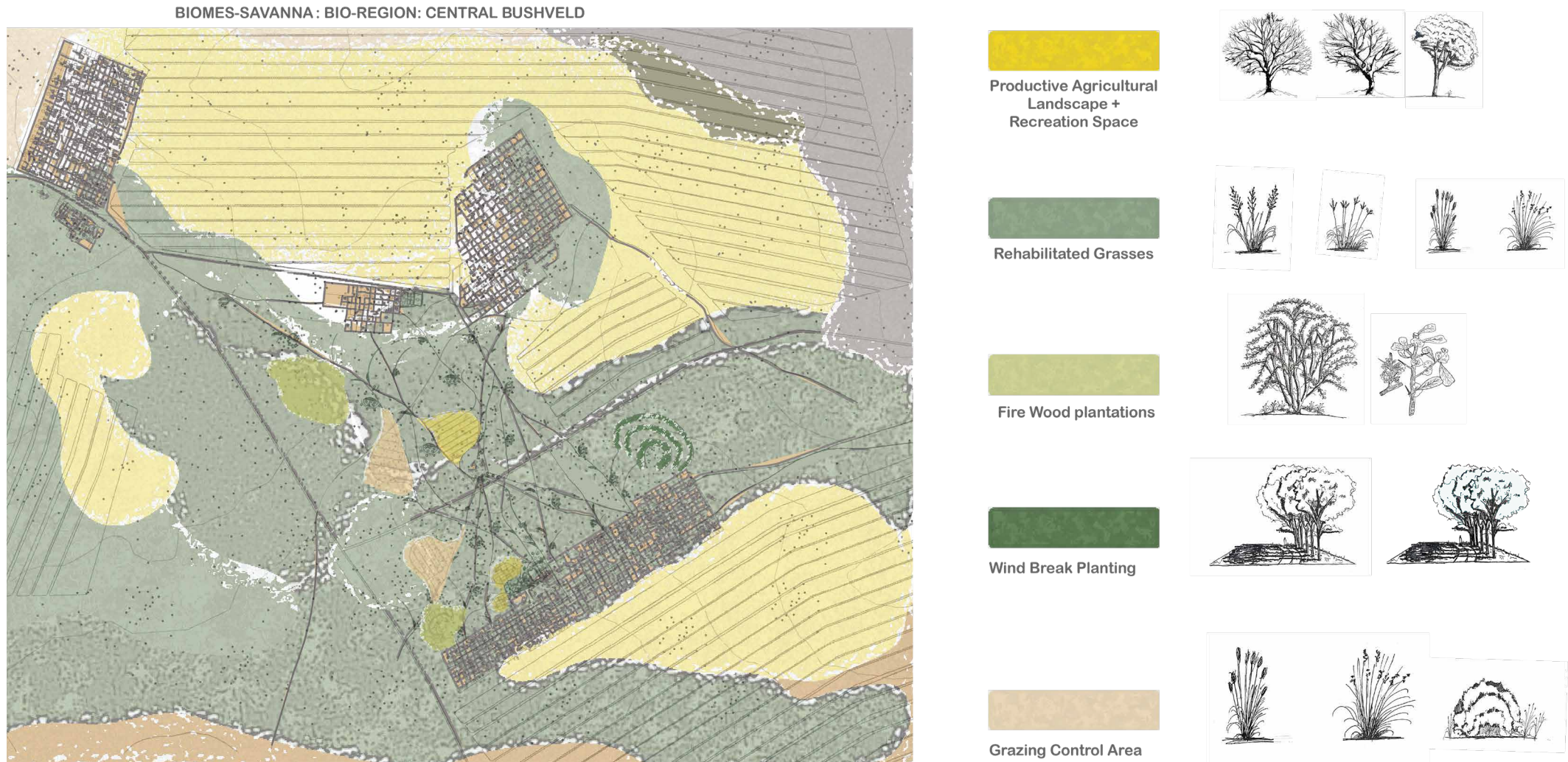
Figure 120 High level planting plan (Author 2020)

12
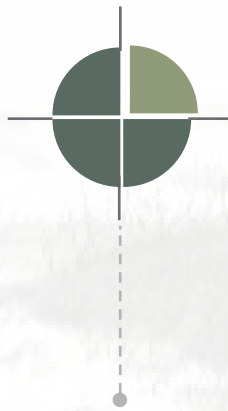
Detailing

12.1. Moments of detailing

Due to the vastness of the site, a few moments along the footpaths were selected to showcase how the footpaths can create moments of respite within the harsh landscape. Spaces along these footpaths are informed by culture, indigenous knowledge ,critical regionalism views and contribute to the proposed water harvesting strategy. Therefore a footpath as indicated in the design projections, does not only connect point A to Point B but rather gives birth to moments of respite. The following chapter showcases the detailing of these moments titled T01 to T04.

T03.
Footpath as space
And water harvesting tool

T02.
Moment of Respite and
Cultural Representation

T01.
Gathering area near School

T04.
Grazing Control
Area
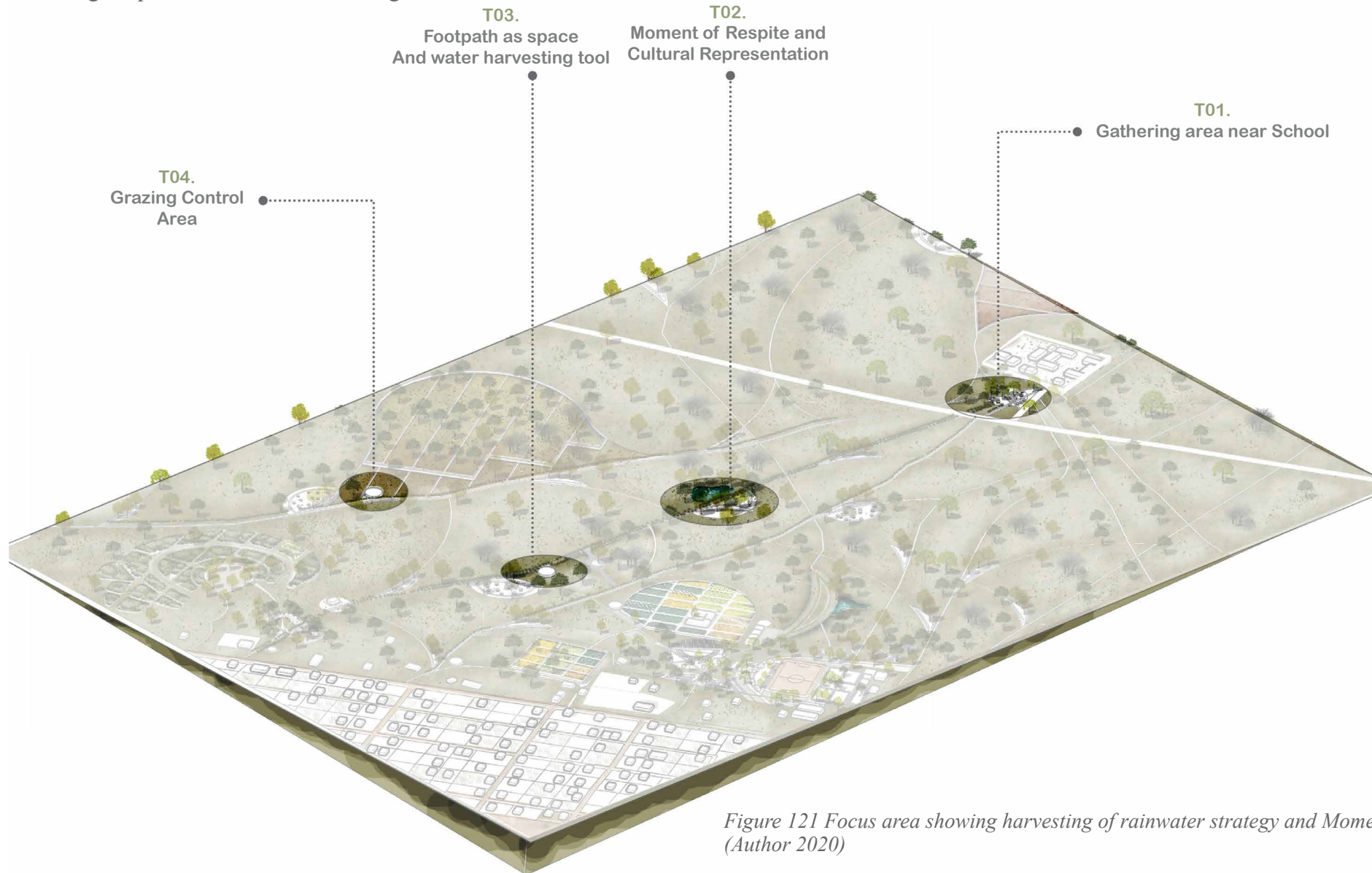
Figure 121 Focus area showing harvesting of rainwater strategy and Moments of detailing (Author 2020)

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12.1.1 T01. Gathering area near School

1 **School courtyard**

2 **Agricultural Plots**

3 **Parking Area**

4 **Gathering area**

5 **Outdoor indigenous games play area**

6 **Multicourts**

7 **Pergola shade area**

1. School courtyard
2. Agricultural Plots
3. Parking Area
4. Gathering area
5. Outdoor indigenous games play area
6. Multicourts
7. Pergola shade area

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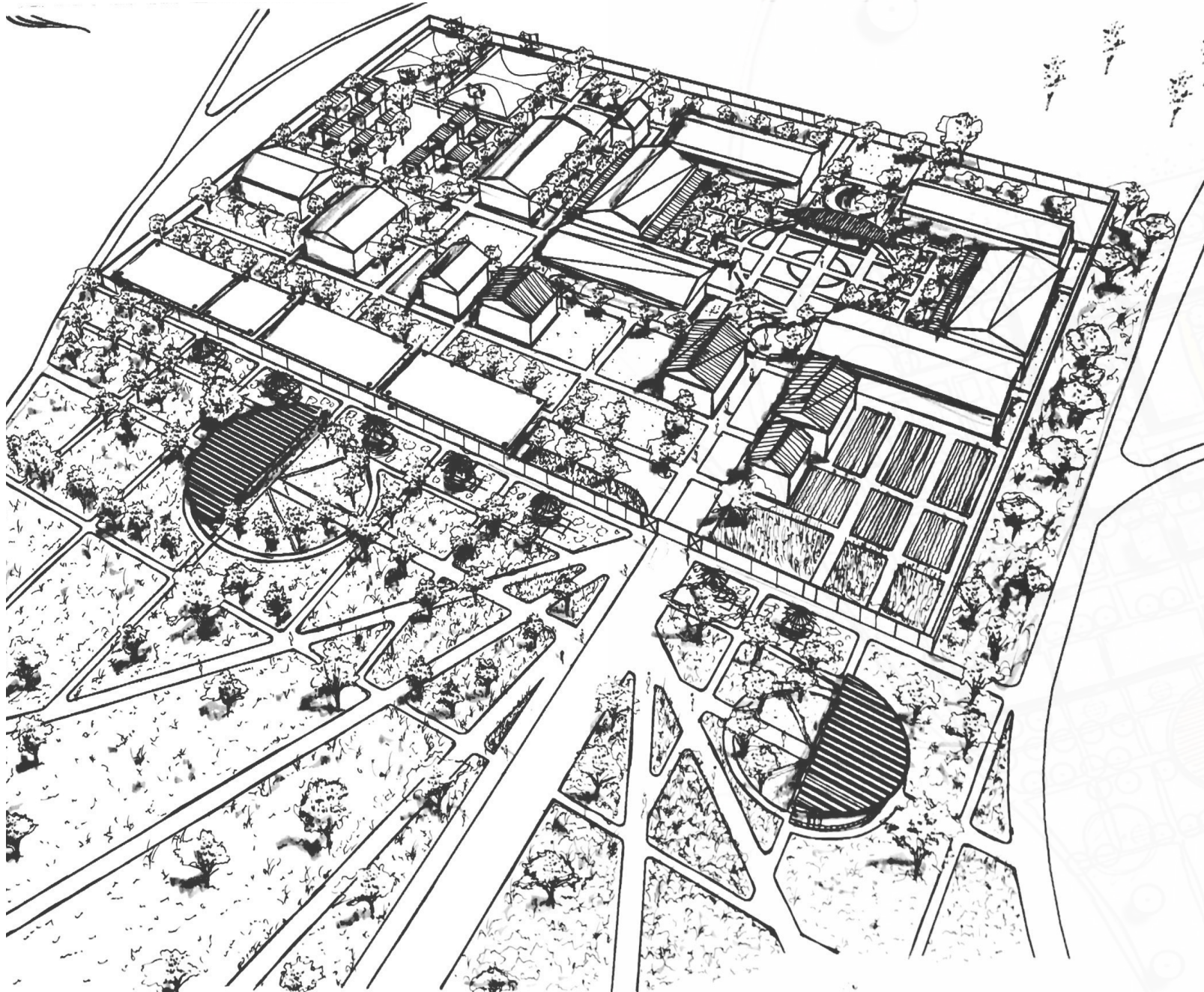
Raw site materials creating a relatable space

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Display/educational wall and culture and ritual representation (Author 2020)

Gathering area outside the school (Author 2020)

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Fireplace gathering area (Author 2020)

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Sclerocarya bimen spp caffra "Marula tree"
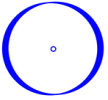
Senegalia caffra

Terminalia sericea "Silver cluster-leaf"

Medicinal focal plant- Hypoxis hemerocallidea

Mix

Veld grass with Grass-blocks

12.1.1a TO1 Planting Strategy

As with the water strategy, the proposed intervention needs to stand on its own and enhance the natural existing context.

The following planting strategy highlights how native naturally occurring plants in this area are doing just that.

Furthermore the native plants contribute to creating a sense of place and more importantly creating personal ties between the community and nature.

The plants used in this scheme are native naturalized plants within this region that are acclimatised to the weather conditions. The plants are selected based on the bio-region of the study area which is the Savanna central bush veld.
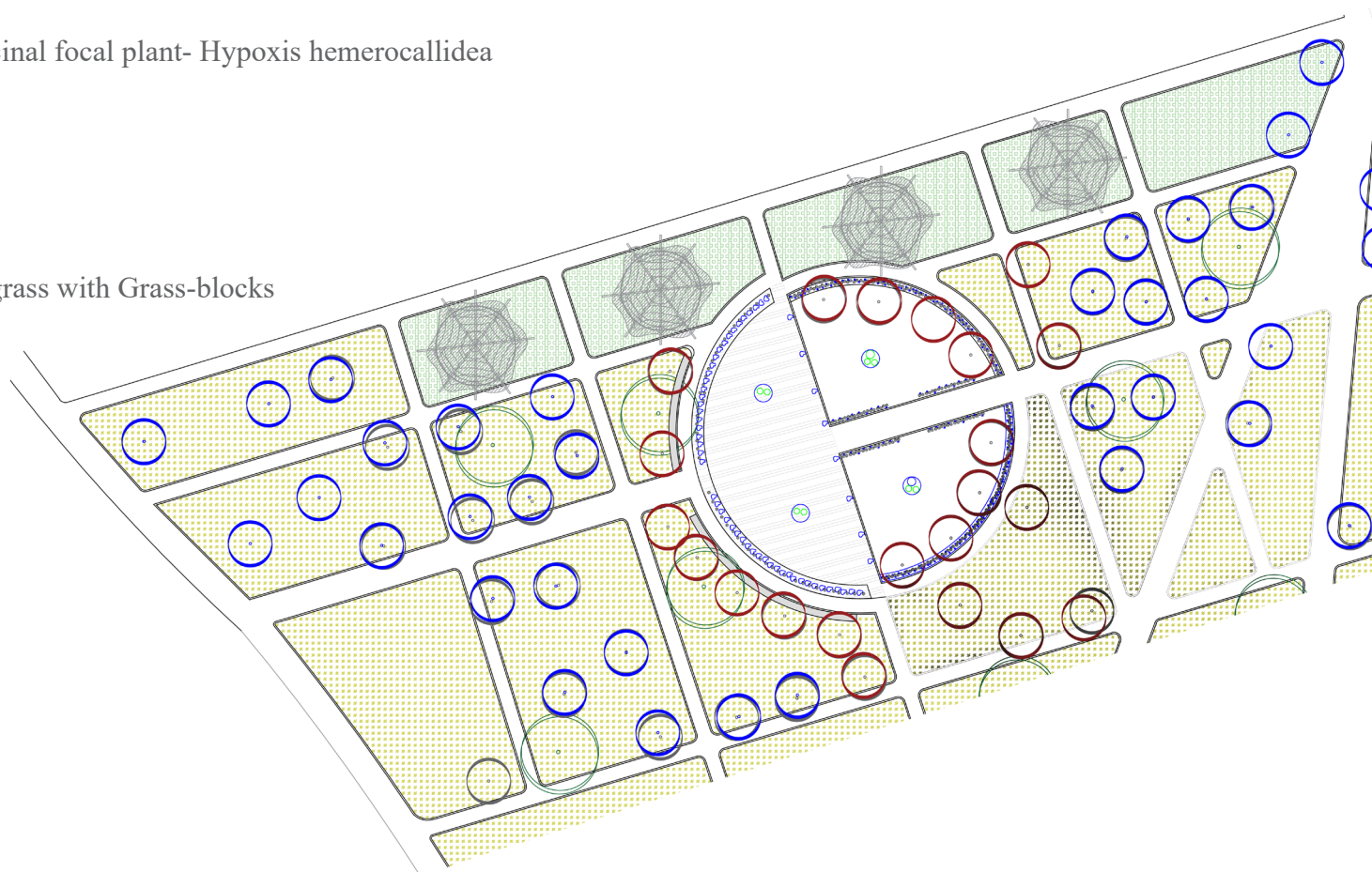
Senegalia caffra

Terminalia sericea "Silver cluster-leaf"

Sclerocarya bimen "Marula tree"

Andropogon gerardii

Heteropogon contortus

Digitaria ischaemum

Andropogon appendiculatus

Aloe ferox

Hypoxis hemerocallidea

Resilience
Water wise/ no need for irrigation
once established

Hardy and self re-planting

Easily -Propagated

12.1.3 Section A-A

T01.
Veld grass Planting

T01.
Proposed Trees

T01.
Wood shade structure

T01.
Wood Screening

Footpath

Footpath

Footpath

Refer DETAIL T01.A

SCALE 1:200 [A1]

SECTION A-A

Refer DETAIL T01.B

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T01.
Veld grass Planting

T01.
Existing Morula Tree

T01.
Vehicle route to school

Footpath

Refer DETAIL T01.C

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DETAIL T01.A 1:50

100 -120 mm dia Local wood from firewood plantations (in Coid Soaking)

Vegetation

100x3600 mm CCA treated Gum pole,tied to 75mm Hardwood poles with a 4mm Double plaited sub-rope At angled joints

1500 mm span between Hardwood Wooden poles dipped in chemical (Coid Soaking)

4mm Double plaited sub-rope at angled joints

200-300 x 105 x 73mm Stone paving on 20mm clay soil bed

100-200mm Kerb on a concrete bedding

150mm Concrete kerb on a concrete bedding

150 mm layer of compacted G5 material to 90 % MOD ASSHTO density

Stainless steel spike in concrete footing

In-Situ Material

150mm Concrete Footing

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DETAIL T01.B 1:25

230mm Display wall built from 200x106x73 Precast Corobrick 200 x106x73 mm Red Travertine

Bolted display hardboards

300x300mm Concrete bedding For the wooden poles

Well tapered Rubble Backfill

150-200 mm layer of compacted G5 material to 90 % MOD ASSHT density

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DETAIL T01.C 1:25

Veld Grass

100 -120 mm dia x 2200mm CCA treated Wooden pole

500x 200 mm concrete coping

200-300 x 105 x 73mm Stone paving on 20mm Clay soil bedding

15 mm Plaster mixed with Colourcem pigment

Stone / Rubble edging on a concrete bed

Prepared Top Soil

Rubble backfill

150 mm layer of compacted G5 material to 90 % MOD ASSHTO density

900 x200mm in situ concrete foundation

In-Situ Material

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T02. Moment of Respite and Cultural Representation

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Veld Grass

T02.
Existing Dry Wetland

T02.
Social and Cultural representational space

Footpath

NGL

Refer DETAIL T02.B

SECTION B-B

SCALE 1:200 [A1]

DETAIL T02.A 1:25

120 mm Compacted gravel footpath with clay soil and 50-75 mm dia gravel

150mm Top soil and Wetland Planting

100-200mm dia loose rocks

Modified Top soil with veld vegetation

50mm dia mm Perforated Geo-pipe

120 mm Compacted gravel footpath with clay soil and 50-75 mm dia gravel

DETAIL T02.B 1:25

Patterned path way -temporary on a 120 mm Compacted gravel footpath with clay soil and 50-75 mm dia gravel

1200mm (max) height earth Berm

500x 200 mm concrete coping

15 mm Plaster mixed with Colourcem pigment

150 mm layer of compacted G5 material to 90 % MOD ASSHTO density

Site Material

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12.1.2 Footpath as space and water harvesting tool

T03. Footpath as
space and water harvesting tool

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T03.
Compacted footpath

T03.
Bio-Swale

T03.
Surface and Sub surface tanks

T03.
Social Space

T03.
Outlet pipe to Tap (water-point)

NGL

SECTION C-C

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DETAIL T03.A

Veld Grass

120 mm Compacted gravel footpath with clay soil and 50-75 mm dia gravel

150mm Top soil and Wetland Planting

100-200mm dia loose rocks

Reuse Rubble built silt trap

1200x 150mm concrete footing

150 mm layer of compacted G5 material to 90 % MOD ASSHTO density

50mm dia mm Perforated Geo-pipe

T04. Grazing Control Area

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T04.
Grazing Control Area

T04.
Outlet pipe to water troughs

T04.
Surface and Sub surface tanks

T04.
Look out Space

T04.
Social Space + Steps

T04.
Compacted footpath

NGL

SECTION D-D

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7m3 Elevated tanks Mild Steel HDPE tank(Landmark and storing water)

200mm Soil infill

Local Sand bags Retaining Wall (50 and 25 kg)

Euronix 110 kv Non-Submersible pump (8000mm high)Pumping ability.

330mm Coro-brick course, With 200 x106x73 mm Red Travertine

8000 mm

550 x500x100 Man hole

Wood shade structure

150 m3 Sub-surface tank

Finish plaster with Nil mixture

100mm In situ Concrete Screed

15mm Concrete Plaster

200x106x73 Precast Corobrick ,brick on edge

5000 x200mm in situ concrete foundation

150 mm layer of compacted G5 material to 90 % MOD ASSHTO density

Rubble back fill

2mm Poloyethelene layer

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12.2. Materiality

Finally robust, local and re-usable materials where the first to be considered in this project. Furthermore the combination of these with more universal (or foreign to the study area) materials were also employed as part of a critical regionalism approach highlighted earlier in this dissertation. The following section shows the material employed in this project.

Local wood
from firewood
plantations (in Coid Soaking)
&
CCA treated Gum poles

Local wood
from firewood
plantations (in Coid Soaking)
&
CCA treated Gum poles

Red soils mix
with concrete
finish (red liquid oxide
colour mix)

Temporary Cow dung
pattern making

330mm Coro-brick course,
With 200 x106x73 mm Red Travertine

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Local Sand bags
Retaining Wall (50 and 25 kg)

Exposed
aggregate
steps

Local wood
from firewood
plantations (in Coid Soaking)

Compacted gravel

330mm Coro-brick course,
With 200 x106x73 mm Red Travertine

Site local Rubble backfill

Compacted gravel

Local rubble wall

Temporary Cow dung pattern making

Red soils mix with concrete finish (red liquid oxide colour mix)

Compacted gravel

Loose local stone

Perforated Geo-pipe

Site local Rubble backfill

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Conclusion and Reflections

Caruso (2009) iterated that design problems need to be understood as systems and not as individual parts, ultimately the goal will be a well-articulated holistic design outcome.

In the case of this proposal, addressing three important factors of design was paramount. These factors include the social, environmental and economic aspects of the community in question. The study of the dynamics of the factors allowed the author to deal with the site issues as systems rather than individual components.

Throughout the study it was observed how different issues were understood based on intimate knowledge of the place and relationships the inhabitants have with their environment. Indeed a place based approach was a powerful tool to root the design in place.

Chigbu (2013) wrote about developing rural areas rurally, and it was observed that one of the most effective ways of doing this is by rooting the design in place. For one to do this, one needs to truly immerse themselves in that region and understand the systems that exist within that area, thus the inclusion of a critical regionalism approach. A critical regionalism approach grounds the designer and constantly reminds him/her of the context he/she is working within.

There is a future in rural landscapes, not only because they are ephemeral in nature; but also because these landscapes are rich with history and heritage. The study serves as a threshold to allow people from within and outside the landscape architectural profession to realize the importance of rural landscapes in creating spaces that people can relate to on an intimate level. Furthermore the author will continue with studies within the rural landscapes beyond this dissertation because a lot was omitted and these spaces are valuable, and thus they should be documented, investigated and improved.

.   ...Kere go lena Tsela-tshweu!!!

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RE-STITCHING THE RURAL LANDSCAPE FABRIC

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RE-STITCHING THE RURAL LANDSCAPE FABRIC

Appendix

The pre-union era, often referred to as the colonial period (1888-1910), highlighted a lot of friction The colonial era (1886-1910)
between the native black African communities and the Broer communities (Donaldson, 1999).
He continues to explain that these were the dark days filled with anger, hate and wars. The tensions that erupted in 1867 include the Boer communities in Schoe-
mansdal (Present day Louis Trichardt, Makhado) being continuously threatened and under attack by the local black African communities to a point where the ZAR
offered to buy the Boers in Schoemansdal the portion of a farm elsewhere away from the Africans in that region.
Records by Heyns (1939) shows that the Boer communities led by General Piet Joubert would then secure a farm in Sterkloop (present-day Polokwane) and chose
to settle there because of the area's centrality, its sufficiency of water and the ample supply of black African labour in its vicinity. Thus the town was named after its
founder and leader as Pietersburg.

To further keep Africans out of the urban areas, in 1923 "The Native (Urban area Act of 1923)"was enacted which came with it more strict regulations to discrim-
inate against the African communities. Some of the regulations included

No persons other than those issued permits were allowed to be in the location between 21:00 and sunrise. Pass laws and curfews were introduced to curtail black
movement in white towns.
The Segregation Model
As a replica of a model which was used in all South African settlements especially cities, the model was designed with a city centre (CBD) for whites, a small Indian
community CBD on its edge and coloured and back communities away from the urban environment. (Davies, 1981:15). Remnants of the model are observed today
with Polokwane as a city the epicentre with townships on the peripher-ies and rural areas further away from the city. (Refer to diagram xx)

To further keep black Africans in the homelands and out of the urban areas, three satellites townships where established in the early 1970s, Lebowakgomo, Mank-
weng and Seshego. With the availability of clean water, sewage flush, electricity, refuse, refuse removal, telephone services and bus services. (Donaldson 1999)

Lebowakgomo was established as a political Sovereignty to the Pedi /Northern Sotho speaking people and administrative centre, Mankweng was established as a
place for Africans higher education thus the establishment of the University of the North (currently known as the University of Limpopo
After the above mentioned laws and several other laws were approved into the government legislature by the municipality, the Natives were then allocated areas
on the outskirts of the town called townships such as Seshego for the working African natives and further areas on the outskirts rural areas were already being
established even before this Act was passes as law. Sterkloop was rapidly urbanized and surrounded by farms on the outskirts where Africans labourers could work
to decrease the number of the
Natives working in the town. (Donaldson 1999).
Before the year 1910, the Boer republic and the two British colonies had legislation that seemed to strive for one goal, to separate the Natives from themselves
(Donaldson 1999).
One could even say that their laws were the same with the only difference being the wording. For example the law put in place in the British colony in the Cape was
the Native Reserve Locations Act (1990), and in the Transvaal the Boer republic called it the Native locations Act (1904) which both prohibited coloured persons
and Africans from living in places near or within towns.
Post-Colonial- Segregation: The union Era

In 1910 South Africa was no longer separated into the Boer republics (Transvaal and Orange River Colony) and British colonies (Cape and Natal), they joined
forces to form a Unified Government (Donaldson 1999). Black (or Native) urbanization was already contained at this time and in 1913 territorial segregation rules
were clearly stated by the Union government which claimed all control over the Natives population movement and settlements.

Appendix

(Christopher 1994:33) explains that "The Natives Act Law of 1913" was the very first law to be brought into legislature by the union government clearly creating an institutional divide between the white and African communities.

The act was already practiced prior the union era, the African communities where removed from white areas except African labourers, these groups were encouraged to stay. (Harcourt 1976:77).

Lastly Seshego was established as a homeland township close to the white urban centre of Pietersburg its main purpose was for permanent residence for the migrant African workers so they can be closer to work. The rest of the outskirts areas were established as farm areas and tribal rural land that depended on farming and agricultural methods for survival.

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AREA CALCULATIONS

Catchment	Area, A (m²)	Runoff Coefficient,	
Roof 01 Households	36750	0,9	0,00
Roof 01 Households	2340	0,9	0,00
Veld Grass	8632722	0,3	0,27
Gravel (COMPACTED GROUND)	33300	0,6	0,00
Cultivated vegetition	828209	0,5	0,04
TOTAL	**9533321**	**3,2**	**0,32**

*Weighted C value worked out - land use / total catchment area * run off coefficient for that land use type (e.i. it is a percentage of the total)

March	120 952,6	21 375,5	99 577,1
April	85 654,3	16 048,5	69 605,8
May	45 693,2	10 726,5	34 966,7
June	26 878,4	10 724,0	16 154,4
July	24 472,7	10 726,5	13 746,2
August	40 317,5	16 051,0	24 266,5
September	112 889,1	10 724,0	102 165,1
October	112 889,1	21 375,5	91 513,6
November	228 466,0	21 373,0	207 093,0
December	217 714,7	21 375,5	196 339,2
ANNUAL AVE.	**1397600,208**	**203243,5**	**1194356,708**

IRRIGATION DEMAND

Month	Planting area (m²)	Irr. depth / week (m)	Irr. depth / month (m)	Irrigation demand (m³/month)
January	106490	0,05	0,2	21298
February	106490	0,05	0,2	21298
March	106490	0,05	0,2	21298
April	106490	0,04	0,15	15973,5
May	106490	0,03	0,1	10649
June	106490	0,03	0,1	10649
July	106490	0,03	0,1	10649
August	106490	0,03	0,15	15973,5
September	106490	0,03	0,1	10649
October	106490	0,05	0,2	21298
November	106490	0,05	0,2	21298
December	106490	0,05	0,2	21298
			ANNUAL TOTAL	**202331**

TOTAL YIELD-BEFORE DE

Month
January
February
March
April
May
June
July
August
September
October
November
December
ANNUAL TOTAL

TOTAL DEMAND

Month	Total demand (m²/month)
January	21375,5
February	21368,0
March	21375,5
April	16048,5
May	10726,5
June	10724,0
July	10726,5
August	16051,0
September	10724,0
October	21375,5
November	21373,0
December	21375,5
ANNUAL TOTAL	**203243,5**

Alt demand (m³/month)
77,5
70
77,5
75
77,5
75
77,5
77,5
75
77,5
75
77,5
912,5

WATER BUDGET

Month	Yield (m³)	Demand (m³)	Monthly balance
January	220 402,5	21 375,5	199 027,0
February	161 270,1	21 368,0	139 902,1

Vol. water in tank (m³)
602 459,2
742 361,4

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841 938,5
911 544,3
946 511,0
962 665,3
976 411,5
1 000 678,0
1 102 843,1
0,0
207 093,0
403 432,2

← Maximum size of tank

← Not sure why this is

AREA CALCULATIONS (After Development

Catchment	Area, A (m²)
Roof 02 Households	2340
Veld Grass	8632722
Gravel (COMPACTED GROUND)	51150
Paving	2215
Existing Cultivated vegetition	828209
African Crops planting	106490
Forest	231038

TOTAL	8794917

*Weighted C value worked out - land use / total catchmer coefficient for that land use type (e.i. it is a percentage of

VELOPMENT

Total Yield (m³/month)
250844,7322
183544,926
137658,6945
85654,2988
52004,3957
30590,821
24472,6568
45886,2315
58122,5599
128481,4482
260021,9785
247785,6501
1505068,393

Total Yield-Total demand
1119171,615