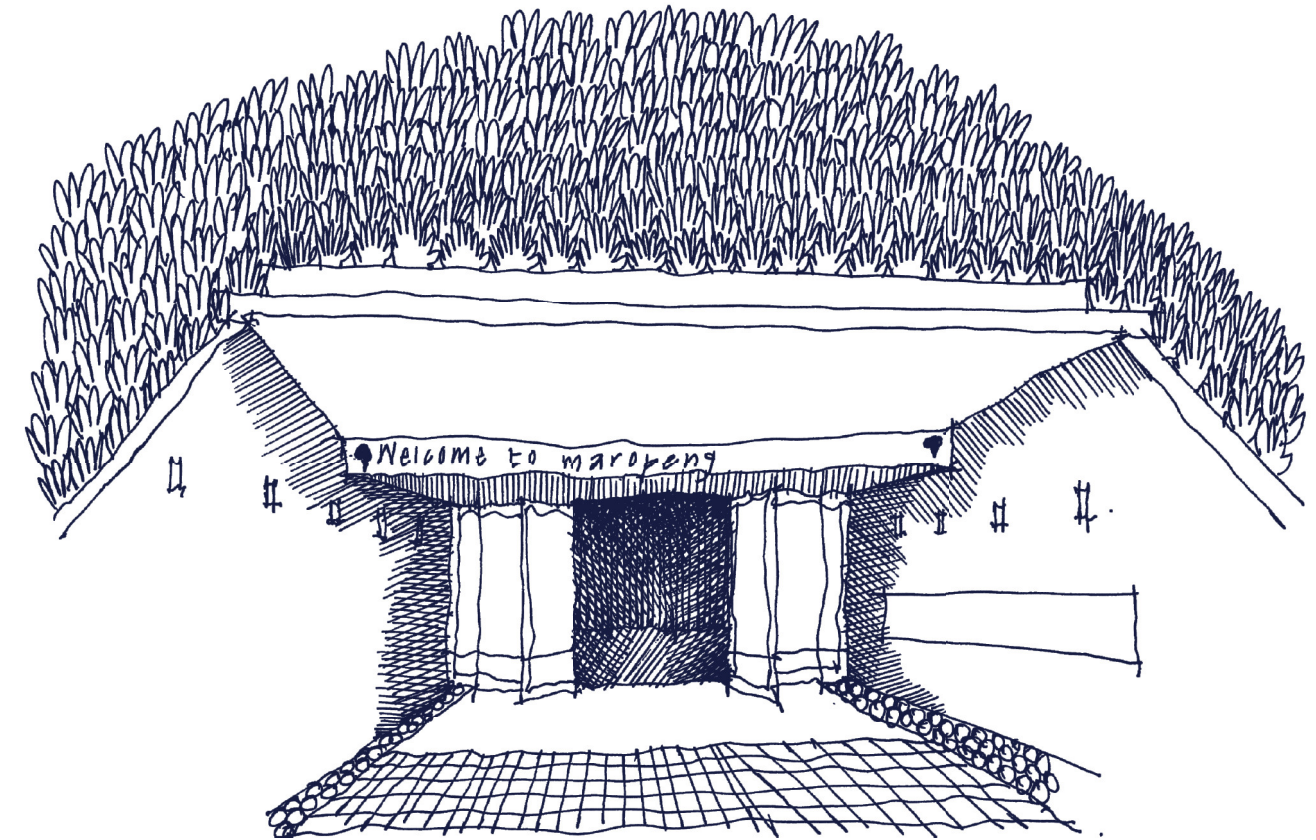
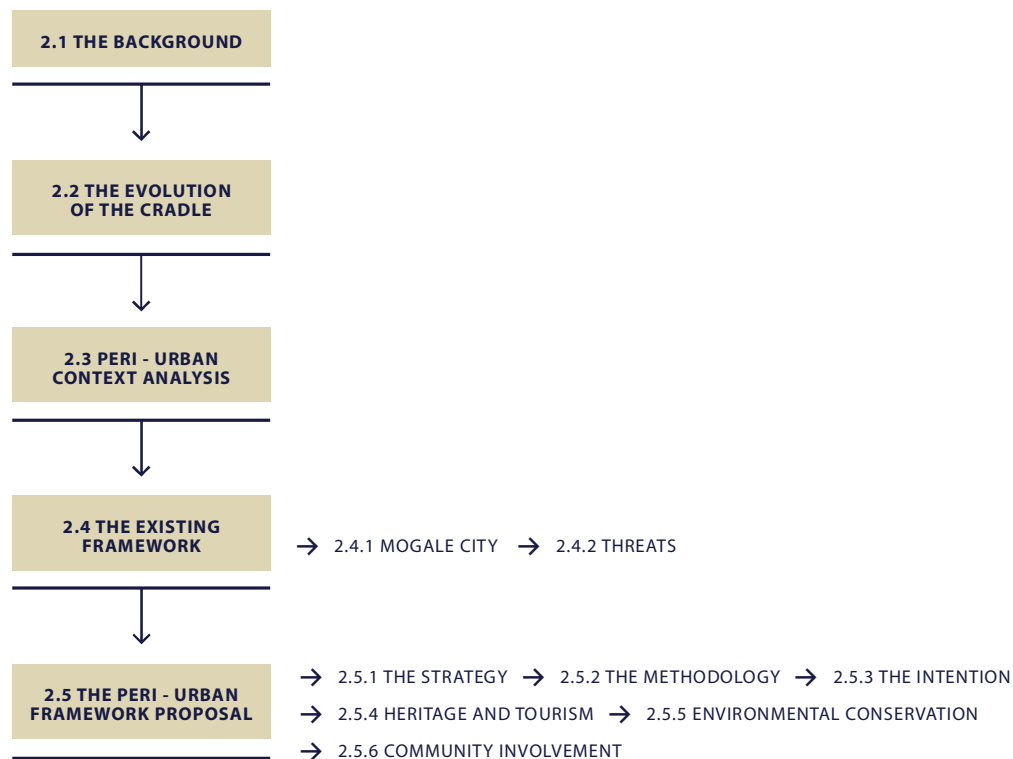


Chapter 2

The Cradle of Humankind

The context of the dissertation is the Cradle of Humankind, a UNESCO World Heritage Site. This chapter provides the background to the Cradle of Humankind, the analysis of the Cradle of Humankind, and a summary of the existing framework, and group peri-urban framework.



2.1 - The background (Author, 2016).

2.1 The background

The Cradle of Humankind is a designated UNESCO World Heritage Site named for the wealth of fossil hominid sites generally located within the area in caves or rocky outcrops. The Cradle of Humankind was listed as a World Heritage Site in 1999, with the listing including the sites of Sterkfontein, Swartkrans, Kromdraai, the Makapan Valley and Taung Skull Fossil Site (UNESCO, 2016). The area was listed as such due to the abundance it contains of extraordinary scientific clues as to the pre-historic and historic landscape of man.

The Cradle has over time delivered the highest concentration of hominin fossils found in South Africa, and 35% of all fossils found in Africa (McCarthy & Rubidge, 2005:283). The locations of the hominid fossils within the area show their paleontological relationships, playing a crucial role in furthering our understanding of prehistoric human behaviour and interaction with the environment. Additionally, the site provides key information on fossil mammals, micro mammals and invertebrates, providing evidence of faunal evolution, palaeobiology and palaeoecology ranging back into the Pliocene era.

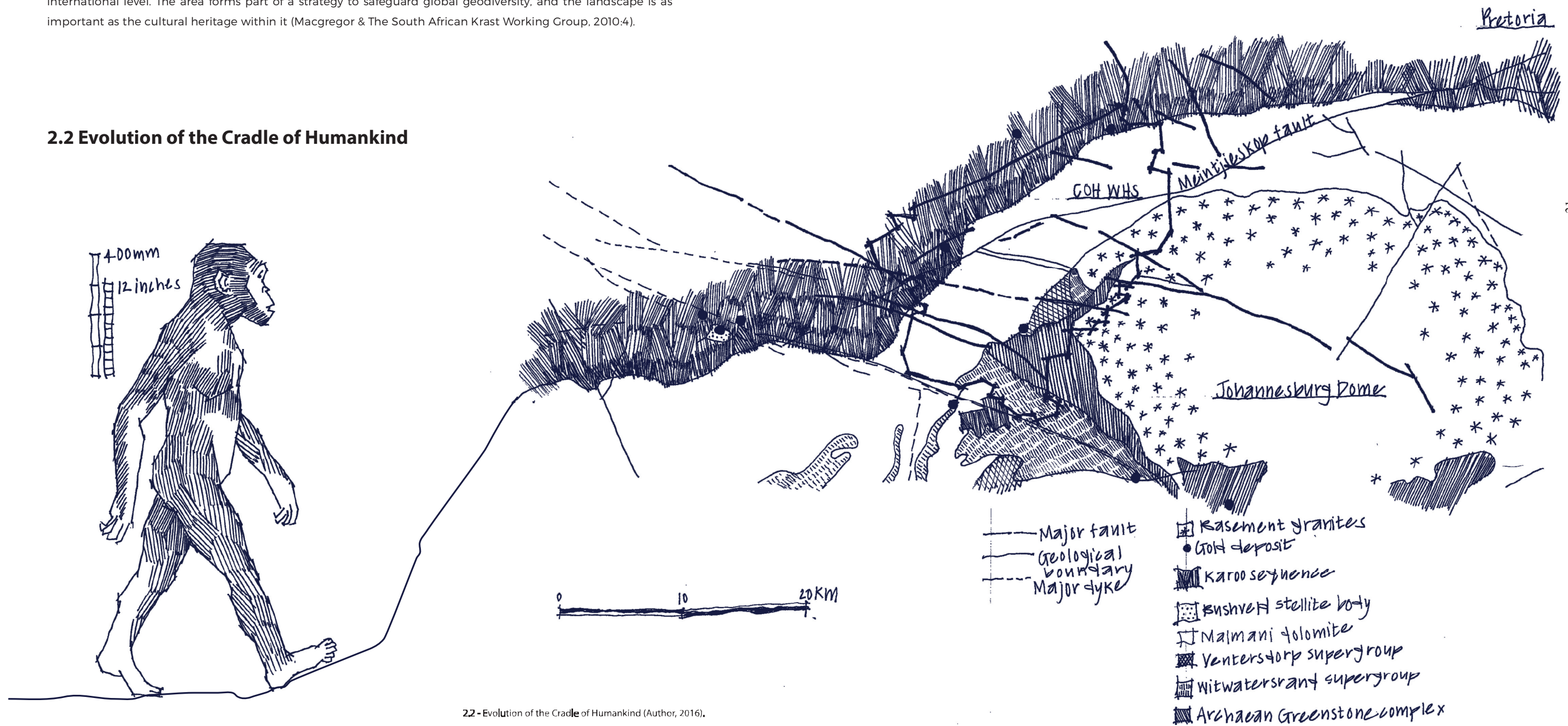
During the evaluation of the Cradle of Humankind, the following criteria were met for it to be declared a site of Outstanding Universal Value (UNESCO, 2016):

Criterion (iii): The nominated serial site bears exceptional testimony to some of the most important Australopithecine specimens dating back more than 3.5 million years. This therefore throws light on to the origins and then the evolution of humankind, through the hominisation process.

Criterion (vi): The serially nominated sites are situated in unique natural settings that have created a suitable environment for the capture and preservation of human and animal remains that have allowed scientists a window into the past. Thus, this site constitutes a vast reserve of scientific data of universal scope and considerable potential, linked to the history of the most ancient periods of humankind.

Today the landscape additionally represents an important aspect of geodiversity which is significant on an international level. The area forms part of a strategy to safeguard global geodiversity, and the landscape is as important as the cultural heritage within it (Macgregor & The South African Krast Working Group, 2010:4).

2.2 Evolution of the Cradle of Humankind



2.2 - Evolution of the Cradle of Humankind (Author, 2016).

The era known as the "boring billion" represents the time between the great oxygenation event and the first appearance of common life. There is no evidence of billion year old complex life forms, yet 2 billion years ago eukaryotic life (large cells with a nucleus) occurred, similar to amoeba, paramecia, euglena and their cohorts living today (Ward & Kirschvink, 2015:90).

35 Millennia ago the earth's climate cooled due to the rise of the eastern and southern African plateaus. This event, christened the African "superswell", caused an increase in aridification and open grassland. It has been proven through geological evidence to have

had an effect on the evolutionary and migratory events in Africa, including the appearance and dispersal of early hominins (Pickering, Kramers, Hancox, de Ruiter & Woodhead, 2011:110) In addition to the superswell creating the conditions for hominid habitation, the Johannesburg Dome affected the geology of the area, leading to the stromatolite-rich dolomite sequences deposited on a late-Archaeon continental shelf and the formation of a unique krast landscape (Dirks et. al. 2012:113). Today the landscape is vital to the region's water supply and forms part of a unique ecosystem housing a variety of organisms (Macgregor & The South African Krast

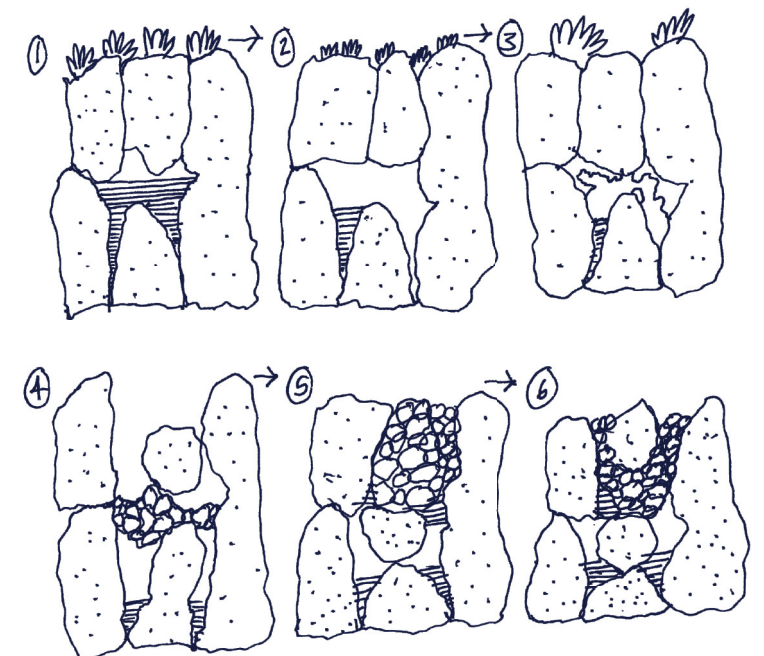
Working Group, 2010:i).

Within the specific krast geology of the Cradle, the formation of caves occurred as moisture passed through the atmosphere, collecting CO₂ particles and becoming acidic. The acid quantity rose as rain moved through the soil, resulting in a solution capable of dissolving dolomite (Eloff, 2010:5). During this time the caves were formed in submerged conditions and then drained by the eroding streams of the Crocodile drainage net. The caves, expressions of extensional tectonics, resulted in a dynamic, high-relief landscape known as the Blaauwbank River valley.

The Plio-Pleistocene landscape which preceded the Cradle landscape today is estimated to have been more forested, with gallery forests along watercourses and patchy open grasslands or woodland providing the dietary requirements of the mid-Pleistocene hominids. The landscape forms part of the Transvaal Supergroup which supports a unique ecosystem with a variety of organisms. It is due to this fact that fossil remains such as *Australopithecus africanus*, *Australopithecus sediba*, *Paranthropus robustus* and early *Homo* remained in a state of preservation (Pickering et al., 2011:23).

Many bones accumulated in caves at the Cradle were amassed from leopards feeding in trees that overhung cave entrances and from hyenas, owls and porcupines that lived in the caves. Hominins were the hunted during this time and not the hunters. Excavations of *Paranthropus* show that they had a coarse vegetation diet and the capacity to use stone tools. *Paranthropus robustus* is the best represented hominin in southern Africa and probably the best in the entire African record; it is found in Swartkrans, Drimolen, Kromdraai, Cooper's and Gondolin.

Gold was discovered during the 1880s on Langlaagte, a farm 50km south of the Cradle of Humankind on the Witwatersrand ridge. Thick seams of lime were deposited during stage 2 of the cave formation, and in following the lime seams underground, miners exposed the breccia deposits which resulted in the existence of fossils becoming known (McCarthy & Rubidge, 2005:284). The artificial process of lime mining in the 1800s and 1900s additionally altered



2.4 - The formation of a cave (Author, 2016).

the vegetation in the creation of rock piles. Partly due to these rock piles, cave entrances boast distinctive vegetation communities, as seven plant communities are spatially distributed in response to the various abiotic habitat factors, which include the presence or absence of chert. The vegetation surrounding the cave entrances is not only important for the identification of caves but assist in regulating ecosystems and endemic cave dwelling species or "troglabites".

Mining played a large part in the discovery of fossils; in 1924 palaeontologist Raymond Dart's attention was drawn to a fossil baboon by the only female student under his supervision, Josephine Salmons. Salmons noticed the skull in a friend's living room. It originated from a lime-quarrying operation near a place called Taung (Reader, 2011:188). This skull, at first appearing to be that of a baby ape, would turn out to have humanoid features not found in any known ape (Cartmill & Smith, 2009:130). Dart described the fossil as *Australopithecus africanus* (Latin: "Southern ape from Afar"), known today as the Taung child. The notion of an ape with humanoid features originating in Africa was fervently opposed by most scientists, as the conventional science of the day anticipated an Asian or European "cradle of humankind" (Maropeng, 2016b).



2.3 - The boring billion (Author, 2016).

No more discoveries were made at Taung, but the discovery of the Taung child fuelled an interest for Scottish palaeontologist Robert Broom. Upon request of General Jan Smuts in 1934, Broom became assistant palaeontologist at the then Transvaal Museum in Pretoria (now Ditsong National Museum of Natural History). In 1936 he began the search for *Australopithecus africanus*, starting at the Sterkfontein Caves. Broom's controversial use of dynamite was questionable, but his efforts to extract fossils yielded hundreds of bones and teeth resembling the infant skull from Taung. He worked at Makapansgat, Cooper's Cave, Kromdraai Cave and Swartkrans Cave. The most famous discovery by Broom is the 'most complete' australopithecine skull, *Paranthropus robustus* "Mrs Ples" (Thackeray, Braga, Treil, Niksch & Labuschagne, 2002) and the Kromdraai Ape-man.

Through his work Broom substantiated Dart's previous work, and with the publishing of his monograph in 1946, made Africa the birthplace of man (Berger & Hilton-Barber, 2006:61).

Historically the landscape contains mostly agricultural activities, in spite of lacking access to water and the appropriate soil chemistry, climate and ease of access. The degree of difficulty related to the rocky soils and slopes of the area make ploughing challenging, and have contributed significantly to the area staying in its natural state. Mainly grazing has been put into practice, with areas connected to water in the flat-sloped bottomlands showing a distinct anthropogenic influence, such as ploughing, unnatural fire regimes and foreign plant species (Eloff, 2010:123).

The fact that the Cradle of Humankind is a proclaimed World Heritage Site means it is afforded some level of protection in terms of the World Heritage Convention Act (Act No. 49 of 1999) and the National Environmental Management: Protected Areas Act (Act No. 57 of 2003), placing emphasis on its correct management in order to retain this valuable status (Eloff, 2010:8).

According to Eloff (2010:126) an understanding of the natural vegetation occurring within the Cradle should be the foundation on which management

of the area must be based. The justification for the ongoing protection of the Cradle as not only a World Heritage Site of cultural significance, but also as an irreplaceable component in the conservation of Bankenveld grassland and subterranean ecosystems associated with karst landscapes, could thereby be accomplished.

In 1999 the significance of the Cradle of Humankind was confirmed by the International Council of Monuments and Sites (ICOMOS), in recognition of its provision of a rich yield of hominin fossils bearing information on the evolution of humans over the past 3.5 million years, which includes the preservation of the prehistoric habitat and way of life (17th General Assembly of ICOMOS, 2011). The evaluation led to the naming of the Cradle of Humankind (CoH) as a UNESCO world heritage site of cultural significance, the aim being the safeguarding of the Cradle against the pressures of shifting socio-economic circumstances and decay (Eloff, 2010:1).

Today the Cradle of Humankind World Heritage Site, located an hour's drive from the major cities of Pretoria and Johannesburg, incorporates an area of 47 000 hectares containing approximately 20 main caves and an additional buffer zone of 80 000 hectares. Due to the World Heritage status of the site and agreed responsibilities, authorities have not only drawn up management plans for the site (Tourism Strategy for Mogale City Local Municipality and District Management) but also spent over R 300 million to build a visitor centre known as Maropeng in the proximity of the fossil sites. In addition to the new visitor centre, the Sterkfontein visitor centre next to the site of the Sterkfontein Cave was upgraded (Flemminger, 2008:10).

The development of the region's mineral wealth has brought great prosperity to the country as a whole. Increased knowledge of the world demands new commodities, technological advances and transformations. Although the influx of tourism poses a threat to the conservation of the sensitive cave sites, tourism holds the possibility of contributing to economic growth and increased employment opportunities for the area and its people, while creating funds for its conservation (Ndoro, 2015:393).

PARANTHROPUS ROBUSTUS

Paranthropus is based on the Greek words para meaning "beside" or "near" and anthropus, meaning "man". The Latin word robustus means "strongly built".

Paranthropus robustus is significant as it became the first "robust" species of hominid ever uncovered – well before *P. boisei* and *P. aethiopicus* – and showed that the trail leading to *Homo sapiens* was not a straight line, but one of rich diversity (Smithsonian National Museum of Natural History, 2016).

At home in parts of Africa predominantly consisting of open savannah grasslands and woodlands, the species had large teeth as well as a ridge on top of the skull, where strong chewing muscles were attached. These distinctive features permitted individuals to crush hard foods such as nuts, seeds and roots, although the species is thought to have been a dietary generalist, also eating a variety of other foods such as soft fruits and possibly young leaves, insects and meat (Dorey & Blaxland, 2015).

Although no clear connection has been drawn between stone tools and *Paranthropus robustus* fossils, experiments and microscopic studies of bone fragments show that it is likely that bones were used as tools to dig in termite mounds.



2.5 - Paranthropus Robustus (Author, 2016).

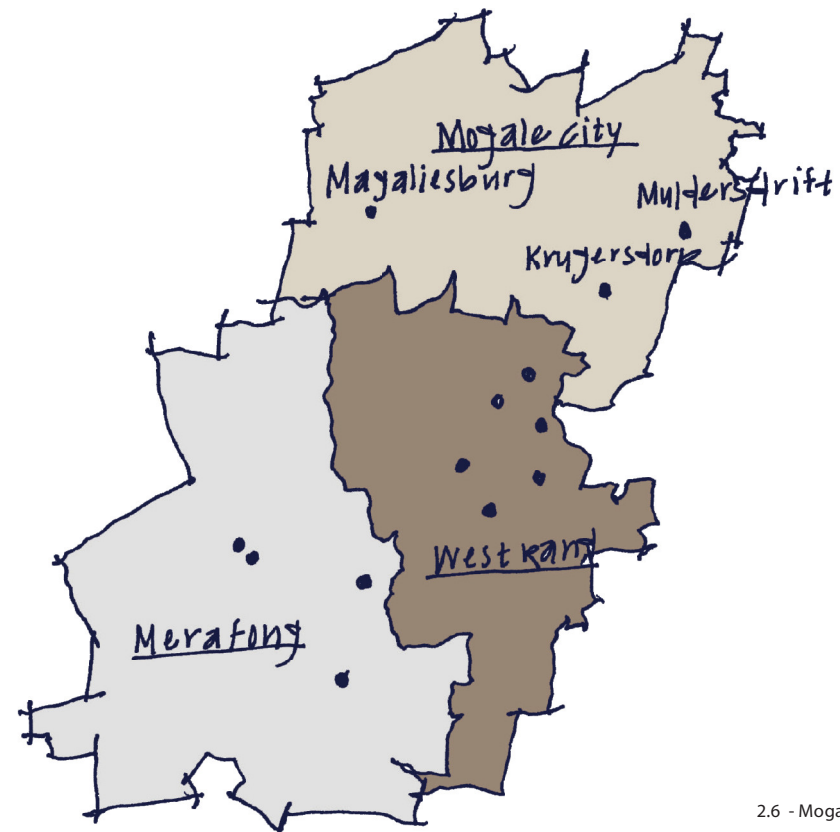
2.3 Peri-urban context analysis

2.3.1 Mogale City

Mogale City lies west and south of the Johannesburg and Tshwane metropolitan areas. The West Rand District Management Area lies within the central-northern part of Mogale City, and this area comprises the bulk of the Cradle of Humankind World Heritage Site.

The largest part of Mogale City is rural in nature, with a specific urban concentration in the south-eastern part of the municipality. The municipality also comprises the urban-rural transition zones typical of large urban areas. The spatial structure of Mogale City is made up of four major development/use zones, namely:

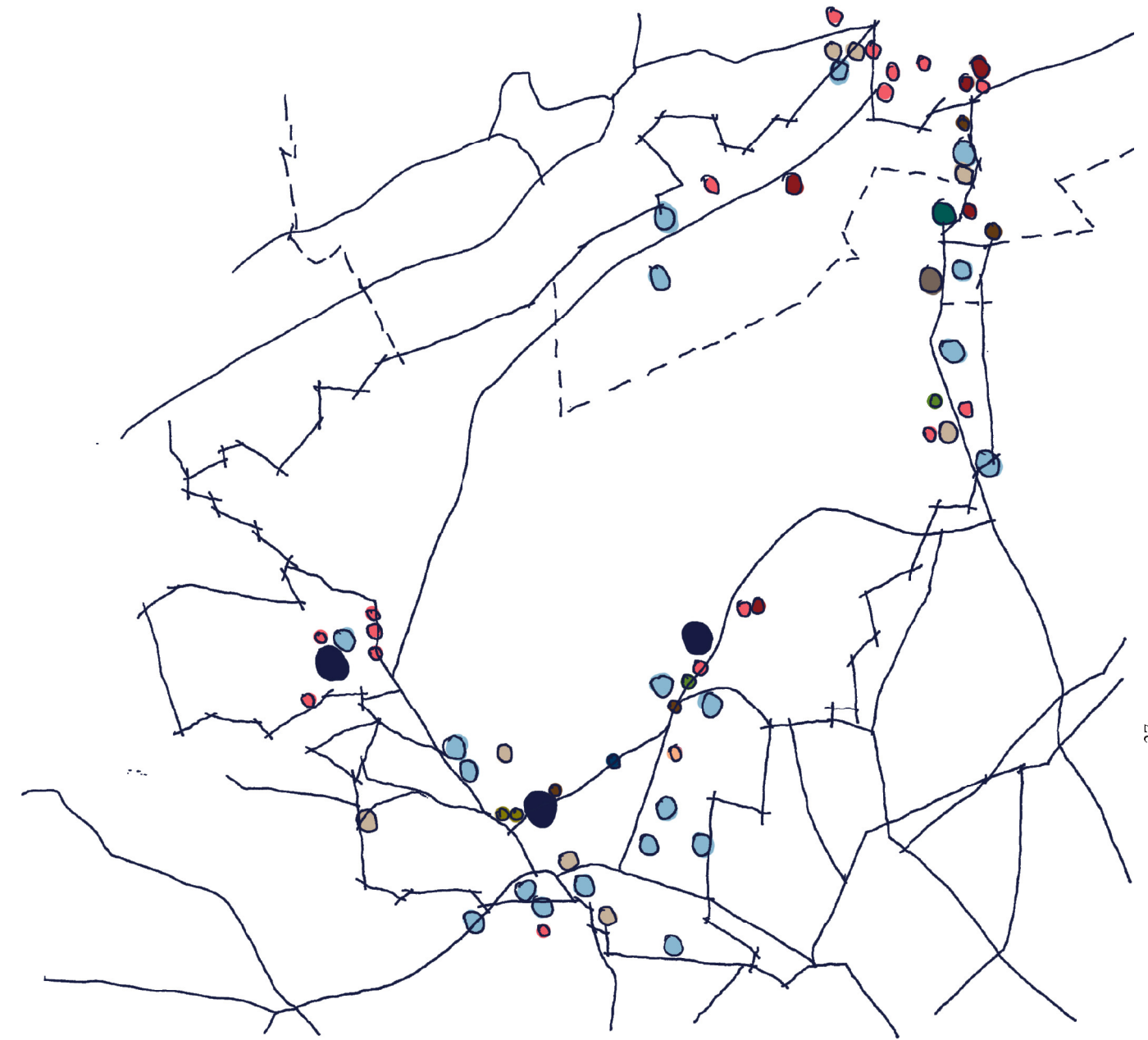
- The Muldersdrift rural/urban transition zone;
- The extensive rural environment;
- The urban area; and
- The Cradle of Humankind UNESCO World Heritage Site and Buffer Zone.



2.6 - Mogale City (Author, 2016).

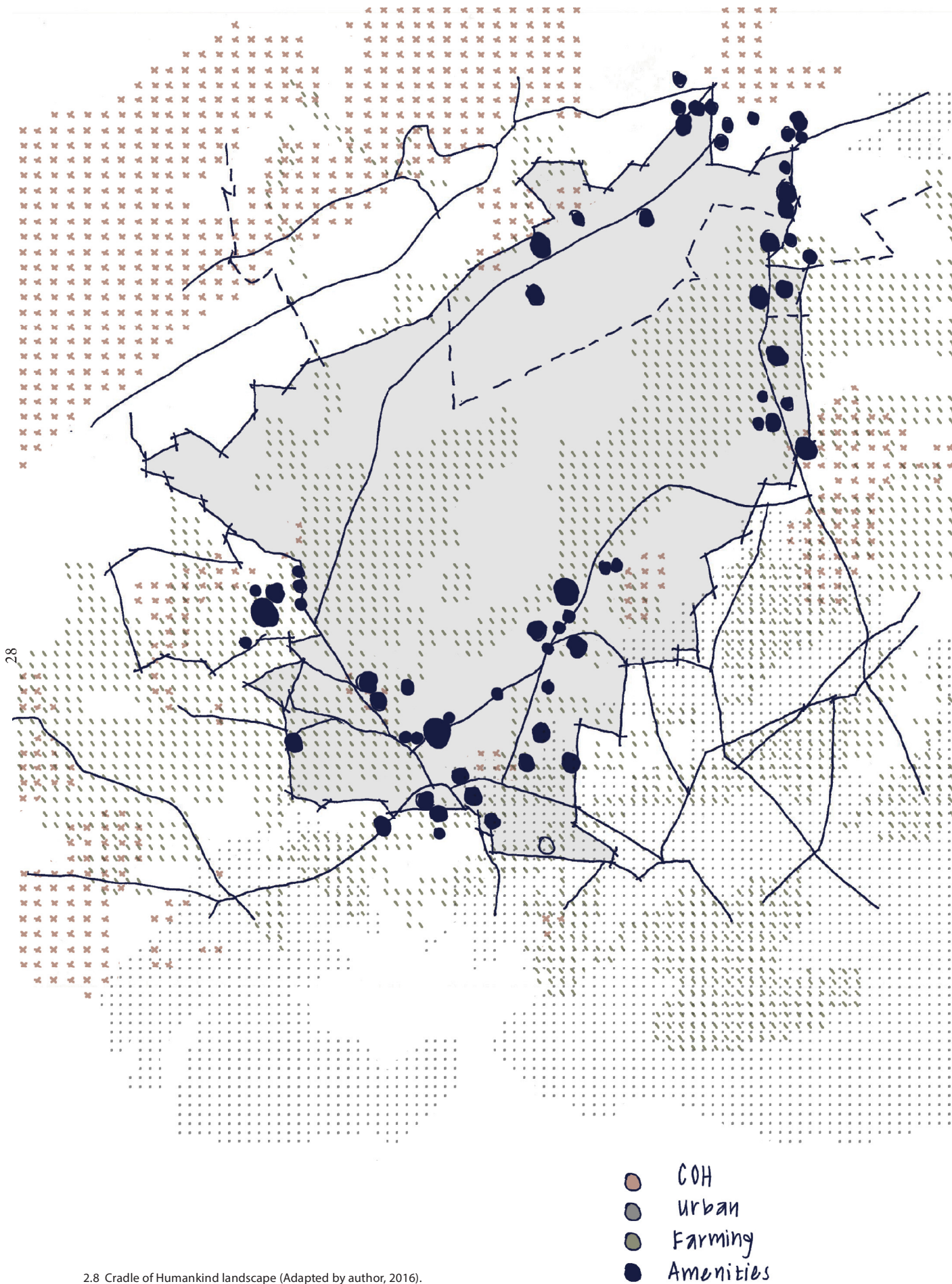
The rural environment is characterised by the following prominent features (Mogale City Local Municipality 2011:33-34):

- The Magaliesberg and Witwatersberg mountain ranges in the north-west of Mogale City;
- Nature conservation areas; and
- Rural towns such as Tarlton, Magaliesburg and Hekpoort.



- Visitor center
- Accommodation
- Extreme sports
- Wedding venue
- Religious
- Food
- Mine
- Sculpture park
- Nature reserve
- Recreational farm
- Cultural village
- Spa

2.7 - Development around the Cradle of Humankind (Adapted by author, 2016).

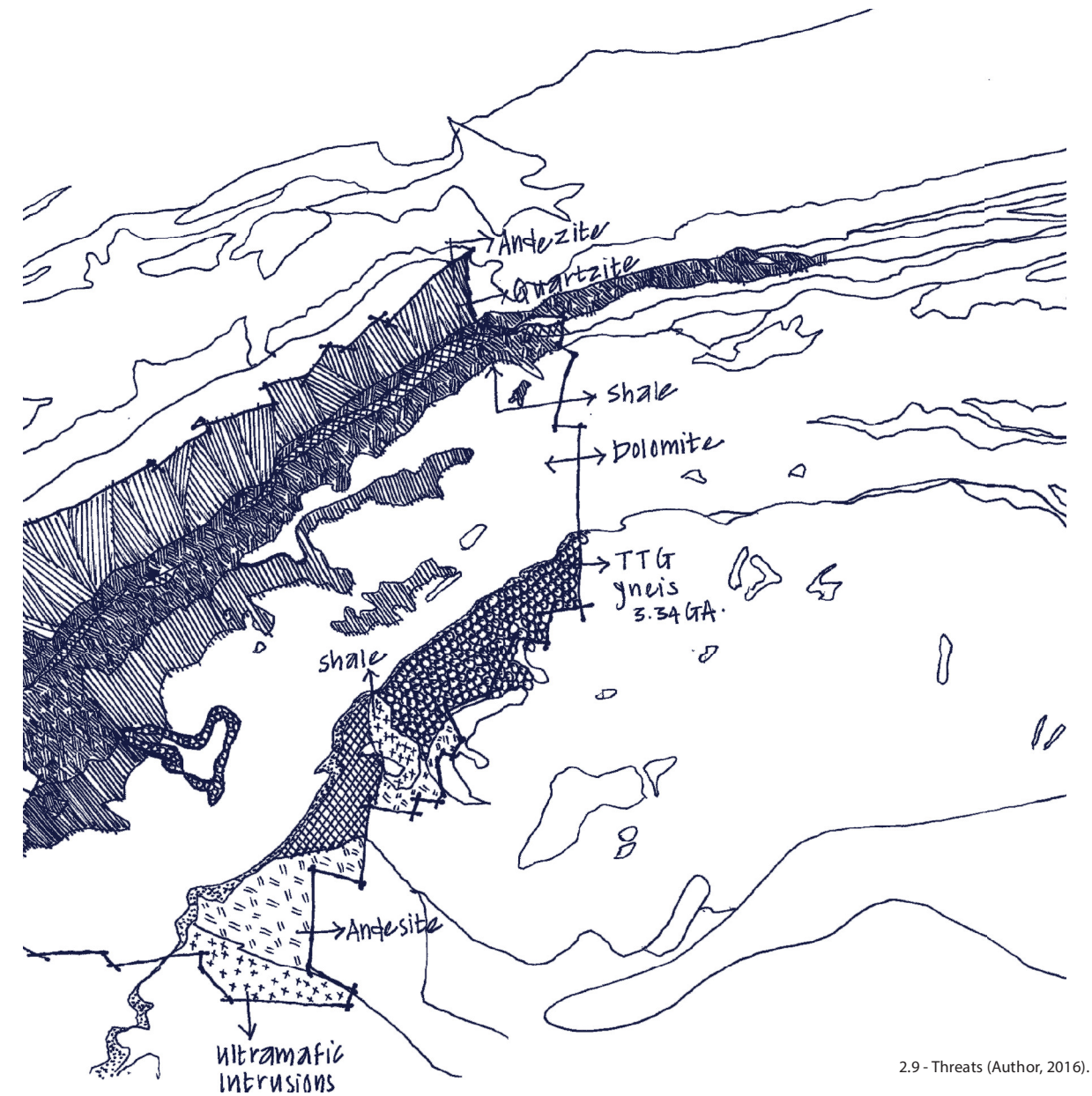


2.8 Cradle of Humankind landscape (Adapted by author, 2016).

2.3.2 Threats

The impact of the Vredefort meteorite led not only to the protection of subterranean gold streams driving gold deposits to the earth's surface, but also to an increase in oxygen, leading to more complex life forms (Berger & Hilton-Barber, 2002:52). Along with depositing gold, the impact led to the formation of the geology of the Cradle of Humankind, known today as a unique karst geology which consists essentially of shallow marine stromatolitic dolostone with variable amounts of chert. The dolomite mineral reaches a thickness of 1 450m in the Sterkfontein area (Eloff, 2010:20).

The important karst geology of the Cradle of Humankind World Heritage Site is vulnerable to contemporary human actions such as the over-use of natural resources and pollution, urban development, and acidic water decanting from the West Rand. The integrity of the site is affected by the unauthorized removal of dolomite, cave formations, fossils and archaeological artefacts by the public (Durand, Meeuwis & Fourie, 2010:74) while invasive species such as *Campuloclinium macrocephalum* have invaded pristine as well as disturbed areas, threatening ecosystems and their associated processes (Makokotlele, 2009:74-75).



2.9 - Threats (Author, 2016).

2.4 The existing framework

In order to conform to the UNESCO listing, the Cradle of Humankind Management Authority has promised to adhere to and develop the following principles (Berger & Hilton-Barber, 2006:50-51):

- To develop measures for the cultural and environmental protection and sustainable development of, and related activities within, World Heritage Sites, and ensure that the values of the WHC are given effect to;
- To promote, manage, oversee, market and facilitate tourism and related development in connection with World Heritage Sites in accordance with applicable law, the WHC and the Operational Guidelines in such a way that the cultural and ecological integrity are maintained;
- To identify cultural and natural heritage that must be transmitted to future generations;
- To take effective and active measures for the protection, conservation and presentation of the cultural and natural heritage;
- To facilitate steps that encourage investment and innovation;
- To facilitate programmes that encourage job creation;
- To take measures that ensure the values of the WHC are promoted;
- To establish and implement the Integrated Management Plan;
- To initiate steps regarding research, education, training, awareness raising and capacity building; and
- To liaise with, and be sensitive to, the needs of communities living in or near the World Heritage Sites.

As a product of the R347-million development, the Cradle of Humankind today has improved bulk infrastructure and roads, together with two visitor centres: Sterkfontein, located near the Sterkfontein Caves, and Maropeng, located a considerable distance from the fossil cave sites. Sterkfontein facilitates an exhibition, a tour of the caves, a small exhibition of the moulding of fossils process, a café and a shop. Maropeng, located outside of the Cradle itself, hosts a visitor centre, conference facilities, three restaurants, a luxury boutique hotel an

amphitheatre, accommodation for schoolchildren, visitors' information points, a marketplace, and parking.

The Cradle is managed by the Cradle of Humankind World Heritage Site Management Authority (Government Communication and Information System, 2016). The Management Authority and the Gauteng Department of Agriculture, Conservation and Environment (GDACE) were appointed in order to carry out certain responsibilities, as listed above. In accordance with the 1972 World Heritage Convention agreement, the primary goal of the Management Authority is to safeguard, preserve and interpret the Outstanding Universal Value (OUV) of the site.

The Cradle of Humankind Trust, a product of The Cradle of Humankind World Heritage Site Management Authority, consists of a community benefits programme, a scientific community, and stakeholders. The Trust was formed in terms of section 8 of the World Heritage Convention Act (Act No. 49 of 1999) and works towards the implementation of an Integrated Environment and Conservation Management Plan. The plan supports a number of specialist studies, including studies on the state of the environment, archaeology and paleoanthropology, geology, hydrology, ecology, land use and infrastructure, tourism and marketing, stakeholder participation, and financial plans.

The Cradle of Humankind World Heritage Site stakeholders include, but are not limited to, the following (Cradle of Humankind, 2016):

- Mogale City Local Municipality
- West Rand District Municipality
- Landowner associations
- Tourism establishment owner forums
- Local councillors
- Provincial government departments
- National government departments
- Local community formations
- Government agencies such as the Gauteng Enterprise Propeller (GEP), Tourism Enterprise Partnership (TEP), Small Enterprise Development Agency (SEDA) and the Culture, Arts, Tourism, Hospitality and Sport Sector

Education and Training Authority (CATHSSETA)

The cave sites at the Cradle of Humankind are researched primarily by the Evolutionary Studies Institute of the University of the Witwatersrand. Kromdraai Cave is being excavated and researched by this institute in collaboration with two Erasmus Mundus programmes, AESOP and AESOP+ (A European and South African Partnership on Heritage and Past). The programmes are composed of 21 South African and European universities and 6 associated partners. The collaboration provides unique opportunities for the promotion of natural and cultural heritage, as well as educational opportunities for not only members of the scientific community, but also the community of the Cradle.

Although the conservation and protection of natural and cultural heritage is the main driver in the management of the Cradle of Humankind, the involvement of surrounding communities is recognised as equally important. Community programmes focused on arts and crafts cooperatives have been established in the area, with a sub-unit of the Cradle of Humankind Trust ensuring benefits accruing from the World Heritage area are to

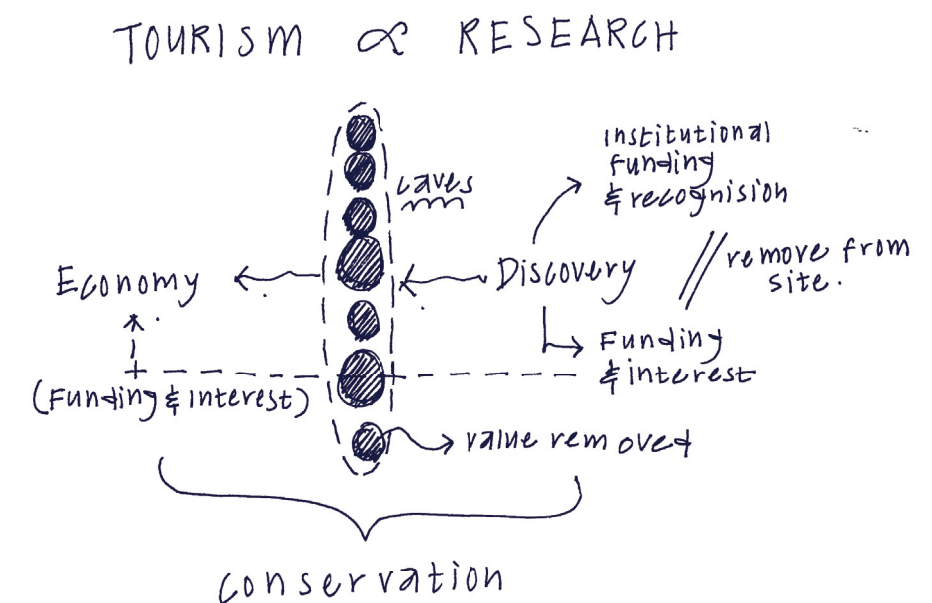
the advantage of the local communities (mostly consisting of farm workers and their families).

The following are community projects identified for the Cradle of Humankind World Heritage Site, in conjunction with the integrated development plan (IDP) of the municipalities involved (Government Communication and Information System, 2016):

- HIV/Aids clinic
- Transportation for academics/ learners
- Skills growth
- School visits
- Tourism safety monitors
- SMME development
- Craft community beneficiation projects
- Housing

The goals of the community projects are:

- Job creation
- Providing local communities with skills to work in the tourism sector
- Assisting municipalities to achieve their IDP goals
- Enterprise development
- Changing the face of business ownership



2.5.1 The peri-urban framework strategy

The Cradle of Humankind World Heritage Site and Dinokeng are initiatives of the Gauteng Provincial Government to establish geo-spatial tourism destinations close to the densely populated metropolitan areas of Johannesburg, Tshwane and Ekurhuleni. If managed and planned properly, local and international tourism can be used to add immense value to these sites with appreciation for the prehistoric remains providing contemporary worth to the area, and thereby protecting it. The area already boasts thousands of cyclists every weekend and acts as a "garden" for the city.

Taking the existing tourism networks into consideration, the framework focuses on developing a conservation strategy which relies on the economic development of the Cradle of Humankind through tourism development. The rural nature of the Cradle of Humankind and the richness of its ecology offer an opportunity for the site to become a heritage park which is rich in memory and biodiversity. The group urban framework concentrates on the southern edge of the Cradle, which acts as the gateway to the larger world heritage site and contains the highest known number of discovered fossil sites. The framework not only aims to address the issue of conservation of the world heritage site, but also aims to address the unarticulated, commodified and fragmented nature of the Cradle.

2.5.2 The methodology

The framework was developed for the Cradle of Humankind through determining a strategy for long-term preservation with short-term gains. The dynamics of tourism and conservation were analysed in order to draw on the positive qualities of each, while preventing possible economic, heritage and ecological threats.

2.5.3 The intention

Owing to the location of the Cradle being an hour's drive away from two major cities, Pretoria and Johannesburg, the area is envisioned to become a tourism corridor and an escape from the city, with activities such as hiking, sport and leisure.

2.5.4 Heritage and tourism

2.5.4.1 Fossil-based and other tourism activities

The framework takes into account the location of the fossil finds within the boundaries of the Cradle of Humankind. Due to the nature of the formation of fossils, the majority of the fossils finds are clustered around the Rietspruit and Blaauwbankspruit. These water bodies run along the major vehicular routes, next to which most other tourism activities, such as adventure sports facilities, sculpture gardens and accommodation, can be found.

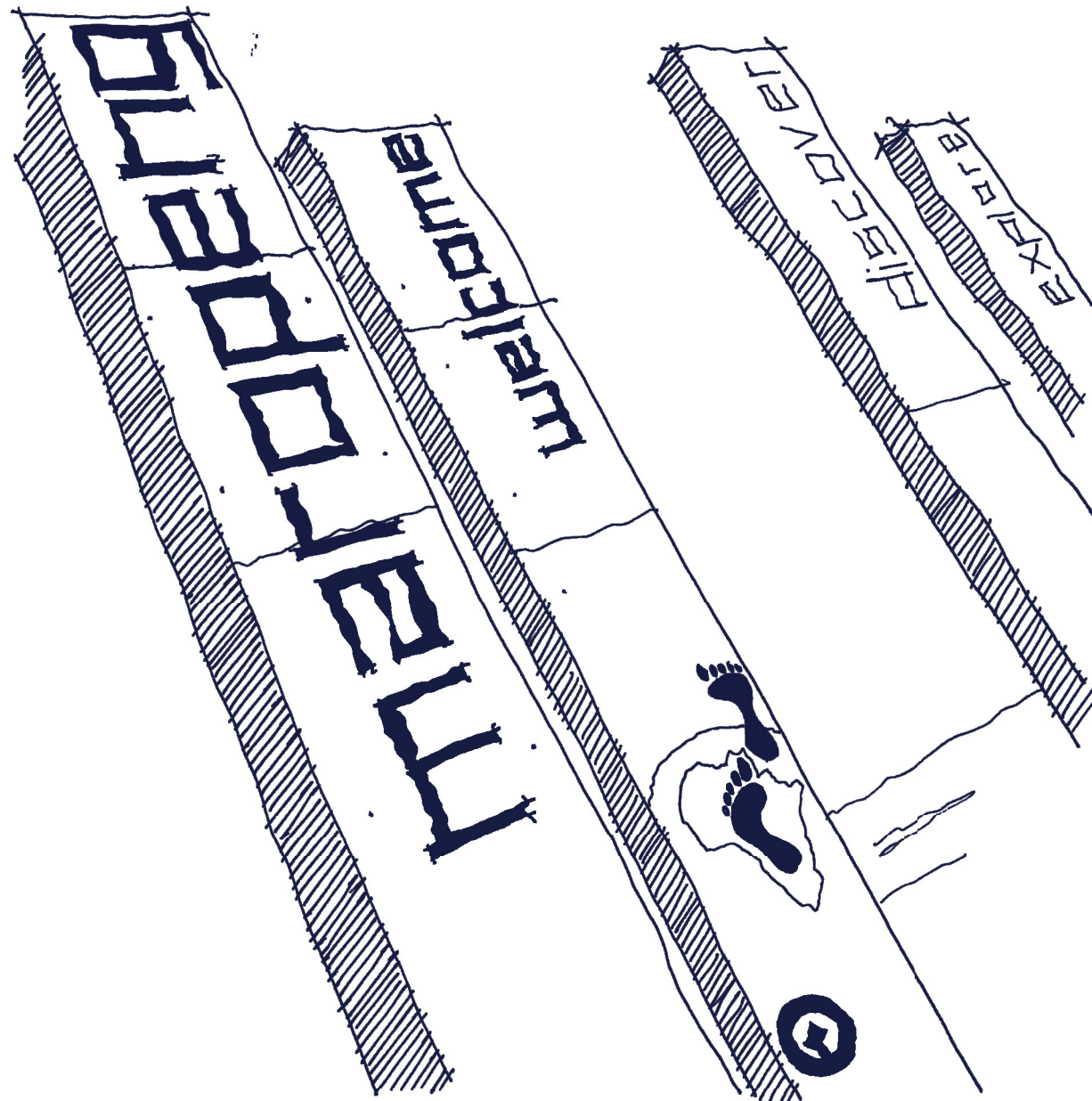
2.5.4.2 The UNESCO heritage conservation framework

The UNESCO strategy for managing tourism at World Heritage Sites includes the following (Pedersen 2002:96):

- Reducing the number of visitors to a site;
- Changing visitors' behaviour;
- Dispersing or concentrating people to reduce use in a particular area;
- Reducing conflicts between visitors;
- Reducing conflict between tourists and the communities;
- Encouraging visitors to practice particular activities; and
- Making the physical environment more resistant to impacts.

2.5.4.3 The proposed heritage framework

As proposed by UNESCO, the management strategies which have a physical or spatial impact on world heritage sites were taken into consideration in the development of the framework. The intention of the proposed framework is to cluster future commercial activities around existing ones, with tourists moving along a Cradle "corridor". This corridor, with the necessary infrastructure, accommodates tourism while managing and limiting the extent to which the tourists are allowed to move within the Cradle – an approach which protects existing sites as well as future discoveries, and connects different parts of the site as one world heritage site. Information points together with access to parking and transportation services are placed at the entrances to the corridor, limiting vehicular activity in the area and announcing the status of the site.

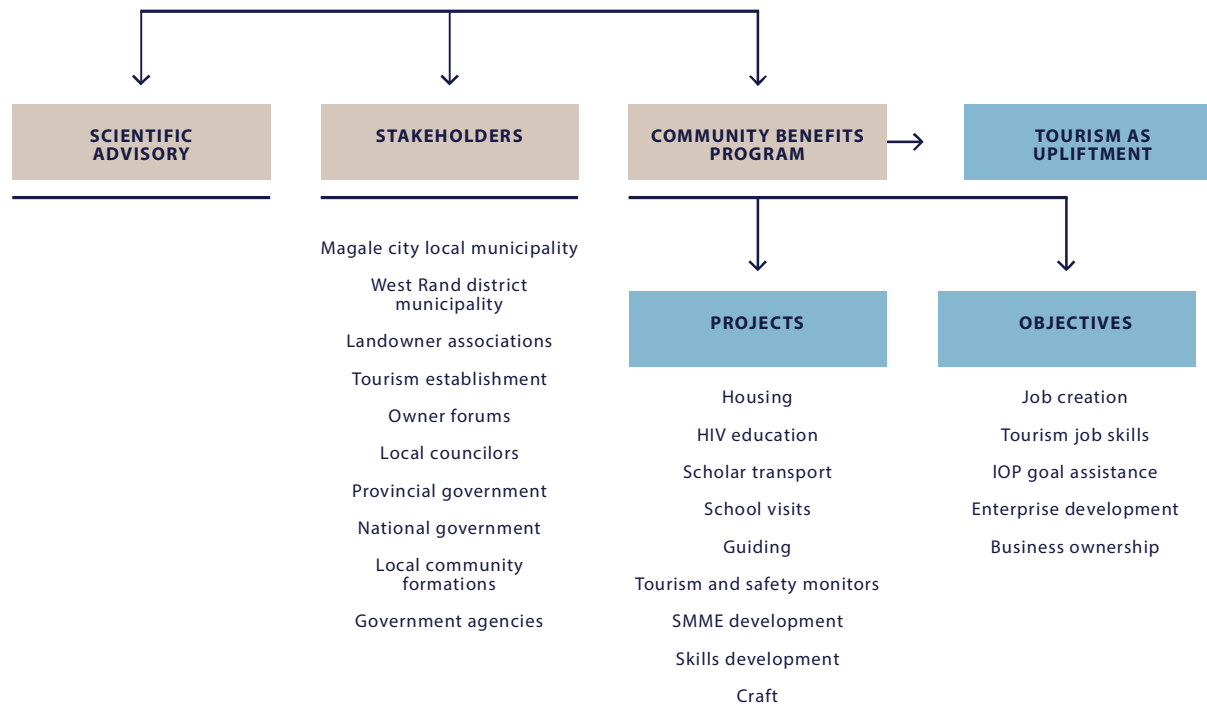


2.11 - Maropeng (Author, 2016).

2.5 The peri-urban framework proposal

In 1997 the South African government signed the 1972 UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage (Flemming, 2008:7), which focuses on the preservation and promotion of the world's natural and cultural heritage, in preparation for the Cradle of Humankind becoming a World Heritage Site in 1999 (Eloff, 2010:2). In order to promote the site's outstanding universal value, the public-private partnership between Blue IQ and the Gauteng Provincial Government undertook a R347-million development of the Cradle of Humankind (Cradle of Humankind., 2016). The University of the Witwatersrand acts as the major excavator of the area, removing fossils from their original environment to be analysed and safeguarded at the university, while the university and Maropeng a'Afrika Leisure (Pty) Ltd (MAL) manage Maropeng together with any developments on the site.

COH TRUST



2.12 - COH Trust (Adapted by author, 2016).

2.5.5 Environmental conservation

2.5.5.1 The state of the environment at the Cradle of Humankind

Together with the seminal fossil discoveries of pre-historic humans, the Cradle of Humankind also offers visitors to the area a view of the rich biodiversity of South Africa, spanning over two biomes and including the grassland and bushveld biomes (Eloff 2010:19). The Cradle is also home to a complex karst system, an underground network of rivers and cabins formed within carbonate-rich rock such as limestone and dolomite (Leyland 2008:67). The surface of the landscape, as well as the hidden karst network, is however becoming increasingly threatened by a multitude of factors such as mining, agriculture, tourism, and increased urbanisation in the area.

2.5.5.2 Climate change adaptation for natural world heritage sites

As a response to the state of the environment, Falzon and Perry (2014:1-82) developed a practical guide for climate change adaptation for natural World Heritage Sites. The guide proposes a holistic approach to the protection of the heritage and biodiversity, while retaining the site as a key for tourism. The strategy as proposed by Falzon and Perry (2014:67) includes practical and strategic actions, such as creating buffer corridors and the development of infrastructure.

2.5.5.3 The proposed environmental framework

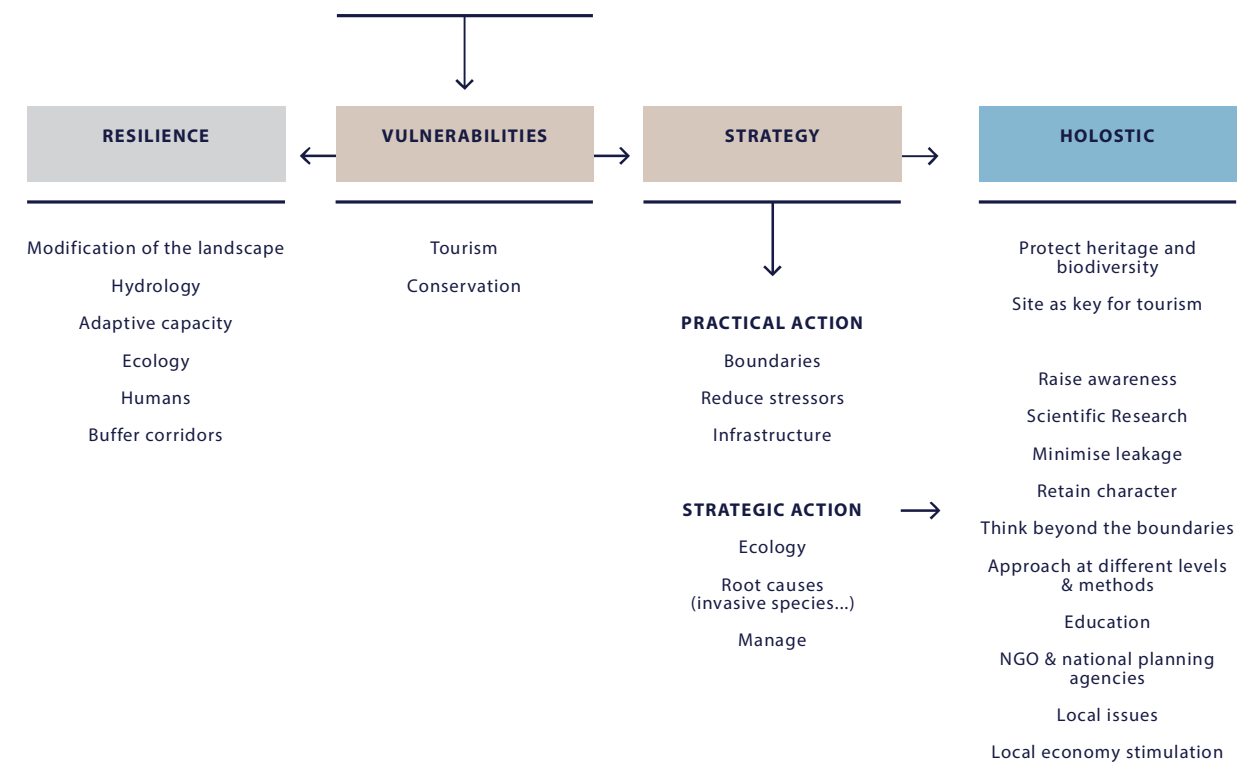
Building on the proposed heritage framework for the Cradle of Humankind, buffer zones are created around the commercial clusters to limit public access to sensitive undisturbed sites. The framework also builds on existing projects in the area, aiming at the removal of invasive species, rehabilitation of the polluted river, and community upliftment and involvement. A sensitive intervention strategy is crucial, and therefore the strategy focuses more on long-term strategic interventions with limited practical actions.

UNESCO



2.13 - The UNESCO heritage conservation framework (Adapted by author, 2016).

CLIMATE



2.14 - The proposed environmental framework (Adapted by author, 2016).

2.5.6 Community involvement

2.5.6.1 The community of the Cradle of Humankind

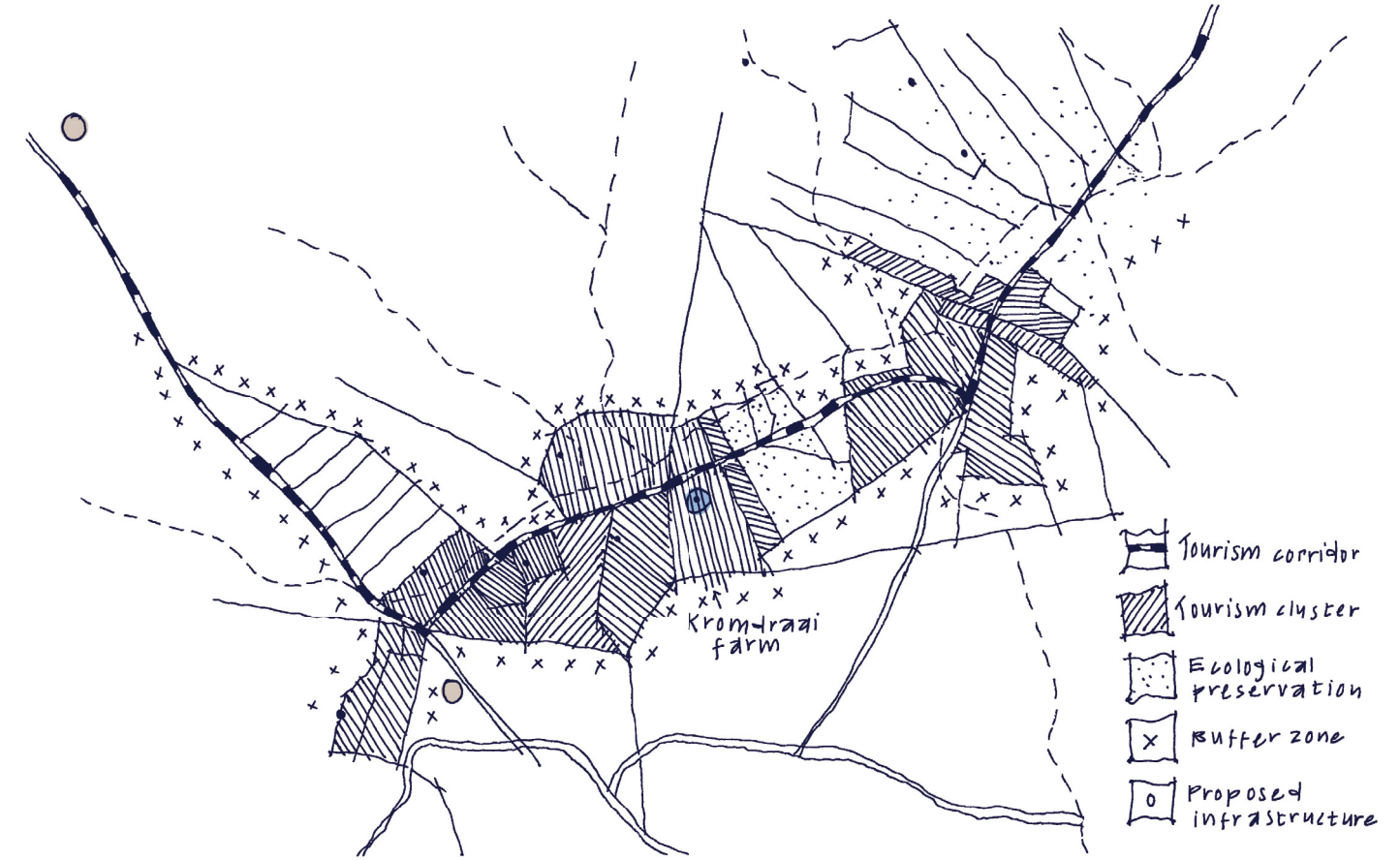
The majority of community members living within the borders of the Cradle of Humankind are employed in the agricultural sector, with more than three quarters living in informal dwellings. The Panorama, Tweefontein and Kromdraai informal settlements are the three major informal settlements found in the region, with many other small informal settlements dotting the landscape of the Cradle (Mogale City Local Municipality, 2011).

2.5.6.2 Community involvement & current stakeholders

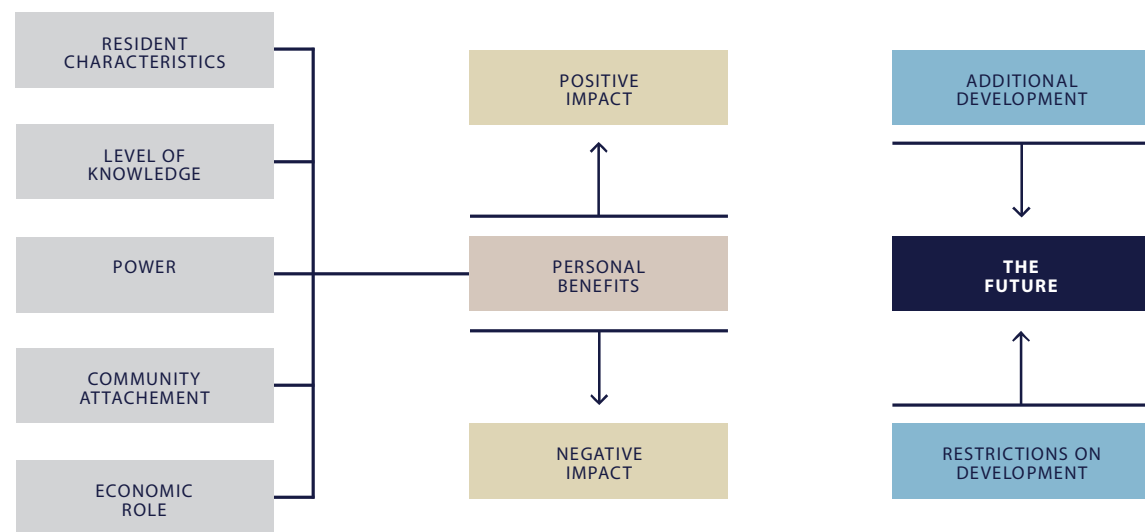
The Cradle of Humankind Trust aims to develop the region for the benefit of the tourism industry as well as the local community. The current stakeholders include the Mogale City Local Municipality, tourism establishment owner forums, and local community organisations, amongst others. The Cradle of Humankind Trust aims to use tourism as a means of upliftment, with projects such as housing and skills development. The objectives of the trust include job creation, tourism job skills, and enterprise development (Mogale City Local Municipality, 2011).

2.5.6.3 The proposed community framework

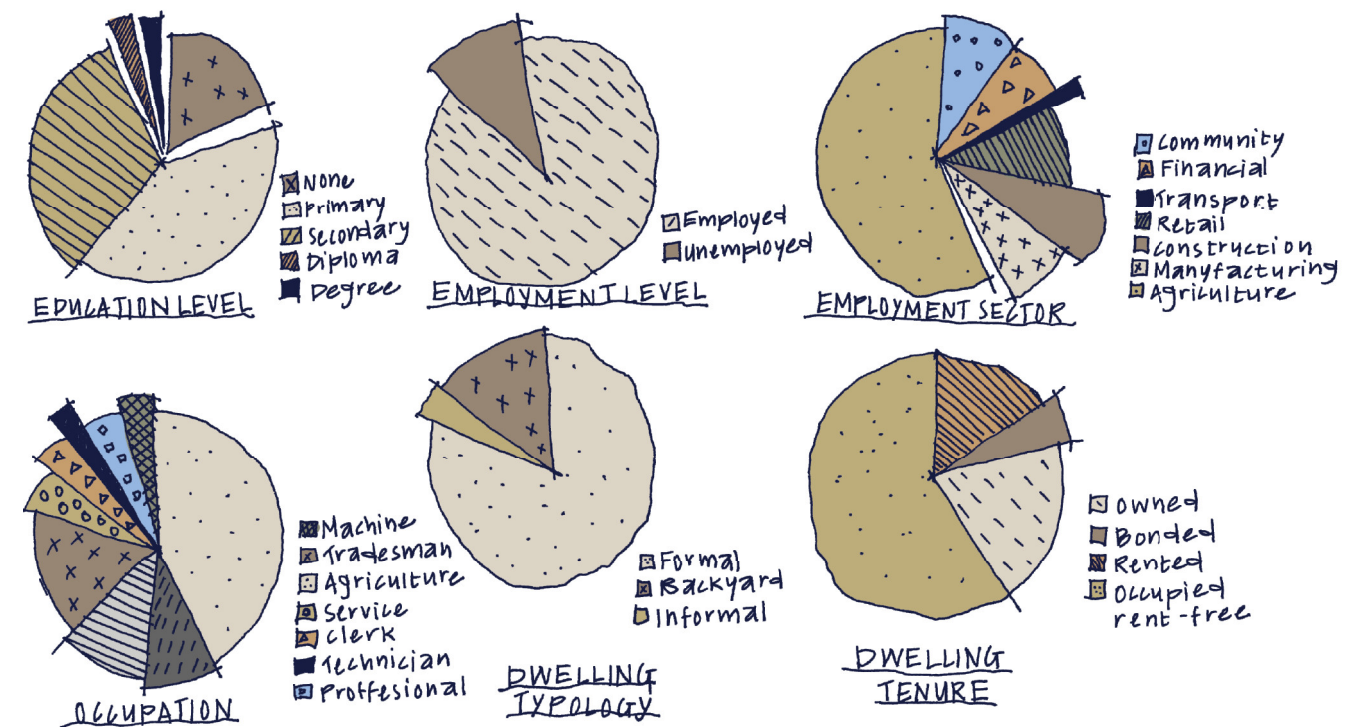
The proposed community framework aims to improve access to the commercial clusters, enabling the local communities to engage with the tourism market and thus providing economic opportunities. The framework proposes a series of bus stops and routes connecting to existing train and bus stops leading from the informal settlements along the Cradle "corridor".



2.16 - The community of the Cradle of Humankind (Adapted by author, 2016).



2.15 - The proposed community framework (Adapted by author, 2016).



2.17 - Community involvement & current stakeholders (Adapted by author, 2016).