LIVING ON THE MARGIN?

The Iron Age Communities of Mananzve Hill, Shashi region, South-western Zimbabwe

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ABSTRACT

In conventional reconstructions of the Iron Age archaeology of southern Africa, drylands have long been viewed as marginal landscapes that did not host any significant agropastoral communities in the past. Against this background, this study explores the discourse of dryland marginality in southern Zambezia using the Shashi region as a case study. Archaeological surveys and excavations were conducted to retrieve reliable data for establishing the settlement history and adaptation strategies of Iron Age communities that lived in this landscape. The study was guided by the concepts of vulnerability, adaptation and resilience, as well as landscape archaeology. Results from excavations conducted at Mananzve, one of the surveyed and excavated sites, show that this part of the Shashi region has a long settlement history spanning the Early Iron Age and the Later Iron Age. Analyses of the recovered material culture shows that Iron Age communities that resided at Mananzve adapted various methods of indigenous dryland agriculture to maintain food security. These findings show that adaptation is context-specific and challenge the designation of drylands such as the Shashi region as ‘marginal’, since that term undermines the adaptive capacity and resilience of Iron Age communities.

Key words: Drylands, Margin, Adaptation, Iron Age, Shashi region, Mananzve

DECLARATION

This is to certify that the results and conclusions presented in this thesis are my own and where the work of others has been used it has been properly referenced. This thesis has not been submitted for a degree at any other institution of higher learning.

ACKNOWLEDGEMENTS

I am indebted to numerous individuals and organisations for their support and advice towards completion of this work. I owe a big debt of gratitude to my supervisor and mentor, Associate Professor Shadreck Chirikure for the success of this project. My first 'informal encounter' with his wisdom of 'the things of the past' was watching him on a Shoreline series on SABC 2 in 2012; little did I know that one day I would become his student. Professor Chirikure initiated the project on Mananzve and invited me to take over through facilitating a Grant-Holder-linked bursary from his Archaeometry and Urbanism project making my stay at the University of Cape Town (UCT) possible. Working with him renewed my interest in the Iron Age. He introduced me to a lot of ideas, particularly on African philosophy, and most of these shaped this study. I am humbled by his willingness to attend to my frequent requests, editing my numerous drafts and, granting me access to his library among many other things. Even though busy, he facilitated and accompanied me on fieldwork at Mananzve; I am forever indebted to him for his moral support and desire to nurture indigenous archaeologists. Dr Foreman Bandama laboured tirelessly in teaching me the technicalities of artefact studies and shaping my drafts. Your generosity went a long way.

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All errors and views are solely my responsibility

DEDICATION

To God, my parents, my late brother Bobby, and the people of Gwanda South

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER ONE

INTRODUCTION AND RESEARCH AGENDA

"This tendency to overlook communities on the margins is embedded in a deeper reluctance of archaeologists to recognize nonnormative iterations of social life in past societies" (Porter 2013: 5).

1. 1. INTRODUCTION

One of the major ironies of modernity is that, on the one hand, climate science emphasises how 'vulnerable' communities living on the world's drylands[1] are because they must constantly adapt to avoid extinction (Tyson & Preston-Whyte 2000), yet, on the other, archaeology continues to reveal a sustained history of human habitation of the same arid lands (Barker & Gilbertson 2000). In modern times, drylands have come to be seen as marginal landscapes for human settlement, where those who brave the harsh conditions barely cope (Porter 2013).

This presumption also applies to southern Africa, a region that has its share of drylands that have been described as marginal and unsuitable for human habitation since the beginning of colonialism (Summers 1960, 1967; Vincent & Thomas 1960; Robinson 1965a; Ford 1971; Huffman 2015:21). In fact, the establishment of colonialism in what is now Zimbabwe was followed by a classification of land into five 'natural' agro-ecological zones basing on rainfall and soil fertility levels (Vincent & Thomas 1960). Areas with high rainfall and soil fertility were classified as Regions 1, 2 and 3. These were considered ideal for human habitation. Dryland areas - located mostly in the Lowveld, such as the Zambezi Valley, Save Basin, Limpopo Valley and the Shashi region (Figure 1.1) - were classified as Regions 4 and 5. These were regarded as marginal landscapes only worthy of extensive cattle farming owing to constant aridity and tsetse-fly infestation (Vincent & Thomas 1960).

[1] These are areas which receive irregular and very low precipitation and high temperatures. These can be dry sub-humid, semi-arid, arid and hyper-arid (Barker & Gilbertson 200:3-6).

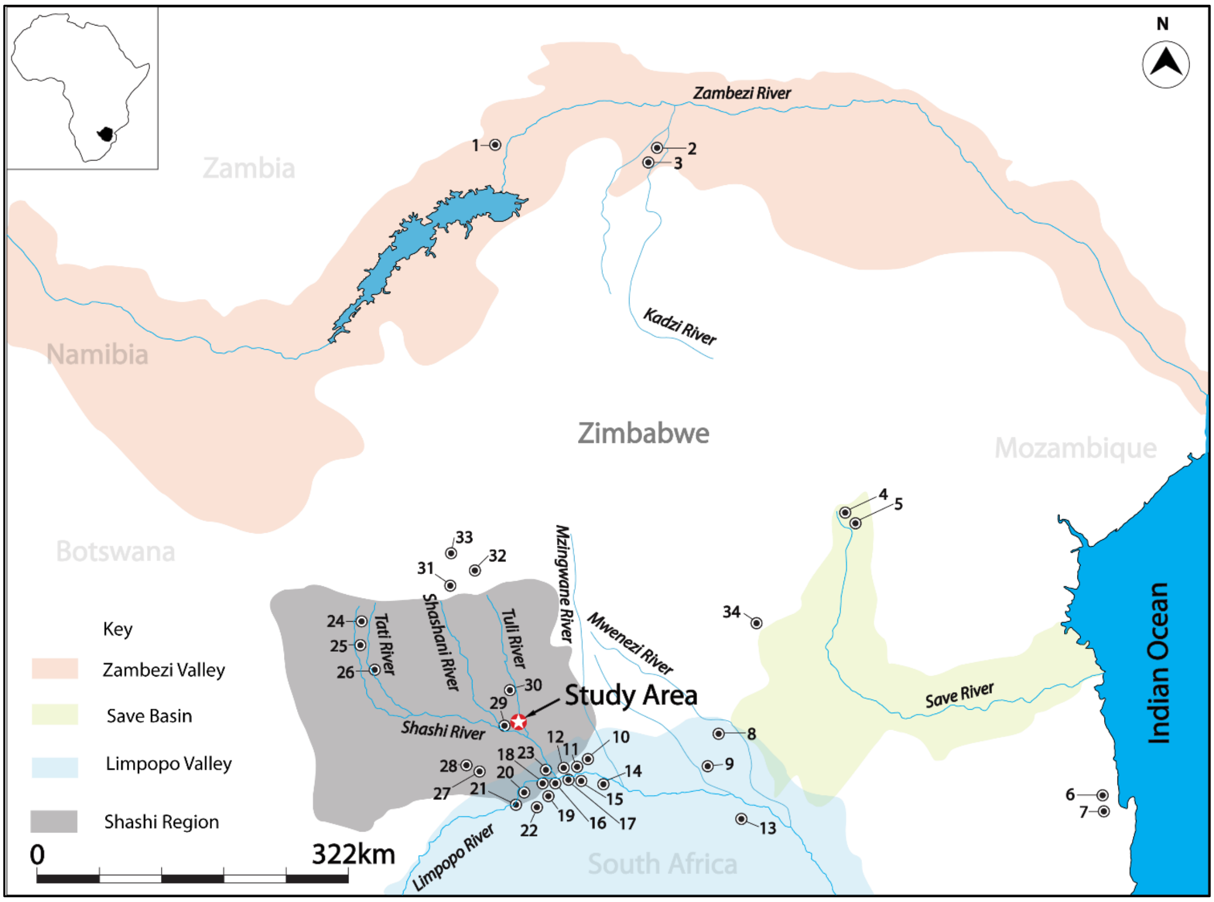


Figure 1. 1:Landscapes of southern Zambezia and some sites mentioned in the text: 1. Ingombe Illede, 2. Kadzi, 3. Kasekete, 4. Ndongo, 5. Charumani 2, 6. Chibuene, 7. Manyikeni, 8. Mwenezi, 9. Mulumba, 10. Tshobwane, 11. Mutshilachokwe, 12. Mtao Village 16, 13. Thulamela, 14. Weipe, 15. Schroda, 16. K2, 17. Mapungubwe, 18. Samaria, 19. Faure, 20. Leokwe, 21. Rhodes Drift, 22. JC Hill, 23. Megwe, 24. Domboshaba, 25. Selolwe, 26. Vumba, 27. Toutswemogala, 28. Taukome. 29, Mapela and Little Mapela, 30. Jahunda, 31. Khami, 32. Danamombe, 33. Tabazikamambo, 34. Great Zimbabwe (Adapted from Google Map's terrain view)

Using this agro-ecological classification, the archaeology of Iron Age (CE 200-1900) communities in southern Zambezia[2] was widely understood in the context of the highly productive Highveld and Middleveld, and the marginal Lowveld (Summers 1960: 270). As such, the highly productive areas were believed to have attracted and hosted most Iron Age settlements, while the Lowveld was considered unfit for human habitation. In fact, Roger Summers (1960:270) concluded that the Lowveld drylands in Southern Rhodesia were

[2] The area drained by Zambezi and Limpopo Rivers

‘archaeologically negligible’, because they could not support Iron Age communities and consequently were avoided (see also Beach 1994).

This view influenced most archaeological and historical research in southern Zambezia (e.g. Phillipson 1969:35; Ford 1971; Cobbing 1976; Sinclair & Lundmark 1984; Beach 1994). For instance, basing on Summers’s (1960) spatial data, Sinclair & Lundmark (1984: 281-286) carried out cluster and density analyses of Iron Age sites in southern Zambezia and produced distribution maps that presented the northern and southern Lowvelds as largely unoccupied during the Iron Age. These maps were used by Beach (1994: 18-23) to formulate his Great Crescent Theory which stated that the majority of the population in southern Zambezia was concentrated on an area of the plateau that forms a crescent shape (Figure 1.2). In Beach’s model, there are hardly any significant Iron Age settlement in the Shashi region and other drylands in the Lowveld (Figure 1.2). Surprisingly, Beach’s statement appeared almost three decades after the Rhodesian Schools Exploration Society had carried out small-scale surveys that found a number of prominent Iron Age settlements in the Shashi region and excavations were conducted at some of these. These settlements included Mapela and Little Mapela (Garlake 1966:19-21), as well as many other sites extending eastwards to Beitbridge (Fig. 1.1). Elsewhere, Robinson (1965a) had also documented drystone-walled settlements of the Musengezi communities in the Zambezi Valley - another area assumed to be marginal. Furthermore, although Mapungubwe and K2 had attracted research interest from the early 1930s and are located in a comparably drier environment, in an area nowhere near an oasis, their location did not direct archaeological interest to other similar arid environments.

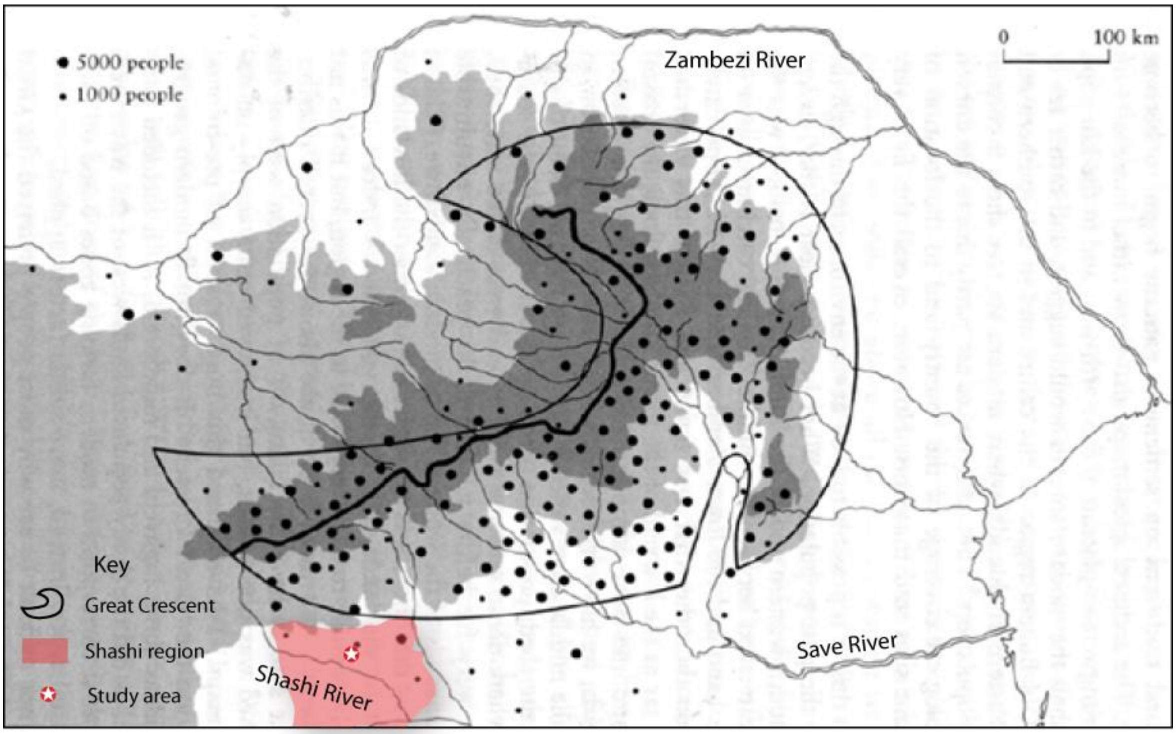


Figure 1. 2: The population of the Great Crescent in relation to that of the Shashi region and the study area, adapted from Beach (1994:19).

With time, however, it was recognised elsewhere that the so-called marginal areas are also worthy of detailed studies (Foley 1981; Crumley 1994; Redman 2005). This prompted archaeological research in lowland areas such as the Zambezi Valley (Pwiti 1996), the Limpopo Valley (Manyanga 2001, 2006; Mothulatshipi 2008), Save Basin (Shenjere 2011) and north-eastern Botswana (Denbow 1983; Van Waarden 2011, 2012). Growing research, by Denbow (1983), Pwiti (1996), Manyanga (2001, 2006), Mothulatshipi (2008) and Van Waarden (2011, 2012) demonstrates that numerous farming communities sustained their livelihoods in these marginal landscapes formerly considered to be archaeologically barren. They revealed that drylands offered many opportunities that attracted large farming populations throughout the Iron Age and thereby undermined the drylands' designation as unsuitable for farming settlement (Denbow 1983; Pwiti 1996; Manyanga 2006). The question that comes out strongly is: By whom are these landscapes being marginalised - archaeologists or inhabitants of the area? Consequently, the above findings encourage more archaeological studies in dry and arid regions, such as the broader Shashi area, to investigate how different farming communities lived and sustained themselves through time. It is within this framework that this research seeks to make a contribution.

1. 2. BACKGROUND TO THE IRON AGE OF SOUTHERN ZAMBEZIA

The Iron Age of southern Zambezia is associated with sedentary farming communities that practised cattle and small stock farming, metallurgy and pottery making (Hall 1987). It has been divided into the Early Iron Age (EIA) (CE 200-900), the Middle Iron Age (MIA) (CE 900-1300) and the Later Iron Age (LIA) (CE 1300-1840) (Huffman 2007). Scholars trace the origins of pioneer farmers to a cradle in West and East Africa, from where they entered Southern Africa sometime around CE 200. Archaeologically, this process has been recognised through radiocarbon dates and the distribution of distinctive ceramic styles such as the Urewe facies (type site Urewe), which is part of the Eastern Stream, and in the West through Kalundu ceramics, which forms the Western Stream (Phillipson 2005).

Between CE 300-550, the presence of the EIA communities in southern Zambezia was widely characterised by Gokomere/Ziwa ceramics, which are dominated by comb-stamping motifs. Later, around CE 400, these spread into northern Zimbabwe in the drylands of the Zambezi Valley as Kadzi facies (Pwiti 1996: 154). By CE 700, Gokomere/Ziwa farmers had spread into south-western Zimbabwe and north-eastern Botswana, and their pottery developed into the Zhizo facies (CE 700-1020), mostly decorated with horizontal and diagonal rows of comb-stamping, bead-bangle impressions, incisions and occasional polychrome designs (Robinson 1965b; Huffman 1974, 2007). Later, around CE 900, some Zhizo communities moved into the Limpopo Valley (Hanisch 1980; Manyanga 2006) and this gave rise to the Leokwe facies sometime between CE 1000 and 1200 (Calabrese 2007). Equally, Zhizo and the Taukome facies in north-eastern Botswana developed into Toutswe facies between CE 1050 and 1300 (Denbow 1983).

Leopard's Kopje communities, identified by their incised wares, are believed to have settled in the Limpopo Valley around CE 1000 before spreading to south-western Zimbabwe and north-eastern Botswana (Huffman 2007). Basing on ceramic typology, the Leopard's Kopje has been divided into two geographical variants – northern and southern facies. The northern group incorporates Mambo (CE 1000-1250) and Woolandale (CE 1250-1400), while K2 (1000-1200) and Mapungubwe (CE 1250-1300) represent the southern group (Robinson 1965b, 1985; Huffman 1974, 2007; Kiyaga-Mulindwa 1990).

Although the two clusters are stylistically related, the K2-Mapungubwe cluster is better known, as a result of having received more analytical attention. Around CE 1290, Mapungubwe collapsed owing to a drought caused by the Little Ice Age (Huffman 1996). Conventional thinking suggested that this drought forced the Leopard's Kopje farmers to move out of the Limpopo Valley into the Toutswe area in the north-eastern and Great Zimbabwe landscape in south-eastern Zimbabwe and into the Soutpansberg (Loubser 1991; Huffman 2000). However, recent research reveals that, around CE 1290, the Limpopo Valley was wetter than its current state (Smith 2005), and that Leopard's Kopje communities continued to settle in the Limpopo Valley, as attested to by sites such as Mutshilashokwe, Tshobwane, Malumba, Mwenezi Farm and Bosutswe (Manyanga 2006; Denbow *et al.* 2008). Furthermore, the Limpopo Valley continued to be attractive for hosting Iron Age settlements and economies as evidenced by the arrival of the Sotho-Tswana groups recognised by the Icon facies around CE 1300 (Hanisch 1979).

It is possible that around CE 1250, some of the Leopard's Kopje communities in south-western Zimbabwe developed into Khami - an entity characterised largely by pottery decorated with polychrome bands and panels (Robinson 1959; Chirikure *et al.* 2002; Chirikure *et al*. 2013). Between 1425 and 1685, Khami was the capital of the Torwa state which was succeeded by Danamombe, the centre of the Rozvi-Changamire dynasty that ruled from multiple capitals from 1685 to 1839. In the North lay the Mutapa state which had multiple capitals between the plateau and the Lowlands (Beach 1980; Pikirayi 2001). A substrate of the Khami is believed to have migrated to the Limpopo Valley and Soutpansberg around CE 1400 (Huffman & Du Piesanie 2011). This sowed the seeds for the development of the Venda (Loubser 1991).

This abridged version of the Iron Age archaeology of southern Zambezia shows that first - and second - millennium CE Iron Age settlements were distributed between the Zambezi Valley and the Limpopo Valley. Across this large area, communities kept cattle and goats, farmed millet and sorghum, and worked and processed metal. Taking advantage of context-specific situations, the Iron Age communities were not necessarily limited in their settlement choices by environmental constraints such as tsetse-fly infestation, as implied by Summers (1960) and Ford (1971). In fact, many communities had indigenous ways of controlling tsetse flies as an adaptation strategy for occupying lowland areas (Torr *et al*. 2011). Therefore, the evidence as it currently exists indicates continued settlement in both lowlands and drylands alongside the so-called productive areas. This raises the need for research that challenges the perceptions of drylands as marginal.

1. 3. RESEARCH AIMS

On the basis of the evidence and Iron Age settlements known at this time, and that which has been summarised in the previous section, taking inspiration from Porter (2013), who argues for an open-minded investigation of prehistoric landscapes that sustained human livelihood and yet are still viewed as marginal, this thesis seeks to contribute to emerging discourse on human responses to environmental constraints and opportunities, using the Shashi region as a case study. The objectives are:

1. To explore the identity and settlement history of Iron Age communities that lived on the area between the Shashi and Tuli rivers in the broader Shashi region, using the site of Mananzve as a case study.
2. To investigate the material culture from the excavations in order to identify diachronic adaptation strategies adopted by some of the communities that resided in the area across time

These objectives were developed and interrogated using theory linked to the concepts of vulnerability, adaptation and resilience (O'Brien & Holland 1992; Holling & Gunderson 2002; Redman 2005; Adger 2006) as a framework within which to interpret and understand human-environment relations across time and their implications for the characterisation of the broader Shashi region as a marginal landscape. Archaeological surveys and excavations were conducted to retrieve reliable data for evaluating context-specific human responses to the local environment over time. The material culture from the excavations was studied using standard analytical techniques (Caple 2006) as a basis for thinking about how communities at different time periods adapted to their landscapes. The results provided a context-specific opportunity to question the suitability of the label 'marginal' as a descriptor of the Shashi region.

1. 4. THESIS OUTLINE

Chapter Two provides a critical review of the biophysical attributes and background of the Shashi region. **Chapter Three** outlines the theoretical frameworks that informed this study and the data-collection techniques that were used. **Chapter Four** presents the survey and excavation data. **Chapters Five and Six** present typological studies of ceramics, and glass beads as chronological indicators for identifying and dating the groups that resided at Mananzve. **Chapter Seven** presents a detailed analyses of material remains and features that were recovered at Mananzve. They are then discussed in relation to the question of livelihoods of the residents of Mananzve. **Chapter Eight** discusses the findings of the study and their implications for the discourse of drylands marginality within the context of the Iron Age and concludes the study by highlighting the major results, limitations of the study and avenues for further research.

CHAPTER TWO

WHOSE MARGIN? BACKGROUND TO THE SHASHI REGION

"Look at those cows and goats…where else do you find such healthy animals. To you this area is dry and dusty but give me land anywhere, I will not accept it. This is my home; all my wealth is here…" (Orders Shakespeare Mlilo[3], pers. comm. 2013).

"In sum, because of environmental constraints, Mapela[4] was an unlikely place for the evolution of social complexity" (Huffman 2015: 21).

2. 1. INTRODUCTION

The Shashi region (Figure 2.1) comprises the landscape drained by the Shashi River[5] which rises from north-eastern Botswana flowing into southern Zimbabwe and northern South Africa where it merges with the Limpopo River which then flows eastwards to the Indian Ocean. The confluence of the Shashi and Limpopo Rivers marks the modern-day boundary between Zimbabwe, Botswana, and South Africa. Before the partition of Africa at the Berlin Conference of 1884-5, which created geopolitically fixed territories that divided the Shashi region into north-eastern Botswana and south-western Zimbabwe, it was once one territory. This included the Limpopo Valley near the confluence of the Limpopo and Shashi Rivers which is now treated as the edge of the Shashi region yet they experience similar climatic settings (1:2 500 000 Mean Annual Rainfall Map of Zimbabwe, 1984).

The area was inhabited by related and interacting peoples in precolonial times (see Von Sicard 1959), but since the onset of colonialism, this area was viewed as marginal for farming because of high temperatures and tsetse-flies (Summers 1960; Ford 1971; Beach 1994; Huffman 2015). As already outlined above, archaeological research in north-eastern Botswana (e.g. Van Waarden 1998, 2011, 2012) and the lower Shashi region in Zimbabwe (Manyanga 2006; Mothulatshipi 2008) has identified a long-term history of human settlement. This history

[3] Former Member of Parliament of Gwanda South and Councillor of Ward 19 (Mlambapele) was born 1951

[4] Mapela is situated on the southern edge of the Shashi region two kilometers north of the Shashi and Shashani River's confluence

[5] Also known as Shashe River

directs the research spotlight on the under-researched area of the Shashi region. This is the area bordered by Shashi, Shashani, Mapate and Tuli Rivers in Gwanda South in south-western Zimbabwe (Figure 2.1).

In this chapter, I outline the physical environment and summarise comparative historic and ethnographic information on livelihoods and farming in the area and how both have interacted and been shaped through time.

2. 2. PHYSIOGRAPHY

Topography and Drainage

The Shashi region forms the southern limit of Zimbabwe's Lowveld, whose altitude fluctuates between 150 and 600 m (Summers 1960). The landscape is semi-arid and is dominated by flat plains, which are flanked by gneiss kopjes of the basaltic Karoo systems, particularly along the Shashi and Tuli Rivers' Valleys (Smith 1966).

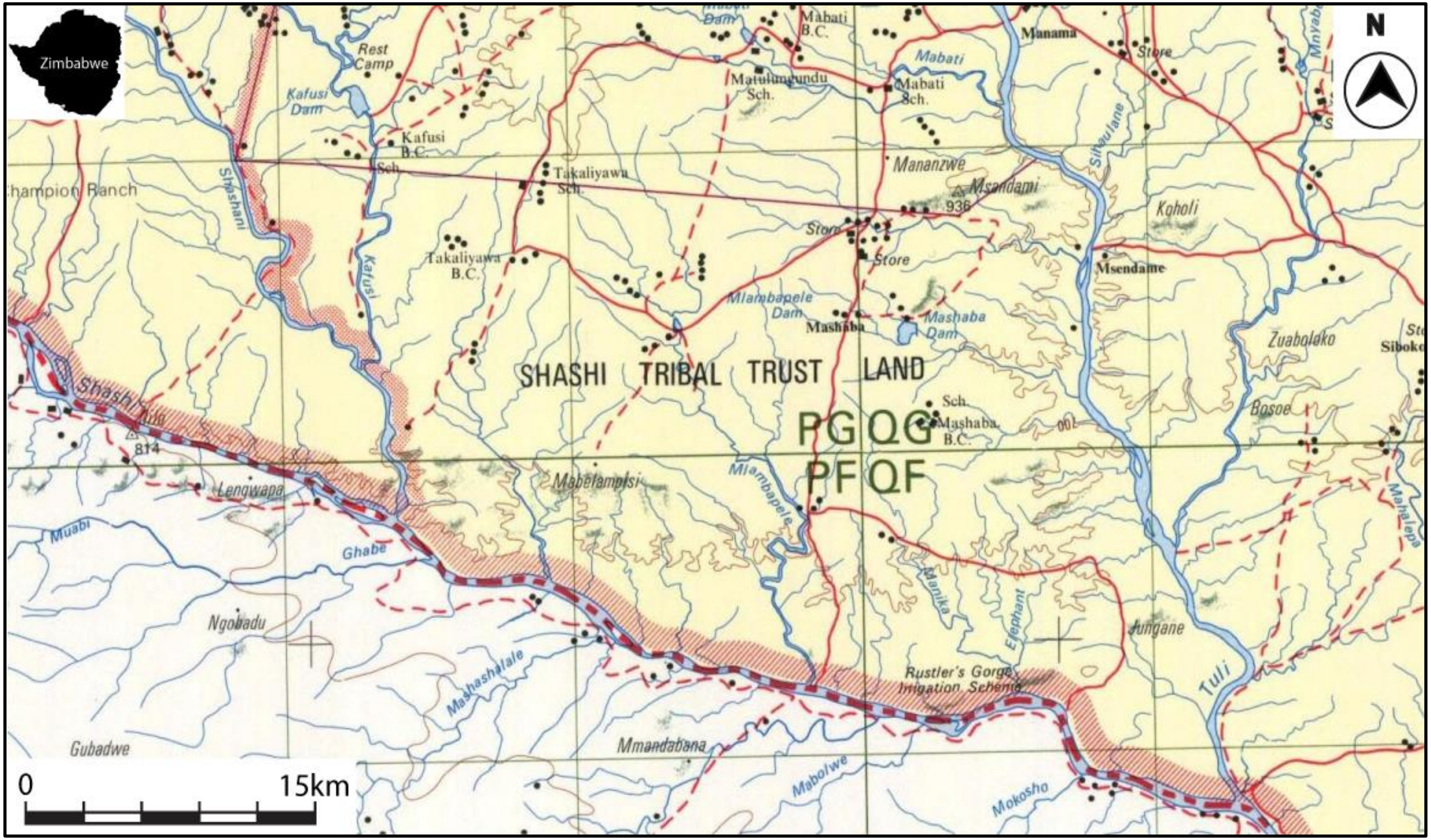


Figure 2. 1: The Shashi region (Adapted from the 1:250 000 Map Sheet SF-35-8 of West Nicholson, Zimbabwe, 1981)

One of the major landmarks in the area is a prominent hill known as Musendami Hill,[6] whose altitude rises to 936 m above sea level (Figure 2.1). Most of the smaller kopjes in the area have flat tops which made sedentary farmer settlement possible. The major tributary of the Shashi River is the Tuli (Figure 2.1), which rises from the kopjes in the Matopos further North, flowing southwards through the granitic and schist beds (Tyndale-Biscoe 1940). The Shashi and Tuli can be described best as ephemeral rivers whose discharge is largely available during the wet season. However, the rivers contain alluvial aquifers, which contain ground water that sustains people and wildlife in the area throughout the year.

Geology and Soils

The dominant geological features in the Shashi region are the Karoo basalts, sandstones and granite deposits (Robertson 1973). Weathering of these rocks is common and gives rise to sandy, loamy, shallow and reddish-brown Kalahari soils, whose levels of fertility and water retention were assumed by some writers of the past to present challenges to rain-fed agriculture (Robertson 1973:2). Northwest, approximately 50 km northwards, the landscape around Ratanyana, Gobatema, Nyambi, and Golanyondo Hills is made up of irregular patches of schist basements. This area is also part of the Gwanda Greenstone Belt, a southern extension of the mineral-rich Great Dyke. The Gwanda Greenstone Belt is rich in soapstone, hematite, quartz, chert, graphite, iron, copper and gold (Phaup 1933:8). Even today, artisanal gold-mining is a major economic activity in Gwanda South. Weathering in some of these minerals produces fine-grained alluvial clay 'cotton' soils, which have high fertility properties (1:1 1000 Soil Map of Zimbabwe 1979). Sorghum, finger millet and maize are some of the crops that are grown in the area today.

Flora and Fauna

A fairly uniform type of savannah vegetation is prevalent throughout the Shashi region. Prominent grass and tree species include mopane *(Colophospermum mopane),* acacia *(Acacia)*, cane-grass *(Eragostis), (Cenchrus ciliaris),* sickle bush *(Dichrostachys cinerea)* and patches of baobab *(Adansonia digitata)* which populate most parts of the Shashi and Tuli Rivers. However, owing to overgrazing, cane-grasslands have been replaced by thickets of

[6] Shall be discussed in section 2.5

acacia, particularly in the sandy and clay-soil zones. The high density of Mopane woodlands and wild game promotes the breeding of the tsetse fly (Summers 1960). Dry-pale buffalo grasses *(Bouteloua dactyloide)* are prevalent on most kopjes. These are considered by archaeologists as to be markers of prehistoric sites (Denbow 1983). Though flora is vulnerable to high temperatures, vegetation surveys revealed aspects of ecological adaptation. For instance, apart from having tough barks, small leaves, and thorns as strategies to reduce evapotranspiration, acacia species in ephemeral river basins such as Shashi, Mapate, Mananzve and Tuli (Figure 2.2) have deep root systems that enable them to tap underground water (Howe 1953).

The Shashi region is rich in wildlife (Wilson 1966; Makhurane 2010). Wildlife species recorded during fieldwork include elephants *(Loxodonta africana)*, zebra *(Equus burcheli)*, kudu *(Tragelaphus strepsiceros)*, ostrich *(Struthio camelus)*, tortoise *(Geochelone pardalis)*, steenbok *(Raphicerus camestris)*, eland *(Taurotragus oryx)*, buffalo *(Syncerus caffer)*, reedbuck *(Redunca arundinum)*, water buck *(Kobus ellipsiprymnus)*, sable *(Hippotragus euinus)*, impala *(Aepyceros melaphus)*, tsetsebe *(Damaliscus lunatus)* and, klipspringer *(Oreotragus oreotragus)*. This diversity of game in the Shashi region has always attracted human settlements. Cattle, sheep and goats are the main domesticates - particularly cattle, hence the landscape is famously known as the ‘cattle country’ (Sibanda & Ndlovu 1992). Domesticates are vulnerable to a shortage of grazing, especially from October to December; however, they have managed to adapt by shifting between grazing and browsing. Tsetse-fly infestations in such dryland areas are controlled easily using traditional means such as land clearing and smoke from burning wood or dried dung (Torr *et al.* 2011).

Rainfall and Temperature

The Shashi region is generally a dryland area receiving low rainfall that is also rendered less effective by high temperatures. These range between 400 and 600 mm per annum and from two to 30 degrees Celsius, respectively (Pikirayi 2001). Rainfall is sharply seasonal and starts between November and March and marks the beginning of the annual agricultural season. However, the coming of the first rains is sometimes erratic and they may only fall in January. Climate scientists have ascribed abnormally low rainfall to climate change caused by El Niño conditions (Tyson & Preston-Whyte 2000), but for local communities, as per my personal observations, these fluctuations are normal. Local farmers adjust their planting time depending on when the first rains fall so that they can harvest something. Furthermore, they alternate between different soil types as a risk-management strategy, designed to insure harvest against rainfall fluctuations and rainfall intensity. Heavy loamy soils, for example, can be cultivated only when heavy rains fall at the beginning of the season, because they retain moisture, and sandy soils may be used if there is too much rain because they drain well and do not become waterlogged.

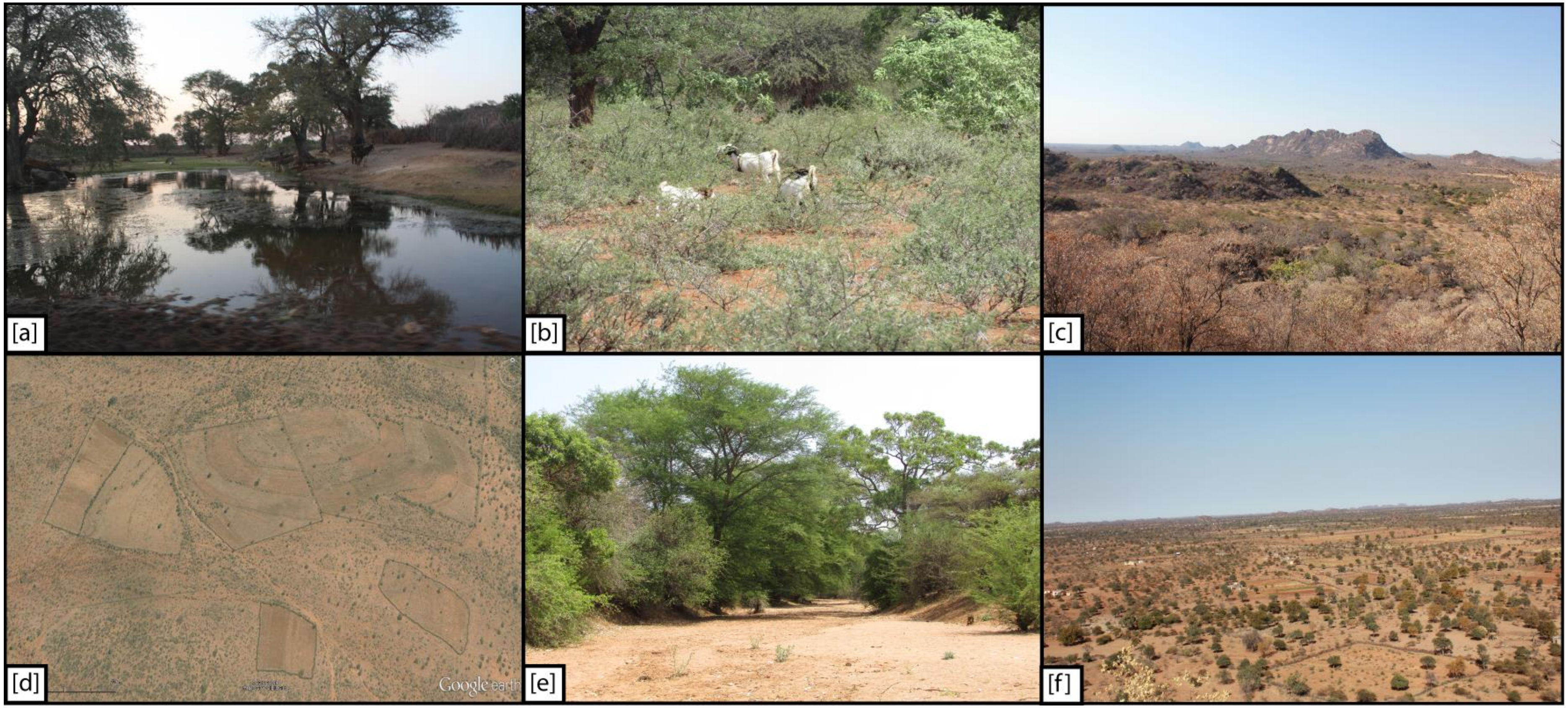


Figure 2. 2: Physiography aspects of the Shashi region: [a] Mlambapele River; [b] goats browsing from acacia species; [c] topography of Shashi Region with Musendami Hill in the far distance; [d] contouring carried out to enhance water retention in some of the fields; [e] Mapate River bed [f]; ridging as a strategy used to capture surface runoff. (Source: Field data and Google Earth)

2. 3. THE HISTORY OF THE STUDY AREA

The Shashi region is basically a 'cultural melting pot' home to Babirwa, Kalanga, Ndebele, Venda and Karanga speakers, and it is very common for people in the area to shift between different languages. According to the locals, this diversity has been present since precolonial times. Currently, the region is under the jurisdiction of Chief Ketso Nare Mathe. Below her is Headman Nyakallo Makhurane, who has several village heads under him. The area targeted in this research is in Ward 16 under Village Head Joel Tlou who reports to Makhurane, who in turn reports to Mathe.

The Shashi landscape is historically known as Bolamba.[7] Not much has been written about the history of the area, particularly the study area, except for some snippets from a few scholars that focused on nearby regions. According to Summers (1960:288-289), it was a no-go area for historical groups such as the Rozvi until 1896 when the pandemic of the tsetse-fly was eradicated. However, oral traditions I collected from the local leadership[8] between 2013 and 2015 and those published in Von Sicard (1959), Beach, (1994), Makhurane (2010), Huffman (2012), Van Waarden (2012) and Nyathi (2014) contradicts Summers. The landscape was historically occupied by Kalanga people who lived under the Chubundule dynasty of the Torwa State (1450-1685). For instance, at Jahunda, one of the archaeological sites approximately 50 km north of Mananzve, Von Sicard (1959) records the displacement of a Torwa Sub-Chief named Chivhuma by a Kalanga newcomer named Chenondo who migrated from Plumtree. According to Von Sicard (1959:103-104), Chenondo became the Paramount Chief and established his capital at Jahunda while Gangaza his Sub-Chief, established his capital at Maname Hill. During the Rozvi period (1685-1839), the followers of Chenondo are remembered as being great metal workers, hunters of elephants and votaries of the Mwari Cult.

Later, around the 1820s, they were joined by the Babirwa [9] a branch of the northern Sotho connected to the Kgatla, who migrated from north-eastern Botswana and settled in south-

[7] A Kalanga word that means 'refusal'.
[8] These included Headman Nyakallo Makhurane; Village Heads, Joel Tlou (born in 1942) and Khotso Malemane (born in 1945); Phuko Ncube locally known as Mbuya Musendami (born between 1914 and 1918) and other elderly villagers such as Jonas Nyathi (born in 1927), James Sibanda (born in 1941), Muthanalo Nare (born between 1928 and 1932) and Elina Nyathi (born in 1936).
[9] Also known as Birwa of the *nare* (buffalo) totem.

western Zimbabwe. According to Elina Nyathi (pers. comm. 2015), these Babirwa's who were fleeing from the Ndebele, came under the leadership of Makhurane. They settled among the Kalanga between the Nyambi, Garanyemba and Jahunda Hills and later down towards the Shashi River. This is also confirmed by Makhurane (2010) and Nyathi (2014), who describe the relations between the Babirwa and Kalanga as cordial. However, Nyathi (2014) conceptualises the Babirwa as originally Kalanga and who were later 'Sothoised'. He bases this on the belief that they were originally citizens of precolonial states such as Mapungubwe, Great Zimbabwe and Khami, and later returned to their ancestral lands in the Limpopo Valley, north-eastern Botswana and south-western Zimbabwe. While this seems plausible, since there has been a lot of interaction between the Kalanga, Babirwa and Sotho, Nyathi generalises the history of these cultural groups as being uniform. Because of this population admixture, it is very difficult to describe these three states as the product of a single cultural group. Moreover, as demonstrated in Van Warmelo (1953) and Huffman (2012), the Babirwa are probably of northern Sotho origin and their material culture largely differs from that of Kalanga-speakers.

Amid these conflicting views, the available oral history largely characterises the Shashi region as a Kalanga territory, which later became a homeland for the Babirwa and the Ndebele as well. While, the data does not account for the livelihoods of these historical groups or how they coped with aridity, the sustained oral history of human occupation makes it clear that the landscape has always been favoured for settlement. This oral history contradicts early colonial observations that designated it as marginal. However, archaeological research is essential to explore long-term patterns of adaptation in the area.

2. 4. LIVELIHOODS

In order to obtain information on the contemporary livelihoods of the locals at both the micro- and macro-levels, I interacted with them through observations, interviews and focus-group discussions. I used these means to gather general data on the local adaptation strategies (Table 2.1) employed to sustain local livelihoods. Adaptation among the locals is seasonal and context-specific, since it is scheduled and driven by predictable annual changes in weather patterns. Basically, it can be subdivided into two cycles – wet- and dry- season adaptation strategies. The wet season normally runs from November to March and this period is characterised mainly by cool temperatures and high or low precipitation levels making the communities vulnerable to crop failure and flooding as result of high precipitation. The dry season, which normally runs from April to October, is hot and dry and this makes the local communities and livestock vulnerable to a number of problems, including food and water scarcity, tsetse-fly infestation and shortages of grazing lands (see Table 2.1). However, the local farmers have adapted by scheduling ways of responding to these risks, as shall be discussed below and is illustrated in Table 2.1.

Livestock husbandry forms the mainstay of the locals' livelihoods. Generally, most families are small-scale peasant farmers who own large herds of cattle, sheep, goats and donkeys and by nature, the Shashi region is best suited for cattle breeding (Figure's 2.3, 2. 4; James Sibanda, pers. comm. 2016).

Figure 2. 3: Goats from the Shashi region (Photograph by S. Chirikure)

Figure 2. 4: Cattle from the Shashi region (Photograph by S. Chirikure)

However, times of fodder scarcity do occur constantly during the dry season and equilibrium between productivity in cattle husbandry and carrying capacity is maintained through flexible herd-management strategies. These strategies focus especially on transhumance, where villagers establish cattle posts elsewhere depending on need and where conditions are better. These cattle posts used to be located approximately 21 km away in north-eastern Botswana in the Bobirwa Sub-District, where some of their relatives migrated to. However, the seasonal movement of cattle outside the national boundaries is now restricted; hence, locals rely on the bushveld adjacent to the banks of Shashi and Tuli Rivers as cattle posts during the dry season (Khotso Malemane, pers. Comm. 2015).

Also, during the dry season, livestock are fed through supplementary feeding (Scoones 1992), where cattle, goats and sheep are released and set free to graze in the harvested fields on millet and sorghum stubble, as well as to browse on mopane trees and acacia. As recorded elsewhere in the Zambezi Valley (Torr *et al.* 2011), I observed that, during the dry season, livestock in the Shashi region are protected from tsetse-fly infection in mopane woodland breeding areas through traditional methods such as herd dispersal, land clearing, and wood smoke. Thus, seasonal or contextual dispersal and aggregation of herds is an important strategy that enables the sustainable utilisation of grazing lands for the reduction and management of cattle mortality during scarcity

Table 2. 1: Some of the adaptation strategies used by the locals to sustain livelihoods

Risk	Adaptation
Erratic rains	Local farmers adjust their planting time depending on when the first rains fall so that they can insure harvesting
Too much rainfall lead to flooding and too little rainfall lead to crop failure, both risks threaten human life	Local farmers spread their crops over different soil types (sandy and clay) as a risk management strategy designed to ensure harvest against rainfall fluctuations
	Water retention in some of the fields is enhanced through the method ofcontouring
	Most families grow drought-tolerant crops such as sorghum, finger millet, cow peas, and water melons
	Homesteads are built usually away from river valleys and in the case of flooding, locals are evacuated
	Agricultural fertility rituals to ensure rain falls and fill the rivers
Food shortages as a result of drought	Locals ensure food security through long-term storage of sorghum and millet in granaries and underground pits
	Most families supplement their food base through the cultivation of crops in community gardens they established along the banks of tributaries of the Shashi River, such as Mlambapele
	Locals diversify their foodways through the exploitation of wild foods, wild game and fresh water resources
	Locals engage in entrepreneurial activities such as arts and crafts, these reward them with money that augment their livelihood during times of need
	Agricultural fertility rituals *(mukwerera)* are carried out towards the end of the dry season to ensure harvests
	Reciprocity among community members
Shortages of grazing lands as a result of drought	Locals facilitate the seasonal movement of cattle to better grazing lands (transhumance)
	Locals feed their livestock with supplements such as millet and sorghum stubble. In some instances, cattle are let to browse on mopane trees and acacia species
Tsetse fly infection	Locals disperse herds to tsetse-free areas
	Locals clear tsetse infested areas and set fire on the vegetation to enable the smoke from wood and in some instances dry dung to repel tsetse-flies
	Locals cross breed tsetse-infested livestock with tsetse-free breeds

The locals also rely on rain-fed agricultural produce for their subsistence (Elina Nyathi pers. comm. 2015). During the wet season, the timing of rains plays a critical role in food production and general livelihood of the local people. Generally, too much or too little of rain makes them vulnerable to poor harvests. However, in most cases it is not the amount of rainfall that matters, but its pattern; i.e. what matters is how many times and how far apart it rains in a season. Thus, the overall rainfall amount received in this region is always well below that of Natural Regions 1-3 but, it may rain at just the right times (intervals) to ensure that the crops are well nourished. Moreover, an awareness of these climatic and weather patterns through indigenous knowledge systems, most families have traditionally grown drought-tolerant crops such as sorghum, finger millet, cow peas, and water melons. Furthermore, the villagers spread their fields over different soil types (sandy and clay) as a strategy to reduce risk in the face of variable rainfall. When rainfall is low, crops in clay fields can ripen since clay retains enough water to sustain cereal growth whilst when rains are heavy planted seed in well drained sandy soils do not get waterlogged and this also enables crop production. This strategy of spreading the risk guarantees harvests each agricultural season. Food security is also ensured through long term storage of sorghum and finger millet in granaries and underground pits. According to the locals, a single bumper harvest of small grained cereals, if stored appropriately, can last them for 5 years. Therefore, despite several droughts being recorded in the area (Illiffe 1990), most villagers have always successfully coped and managed their food security through traditional and modern strategies of dryland agriculture.

The dry season obviously falls outside the normal crop-production season, as described above. Most families, however, have developed a mechanism of dryland agriculture where they supplement their food base through the cultivation of community gardens they have established along the banks of tributaries of the Shashi River, such as in Mlambapele (Figure 2.5). This risk-management strategy of cultivating along floodplains and riverbanks dates back to the EIA in areas such as the mid-Zambezi Valley and was practised by farmers at Kadzi (Pwiti 1996).

Figure 2. 5: Community gardens along Mlambapele River

Good rain and periodic flooding resulting from the networking of local rivers maintain a high water table and locals take advantage of this and the flooding of alluvial areas adjacent to banks and water in the rivers that replenish aquifers and dams to irrigate crops in the gardens. One successful project exists along Mlambapele River, where local villagers grow rape, tomatoes, beans, onions, peas, cabbage, potatoes, and, maize all year round (Figure 2.5). Thus, the use of floodplains and alluvial aquifers during the dry season enables the local communities to maximise their yearly produce as they can supplement rain-fed produce with irrigation agriculture.

Creating diversity in foodways through the exploitation of wild foods also enables contemporary communities to cope with scarcity by expanding the food base to supplement agricultural produce. For instance, I observed that, during the dry season, the communities supplement their diet through gathering mopane worms, marula fruit, and baobab fruit. Although hunting of wildlife is discouraged by national legislation, most families survive on a mixed animal economy where domestic species and small game are exploited equally as a means to boost their meat economies (Makhurane 2010). Among the wild species exploited are tortoise, fish, rabbits, ostrich, steenbok, reedbuck, waterbuck, and klipspringer (see also Wilson 1966).

The villagers also take advantage of other resources for various entrepreneurial activities that reward them with money that in turn augments their livelihoods. These activites include basketry, pottery, wood carving and, in some instances, artisanal gold-mining further northwest, towards the Gwanda Greenstone Belt.

This discussion so far has considered practical measures and strategies taken to supplement food production and to reduce risks in food production. However, another consideration and a key measure directed at food security besides grain storage lies within agricultural fertility rituals (Phuko Ncube, pers comm. 2015). These rituals are carried out annually in the dry season in Village Ward 16 at Musendami Hill[10] (Figure 2.2), where locals gather to conduct rain-propitiation ceremonies (*mukwerera*) to ask God for rain between July and October. Preparations start in July when the Headman liaises with the *svikiro* (spirit medium)[11] to start collecting sorghum or finger millet for brewing beer for the event. On the day of the ceremony, elders gather at the home of the *svikiro,* but only a few elderly individuals, led by the *svikiro,* ascend Musendami Hill and offer beer to the ancestors, petitioning them to bring rain. Upon descending from the hill, a feast is conducted where drums are beaten while food and beer is served. The expectation is that the rains will come. Mbuya Musendami (pers comm. 2015) also stated that they do not use any rain medicines, as practised among the Sotho, Tswana and Nguni communities (see Murimbika 2006). As such, it is only God who can make it rain.

[10] The hill is known originally as ‘Musendami’, a Kalanga word which features in cartographic maps that were published by the Surveyor-General of Zimbabwe in 1975. The contemporary community regard the hill as the abode of the first people who lived in the Shashi Region. As a result, they revere the hill as sacred calling it Halisupi, a Sotho word which means ‘that which must not be pointed at’ (Makhurane 2010). Therefore, this study adopts the original name Musendami so as to maintain consistency with local history.

[11] Mbuya Musendami has been serving this role since the 1950s. Her lineage is regarded as linked to the original inhabitants of the area; hence they are responsible for *mukwerera*. According to her, she is related to Solifa Ncube, the current custodian of Njelele in the Matopos, where national rain-petitioning ceremonies are believed to have been undertaken since the precolonial era (Beach 1994).

I also asked how a drought was defined in the area given that low precipitation is a constant threat and recurring event. I was told that a drought normally equates to about three or more successive years of poor rains. In these cases, the scale of the ritual process increases. When that happens, the Headman will liaise with the *svikiro* and approach the Paramount Chief, who also engages officials from other areas, resulting in the dispatch of emissaries *(hosannas*) to Njelele in the Matopos, where the Mwari Cult is based. Interviews with the *svikiro*, the village heads and Solifa Ncube (aged 85 years), the custodian of Njelele in the Matopos confirmed this information. Thus, agricultural fertility rituals are integral and embedded in the social and economic fabrics of the local people where resilience and inspiration are instilled communally through the development of faith in God as their rain-giver. Most of the traditional strategies of dryland agriculture are practical and shared widely in the region. A summary of these are listed in Table 2.1.

2. 5. ARCHAEOLOGY OF THE SHASHI REGION

In the last section of this chapter I focus on previous and current archaeological research on the region that prompts and structures the fieldwork and research undertaken for this thesis. This archaeology is known largely through two research projects that were and are being undertaken at Mapela and Little Mapela. The first was undertaken by the Rhodesian Schools Exploration Society (Garlake 1966) and the current one is being done by the UCT Iron Age Research Group (Chirikure *et al.* 2014; Chirikure *et al.* 2016; House 2016).

The initial reconnaissance conducted by Garlake and his team exposed three Leopard's Kopje settlements and one Khami settlement. According to Garlake (1966), most of the Leopard's Kopje ceramics were similar to those recovered at Tabazikamambo in the Zimbabwean Midlands, but those from Mapela were stylistically typical of Mapungubwe. Excavations were only carried out at two settlements, Venzo Kopje and Mapela, while the other two sites were surface-collected. Garlake (1968) suggested that the massive terrace walls at Mapela were unique among the Leopard's Kopje sites, and that this indicated the presence of class and social distinction at the site.

Up until 2014, archaeological interpretation of the Shashi region largely relied on Garlakes's team's work and, hence, most of what we know today about Mapela has not changed for 48 years. As discussed above, in between the current work and that of Garlake, the Shashi region was interpreted as a peripheral district that fell under Mapungubwe, Great Zimbabwe and Khami hegemonies respectively (Huffman 2007:381-415). Those at the core always exercised power over Mapela and the Mapela region was seen as a 'provincial' district of the state.

Manyanga's (2001, 2006) work that focused on the southern edge of the Shashi region highlighted the presence of vibrant communities that were resilient throughout time. Similar findings were also recorded on the western edge of the Shashi region when Mothulatshipi (2008) surveyed parts of eastern Botswana. Thus, those communities had a great deal of agency and were not at the mercy of what some archaeological reconstructions believe might have been more powerful agents (e.g. Huffman 1996). Besides, this interpretation might also be questioned when thinking about the mechanics of how the so-called powerful elites at these capitals exercised control over the Shashi region. Beach (1984) takes an alternative view and argues that Mapela was the capital of an independent chiefdom and that local historical traditions suggest the presence of chiefdoms at Jahunda and based at other settlements in Gwanda South.

Ongoing research carried out by the UCT Iron Age Research Group has added new insights to the archaeological record of the Shashi region. Building on the work of Garlake, Chirikure *et al.* (2014) provided an updated sequence of occupation at Mapela with a significant emphasis on the EIA and MIA. They exposed a cultural succession of Iron Age communities that comprise Zhizo (CE 700-1020), K2 (CE 1000-1200), TK2 (1200-1250) and Mapungubwe (1250-1300) ceramics. Radiocarbon dates for these contexts dates the occupations at Mapela between the 11th and the 14th centuries (see Table 2.2).

Table 2. 2: Radiocarbon dates from Mapela (Adapted from Chirikure et al. 2014:11)

Name	Unmodelled (BCE/CE)				Modelled (BCE/CE)			
	From	to	%	median	from	to	%	median
End					1225	1317	95.4	1269
Beta-362445	1217	1282	95.4	1254	1230	1281	95.4	1263
Beta-362446	1217	1282	95.4	1254	1227	1276	95.4	1256
Transitional K2/Mapungubwe					1223	1272	95.4	1247
Beta-362447	1217	1282	95.4	1254	1220	1267	95.4	1239
Beta-362448	1224	1291	95.4	1270	1216	1263	95.4	1231
Beta-362449	1165	1265	95.4	1224	1200	1252	95.4	1221
Beta-362450	1041	1218	95.4	1140	1181	1239	95.4	1210
Beta-362451	1049	1256	95.4	1186	1170	1225	95.4	1204
K2/Transitional K2					1163	1224	95.4	1197
Beta-362452	1161	1264	95.4	1214	1159	1216	95.4	1187
Beta-362453	1039	1210	95.4	1123	1115	1220	95.4	1175
Start					1055	1219	95.4	1165
ShCal13								

doi:10.1371/journal.pone.0111224.t003

The distribution of Zhizo ceramics was restricted to the base of the hill, while Leopards Kopje ceramics were recovered from the terraces and the hilltop. However, occasional Zhizo ceramics were recovered on the terraces as well. This sequence is similar to that exposed on the edge of the Shashi region at K2, Mapungubwe and related sites (Huffman 2007) in the dryland of the middle Limpopo Basin or Shashi-Limpopo confluence area. Similarly, Manyanga (2006) and Mothulatshipi (2008) found the same cultural succession on the Zimbabwean and Botswana sides of the Shashi-Limpopo confluence area respectively. Furthermore, the same applies to the northern edge of the Shashi region in north-eastern Botswana where various sites around the Francistown region have Zhizo, Leopard's Kopje and Khami occupation, often stratified at the same site (Van Waarden 1998, 2011, 2012).

These researchers have contributed immensely to the archaeology of the Shashi region and they have demonstrated a long sequence of settlement in this dryland landscape that is largely perceived as unfit for agropastoral economies (Summers 1960; Beach 1994; Huffman 2015). While research output at Mapela should be applauded, up to now, however, no dedicated study directed at the adaptive strategies used by farming communities in the Shashi region has been undertaken. The research reported here is a step in this direction and interrogates the assumption popular among most archaeologists of European and American descent that the area was marginal for mixed farmer occupation (Summers 1960; Robinson 1965a, Ford 1971; Sinclair & Lundmark 1984; Beach 1994). Recently, Huffman (2015:21), for example, basing on a desktop study that included a Google Earth survey posited that *"...because of environmental constraints, Mapela was an unlikely place for the evolution of social complexity. The Shashe-Limpopo valley on the other hand combined all the necessary factors"*. This statement repeats the assumption that the environment and the geography of the Shashi region could not support any significant Iron Age communities. The issue is what specific differences does Huffman feel that gave one area an advantage over another when the ecology and the environment of both the Shashi region and the Limpopo Valley are similar? Furthermore, as demonstrated in Figure 2.6, the study area actually receives greater mean annual rainfall totals than the Middle Limpopo Valley where sites such as Mapungubwe are situated. Huffman's statement is also contradicted by an assessment of the livelihoods in the study area that shows the ability of local communities to adapt.

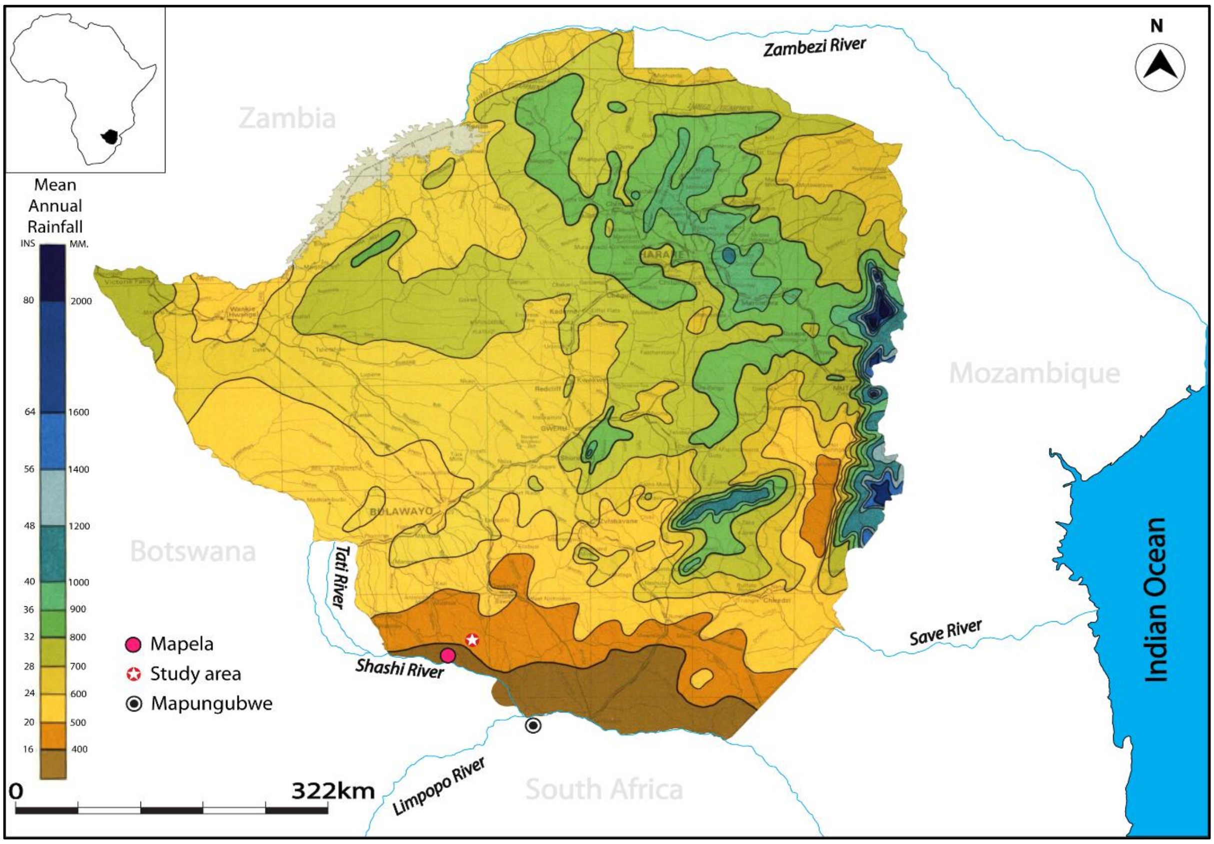


Figure 2. 6: A comparison of mean annual rainfall totals of the study area in the Shashi region and Mapungubwe in the Limpopo Valley (Adapted from the 1:2 500 000 Mean Annual Rainfall Map of Zimbabwe, 1984)

As we have seen, the Shashi region is conducive to animal husbandry, and a range of strategies for stable crop production and food security have been outlined, including water management through its proximity to major rivers, such as the Tuli and Shashi, and their tributaries. Additionally, geologically it contains a variety of minerals as demonstrated earlier. Thus, in the words of the former Member of Parliament and Councillor Mlilo, it is archaeologists such as Huffman who think that, just because an area is dry, then it is in fact marginal. Clearly, for the communities that live there, this definition makes no sense. On the basis of contemporary agricultural practices, the communities that live in the area do have both considerable wealth in cattle and crop production strategies that ensure supply of cereal and the all-important carbohydrates. Consequently, archaeologists must change their tune and start focussing on adaptive strategies that made this vast region, from the headwaters of the Shashi in Botswana to its confluence with the Limpopo, home to Iron Age communities.

2. 6. GAP ANALYSES

A review of the literature on the Shashi region demonstrates two diametrically opposed viewpoints. The first, which is popular among those who originated in the temperate environments of Europe and North America (Tyndale-Biscoe 1940; Summers 1960; Vincent & Thomas 1960; Ford 1971; Huffman 2015), views the landscape as a dryland vulnerable to drought and tsetse-fly infestation. According to this view, this marginal landscape had little to offer its inhabitants, who did not adapt and consequently were always at the mercy of its vicissitudes. Ironically, in some writings (e.g. Huffman 2009:50), the Gwanda Greenstone Belt in the Shashi region is viewed as one of the sources of the gold that made ‘prosperous kingdoms’ such as Mapungubwe rich and famous. Why the same communities could not use that gold as an adaptive strategy to trade for what they lacked does not seem to have been considered.

The Shashi region is endowed with a rich biodiversity and there is need for a shift in mind-set away from colonial definitions of marginality that were designed to support European agriculture and not African farming. African livelihoods have to be viewed relative to their own context and the ingenuity of the local people not simply to make a living, but, from the historical and archaeological perspective, to adjust the capacity to feed people in response to environmental and climatic risks.

The second viewpoint considers the Shashi region an ecological niche conducive to cattle husbandry, growing of crops, mining of iron and gold and much more. Additionally, as indicated above, there are traditional ways of managing tsetse flies, and agricultural activities are adaptively geared towards risk-management strategies that ensure good harvests. Thus, through traditional strategies of dryland agriculture, water management, herd management, soil conservation, water harvesting, tsetse-fly eradication and entrepreneurship, the contemporary communities of the Shashi region have managed to adapt to the landscape to be able to obtain food security and wealth from it. What is also surprising is the fact that similar adaptive strategies have been recorded among the Iron Age communities residing in Beach’s Great Crescent area (Beach 1994) and outlying landscapes such as the Tugela Basin and the Zambezi Valley are mostly similar. For example, the cultivation of flood plains and growing of sorghum and millet dates back to the Early Iron Age (Maggs 1984; Pwiti 1996). We must therefore learn from Smith (2005), Manyanga (2006) and Mothulatshipi (2008), who exposed the fact that, throughout time, the inhabitants of the Limpopo Valley were very adaptive and innovative, making them resilient. To that one may add the need to write the Iron Age archaeology of the region from locally centred positions and experiences and not on the basis of the perceptions of those working in atmosphere-controlled offices and who view drylands as only as marginal and hardly consider the local voices at all. This raises the need for new research to explore the adaptation strategies adopted by humanity in order to earn a living on this landscape through time. This provides the motivation for this study, which seeks to develop a long-term perspective on adaptation strategies utilised in the Shashi region using the transect between the Tuli and Shashi rivers as a case study.

2. 7. CONCLUSION

Although the Shashi region is a dry landscape, it is endowed with a rich biodiversity. Considering the long history of occupation, this diversity of resources has always acted as one of the factors that attracted human settlement throughout the Iron Age. Furthermore, the livelihoods of the local people today show that the predecessors would have been equally successful in livestock breeding, flood plain agriculture, long-term grain storage and artisanal gold mining. This brings into sharp contrast the very different perceptions of some archaeologists, who label this area unproductive and marginal, and of local communities, who call the area home because of its resources and wealth. This difference in outlook directs the spotlight towards the need to understand in detail adaptation strategies used by various communities throughout time. The next chapter presents the theoretical and methodological frameworks adopted in this study.

CHAPTER THREE

THEORY AND METHODS

“The archaeological record contains a wealth of information pertinent to examining the adaptedness of prehistoric groups…” (O'Brien & Holland 1992: 36).

3. 1. INTRODUCTION

Globally, civilisations living in drylands have often been presented as risk-prone. However, through use of risk-management strategies, most of these societies managed to adapt, achieve resilience and have food security throughout time (McAnany & Yoffee 2010). Thus, the concepts of vulnerability, adaptation and resilience are essential for understanding the development of communities in drylands. These are used in this thesis with the aim of developing a long-term understanding of human responses to risks and opportunities created by the environment throughout time in the Shashi region. Examples are drawn widely from drylands scattered across different parts of the world, ending with southern Africa. Datasets from these case studies will be used as comparative material for understanding human adaptation during the Iron Age. Furthermore, this chapter also presents data collection techniques employed in the study and these include the following: desktop surveys, archaeological surveys and excavations. Within a chronological framework, the resulting data is used to discuss the long-term adaptation in the Shashi region.

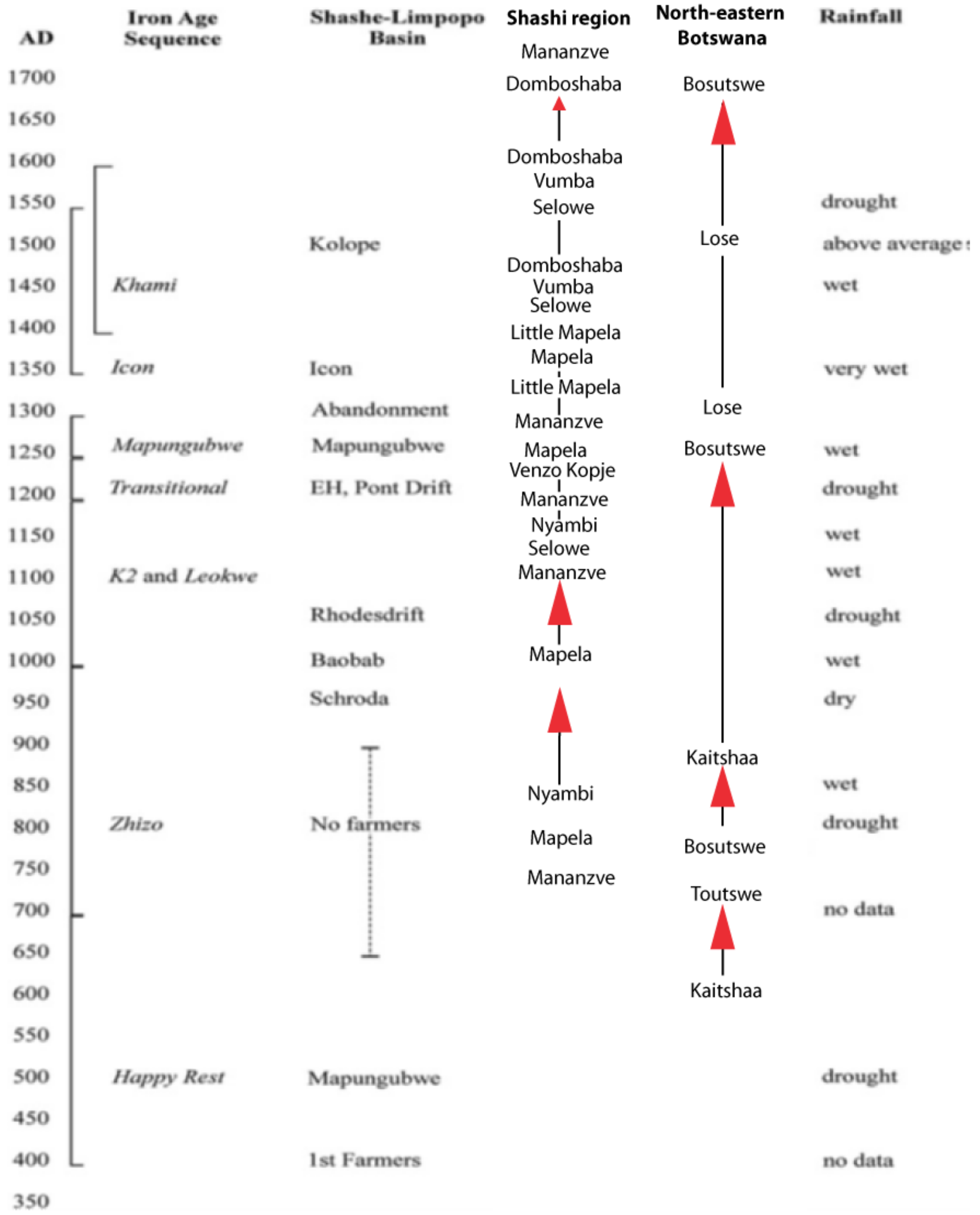
3. 2. VULNERABILITY

The concept of vulnerability has been used in inter-disciplinary discourses on the impact of climate change on society (Vogel *et al.* 2007). According to Adger (2006), vulnerability refers to exposure of a socio-environmental system to a hazard. Broadly speaking, regardless of time period, every society and ecological system has always been vulnerable to problems of either a short- or long-term nature. Because drylands are situated in the arid and semi-arid environments, societies that inhabited these landscapes are often described as vulnerable to climate and environmental challenges. For instance, in global archaeology, preindustrial communities living in drylands such the Peru coast in South America, Mesopotamia, the

Libyan desert, Syrian desert and west-central Jordan (Thompson *et al*. 1985; Barker & Gilbertson 2000; Porter 2013) have been examples that are vulnerable to drought. The unsubstantiated assumption is that, because these landscapes experienced a combination of hot temperatures and erratic rainfall patterns, they were always prone to scarcity during the dry season. What is surprising, however is that the same areas sustained very successful human civilisations which produced great novelties, thereby exposing humans' capacity to innovate and adapt to various living conditions.

The same view has been applied to southern Zambezia where precolonial communities living in drylands such as the Shashi region, the Save Basin and the Zambezi Valley are depicted as having been vulnerable to environmental stress occasioned by droughts often lasting up to three or five years (Table 3.1) (Huffman 2009). For instance, the Leopards Kopje communities that lived at Mapungubwe, situated in the Limpopo Valley, where the average rainfall is between 140 and 600 mm, are often assumed to have been vulnerable to droughts triggered by the Little Ice Age that eventually forced them to move out of the valley in CE 1290 (Huffman 2007). However, it must be mentioned that new evidence suggests that Leopards Kopje farmers never migrated from the Shashi-Limpopo area to the point of living it as an empty landscape (see Manyanga 2006). In fact, they continued to adapt and achieved resilience throughout time (Table 3.1). This is supported by isotopic data from Smith (2005) that shows that, until the 15th century, the Limpopo Valley was conducive to crop production; hence, the basin attracted even new farmer groups, such as the Moloko (Icon). Similar events were recorded in north-eastern Botswana, where settlements on Iron Age sites such as Bosutswe were previously thought to have been abandoned by the Toutswe people in the 14th century owing to a drought induced by the Little Ice Age (Huffman 1996; Reid & Segobye 2000). New radiocarbon dates, ceramic sequence and isotopic data from Denbow *et al.* (2008) report the arrival of the Leopards Kopje people (Lose) at Bosutswe. Thus, caution must be taken when reading Table 3.1 because the resolution of available data does not yet allow a more detailed understanding of context-specific variation. It is known, for example, that within the same area, one part may be affected by drought and another will have bumper harvest owing to too little or too much precipitation which may even create risks of flooding (Manyanga 2006). This makes sense because, despite the incidence of droughts summarised in Table 3.1, the neighbouring drylands continued to be occupied, showing that farmers did adapt to changing circumstances, as demonstrated at Mapela (Chirikure *et al.* 2014).

Figure 3. 1: Estimate of drought in southern Zambezia during the Iron Age (Adapted from Huffman 2008:2043. Additional data was extracted from Garlake 1966; Denbow *et al.* 2008; Van Waarden 2012; Chirikure *et al*. 2014; Denbow *et al.* 2015; House 2016)



Aside from drought, drylands in southern Zambezia are also believed to have been vulnerable to tsetse-fly that affected both cattle herds and people (Summers 1960; Robinson 1965a; Ford 1971; Beach 1994). According to Summers (1960), until 1896 landscapes within the Zambezi Valley, the Shashi region and the Limpopo Valley (Figure 3.1) were heavily infested with tsetse-flies owing to the density of Mopane woodlands particularly during the dry season (Figure 3.1). While this may be true, Summers did not consider the seasonal adaptation strategies that local communities employed to successfully keep cattle in this region. For example, precolonial EIA societies living in the Zambezi Valley are believed to have probably kept a considerable number of cattle as demonstrated by faunal remains recovered from the site of Kadzi (Pwiti 1996; Plug 1997), perhaps through indigenous ways of tsetse-fly eradication such as land clearing (Torr *et al.* 2011). Thus, vulnerability stimulates context-specific adaptation, which has not been emphasised in most of the literature on the southern Zambezian Iron Age.

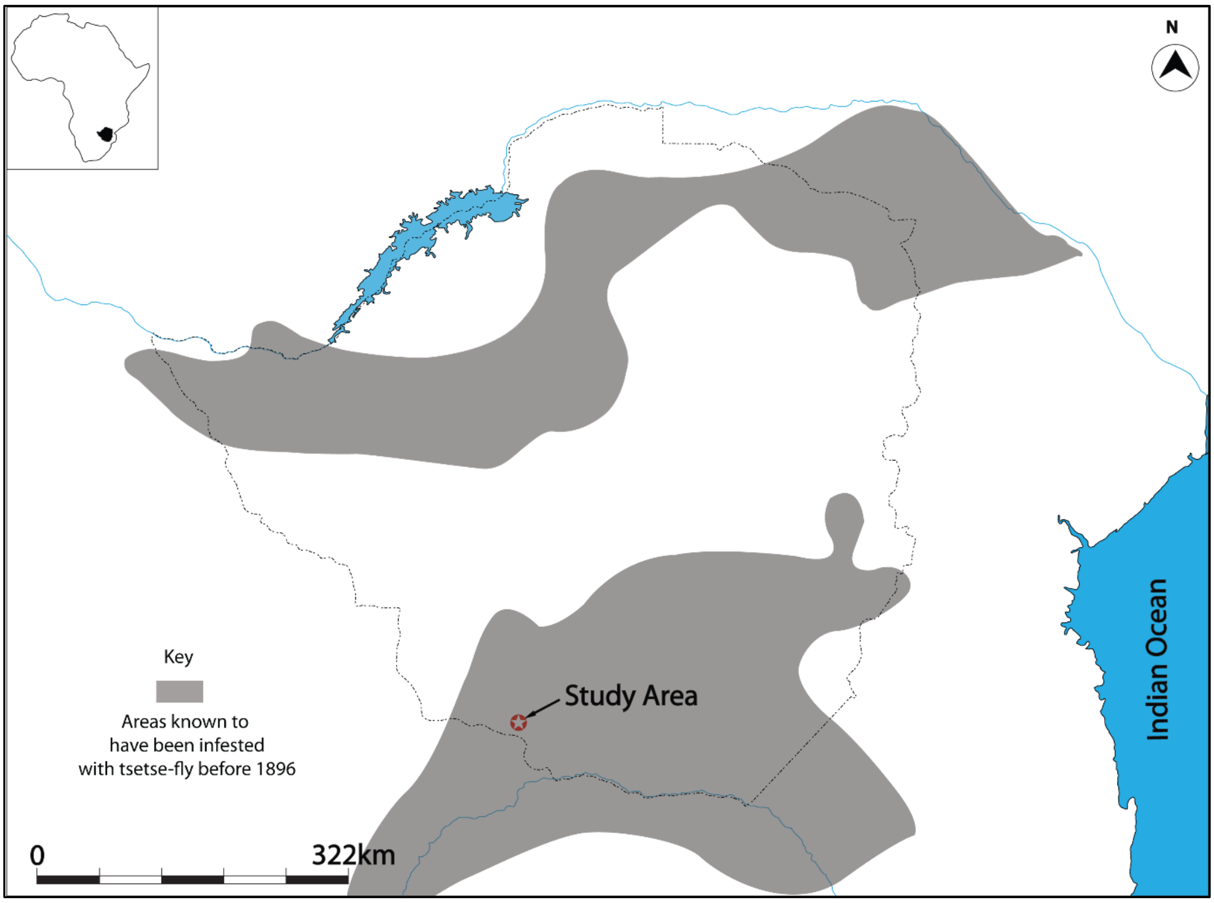


Figure 3. 2: Areas vulnerable to tsetse-fly infestation in southern Zambezia (Adapted from Summers 1960: 287)

Consequently, it is often assumed that, owing to the fear of losing their lives and their livestock, most Iron Age communities in southern Zambezia deliberately avoided settling in regions such as the Shashi area, hence, they settled in tsetse-free landscapes such as the Great Crescent (Beach 1994). According to Summers (1967), for those unique cases where archaeologists have recovered the material remains of major occupations in these tsetse-fly-infested landscapes, such as the Leopards Kopje communities at Mapungubwe, this sequence was short and can be explained by a local phase of cold and wet conditions which deterred the tsetse-fly threat (Summers 1960).

While Summers's conclusions have been undermined by recent studies conducted in the Zambezi (Pikirayi 1993; Pwiti 1996) and Limpopo Valleys (Smith 2005; Manyanga 2006), Iron Age settlement in the Shashi region is still widely understood in a framework that identifies the tsetse-fly as a hazard to human settlement (Huffman 2015). Nevertheless, it must not be overlooked that communities living in drylands did not always remain trapped in their vulnerabilities since they were able to adapt. Thus adaptation, which is the focus of the next section, is a fundamental concept for understanding human occupation in drylands.

3. 3. ADAPTATION

Vulnerability breeds risk, and adaptation breeds risk management (Lei *et al.*2014). The concept of adaptation refers to *"…adjustments in a system's behavior and characteristics that enhance its ability to cope with external stresses"* (Brooks 2003; Young *et al.* 2005; Lei et al. 2014:615). Thus, adaptation enables a community to decrease its vulnerability to hazard (Lei *et al*. 2014:615) using adaptation strategies. According to Kirch (1980:129) adaptation strategies refers to a

"…set of of culturally transmitted behaviors - extractive, exploitative, modifying, manipulative, competitive, mutualistic, and the like - with which a population interacts or interfaces with its natural and social environment".

As such, adaptation is facilitated through the social learning of long- and short-term strategies on how to cope with vulnerability, and these strategies are shared within communities through innovation, networking, mobility and/or diffusion. Often material culture attests to this adaptation at macro- and micro-levels in the archaeological record (O'Brien & Holland 1992). Some of the common adaptation strategies include strategic settlement choices, long-term food-security strategies, diversity in foodways, fertility rituals, and other livelihood strategies, such as arts and craft production. These will also be discussed as repositories of human adaptation (O'Brien & Holland 1992).

There is a fair amount of global and regional research on how farming communities living in drylands adapted to climatic and environmental uncertainties (Barker & Gilbertson 2000). Globally, the studied groups include the Moche (CE 200-850) of the coastal desert of Peru in South America (Thompson *et al.* 1985; Quilter 2002; Dillehay & Kolata 2004; Sutter 2009), and the EIA Levant communities (BCE 1250-1000) of west-central Jordan in the Middle East (Gilliland & Fisk 1986; Borowski 1987; Porter 2013). Regionally these includes the Kadzi (CE 400-750) and Kasekete (CE 1400 or 1500) Iron Age communities of the Zambezi Valley (Pwiti 1996), and the Zhizo (CE 700-1020), Leopards Kopje (CE 1000-1420) and Khami (CE 1400-1820) Iron Age communities of the Limpopo Valley (Smith 2005; Manyanga 2006; Huffman 2007; Mothulatshipi 2008) and north-eastern Botswana (Denbow 1983; Van Waarden 2011, 2012), who inhabited the drylands of southern Zambezia. These civilisations provide exceptional case studies of how pre-industrial communities continuously reconfigured their daily subsistence strategies in order to adapt to possible vulnerability. Therefore, in order to understand what enabled these people to be successful despite living in drylands affected by climatic and environmental uncertainties, this section will briefly examine the adaptation strategies that they employed to combat vulnerability.

The Moche civilisation is rated globally as a unique case study that offers us an understanding of how pre-industrial societies living in drylands responded to environmental and climatic uncertainties (Quilter 2002; Dillehay & Kolata 2004). Prior to the 1990s, the accepted theory, derived from climate science, attributed the collapse of Moche to a series of droughts that heavily affected coastal Peru between CE 560 and 650 (Thompson *et al.* 1985). According to Thompson *et al.* (1985), Moche was abruptly abandoned; hence, people migrated to neighbouring lands with climates conducive to agriculture such as Chimor. The assumption held by Thompson and colleagues was that, because the Moche people were food producers, who relied on water for agricultural prosperity, climate obviously played a role in their rise and fall. However, later research pioneered by Tom Dillehay (Dillehay & Kolata 2004) revealed Moche material culture, whose radiocarbon dates overlapped at CE 650. This became a turning point in Peruvian archaeology, as scholars began to question the collapse of Moche using resilience models (Dillehay & Kolata 2004; Zobler & Sutter 2009). New researches concluded that, though the Moche were affected by climate change, they were not docile, as implied by climate scientists. Rather, through a variety of adaptation strategies, listed in Table 3.2, they persevered and thrived until the CE 850 civil wars (Dillehay & Kolata 2004).

These adaptation strategies (Table 3.2) fostered resilience among the Moche people; hence, through improvisation and innovation, they prospered in agriculture, architecture, technology, arts and crafts. Today they are a world-renowned civilisation, remembered for the novelty of metal ornamentation and soldering, both of which enabled them to make magnificent jewellery using gold, bronze and copper (Quilter 2002; Gamboa 2015). They are also remembered as makers of magnificent ceramics and textile, and as builders of monumental pyramids and irrigation canals (Quilter 2002).

Table 3. 1: Adaptation strategies that enabled the Moche of ancient Peru to sustain livelihoods during (CE 200-850)

Risk	Adaptation Strategy	Archaeological Signature	Site/s	Reference
Too much rainfall posed the risk of flooding on crops, humans and livestock	Developed raised fields and expanded fields into the coast	Agricultural fields and canals	Lamina, Huascas de Moche	Thompson *et al.* 2014
	Temporarily migrated to higher terrains in the adjacent areas	Moche pottery and metallic objects on highlands and lowlands	EL Brujo Lamina, Sioan tombs	Thompson *et al.* 2014
Infertile soils	Enhanced the fertility levels of their fields using a special fertilizer which they mined from rich Guano beds in the Chincha islands	Residues of their fertilisers, and Moche wooden artworks which were eft at Chincha islands by the miners of the Guano beds	Guano, EL Brujo Lamina, Huascas de Moche	Quilter 2002
Shortage of water for agriculture	Erected artificial canals that were networked hence they could divert river water to irrigate their crops	Canals remains and artistic impressions on pottery which show agriculture taking place	Vichanzao	Quilter 2002, Gamboa 2015, Dillehay & Kolata 2004
	Harvested water on coastal hills during raining which was redirected into the canals	Canals	EL Brujo Lamina Huascas de Moche, Vichanzao	Dillehay & Kolata 2004
	Agricultural fertility rituals were annually conducted these were meant to attract rain through human sacrifices to their deities to give them rain	Human skeletal remains	San Jose de Moro	Sutter 2009, Bougert 2001 cited in Quilter 2002) Thompson *et al.* 2014
Food shortages	Diversified their livelihoods through engaged in long distance trade of spondylus shells which provided them with wealth to purchase more food resources	Spondylus shells	EL Brujo, Lamina, Sioan tombs Huascas de Moche	Quilter 2002

Turning to another area, the EIA Levant communities of west-central Jordan are celebrated in global archaeology as a successful case study of how small-scale communities adapted to drylands in the face of climatic and environmental adversity (Routledge 2004; Porter 2013). Initially, the Levantine communities were assumed by socio-evolutionary scientists to be pastoral nomads who roamed the drylands of the Middle East (Bell 1907). Basing on this lens, their landscape was seen as marginal when it came to hosting successful Iron Age economies, since it lay at the periphery of the Fertile Crescent which was traditionally rated as the ideal landscape for food production (Coon 1951). However, recent surveys and excavations conducted by Porter (2013) basing on a communal resilience framework, revealed that these were actually EIA communities who thrived in a landscapes designated as marginal. This was evidenced by a long sequence of occupation and diverse Iron Age material culture, which revealed prosperity in agriculture, technology, arts and crafts (Routledge 2004; Porter 2013). Using the adaptation strategies outlined in Table 3.3, they managed to host their Iron Age economies despite west-central Jordan being a semi-arid landscape marred by a combination of limited precipitation (which ranged between 100 and 300 mm) and barren soils barely ill-suited to food production (Porter 2013).

Table 3. 2: Adaptation strategies that enabled the EIA Levant communities of west-central Jordan to sustain livelihoods (BCE 1250-1000)

Risk	Adaptation Strategy	Archaeological Signature	Site/s	Reference
Pests e.g. locusts	They practised intercropping	Paleo botanical remains of grapes, corn and barley	al-Mu'ammariyya & al-'Aliya	Routledge 2004 Porter 2013
Low precipitation	Strategically erected settlements adjacent to the wadi floors and canyons to harvest water for crop production and domestic consumption	Homestead foundations found in the canyons	al-Mu'ammariyya & al-'Aliya	Routledge 2004 Porter 2013
Food shortages	They practiced flood plain agriculture during the dry season along the Jordan Valley to supplement their food base	Agricultural fields & paleo botanical remains of grapes, corn and barley found along the Jordan Valley	al-Mu'ammariyya & al-'Aliya	Routledge 2004 Porter 2013
	Built food reserves both at household and village level to ensure long-term food security	Food storage chambers were recovered with scatters of botanical remains of barley and grapes	al-Mu'ammariyya & al-'Aliya	Gilliland & Fisk 1986 Porter 2013
	Made extra income to supplement their food subsistence through making and trading crafts	Pottery	al-Mu'ammariyya & al-'Aliya	Porter 2013
Fodder scarcity	Used supplementary fodder to feed their livestock during the dry season	Faunal remains of caprines, provisional shelters where herds were fed and penned	al-Mu'ammariyya	Borowski 1987; Porter 2013
	Communities in rugged terrains such as al-'Aliya focused on goat rearing while those on flats focused on sheep rearing	Faunal remains of caprines, provisional shelters where herds were fed and penned	al-Mu'ammariyya	Borowski 1987; Porter 2013
	Diversified their economy - exploited wild plants, wildlife, domesticates, freshwater resources and agro-produce	Botanical remains, fauna of domestic, wildlife and fresh water resources	al-Mu'ammariyya & al-'Aliya	Borowski 1987; Porter 2013
	Co-management and sustainable utilisation of local resources such as grazing lands	Communal storage facilities, ancient grazing lands	al-Mu'ammariyya & al-'Aliya	Porter 2013

Thus, owing to the ability to adapt the Levant communities of west-central Jordan are today remembered as a collection of autonomous and self-organising EIA agropastoralists who fostered resilience through their subsistence economy which hinged largely on agropastoralism (Porter 2013).

In southern Zambezia, the Zambezi Valley is one of the most unique case studies in regional Iron Age archaeology that demonstrates human adaptiveness to a dryland landscape. Generally, the Zambezi Valley is a semi-arid landscape and, before colonialism, it was once heavily infested with tsetse-fly owing to a high density of Mopane woodlands (Summers 1960; Pwiti 1996). Given such a background, the presence of the tsetse-fly was assumed to have obviously posed mortality challenges for Iron Age communities and their cattle, since, by default they were fulltime agropastoralists (Summers, 1960:289; Robinson 1965a:5; Ford 1971). Therefore, in order to save their own lives and their livestock's as well, most Iron Age communities in southern Zambezia were assumed to have deliberately avoided settling in the Zambezi Valley. However, new research conducted by Pwiti (1996) exposed a layering of communities with a full Iron Age 'package' that included metallurgy, domestication and food production, with an occupational sequence that stretched for nearly two millennia. Most importantly, the research emphasised adaptation strategies listed in Table 3.4, which were enacted by these communities to successfully host Iron Age economies in this dryland region. Thus, today, the Kadzi EIA communities, are renowned in African archaeology as specialist buffalo hunters who supplemented their meat economy by exploiting wildlife resources (Plug 1997).

Table 3. 3: Adaptation strategies that enabled the Iron Age communities of southern Zambezia to sustain livelihoods

Risk	Adaptation Strategy	Archaeological Signature	Iron Age group/s	Period	Site/s	Reference
Low precipitation resulting in water shortages	Located their settlements along rivers such as Kadzi, Limpopo and Utete to enable constant supply of water for domestic use, flood plain agriculture and watering their livestock especially during the dry season	Agricultural fields and settlements near rivers	Kadzi Khami (Kasekete)	CE 400-750 1400-1500	Kadzi & Kasekete	Pwiti 1996 & Plug 1997
			Zhizo, Leopards Kopje & Khami	CE 700-1020, CE 1000-1200, CE 1250-1300 & 1400-1820	Little Muck, K2, Mapungubwe, Mutshilachokwe, Mtao village 16, Den Staat	Manyanga 2006, Murimbika 2006, Huffman 2007
	Trapped surface run-off by blocking drainage lines in the fields. This enhanced rain fed agriculture as it increased soil moisture	Agricultural fields with raised drainage blockages	Zhizo, Leopards Kopje & Khami	CE 700-1020, CE 1000-1200, CE 1250-1300 & 1400-1820	Little Muck, K2, Mapungubwe, Mutshilachokwe, Mtao village 16, & Den Staat	Manyanga 2006, Murimbika 2006, Huffman 2007
	Focused on growing drought-tolerant crops to enable successful yields	Charred sorghum, millet and cereal grinding stones	Zhizo, Leopards Kopje & Khami	CE 700-1020, CE 1000-1200, CE 1250-1300 & 1400-1820	Schroda, Leokwe, K2, Mapungubwe, Malumba, Tshobwane, Mutshilachokwe, Megwe, Chaile, Pitsane, Mtao Village 16 & Den Staat	Hanisch 1980, Meyer 1980; Manyanga, 2006, Calabrese 2007; Mothulatshipi 2008, Huffman & Du Piesanie 2011
			Toutswe, Leopards Kopje, & Khami	CE 1050-1300 CE 1000-1420 CE 1400-1820	Taukome, Toutswemogala, Lechana, Bosutswe Vumba & Selolwe	Denbow 1983; Denbow *et al* 2008; Van Waarden 2012
			Kadzi Khami	CE 400-750 1400-1500	Kadzi & Kasekete	Pwiti 1996
	Spread crops over all the soil types e.g. sandy and clay soils to maximize harvests	Agricultural fields in both sandy and clay soil areas	Toutswe, & Khami	CE 1050-1300 CE 1400-182	Taukome, Toutswemogala, Lechana, Vumba & Selolwe	Denbow 1983; Van Waarden 2012
	Conducted annual agricultural fertility (rainmaking) rituals	Beads (glass, shell and metal), pottery (Zhizo, K2), grinding stones, rock tanks, burnt grain bin floors	Zhizo, Leopards Kopje & Khami	CE 700-1020, CE 1000-1200, CE 1250-1300 & 1400-1820	Rhodes Drift, Ratho Kroonkop, Mapungubwe, Schroda	Murimbika 2006; Schoeman 2006; Huffman 2007, 2009
Food shortages as result of drought	Built long-term food security reserves such as grain bin and underground pits sealed with dung	Grain bins foundations and plastered *dhaka* with pole impressions, underground pits	Zhizo, Toutswe, Leopards Kopje & Khami	CE 700-1020, CE 1000-1200, CE 1250-1300 & CE 1050-1300 CE 1400-1820	Schroda, Leokwe, K2, Mapungubwe, Tshobwane, Mutshilachokwe, Mtao Village 16 and Den Staat Taukome, Toutswemogala, Bosutswe, Dwaleng, Vumba, and Selolwe	Hanisch 1980; Meyer 1980; Voight 1983; Manyanga, 2006, Calabrese 2007; Huffman & Du Piesanie, 2011 Denbow 1983; Denbow *et al.* 2008; Van Waarden 2012
Tsetse-fly	Acquired tsetse-tolerant	Cattle fauna	Kadzi	CE 400-750	Kadzi	Pwiti 1996, Plug 1997

	livestock (cattle) through trade					
	Cleared vegetation of areas infested with tsetse-flies		Zhizo, Leopards Kopje & Khami	CE 700-1020, CE 1000-1200, CE 1250-1300 & 1400-1820	K2, Mapungubwe, Weipe, Skutwater, Tshobwane, Mutshilachokwe Megwe, Chaile, Pitsane and Mtao Village 16	Ford 1971; Smith 2005; Manyanga 2006, Mothulatshipi 2008;
Fodder scarcity	Dispersed cattle to graze in distant cattle posts Unpenned and set free cattle to feed on sorghum & millet stubs in the fields and mopane and acacia species	Cattle Posts, livestock fauna and dung remains	Toutswe, Leopards Kopje, & Khami	CE 1050-1300 CE 1000-1420 CE 1400-1820	Toutswemogala, Taukome, Boteti Bosutswe, Matanga Dwaleng, Selolwe, Letsibogo & Makgadikgadi Pans	Lepionka 1977; Denbow, 1983; Van Waarden 1998; 2012; Reid & Segobye 2000; Kinahan 2000 & Denbow *et al.* 2008
Food scarcity resulting from drought	Diversified foodways - exploited wild, domestic, and freshwater resources	Fauna (wild, domestic and freshwater resources), cereal remains e.g. sorghum	Kadzi, Zhizo, Leopards Kopje & Khami	CE 700-1020, CE 1000-1200, CE 1250-1300 & 1400-1820	Schroda, Leokwe, K2, Mapungubwe, Skutwater, Mwenezi Farm, Malumba, Tshobwane, Mutshilachokwe and Mtao Village	Voight 1983; Pwiti 1996 & Plug 1997 Plug 2000; Smith 2005; Manyanga, 2006; Huffman & Du Piesanie 2011
		Fauna from domesticates, wildlife and fresh water resources such as cattle, sheep, goats, impala, fish, tortoise, chicken etc.	Toutswe, Leopards Kopje, & Khami	CE 1050-1300 CE 1000-1420 CE 1400-1820	Toutswemogala, Taukome, Bosutswe, Selolwe and Vumba	Denbow 1983 Denbow *et al.* 2008; & Van Waarden 201
	Entrepreneurship in commerce, enabled them to take advantage of the natural resources such as wildlife and minerals to make crafts which they traded in exchange for food and other commodities which boosted their livelihood	Animal skins, gold and ivory in return for glass beads, cowry shells, conus, shells, glazed ware and cloth	Zhizo, Leopards Kopje & Khami	CE 700-1020, CE 1000-1200, CE 1250-1300 & 1400-1820	Schroda, Leokwe, K2, Mapungubwe, Skutwater, Mutshilachokwe, Tshobwane, Mtao Village 16, Pitsane, Chaile	Fouche 1937; Hanisch 1980; Voight 1983; Manyanga 2006; Calabrese 2007, Mothulatshipi 2008
		Glass beads, glazed ware, cowry shell	Toutswe, Leopards Kopje, & Khami	CE 1050-1300 CE 1000-1420 CE 1400-1820	Domboshaba, Mupanipani Toutswe Bosutswe Selolwe Dwaleng	Denbow 1983; Denbow *et al.* 2008; Van Waarden 2011, 2012
		Pottery, ivory, iron bangles, wound copper bangles, shell beads	Kadzi Khami (Kasekete	CE 400-750 1400-1500	Kadzi & Kasekete	Pwiti 1996; Plug 1997
		Worked bone, pottery, spindle whorls, bangles (metal, ivory), beads, (soapstone, clay), tuyeres, furnaces, & stone walling	Zhizo, Leopards Kopje & Khami	CE 700-1020, CE 1000-1200, CE 1250-1300 & 1400-1820	Schroda, Leokwe K2, Mapungubwe, Mutshilachokwe, Malumba, Tshobwane, Letsibogo, Weipe, Skutwater and Mtao Village 16	Fouche 1937; Hanisch 1980; Voight 1983; Van Ewyk 1987; Kinahan 2000; Wood 2005, Manyanga 2006; Calabrese 2007, Huffman 2007

		Beads (shell, iron, copper and bronze), pottery sherds, bangles (ivory, iron, copper and bronze), spindle whorl discs (clay and soapstone), crucibles	Toutswe, Leopards Kopje, & Khami	CE 1050-1300 CE 1000-1420 CE 1400-1820	Toutswemogala, Taukome, Lechana, Bosutswe, Dwaleng, Kaitshaa, Tholo, Mupanipani, Vumba, Selolwe and Domboshaba	Lepionka 1977; Denbow 1983; Reid & Segobye 2000; Denbow *et al.* 2008; Van Waarden, 2011, 2012
		Crucibles, dolly holes	Leopards Kopje, & Khami	CE 1000-1420 CE 1400-1820	Mupanipani Domboshaba	Van Waarden 1998, 2011, 2012
	Strategically located their settlements near natural resources e.g. Toutswe settled in the Sowa pan to exploit salt, Leopard Kopje and Khami communities settled in the Tati and Vumba Green stone belt to exploit minerals such as gold.	House foundations in the Vumba & Tati Greenstone Belt areas	Toutswe, Leopards Kopje, & Khami	CE 1050-1300 CE 1000-1420 CE 1400-1820	Taukome, Nqoma, Kaitshaa, Dwaleng, Vumba, Letsibogo, Domboshaba	Denbow 1983; Kinahan 2000; Reid & Segobye 2000; Van Waarden 1998; 2012
Flooding	Strategically sited their homestead on elevated hilltops were they built artificial terraced platforms with stone walling to expand living space	House foundations on hill summits along river valleys and terraced walling made out of simple uncoursed stone blocks	Zhizo, Leopards Kopje & Khami	CE 700-1020, CE 1000-1200, CE 1250-1300	Zhizo, K2, Mapungubwe, Mutshilachokwe, Mtao village 16, Megwe, Chaile, Pitsane, Den Staat, Dwaleng, Selolwe, Tholo, and Thitaba	Hanisch 1980, Meyer 1980; Van Waarden 1998, 2011, 2012; Reid & Segobye 2000; Manyanga 2006 % Mothulatshipi 2008
Dangerous wildlife & livestock raiders	Strategically located their settlements on flat topped hilltops to protect livestock from raiders and dangerous wildlife	Settlements on terraced hilltops	Toutswe, Leopards Kopje, & Khami	CE 1050-1300 CE 1000-1420 CE 1400-1820	Taukome, Nqoma, Kaitshaa, Dwaleng, Vumba, Domboshaba	Denbow 1983; Reid & Segobye 2000; Van Waarden 1998; 2012

The Limpopo Valley where the modern-day boundaries of Zimbabwe, Mozambique, South Africa and Botswana meet, is another case study that showcases evidence of human resilience in a dryland landscape. Though the historiography of Iron Age research in this part of southern Zambezia is as old as the discipline of archaeology (Manyanga 2006), until recently most researchers (e.g. Summers 1960; Huffman 1996; Plug 2000; Wood 2005; Schoeman 2006; Murimbika 2006) were influenced by long-term climatic data (e.g. Tyson & Lindsey 1992), which portrayed the livelihoods of the Iron Age communities that resided in this landscape as being heavily influenced by climate variability time and again. For instance, the rise and fall of Happy Rest, Zhizo, Leopards Kopje and Khami civilisations were perceived largely as to having been triggered by climate change (Huffman 1996). This understanding continued for some time despite the fact that these communities were regionally acclaimed for various novelties, such as the remelting of glass beads using a single mold, early work on gold and bronze and cotton weaving (Huffman 2000; Miller 2002; Bvocho 2005). Thus, climate continued to be heralded as the determiner of their fate. In this regard their presence in this dryland landscape was seen as by chance and not by choice; hence, in-as-much as they were great inventors, they were known largely as docile to climate change, as once argued by Huffman (1996) and others (see Table 3.1). However, recent research (Smith 2005; Manyanga 2006; Mothulatshipi 2008; Hannaford 2015) showed that in-as-much as they lived in a dryland landscape vulnerable to environmental and climatic uncertainty, Iron Age communities of the Limpopo Valley were not as docile as was presented in previous models crafted from climate science. Rather, they determined their own density and maintained their livelihoods through using the adaptation strategies listed in Table 3.4. As a result, they were able to combat drought, tsetse-flies and other related calamities that affected the valley constantly; hence, today they are remembered as resilient civilisations who were able to adapt to drylands (Manyanga 2007; Mothulatshipi 2008; Hannaford 2015).

The fringes of the Kalahari Desert in north-eastern Botswana are also part of the archaeological landscapes in southern Zambezia that exhibit evidence of human adaptiveness specifically to a semi-arid environment during the Iron Age. Until the 1970s, north-eastern Botswana was considered to have not supported any significant Iron Age groups, since it was assumed that food-producing communities avoided the Kalahari margins when it came to settlement choices (e.g. Phillipson 1969:35). This assumption was based largely on presentist geo-climatic maps modelled by incoming colonial enviromental scientsists that depicted the landscape as unsuitable for agricultural subsistence (Segobye 1998:102). However, extensive archaeological surveys and excavations undertaken for the last five decades by scholars such as Lepionka (1977), Denbow (1983), Campbell (1991), Kinahan 2000; Reid & Segobye (2000); and Van Waarden (1998; 2011, 2012) revealed thousands of sites with continuous occupational sequences that stretched from the EIA to the LIA. Thus, today it is well established knowledge that north-eastern Botswana was once home to vibrant Iron Age communities who independently chose to settle in the Kalahari margins and adapted context-specific innovations (Table 3.4) (Denbow 1983:213; Van Waarden 2012).

3. 4. RESILIENCE

Over the long-term, adaptation creates resilience (Crumley 1994, Redman 2005; Manyanga 2006; McAnany & Yoffee 2010; Lane 2015). Resilience is "…*the capacity of society …to respond to and recover from adverse conditions, to counter the effects of inherent environmental insecurity (for instance seasonality), and to reorganise society to meet new conditions…"* (Ekblom 2012:481).

Thus, in short, resilience is the opposite of vulnerability and can only be achieved after communities have successfully adapted to endure and overcome their vulnerabilities. The resilience theory is largely informed by the adaptive cycle (Holling & Gunderson 2002), where a community passes through four phases of growth, namely exploitation – (a phase when it rapidly grows owing to diversity of opportunities), conservation – (when it strategically manages its resources for posterity), release – (when it becomes vulnerable to hazards due to over-exploitation of resources) and finally, reorganisation phase, when it rejuvenates through adaptation in the form of innovation, experimentation or improvisation. This cycle helps us to measure continuity and change in a community (Redman 2005). This point is clearly illustrated in Porter's (2013) study of the Levant Iron Age communities of west-central Jordan where trajectories of communal complexity constantly shifted between stratified and non-stratified political organisations. However, as cautioned by Redman, the adaptive cycle still needs refinement as a measure of resilience as it depicts the past as being roughly uniform.

Archaeologists find is difficult to measure resilience within communities, but one variable that is common among all civilisations is extinction; hence, no community lasts forever (Porter 2013:127). Usually, this kind of collapse happens when a community's vulnerabilities force it to disintegrate permanently and abandon the landscape it called home. However, as cautioned by McAnany & Yoffee (2010) and Ekblom (2012), this is rare and assessment of collapse is only possible through an understanding of the long-term and short-term solutions that were put in place to overcome vulnerability. As presented earlier, the same approach has been employed in southern Zambezia to measure resilience in the so-called marginal area of the Limpopo Valley that existed during the Iron Age. Therefore, in the current study, the presence or absence of Iron Age communities with a long occupational sequence in the Shashi region is what determines whether they were resilient or not. However, an understanding of the long-term and short-term adaptation strategies they put in place in order to overcome their vulnerabilities is the priority of this study.

3. 5. METHODS

Within a framework provided by the interlinked concepts of vulnerability, adaptation and resilience, various data-collection methods were deployed to achieve the research objectives of this study. These include desktop studies, archaeological surveys, mapping and excavations. Overall, data collection was undertaken using a stepped methodology where desktop studies were conducted first followed by surveying and excavations.

3.5.1. Desktop studies

Firstly, published and unpublished documentary data from the National Museums and Monuments of Zimbabwe (Harare and Bulawayo), National Archives of Zimbabwe (Bulawayo), Surveyor-General (Harare) and the UCT African Studies Library (Cape Town) were reviewed to create a database of what is known about the physiography, history and archaeology of the Shashi region. Documentary evidence included maps, photographs, site registers, journals, fieldwork reports, monographs and autobiographies - particularly those of early explorers. Thus, the database provided background information, which aided towards understanding of the Shashi region as viewed by different communities - those that lived in the area, archaeologists and others. The rationale was to use the known to unveil the unknown

3.5.2. Survey

Having gathered background information about the study area from the desktop studies, a survey of the Shashi region was conducted in three stages. It was conducted firstly on Google Earth, and followed by surface surveys and, lastly another satellite survey on Google Earth. The survey was limited to a 100 km^2 transect (Figure 3.2) and this was selected to represent the study area using the principles of stratified random sampling (Renfrew & Bahn 2004). The selected transect covered all of the three geophysical-ecological layers of the Shashi Region, namely riverine, plains and kopjes. This was done to offset the uneven topography and ecology of the region. The 100 km^2 transect was further dissected into 1 km x 1 km grid units using 1:250 000 and 1:50 000 maps (SF-35-8, 2129C1 and 2128D2 & D4) acquired from the Surveyor-General office in Harare. The logic sought to enable systematic satellite and surface (pedestrian and vehicle) surveys.

Satellite surveys were conducted first on the 100 km^2 transect (Figure 3.3), using Huffman (2012) and Sadr & Rodier (2012) Google Earth Pro techniques for surveying Iron Age sites.

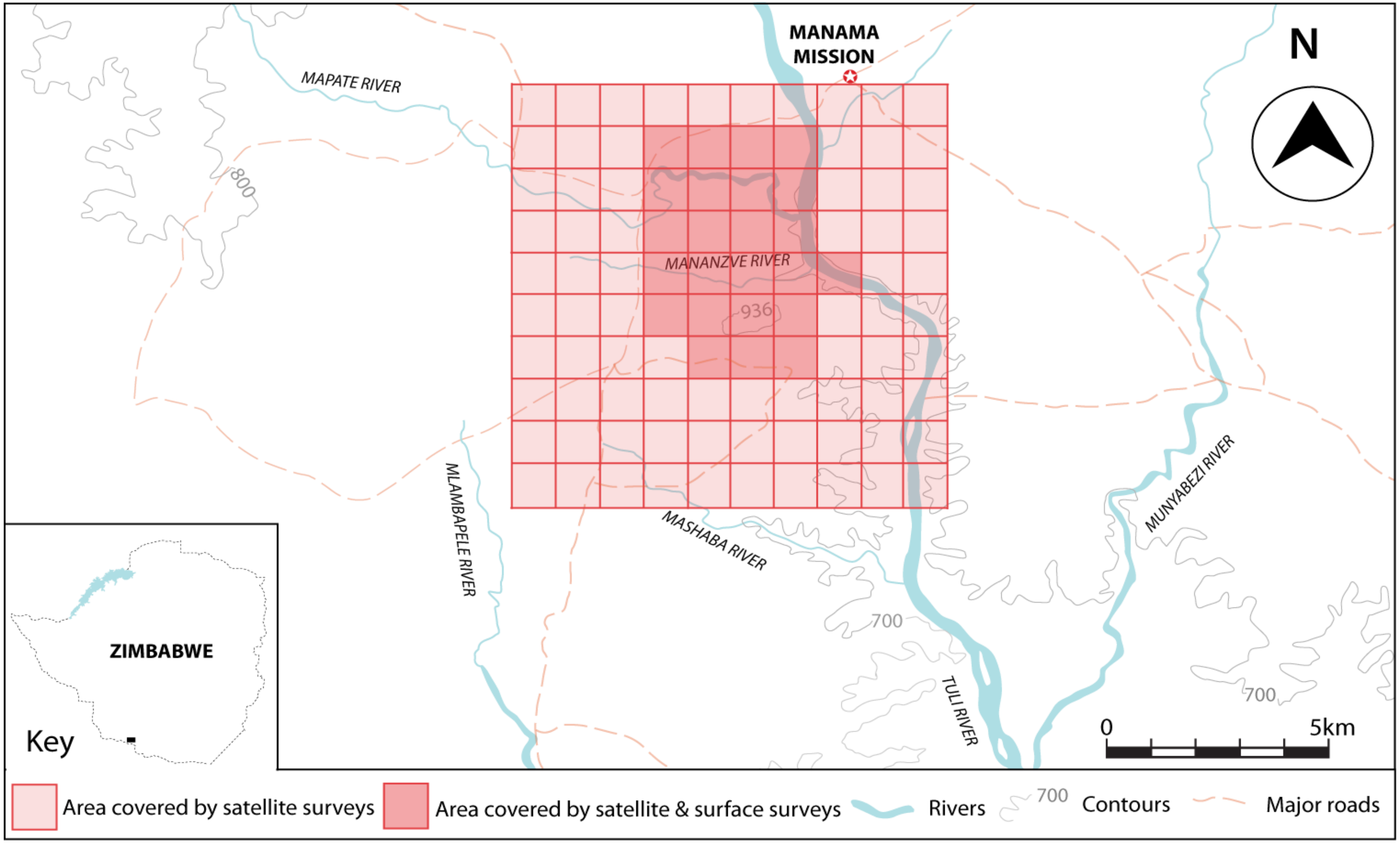


Figure 3. 3: The Shashi Region and the areas covered by surface and satellite surveys

Huffman used Google Earth to identify more than 1000 Iron Age sites in the Limpopo Valley; Sadr, and Rodier, on the other hand, successfully used the same Geographic Information Systems (GIS) package to map the peopling and evolution of Sotho/Tswana stone-walled settlements in the Gauteng province in South Africa. Basically, the surveys were aimed at mapping cultural and natural features that could might exhibit traces of Iron Age behaviour, such as (ashy) middens, steep-sided hills with flat tops, cultivation lands, vegetation anomalies, soils, strategic water bodies, grazing lands, mineral belts and livestock pens (Huffman 2012:36). Thus, mapping was made possible through 3D imagery, flight simulation, as well as recording of the Global Positioning System (GPS) coordinates and elevation profiles, since the landscape did not have much vegetation cover (Figure 3.3). Google Earth's time slider and historical-imagery tools were also used to view the landscape during different times of the day and evaluating how the landscape evolved through time. Nevertheless, as experienced by Sadr & Rodier (2012), Google Earth was in some instances marred with low visibility in the densely vegetated riverine transects whose imagery were last updated in 2012. Consequently, such invisible transects were reserved for surface surveys, as recommended by Reid & Segobye (2000).

Surface surveys were conducted using both pedestrian and vehicle surveys. Owing to various constraints that included land access, budget and time, the reconnaissance only covered a 22 km^2 transect out of the 100 km^2 initially selected as the study area (Figure 3.3). Areas plotted on Google Earth Maps as 'possible' Iron Age sites were verified for ground truthing.

Following Bahn (1996:55), a site was conceptualized as any portion of the landscape that showed visible evidence of human activity. Both cultural and environmental features were recorded and mapped using a combination of data capture sheets (Appendix 1), photography and GPS receivers. Owing to time and budgetary constraints, 1 km x1 km pedestrian surveys were dedicated mostly to kopjes and riverine valleys while plains were surveyed using vehicles mostly owing to high visibility. Following, Denbow (1983), ground truthing was also achieved by relying on the local elderly - whose knowledge played a pivotal role in the identification of most sites. However, not every one of them had an understanding of the local geography and history of the study area.

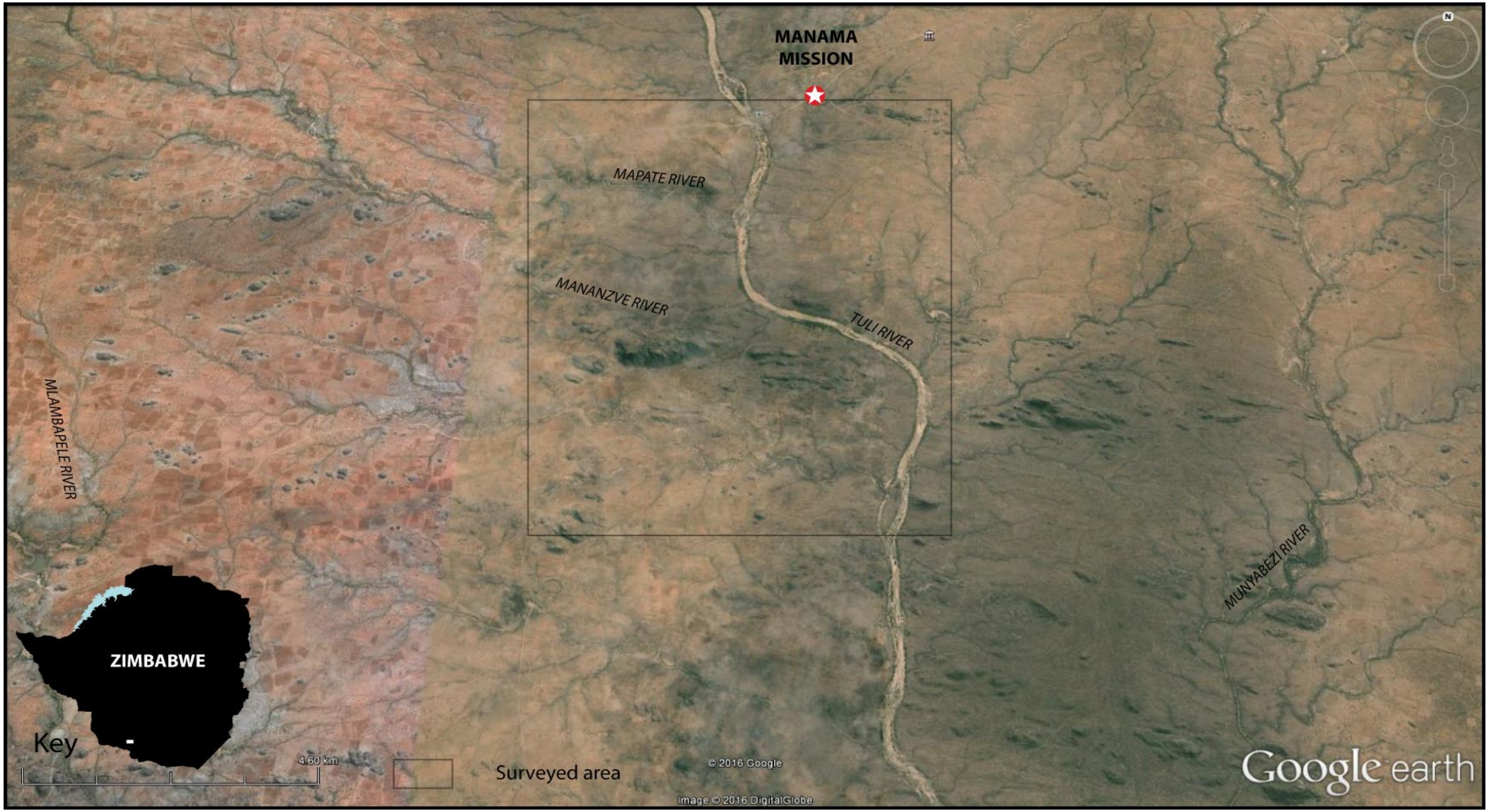


Figure 3. 4: The Shashi Region and the surveyed area using Google Earth satellite imagery (Adapted from Google Earth)

Basing on the combined results, attention was directed to the site of Mananzve, which had Zhizo, K2, Mapungubwe and Khami ceramics eroding out of various parts of the site. This suggested long-term occupation by various communities and, in the process, an opportunity to explore long-term adaptation across time in one place.

3.4.1. Excavation strategies

Intra-site surveys were conducted on Mananzve first to understand the site as a prelude to mapping it. The mapping exercise was first carried out at desktop level using Google Earth Pro satellite imagery, following Sadr & Rodier (2012) and Chirikure *et al.* (2016). Google Earth enabled zooming into the site; hence, cultural and natural features that exhibited traces of Iron Age behaviour were provisionally plotted against contour lines adapted from a digitised 1:50 000 topographic map showing the study area. However, Google Earth was not able to pick up all the features and surface scatters. Consequently, these were physically mapped on site using basic field survey techniques such as setting up of a datum (Renfrew & Bahn 2004). Recording equipment used included, grids, data capture sheets, notebooks, digital cameras, and Garmin GPS receivers. The Garmin receivers were used to generate GPS coordinates of the sampled features and surface scatters hence the readings were exported to Google Earth and plotted on the provisional map. Various architectural attributes of the stone walling were recorded (see Chapter Seven). As a result, the mapping exercise culminated into the production of a detailed site map which was drawn using Adobe Illustrator to make the graphic data scalable to any proportion without scarificing the quality of the resolution.

Large ashy middens exposed during the mapping exercise were targeted for vertical excavations to retrieve samples of material culture remains that were produced and consumed at different timescales when the site of Mananzve was occupied. Since the study was a pilot, a test pit approach was adopted for sampling different parts of the settlement and establishing the depth of the archaeological deposit. However, because of the scale, scope and budget of the study, these were restricted to the hilltop and foothill middens. Nevertheless, the extracted subsurface data provided numerous finds which enabled an overview of the behaviour of Iron Age communities that settled at Mananzve and how they adapted to the local environment. A total of 11 test pits (1 m x1 m) including 1 measuring (2 m x1 m) were sunk on the hilltop and foothill using basic principles and equipment used for archaeological excavations (Renfrew &

Bahn 2004). These test pits were excavated using natural stratigraphy until sterile soil or bedrock was reached. All the excavated soil was sieved using 2 mm and 5 mm mesh sieves so as to retrieve smaller finds such as glass beads. Stratigraphic profiles of the test pits were drawn using Adobe Illustrator and changes in soil colour were recorded to emphasise stratigraphy. As a result, all the finds were properly documented using note books, and photographs. Portable finds such as charcoal, ceramics, beads, bones, spindle whorls, metal objects, and stone objects were bagged and transported to the Natural History Museum in Bulawayo for further laboratory analyses. Charcoal fragments that were eventually selected were then radiocarbon dated. The results of the excavation and the surveys will be presented in the next chapter.

3. 6. SUMMARY

Although drylands exposed ancient civilisations to vulnerability, the communities that lived in them adapted, thereby producing numerous novelties. Thus, through innovation and improvisation, they were able to adapt and the more they adapted, the more resilient they became. However, adaptation is mostly absent in Iron Age studies of southern Zambezia. Instead, most of what we know about dryland communities is 'doom'; hence, the are perceived largely as marginal. This problem is not immune to global archaeology, as demonstrated among the Moche of ancient Peru and the EIA Levant communities of west-central Jordan. Though it has changed now, the popular understanding was that the fate of these respective civilisations was always at the mercy of climate change; henceforth, their survival was understood mostly as by chance and not choice. However, a close look at human responses to climatic and environmental change, beyond and regionally, shows that ancient civilisations were able to adapt to drylands through various strategies. Therefore, in southern Zambezia, there is a need to conduct more studies in typical landscapes such as the Shashi region, focusing on exposing those strategies that enabled them to overcome and succeed in the face of environmental and climatic adversities. The next chapter presents the data from the archaeological surveys that were undertaken in the Shashi region and the excavations carried out at Mananzve.

CHAPTER FOUR

SURVEYS AND EXCAVATIONS: DATA COLLECTION RESULTS

"…the archaeological excavator is not digging up things, he is digging up people…" (Wheeler 1954:2).

4. 1. INTRODUCTION

This chapter, presents the results of surveys that were undertaken in a portion of the Shashi region and the excavations that were undertaken at Mananzve, one of the archaeological sites located during the reconnaissance. The surveys and excavations were carried out under a permit obtained from the National Museums and Monuments of Zimbabwe between July and October 2015. The rationale for undertaking the surveys was to prospect Iron Age sites and trace farmer adaptations as depicted in environmental and settlement histories of the Shashi region. Excavations were conducted so as to acquire contextualised subsurface data for establishing the chronostratigraphy of the study area through relative and absolute dating. Furthermore, the excavations were essential in generating artefact samples for further laboratory analyses needed to understand human adaptation.

4. 2. SURVEY RESULTS

A total of 83 'potential' Iron Age sites were located using Google Earth Pro satellite imagery (Figure 4.1). These were digitally mapped following kraals or homestead residues, which appeared white or grey and, out of the total, only 32 sites were visited for ground truthing. Among the surface surveyed only 22 sites had typical Iron Age material culture and these were fairly distributed throughout the three natural strata that make up the physiography of the Shashi region (Table 4.1 and Figure 4.2). These sites represented all the Iron Age periods in southern Africa, namely – the EIA (*n*=4), MIA (*n*=7) and LIA (*n*=22) (Figure 4.3). However, the LIA formed the majority. Seven (32%) of the surface surveyed sites were recorded as multi-component. These held scatters of material remains from different Iron Age groups, particularly ceramics (Figure 4.2).

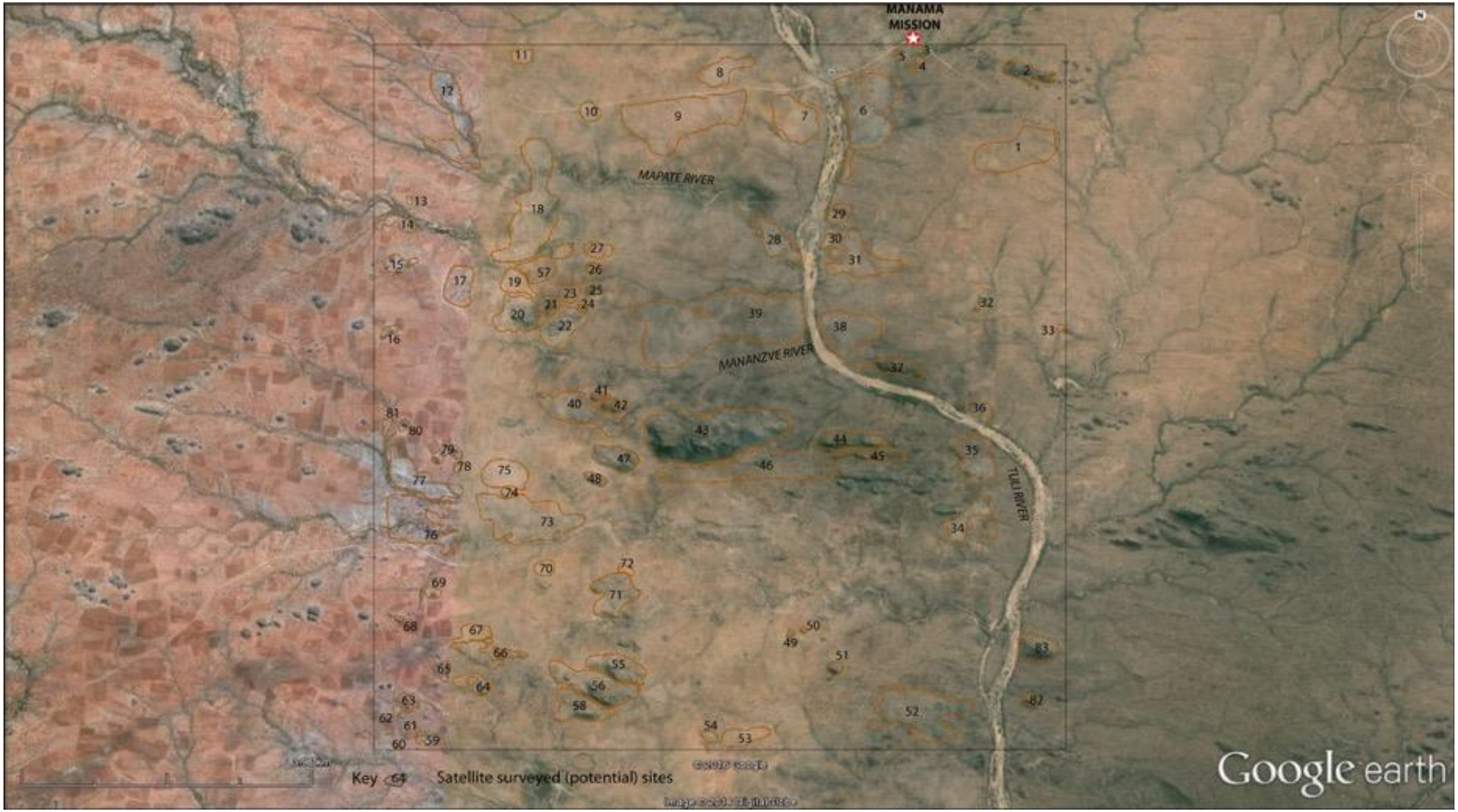


Figure 4. 1: ‘Potential’ Iron Age sites identified using satellite surveys (Adapted from Google Earth)

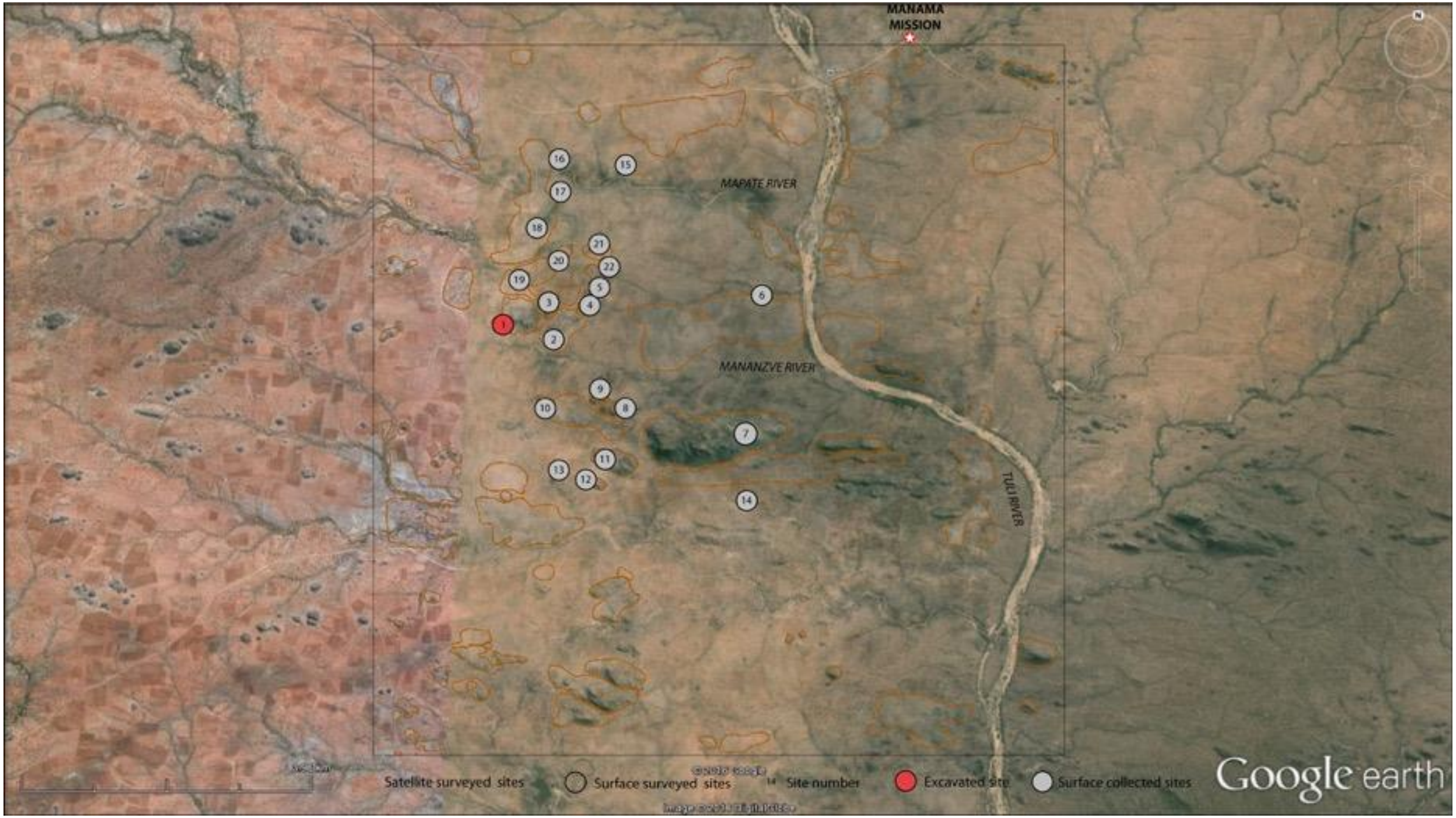


Figure 4. 2: The relationship between satellite and surface surveyed sites (Adapted from Google Earth)

Table 4. 1: Sites identified using satellite and surface surveys

Site Number	Site Name	GPS Coordinates	Location	Cultural Period	Tradition	Type Site	Action Taken
1	Mananzve	21°36'1.53"S 28°56'31.58"E	Kopje, Plain	EIA, MIA, LIA	Zhizo, LK, Khami	Settlement	Excavated
2	Mananzve 1	21°36'5.12"S 28°56'50.39"E	Kopje, Plain	EIA, MIA, LIA	Zhizo, LK, Khami	Settlement	Surface Collected
3	Mananzve 2	21°35'58.05"S 28°56'45.10"E	Kopje, Plain	MIA, LIA	LK, Khami	Settlement	Surface Collected
4	Mananzve 3	21°35'56.67"S 28°57'1.48"E	Kopje, Plain	LIA	Khami	Settlement	Surface Collected
5	Mananzve 4	21°35'48.83"S 28°57'3.93"E	Kopje, Plain	LIA	Khami	Settlement	Surface Collected
6	Tuli 1	21°35'48.00"S 28°58'36.57"E	River	LIA	Khami	?	Surface Collected
7	Musendami	21°36'57.12"S 28°58'17.76"E	Kopje, Plain	MIA, LIA	LK, Khami	Settlement	Surface Collected
8	Musendami 1	21°36'42.27"S 28°57'16.90"E	Kopje, Plain	MIA, LIA	LK, Khami	Settlement	Surface Collected
9	Musendami 2	21°36'37.80"S 28°57'9.50"E	Kopje, Plain	EIA, MIA, LIA	Zhizo, LK, Khami	Settlement	Surface Collected
10	Musendami 3	21°36'40.18"S 28°56'36.65"E	Plain	LIA	Khami	?	Surface Collected
11	Musendami 4	21°37'9.10"S 28°57'26.92"E	Kopje, Plain	LIA	Khami	Settlement	Surface Collected
12	Musendami 5	21°37'16.67"S 28°57'11.27"E	Kopje, Plain	MIA, LIA	LK, Khami	Settlement	Surface Collected
13	Musendami 6	21°37'15.98"S 28°56'50.83"E	Kopje, Plain	LIA	Khami	Settlement	Surface Collected
14	Musendami 7	21°37'18.61"S 28°58'22.42"E	Plain	LIA	Khami	?	Surface Collected
15	Mapate 1	21°34'51.97"S 28°57'18.06"E	River	LIA	Khami	?	Surface Collected
16	Mapate 2	21°34'50.02"S 28°56'49.36"E	River	LIA	Khami	?	Surface Collected
17	Mapate 3	21°35'0.12"S 28°56'43.40"E	River	LIA	Khami	?	Surface Collected
18	Mapate 4	21°35'23.72"S 28°56'34.65"E	River	LIA	Khami	?	Surface Collected
19	Mapate 5	21°35'47.63"S 28°56'20.52"E	Plain	EIA, LIA	Zhizo, Khami	Settlement	Surface Collected
20	Mapate 6	21°35'41.18"S 28°56'55.94"E	Plain	LIA	Khami	?	Surface Collected
21	Mapate 7	21°35'34.62"S 28°57'1.72"E	Plain	LIA	Khami	Settlement	Surface Collected
22	Mapate 8	21°35'41.19"S 28°57'6.51"E	Plain	LIA	Khami	Settlement	Surface Collected
Key EIA = Early Iron Age MIA = Middle Iron Age LIA = Late Iron Age LK = Leopards Kopje							

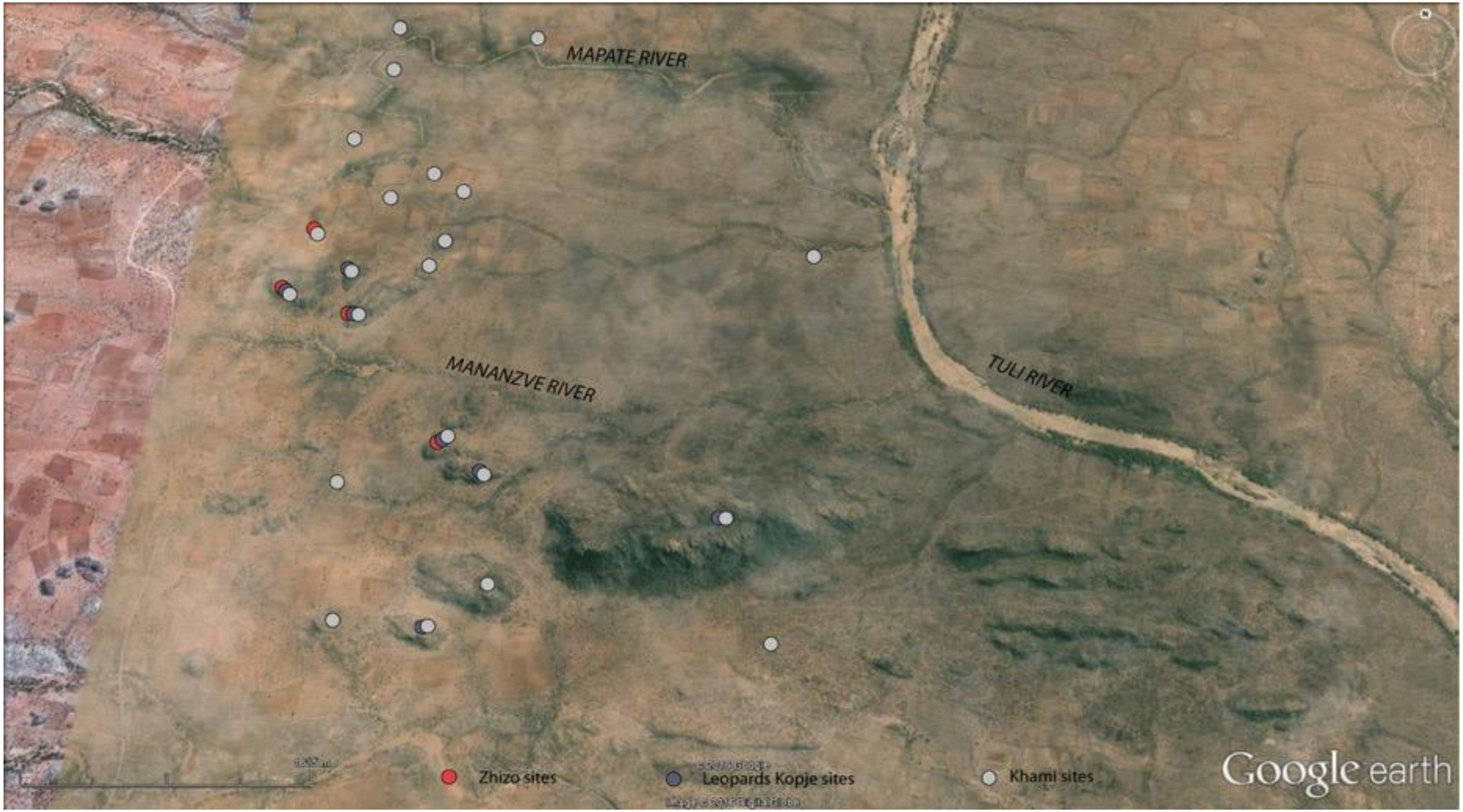


Figure 4. 3: The EIA, MIA and LIA type sites (Adapted from Google Earth)

EIA sites were located mostly on plains adjacent to rivers and kopjes (Table 4.1). The furthest distance to accessible water was less than a kilometre from Mapate, Mananzve or Tuli Rivers (Appendix 1). These sites were dominated by scatters of comb stamped ceramics and tabular shaped drawn beads (Figure 4.4), these materail remains are largely associated with Zhizo communities (see Huffman 2007). Other material remains scattered in plains currently used as cultivation fields included mussel shells, iron scrapers and shell beads (Figure 4.4).

MIA sites were located mostly on hilltops and hill slopes however, some settlements were situated on flats formerly inhabited by Zhizo communities (Table 4.1). In terms of distance to the nearest water source, most sites were situated within a 0–0.99 km radius while the remainder extend to a 4 km radius (Appendix 1). Most MIA sites had surface scatters of potsherds decorated with arcades and triangle motifs (Figure 4.4). Basing on their similarities with ceramics recovered from other Iron Age settlements within the same landscape, such as Mapela, K2, Mapungubwe, Pitsane, Megwe, Mutshilashokwe, and Tshobwane (Fouche 1937; Manyanga 2006; Calabrese 2007; Mothulatshipi 2008); the sites were recoded as Leopards Kopje settlements. However, more laboratory work was needed to ascertain the exact facies of the Leopards Kopje. The ceramics were found in association with numerous grain bin foundations, grinding stones (upper and lower), occasional spindle whorls fragments, metals, lithics, shell beads and glass beads. Stone walling was recorded, but this was only expressed at the site of Mananzve, where flats on the hilltop and hillslope were levelled with artificial stone terraces made of simple uncoursed basalt-stone blocks.

LIA sites were fairly distributed throughout the plains, kopjes and river basins that make up the geology of the Shashi region (Appendix 1). Locations of LIA settlements included plains, foothills and summits of hills, such as Mananzve, which were formerly occupied by the Leopards Kopje people (Figure 4.3). Most of these settlements were scattered densely with potsherds decorated occasionally with polychrome band and panels, incisions and cross hatching motifs. Basing on the typology of the ceramics which shared a lot of characteristics with those from Danamombe, Kasekete, Khami, Domboshaba and Mtao Village 16 (Robinson 1959; Chirikure *et al*. 2002; Manyanga 2006; Van Waarden 2012; Machiridza 2012), the settlements were recorded as dating to the Khami period. This included, crucibles, slag, potsherds, shell and glass beads, metals (bronze, copper and iron), lithics, grain bins, house foundations, dung and other immovable infrastructure such as dolly holes which were found in association with the ceramics. Spindle whorls discs made of clay were recovered; however, others made of recycled old potsherds and soapstone (1) were recovered from Mananzve 1 and Mapate (Figure 4.4).

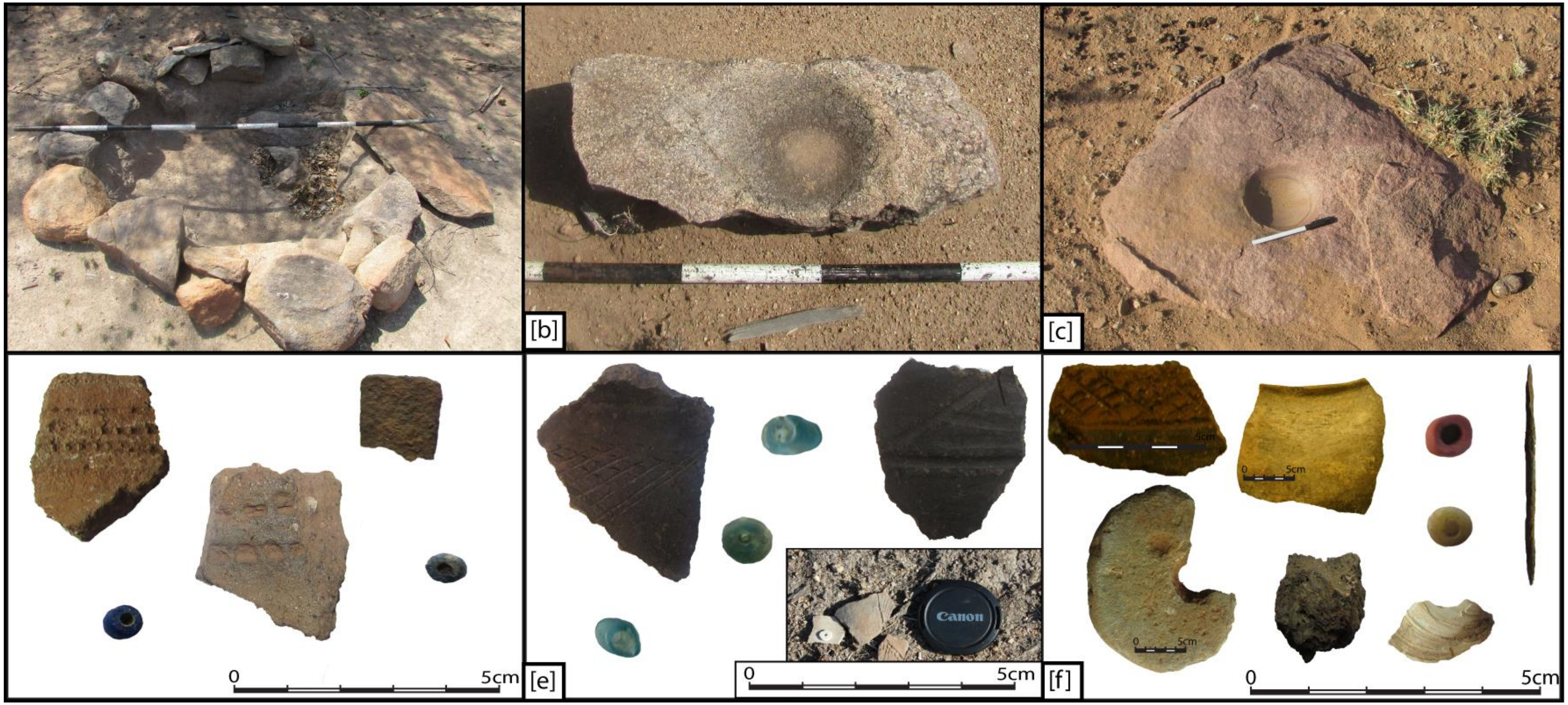


Figure 4. 4: Surface finds from the surveyed sites; [a] Stone circle (dried spring?) at Mananzve 3; [b] grinding stone from Musendami 4; [c] dolly hole at Musendami 2; [d] some EIA surface finds recorded at Zhizo sites; [e] some MIA surface finds recorded at Leopards Kopje sites; [f] some LIA surface finds recorded at Khami sites.

4. 3. FIELDWORK AT MANANZVE

Basing on the combined results of desktop and pedestrian surveys, the site of Mananzve was selected for excavations conducted within a space of two months (July and October 2015). A two paged site recording form housed in the Museum of Human Sciences in Harare demonstrates that Mananzve was initially reported to the Archaeological Survey department on the 10th of August 1993 by Dr Nils Bergman, a physician and an honorary research fellow at UCT who by then was the Medical Superintendent of Manama Mission hospital. Several surface finds such as stone walling, grindingstones (more than 40), lithics, spear heads, chisels, spindle whorl discs, shell beads and a cowry shell fragment were reported hence Mananzve was given a site number (2128:DB:8). However, the grid reference recorded was not clear hence it remained mysterious until the recent survey by the current study. Upon recovery, Mananzve was mapped to produce a detailed site map which clearly illustrated the settlement layout, different activity areas, and possible boundaries. Intra-site surveys and mapping informed the selection of excavation areas. The idea was to target various areas that would expose the layers of occupation (EIA, MIA and LIA) at the site. Eventually, five excavation units were sunk on the hilltop, while six were strategically spread on the foothill.

4. 3.1. MANANZVE: SITE DESCRIPTION AND SPATIAL LAYOUT

Mananzve (S 21°36'1.53"; E 28°56'31.58") lies approximately 7 km south of Manama Mission in the Shashi region, Gwanda South. Geographically, it is bordered by Tuli River to the east, Mapate River to the north and Mananzve River to the south. Generally, the site is made up of two geophysical strata, namely the plain and the hill (Figure's 4.5 & 4.6). These have abundant ashy middens which are consistently spread out throughout the terrain. The hill is spread on a roughly west-east axis and rises to an altitude of 773 m covering a surface area about 300 m long and 200 m wide. The plain undulates between 730 and 740 m above sea level, and covers an area of 1500 by 900 m stretching from the foothill down to the areas contemporarily used for settlement and crop cultivation.

The hilltop is also composed of cliffs and boulders that merge with a series of retaining stone-walls that form the eastern end platform of the hill slope and the the upper edges of the northern slope. These walls were built using predominantly undressed basalt blocks which were fitted carefully with smaller rocks and, in some instances, abutted to each other for stability purposes.

Figure 4. 5: North-west elevation of Mananzve Hill

The hill and the plain are covered with numerous surface scatters of *dhaka* floor rubble, slag, spindle whorls, shell beads, glass beads, bone fragments and other movable and immovable material remains that points to sedentary existence. These remains include a dolly hole cluster on the north-eastern section of the foothill, a kraal with a massive accumulation of dung on the western end of the foothill and numerous grinding stones scattered all over the flats and summit of Mananzve. These features and artefacts were mapped to produce a site map of Mananzve (Fig 4.6).

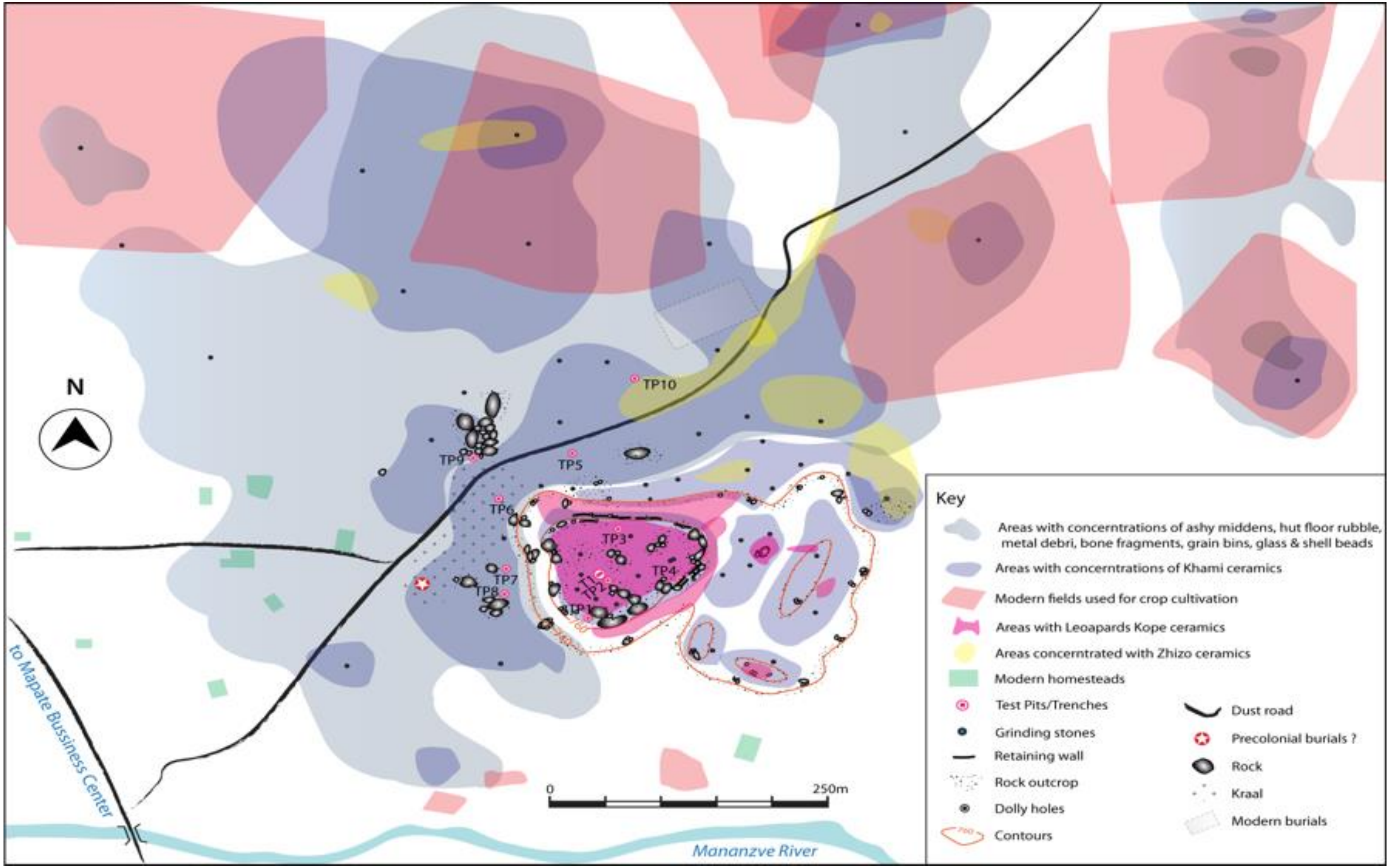


Figure 4. 6: The site of Mananzve showing features and the location of all the excavation units

4. 3. 2. EXCAVATIONS

In order to retrieve well resolved samples for establishing the sequence of the site, excavations were performed on the hilltop and on the foothill. The idea was to also understand the evolution of the site and associated adaptation strategies as revealed through recovered artefacts.

4. 3. 2. 1. HILLTOP EXCAVATIONS

Test Pit 1

Test Pit 1 was sunk on an undisturbed midden on the southern end of the hilltop and was excavated to a depth of 50 cm. Four stratigraphic layers were established (Figure 4.7). The first layer was made up of light brown soil followed by a thick layer of ashy grey soil, which yielded substantial material culture. The subsequent layer produced dark soil which was soft and ashy. A *dhaka* floor resting on a gravel foundation protruded on the northern section of the trench and this only covered only one quarter of the trench. Below this section emerged a sterile greyish gravel soil. The soil eventually culminated into the bedrock. Finds recovered included shell beads, glass beads, bones, potsherds and lithics.

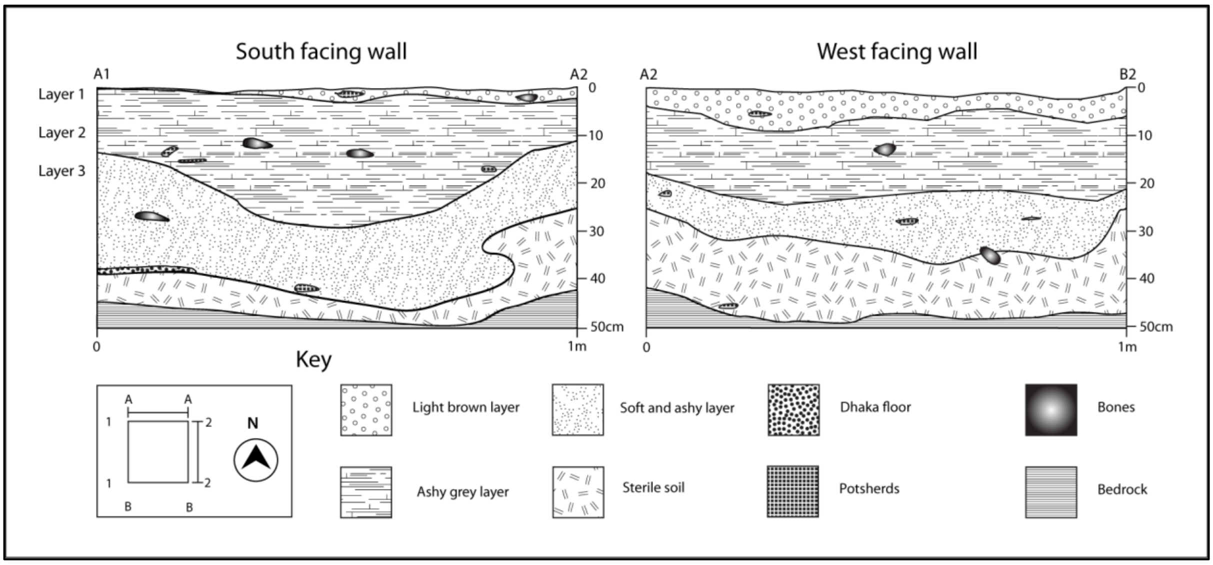


Figure 4. 7: Stratigraphy of Test Pit 1

Test Pit 2

Test Pit 2 was sunk on a rich midden that spreads from the centre of Mananzve hilltop. The exposed stratigraphy culminated into 6 natural layers as illustrated in Figure 4.8 below. Finds recovered included potsherds (decorated with polychrome and incised triangles), metal objects, fauna and beads made of glass, and shell. A *dhaka* floor (Figure 4.9) was exposed on the base of layer 6. Charcoal samples that were extracted from Layer 2 (Beta-426921) and Layer 4-(Beta 426922) were dated, these results shall be discussed in Section 4.4.

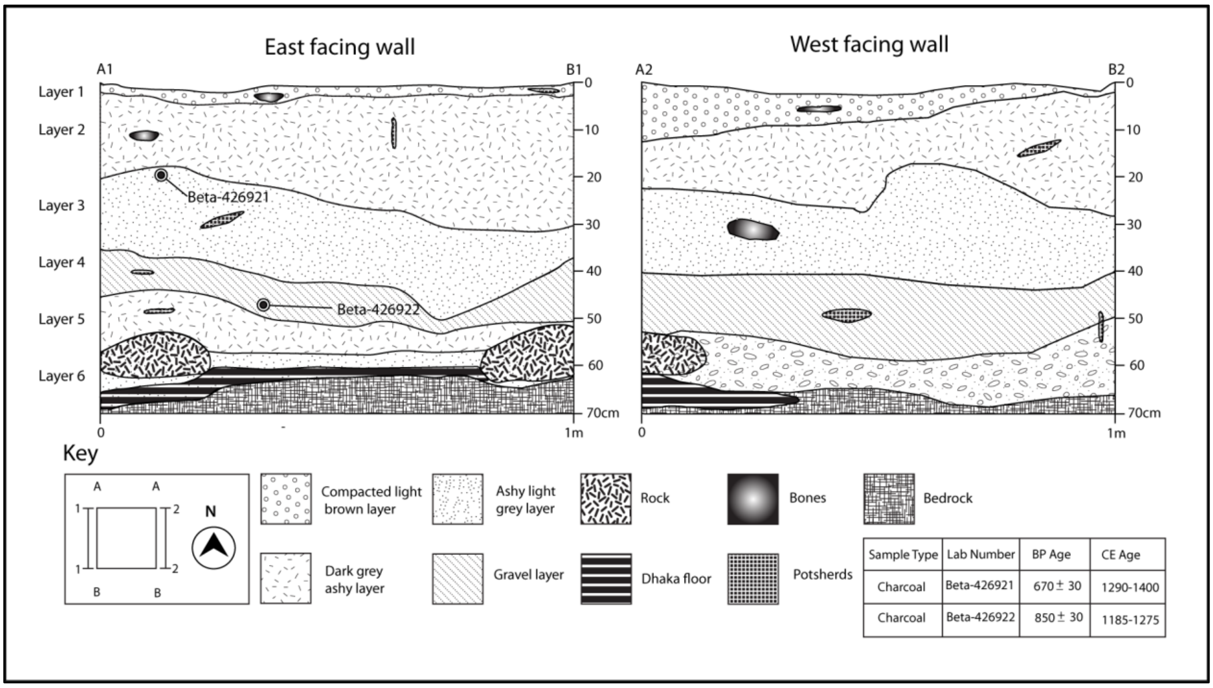


Figure 4. 8: Stratigraphy of Test Pit 2

Figure 4. 9: Section of a dhaka floor from Test Pit 2

Test Pit 3

Test Pit 3 was strategically sunk a metre away from Test Pit 2 (see Figure 4.6) so as to obtain a comparable stratigraphy and material culture. The first layer exposed compacted light brown soil and a section of a *dhaka* floor with a gravel foundation on the eastern end of the trench (Figure 4.10). Numerous potsherds, fauna, glass, and shell beads were recovered from this stratum. The subsequent layer was filled up with soft dark brown ashy soil, which culminated into the bedrock of the western end of the trench (A1-A2). However, soil on the eastern section of the midden (A2-A3) continued to yield more material though its colour and texture transformed to grey ashy gravel. The subsequent ashy grey layer eventually culminated into the bedrock. Material culture recovered from Test Pit 3 was generally similar to that recovered from Test Pit 2.

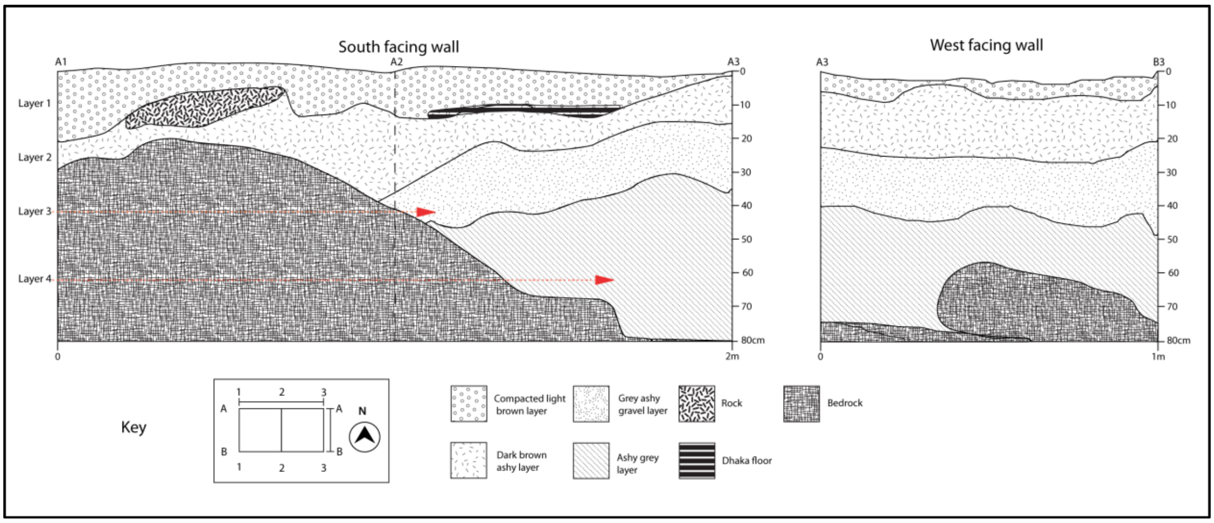


Figure 4. 10: Stratigraphy of Test Pit 3

Test Pit 4

Test Pit 4 was located on a midden on the northern end of the hilltop. Four layers of stratigraphy were established (see Figure 4.11). The first layer consisted of compacted light grey soil which contained pottery and occasional bone fragments. The second layer was characterised by a fine grey ashy layer which yielded numerous potsherds. The subsequent stratum was made up of dark grey soil that transmuted into an ashy midden. Eventually the soil became gritty and gravelly and no finds were retrieved from this layer. This area marked the protrusion of a sterile layer; hence, the excavation was stopped.

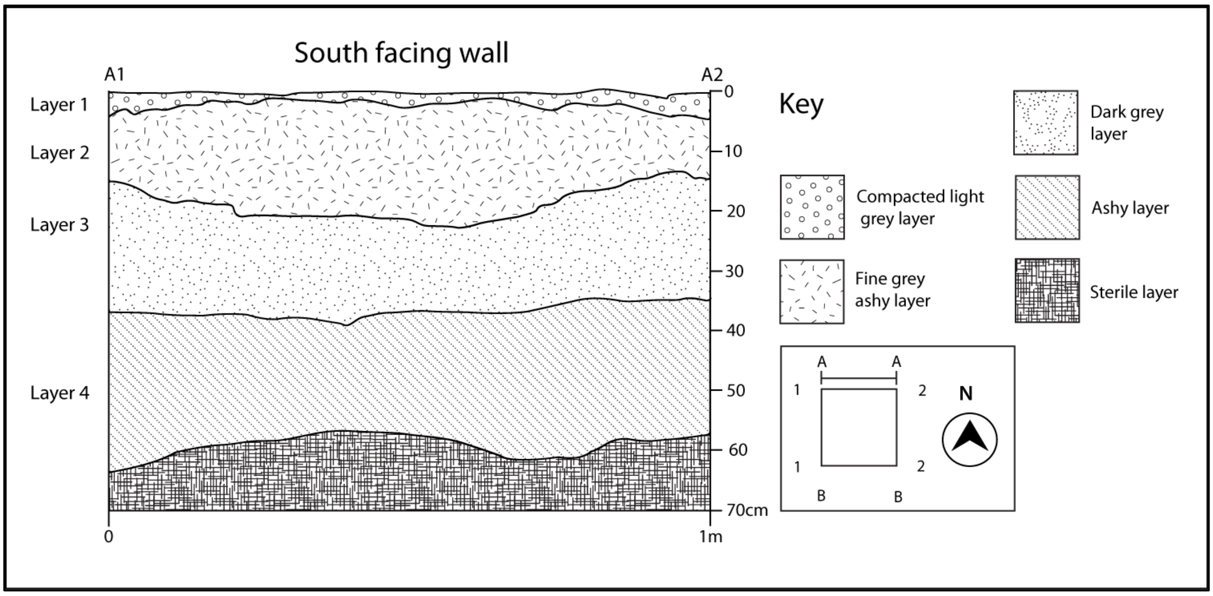


Figure 4. 11: Stratigraphy of Test Pit 4

Test Pit 5

Test Pit 5 was sunk on the eastern platform of the hilltop (Figure 4.6). The objective was to establish the chronostratigraphical relationship between the midden material remains and the stone walling achitecture at Mananzve. Basically, two layers of stratigraphy were exposed (Figure 4.12). The first layer was made up of compacted grey soil with stone walling section potruding at the northern end of the square. Material remains recovered from this layer included a spindle whorl fragment, one metal axe (head), a glass bead, shell beads, fauna and plain potsherds. The subesquent layer was composed mainly of light ashy soil and a stone walling foundation which rested on the bedrock that emerged from the southern end of the test pit. Density of the finds sharply declined; however, few potsherds decorated with triangle motifs, burnt dhaka fragments, bone fragments, a cowrie shell fragment, and shell beads were recovered from this layer. Basically, the bottom layer showed that the exposed wall was initially built on the foundation of a basalt bedrock on the nothern cliff of the hilltop so as to block and bind deposit that was later filled in as core.

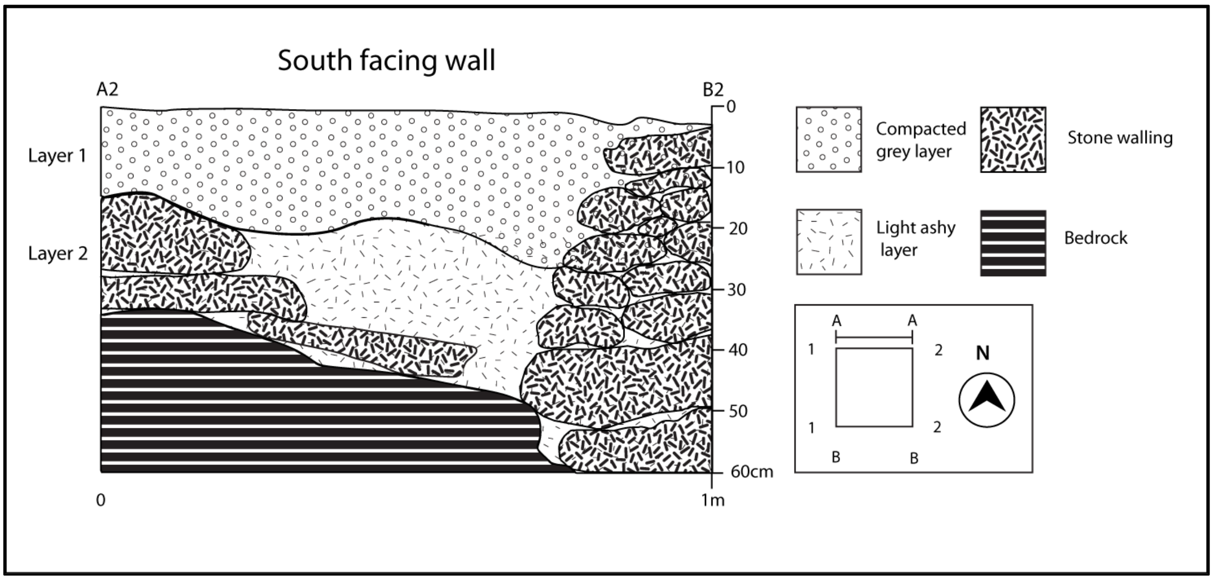


Figure 4. 12: Stratigraphy of Test Pit 5

4. 3. 2. 2. FOOTHILL EXCAVATIONS

Test Pit 6

Test Pit 6 was excavated on a large midden adjacent to the path that passes through the plain on the eastern end of Mananzve foothill (Fig 4.6). The test square yielded numerous material finds to a depth of 80 cm. These finds included potsherds, (largely plain with occasional cross hatching and polychrome), bone fragments, metals, charcoal, fauna and beads made of shell and glass. A clear stratigraphy was established (Figure 4.13). The top layer comprised compacted brown grey soil. This was followed by two successive layers made up of dark grey ashy soil and light and soft grey soil, which rested on the bedrock. Charcoal samples (Figure 4.13) were collected for radiocarbon dating from Layer 2 (Beta-426923) and Layer 3 (Beta-426924 & Beta-426925. The results shall be discussed in a Section 4.4 below.

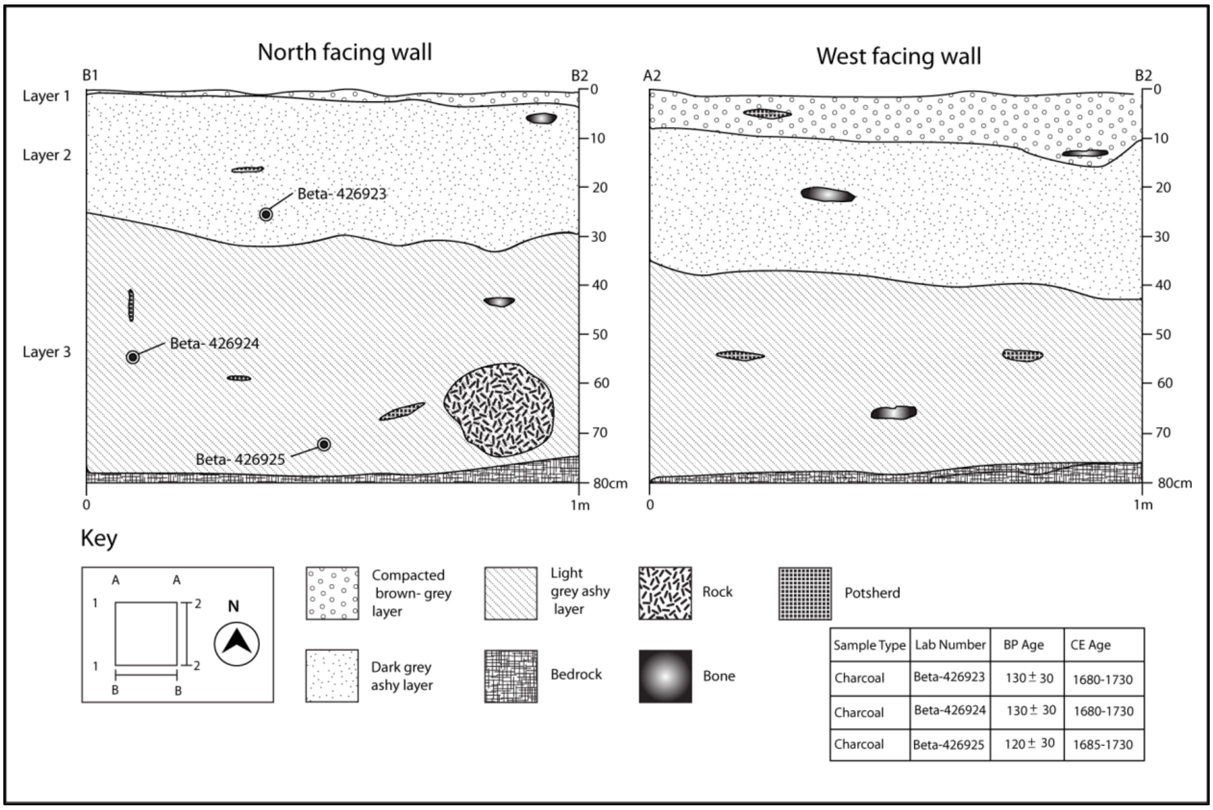


Figure 4. 13: Stratigraphy of Test Pit 6

Test Pit 7

Test Pit 7 was sunk on the edge of a large kraal on the north-western end of Mananzve foothill (Fig 4.6). The rationale was to establish the relationship between the kraal and the Iron Age communities that dwelt at Mananzve. Two layers of stratigraphy were exposed (Figure 4.14). The first layer comprised compacted grey ashy soil, which yielded numerous plain potsherds, shell beads, bone fragments and lithics. This was followed by a massive matrix of compacted vitrified dung with a glassy, like slag-like appearance, whose depth extended to 80 cm. Occasional ceramics and bone fragments were recovered from this layer; however, a sharp decline in finds was encountered towards the bottom; this marked the intrusion of sterile soil.

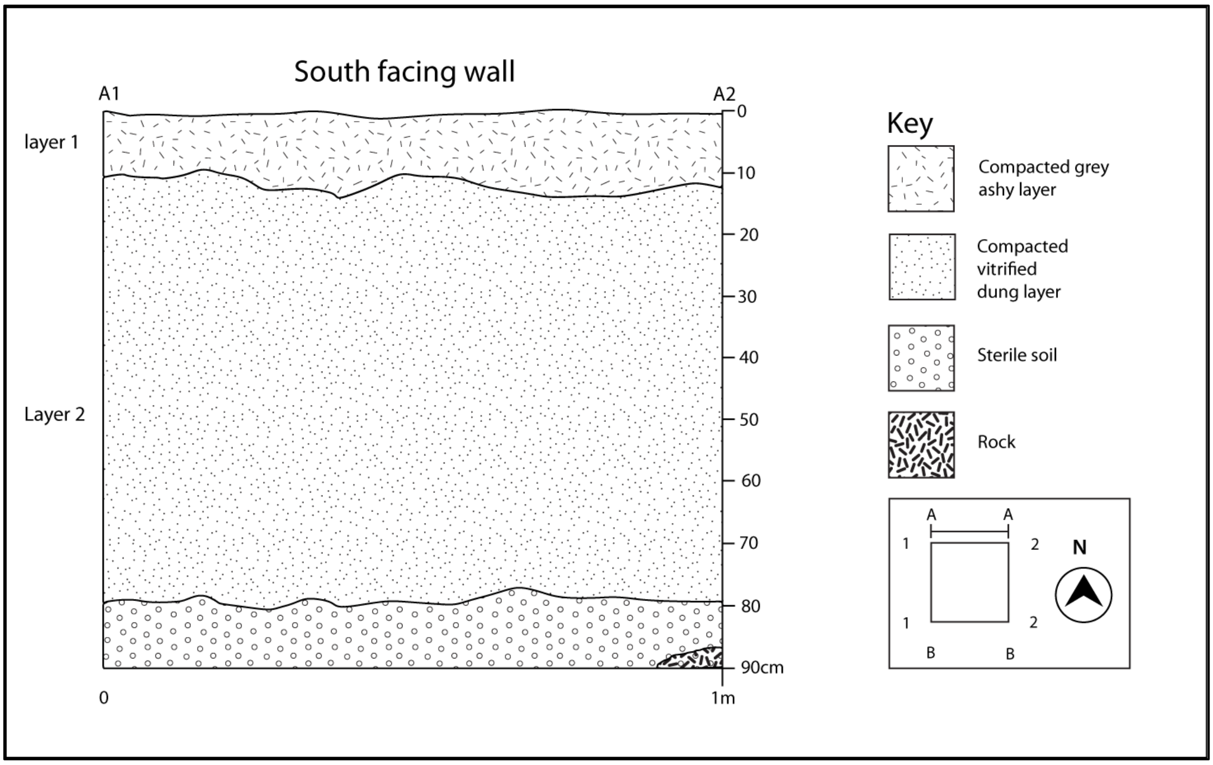


Figure 4. 14: Stratigraphy of Test Pit 7

Test Pit 8

Test Pit 8 was sunk on a rich midden east of Mananzve foothill (see Figure 4.6). The top layer comprised compacted grey brown ashy soil (Figure 4.15 and 4.16). This was followed by a grey ashy midden layer, which yielded numerous finds. These finds included plain and decorated potsherds, *dhaka* fragments, a spindle whorl, metals, bone fragments, glass beads and shell beads. A grinding stone was also recovered from this layer (Figure 4.15). At a depth 109 cm the layer hit the bedrock, which protruded on the eastern end of the test pit, hence the excavation had to be stopped.

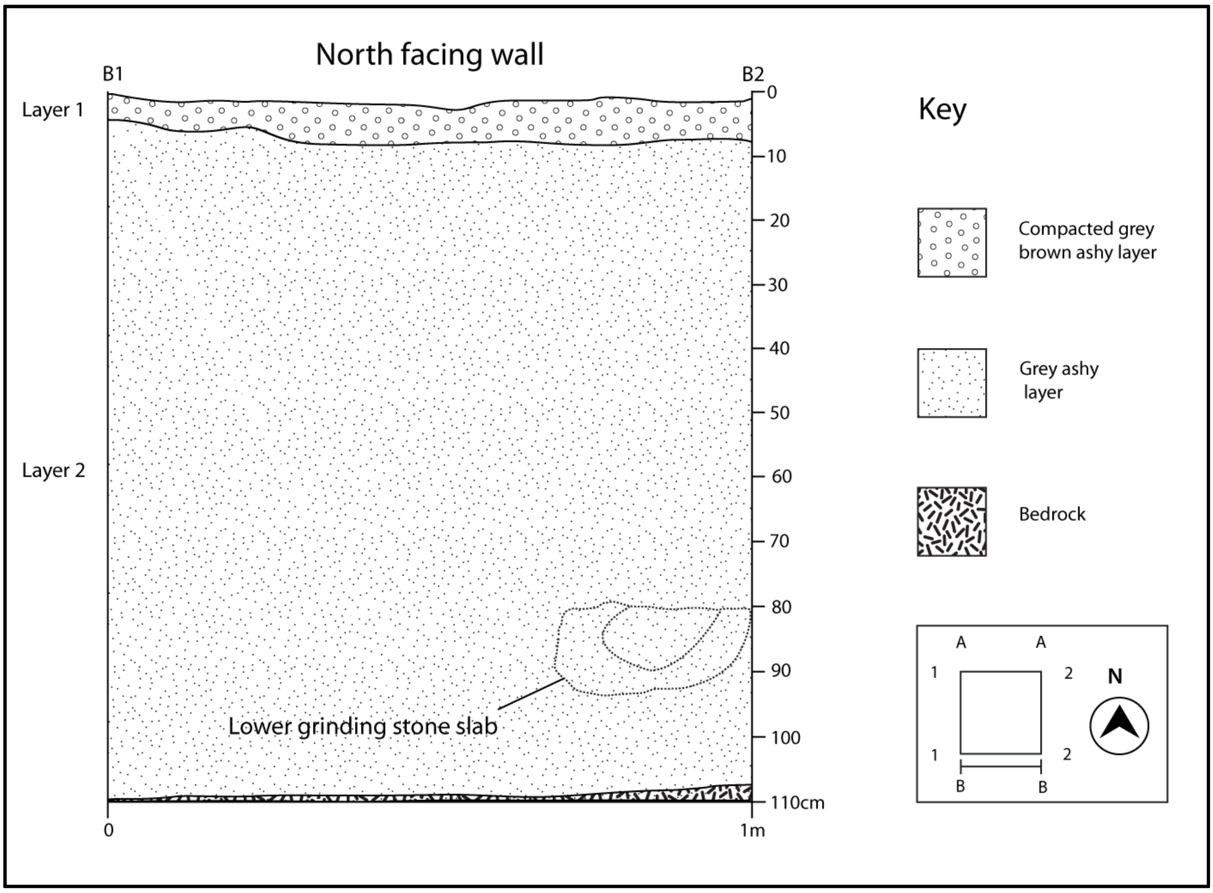


Figure 4. 15: Stratigraphy of Test Pit 8

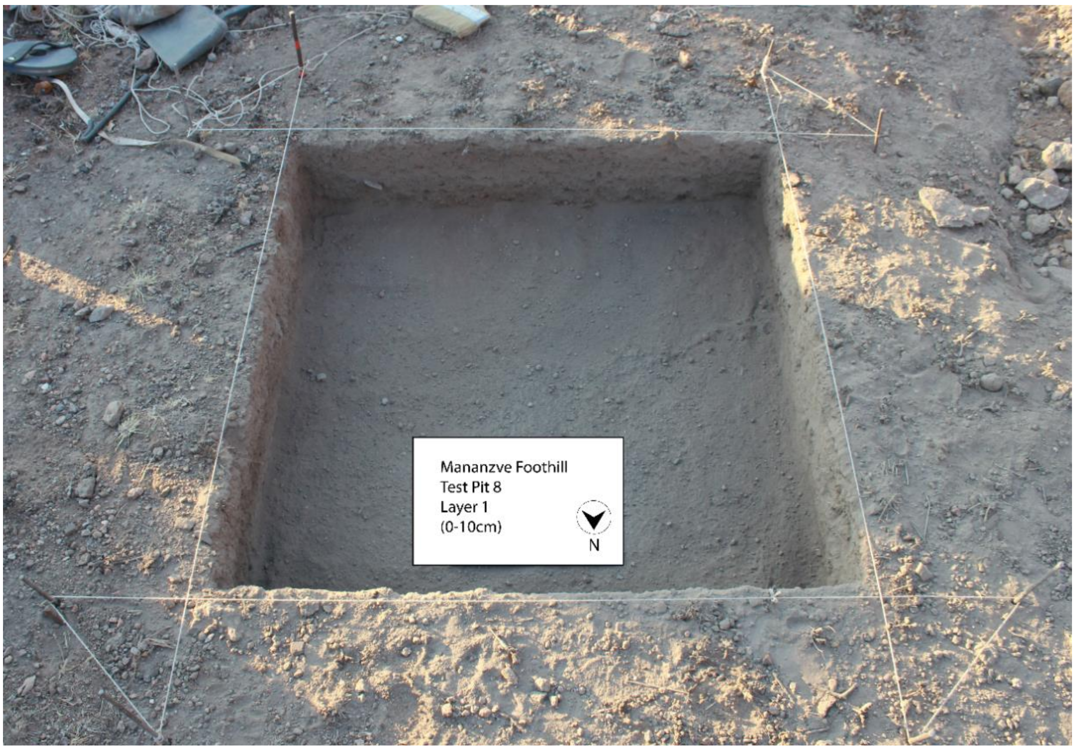


Figure 4. 16: Top layer of Test Pit 8

Test Pit 9

Test Pit 9 was excavated 25 m south of Test Pit 8. The objective was to recover more samples from the ashy midden, which covers the eastern section of Mananzve foothill. Three layers of stratigraphy were exposed (see Figure 4.17). These yielded numerous finds which included potsherds, bone fragments, beads (shell and glass), charcoal and charred cereal remains.

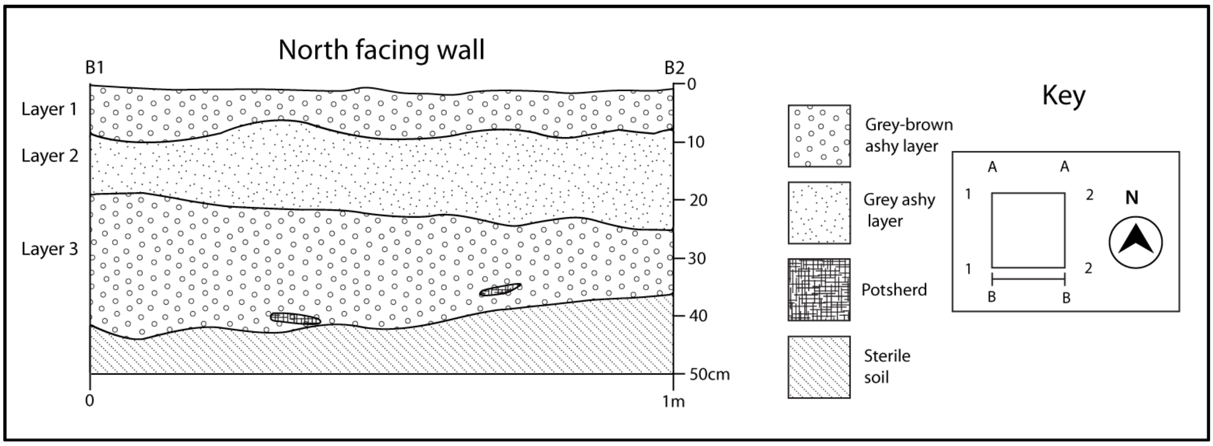


Figure 4. 17: Stratigraphy of Test Pit 9

Test Pit 10

Test Pit 10 was sunk on a midden adjacent to a rock outcrop north of Mananzve Hill. Numerous finds were recovered. These included charcoal, beads made of shell beads and glass beads, bone and potsherds similar to those recovered in Test Pit 9. Basically two stratigraphical layers were recorded (Figure 4. 18). The first layer consisted of grey brown ashy soil and was followed by a layer of grey ashy soil. Below the second layer, soil became gritty, brown and strerile, and the excavation eventually hit the bedrock.

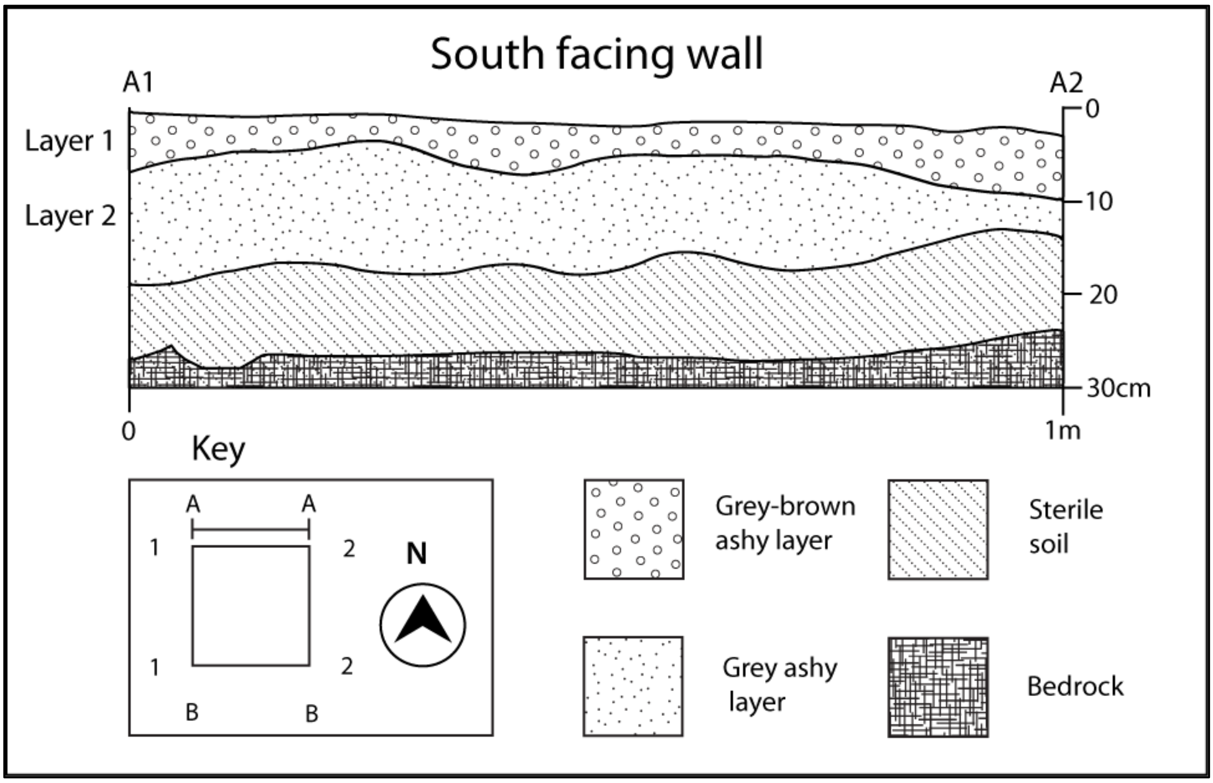


Figure 4. 18: Stratigraphy of Test Pit 10

Test Pit 11

Test Pit 11 was sunk on a midden north of Mananzve Hill (Figure 4.6). Five natural layers were established. Light ashy soil constituted the first layer and numerous bones, potsherds, metallographic objects, shell beads and glass beads specimens were retrieved. The subsequent layer comprised red brown soil which yielded similar finds including lithics, and charcoal. The colour of soil on the eastern end of the square changed to a dark ashy layer and below the layer, a light ashy layer and, a red brown layer reappeared (Figure 4.19). Eventually, the test pit hit the bedrock, at a depth of 60 cm.

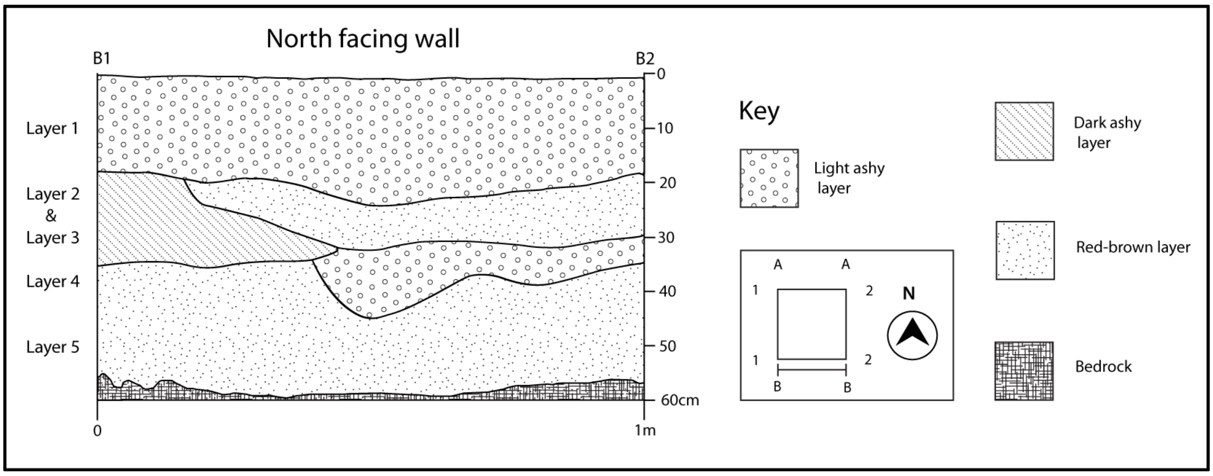


Figure 4. 19: Stratigraphy of Test Pit 11

4. 4. RADIOCARBON DATING

Five samples of carbonaceous material extracted from Test Pit 2 (Figure 4.8a) and Test Pit 6 (Figure 4.1) were submitted for Accelerator Mass Spectrometry (AMS) dating at the Beta Analytic Laboratories in Florida, USA. The objective was to determine the age of Iron Age settlements at Mananzve. Table 4.2 presents the dates obtained from the hilltop and foothill excavations.

Table 4. 2: Radiocarbon dates from Mananzve hilltop and foothill

Accession Number	Provenance	Sample Type	Lab Number	Uncalibrated Dates	Calibrated Dates
MNTP2L4	Test Pit 2 Layer 4 [Hilltop]	Charcoal	Beta-426922	850±30	1185-1275
MNTP2L3	Test Pit 2 Layer 3 [Hilltop]	Charcoal	Beta-426921	670±30	1290-1400
MNTP6L2	Test Pit 6 Layer 2 [Foothill]	Charcoal	Beta-426923	130±30	1680-1730
MNTP6L3	Test Pit 6 Layer 3 [Foothill]	Charcoal	Beta-426924	130±30	1680-1730
MNTP6L3	Test Pit 6 Layer 3 [Foothill]	Charcoal	Beta-426925	120±30	1685-1730

The radiocarbon dates show that Mananzve has a settlement history that stretches from the late 12th century to the 18th century. The hilltop was occupied from the late 12th century to the 15th century, while the flats were occupied from the late 17th to the early 18th century. However, material culture from the site exposed an occupation by Zhizo, Leopards Kopje and Khami Iron Age groups. The Zhizo occupation was not dated and future research may target such areas.

4. 5. SUMMARY

Archaeological surveys and excavations undertaken at Mananzve yielded substantial material culture – finding that proved critical for answering research questions that informed this study. These finds included, ceramics, beads, bones, stone walls, grain bins, house floors, dolly holes, cow dung, metals, spindle whorls, grinding stones, and lithics. Therefore, in order to gather more data on issues of group identity and human adaptation, detailed research was dedicated to these material remains. Analyses of these finds is presented in the next three chapters.

CHAPTER FIVE

CERAMICS FROM MANANZVE

"…typology dominates southern African ceramic studies to this day, and as long as many areas remain archaeologically unknown, it will remain a necessity" (Pikirayi 1997: 69).

5. 1. INTRODUCTION

Ceramics are basically fired clay containers. For nearly two millennia, Iron Age communities are believed to have relied on ceramics in order to fulfil their daily routines and social organisational practices, such as cooking, brewing and the storage of liquid and solid foods (Evers 1988; Lindahl & Pikirayi 2010; Nyamushosho 2013). As a result, ceramics form the largest category of material evidence that is recovered from most of their settlements during fieldwork (Pikirayi 2007). Study of these ceramics through archaeological and anthropological techniques has aided archaeologists in answering a wide range of questions about the lifeways of these precolonial societies, particularly those on group identity and human adaptation (Huffman 1974; Chirikure *et al.* 2002; Manyanga 2006; Pikirayi & Lindahl 2013). However, not all areas have had the privilege of being researched - particularly those dryland landscapes of southern Zambezia that kept on being perceived as marginal for human habitation. Since the study was concerned with the culture history of the Shashi region, ceramics recovered from Mananzve were studied from a typological perspective in order create a ceramic sequence that would help to date the site, identify its occupants and track cultural change and continuity.

5. 2. CERAMICS AND GROUP IDENTITY

When it comes to the Iron Age of southern Zambezia, ceramic studies focus largely on the stylistic and decoration attributes of pottery assemblages (Pikirayi 1997). These typology studies are conducted within a material culture framework that conceptualises the potteries as proxies for prehistoric people that have the potential to illuminate on several aspects of their culture such as identity, and livelihoods, (Schofield 1948; Maggs 1976; Huffman 1980; Caple 2006; Manyanga 2006; Pikirayi 2007).

According to Huffman (2007), because it was central to the livelihoods of past communities, prehistoric pottery has the potential to reveal facts about their identity at group level. This is achieved by studying typological traits where groups retain most of the stylistic and decoration attributes that identify them as a group. While Huffman's framework has been periodically critiqued for being biased towards certain typological traits of Iron Age pottery at the expense of other forms of material culture that defined agropastoralists identity (e.g. Beach 1980; Hall 1984; Pikirayi 2007; Sadr 2008; Mtetwa *et al*. 2013; Nyamushosho 2014), his framework has been used consistently by many archaeologists for the last 30 years as the standard framework for identifying Iron Age groups of southern Zambezia. Furthermore, as noted by Pikirayi (1997, 2007) ceramic typology remains relevant to and foremost within under-researched sites such as Mananzve. Therefore, in this study ceramics recovered from Mananzve were analysed as a basis for identifying groups that resided on site during the Iron Age.

5. 3. A MULTI DIMENSIONAL TRAIT LIST APPROACH

A multi-dimensional trait list approach was adopted for the analyses of ceramics recovered from Mananzve. Basically a multi-dimensional approach is used to statistically analyse and characterise the stylistic and decoration attributes of pottery assemblages at intra or inter-site level (Soper 1971; Maggs 1976; Huffman 1980, 2007). Therefore, to maintain consistency among other related researches (e.g. Garlake 1968; Pikirayi 1993; Chirikure *et al.* 2002; Manyanga 2006; Calabrese 2007; Van Waarden 2012; Nyamushosho 2013; Chirikure *et al.* 2014; House 2016), Huffman's (1980, 2007) version of the multi-dimensional approach was adopted for this study, since it has been used for more than three decades as the standard procedure for identifying groups in southern Zambezian Iron Age.

Therefore, emphasis was placed on attributes relevant to the aims of this study. These included vessel profile, decoration motif, decoration technique, and decoration placement. According to Huffman (2007:111), these three attributes are the only constant in most ceramic assemblages; hence, they are the primary attributes needed to define an Iron Age ceramic assemblage. More importantly, Huffman's (2007:6, 144, 280-286) inventory (see Figure 5.1-5.3 below) of Iron Age ceramic assemblages of most groups recorded in southern Zambezia was chosen as a framework for identifying groups represented by ceramics recovered from Mananzve since it shows a detailed characterisation of the vessel profiles, decoration motifs, decoration techniques, decorations placement, geographical distribution and associated radiocarbon dates. Therefore, the three attributes were recorded using a data capture sheet in Appendix 2. However, owing to the high rate of sherd fragmentation, other attributes such as lip form, rim diameter, rim/sherd thickness, colour, fabric, surface treatment and residue were recorded for the purposes of getting an insight into the vessels character.

Vessel Profiles

Vessel profiles were reconstructed using Huffman's (2007:6, 144, 280-286) prototypes illustrated in Figures 5.1-5.3. These show detailed shapes of most of the vessels associated with Iron Age groups that are associated with the Shashi region. However, caution was exercised to avoid the tendency of weeding out variation.

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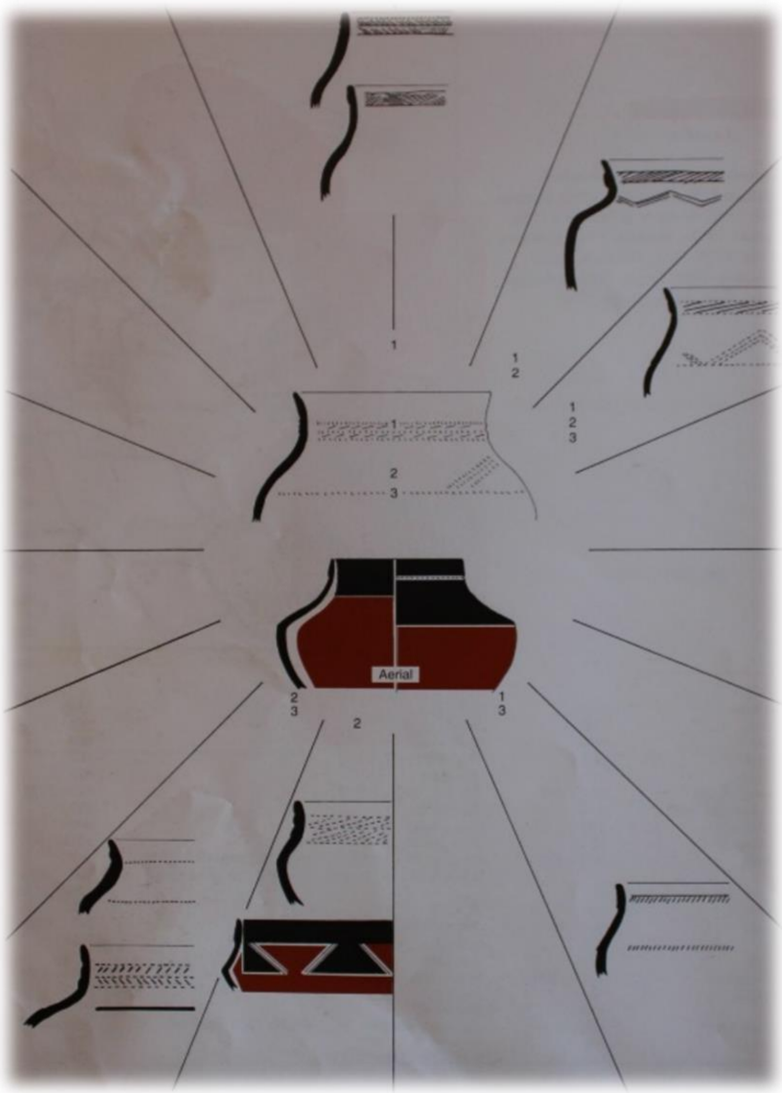


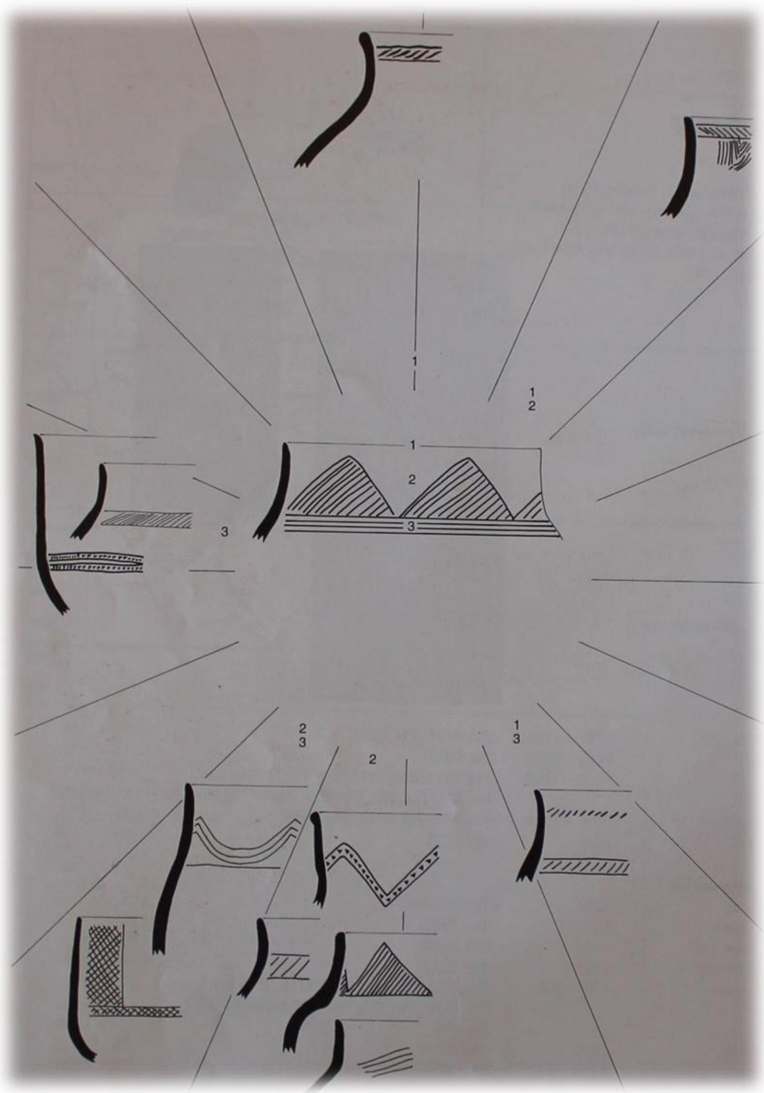


Figure 5. 1: Zhizo (left) and K2 (right) type ceramics (Extracted from Huffman 2007:144, 280)

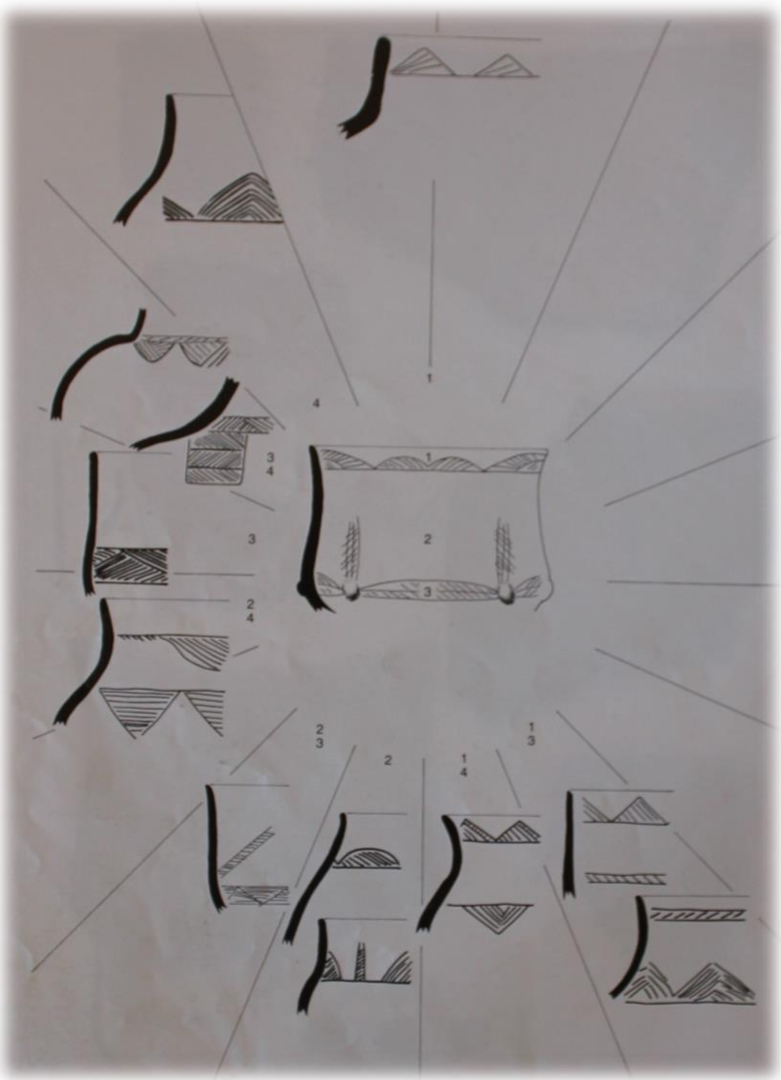
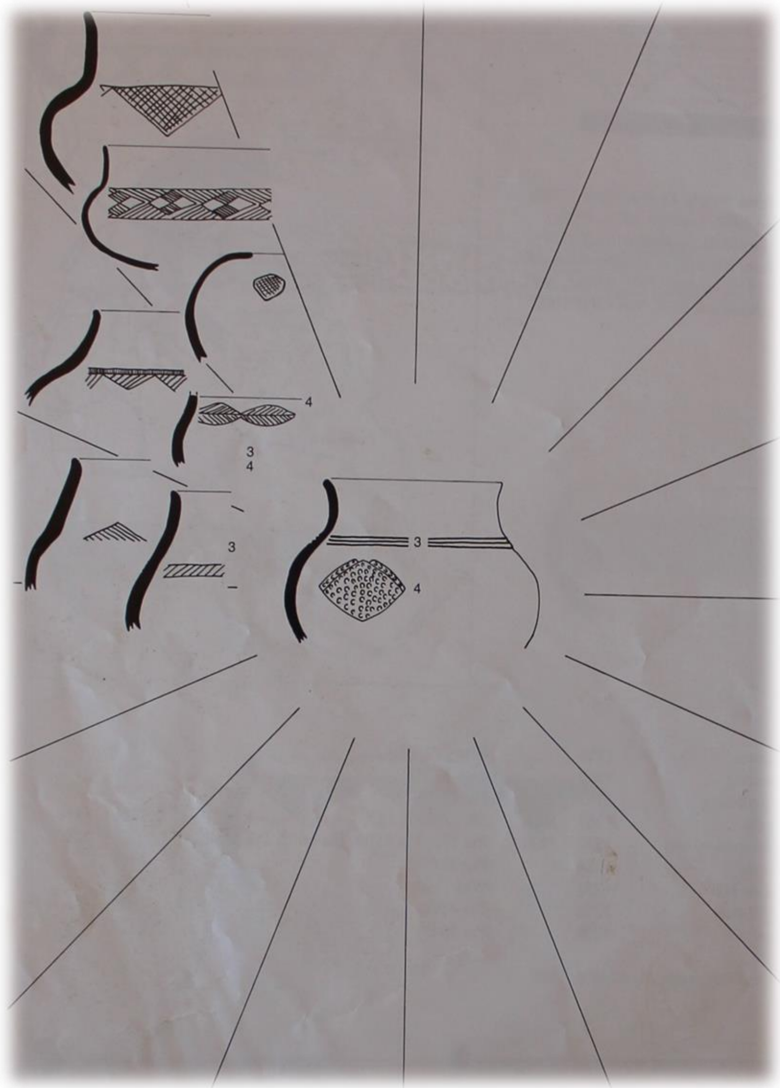
 

Figure 5. 2: TK2 (left) and Mapungubwe (right) type ceramics (Extracted from Huffman 2007:282, 286)

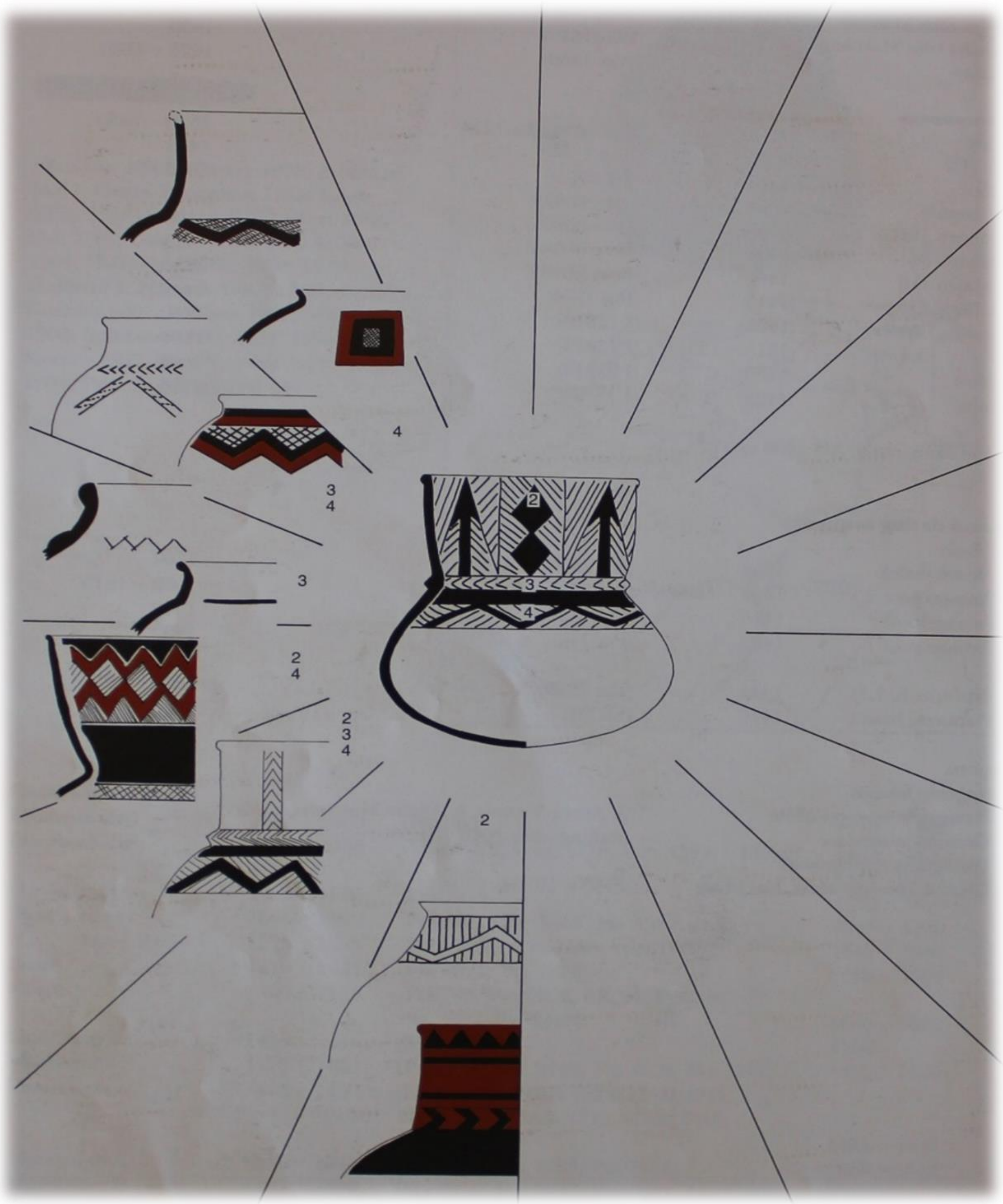


Figure 5. 3: Khami type ceramics (Extracted from Huffman 2007:26)

Decoration Motif, Decoration Technique, and Decoration Placement

Decoration motif is basically the full layout or pattern expressed by the decorations (Huffman (2007) and, in this study, motifs were classified and illustrated on the basis of the pattern they expressed. Decoration technique was recorded as the method used to exert decoration(s) or design(s) on the surface of pottery vessels (Pikirayi 1993). Lastly, decoration placement was documented as the actual location on which the decorations were applied on the surface of a ceramic vessel (Huffman 2007).

5. 4. RESULTS

A total of 3259 ceramic sherds were recovered from the hilltop and foothill of Mananzve. Diagnostic sherds totalled 350 (11%) while the remainder, 2909 (89%) were undiagnostic. In terms of ornamentation, only 105 (30%) of the diagnostic sherds had decorations. For the purpose of adherence to the protocols of the multidimensional approach, the statistical analyses were limited to diagnostic vessels. These included, all the sherds with vessel body parts that could be identified, particularly rim and decorated sherds (Chirikure *et al.* 2002; Huffman 2007). A detailed analyses of the diagnostic sherds at individual and test pit level is provided in Appendix 2. The forthcoming sections will provide an analyses of key multidimensional attributes of the pottery recovered from the hilltop and foothill of Mananzve, namely vessel shapes, decoration placements, decoration techniques and decoration motifs. These variables will be presented stratigraphically using the natural layers of the excavated units as presented in the previous chapter.

5. 4. 1. HILLTOP ASSEMBLAGE

A total of 1559 ceramic sherds were recovered as surface and subsurface finds from the five test pits that were sunk at the summit of Mananzve Hill. Out of the total, only 213 (13.7%) sherds were diagnostic. Only 87 (41%) of these diagnostic sherds had decorations. Most of the diagnostic vessels had bevelled lip forms (*n*=56 or 26%), followed by those with externally thickened lips (*n*=33 or 15%), rounded lips (*n*=20 or 9%), tapered lips (*n*=17 or 8%), and squared lips (*n*=18 or 8%). The majority of the vessels from the hilltop assemblage had polished surfaces (93%), while the remainder had their surfaces treated with graphite burnish (4.1%), red ochre and graphite burnish (1.3%), and red ochre (1.7%) respectively. In terms of colour, most of the sherds had a grey-brown pigment (58%). The remainder had red-brown (31%) and black pigments (11%).

5.4.1.1. Vessel Profiles

Eight vessel classes were reconstructed out of the 213 potsherds recovered from the hilltop of Mananzve (see Figure 5.4 below). Shapes recorded ranged between jars and bowls. These are presented below basing on the stratigraphy layering of the hilltop test pits where the illustrated potsherds were retrieved.

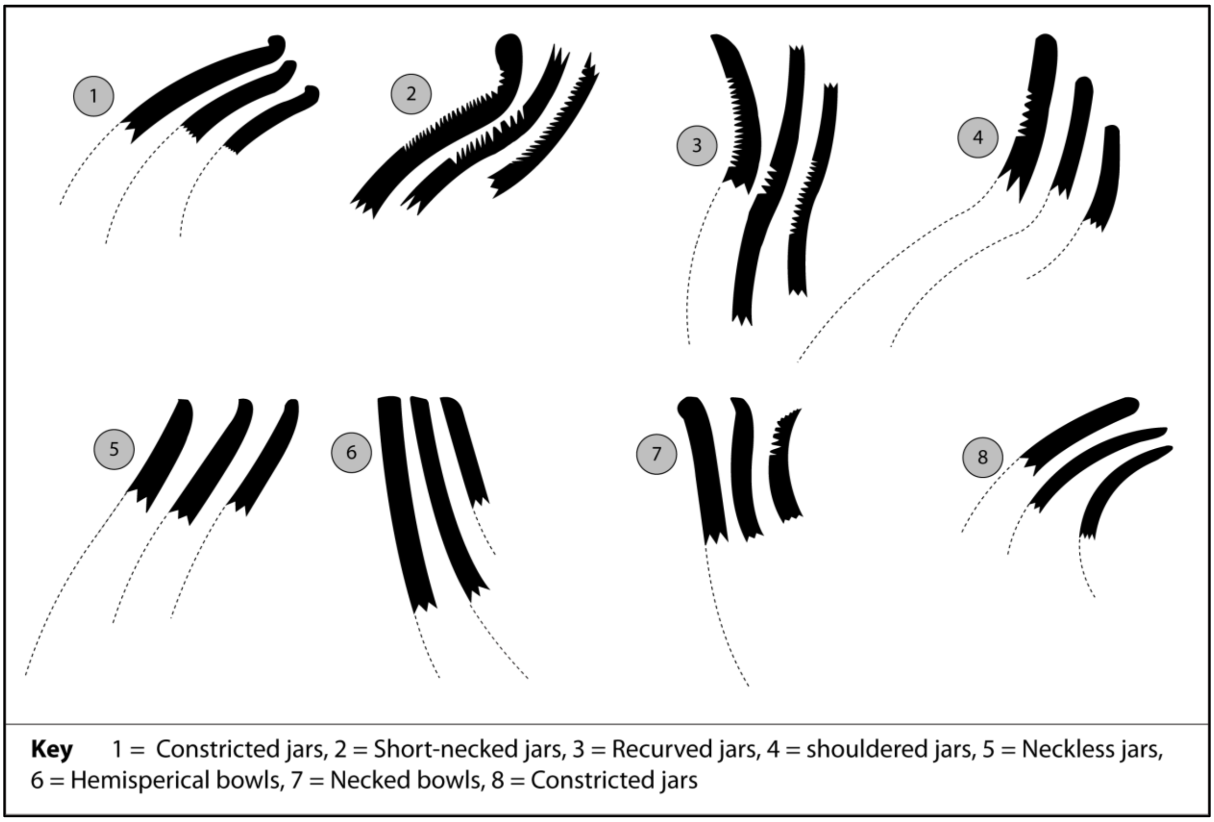


Figure 5. 4: Summary of vessel profiles reconstructed out of the hilltop assemblage

Surface Finds

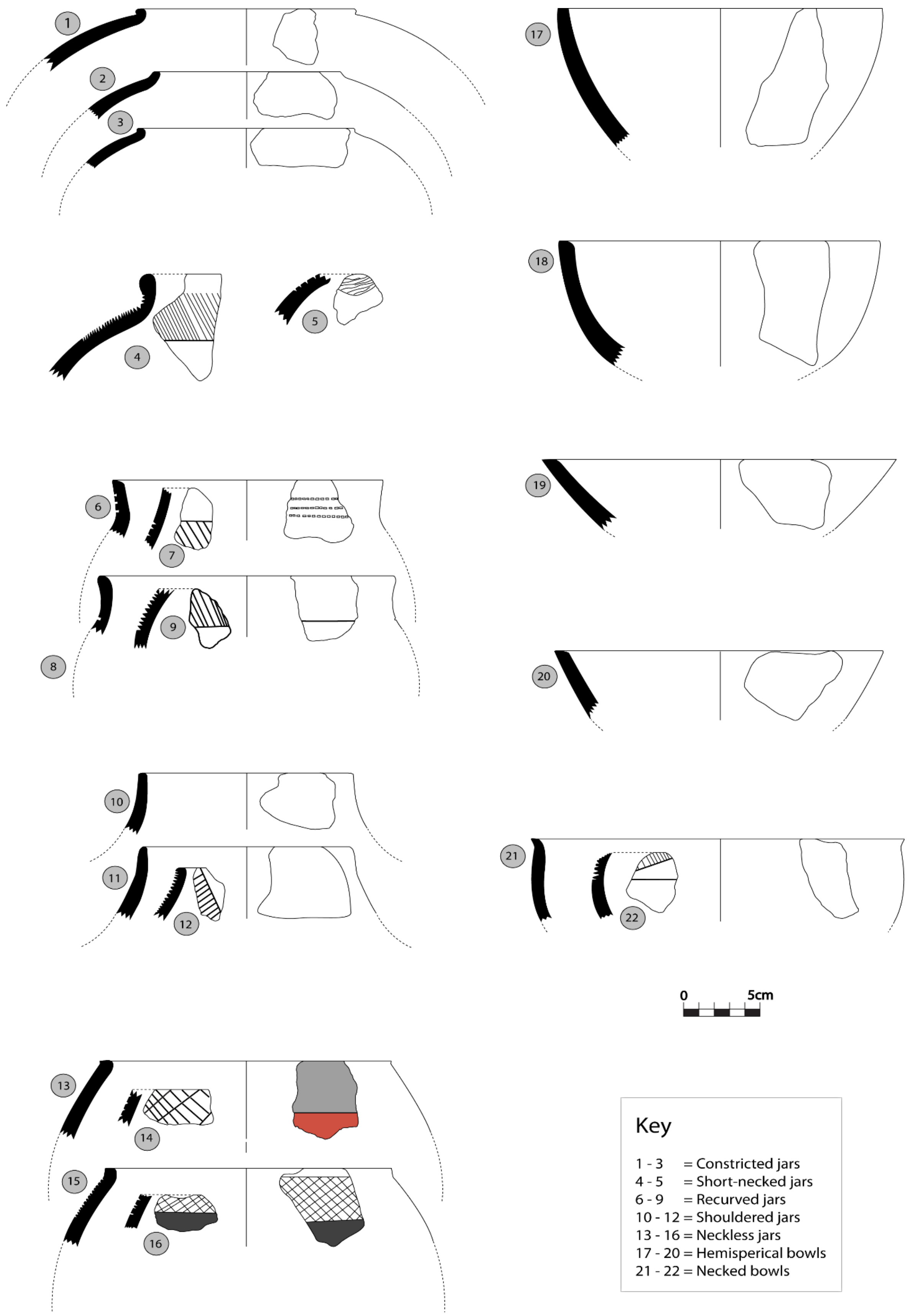


Figure 5. 5: Sample of ceramics recovered from the hilltop as Surface Finds

Seven vessel profiles were reconstructed out of the 37 potsherds collected as hilltop surface finds (Figure 5.5). As demonstrated in Table 5.1, it is clear that the surface ceramic sherds were dominated by constricted jars, while necked bowls were the least dominant.

Table 5. 1: Vessel Profiles of Surface Finds ceramics recovered from Mananzve Hilltop

Vessel Profile	1	2	3	4	5	6	7	8	Total
Surface Finds	11	2	4	6	4	8	2		37

Top Layers (Layers 1 & 2)

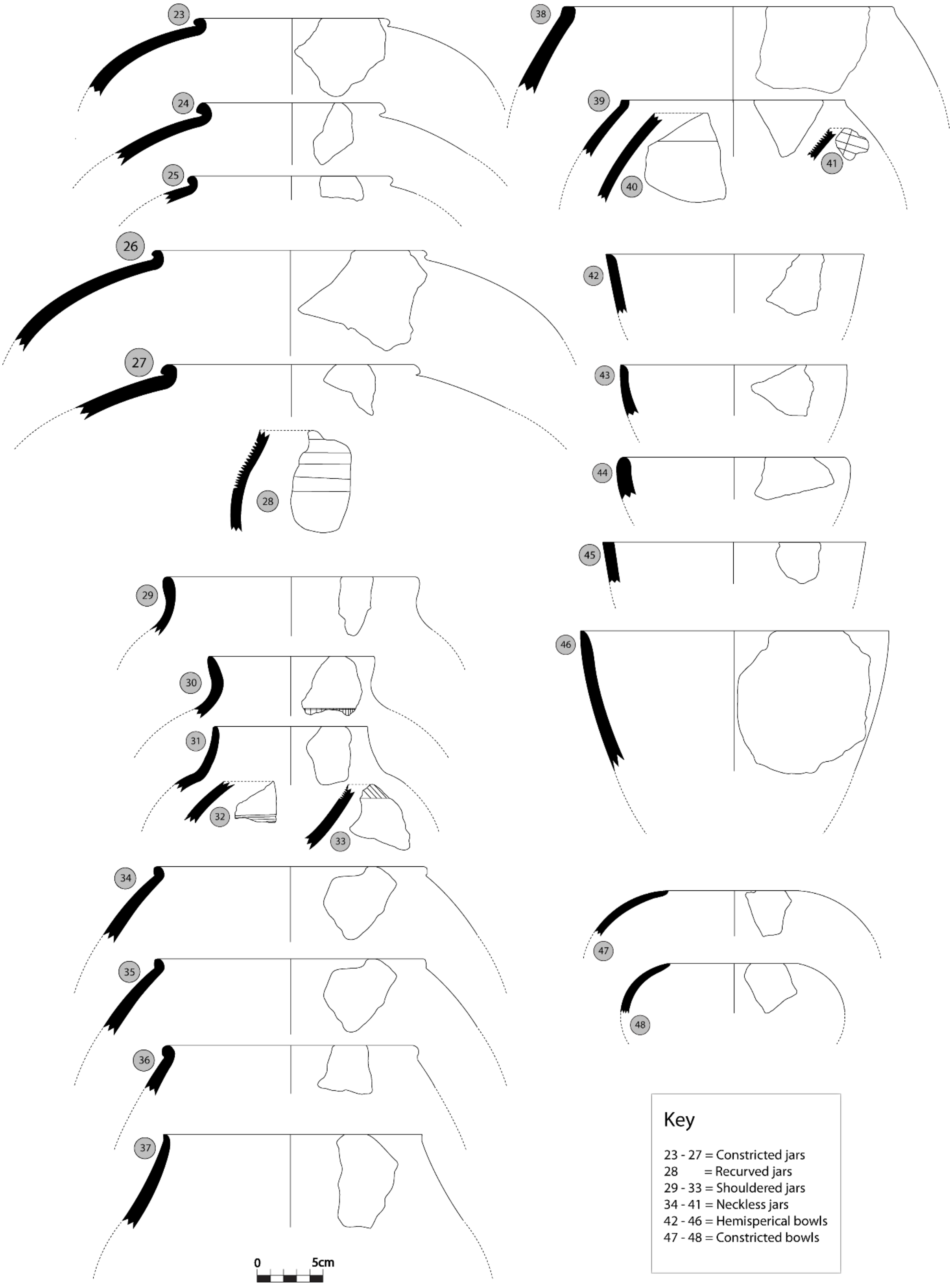


Figure 5. 6: Sample of ceramics recovered from Top Layers of the hilltop test pits

Vessel profiles similar to those found at the surface were also reconstructed from the 84 potsherds recovered from the first two layers of the stratigraphy of the five test pits that were sunk on the hilltop of Mananzve (Figure 5.6). These were dominated by neckless jars, followed by constricted jars, hemispherical bowls, constricted bowls, and shouldered jars. Recurved jars were the least vessel dominant category (Table 5.2).

Table 5. 2: Vessel Profiles of ceramics recovered from Top Layers of the hilltop test pits

Vessel Profile	1	2	3	4	5	6	7	8	Total
Layers 1 & 2	14		2	7	39	13		9	84

Middle Layers (Layers 3 & 4)

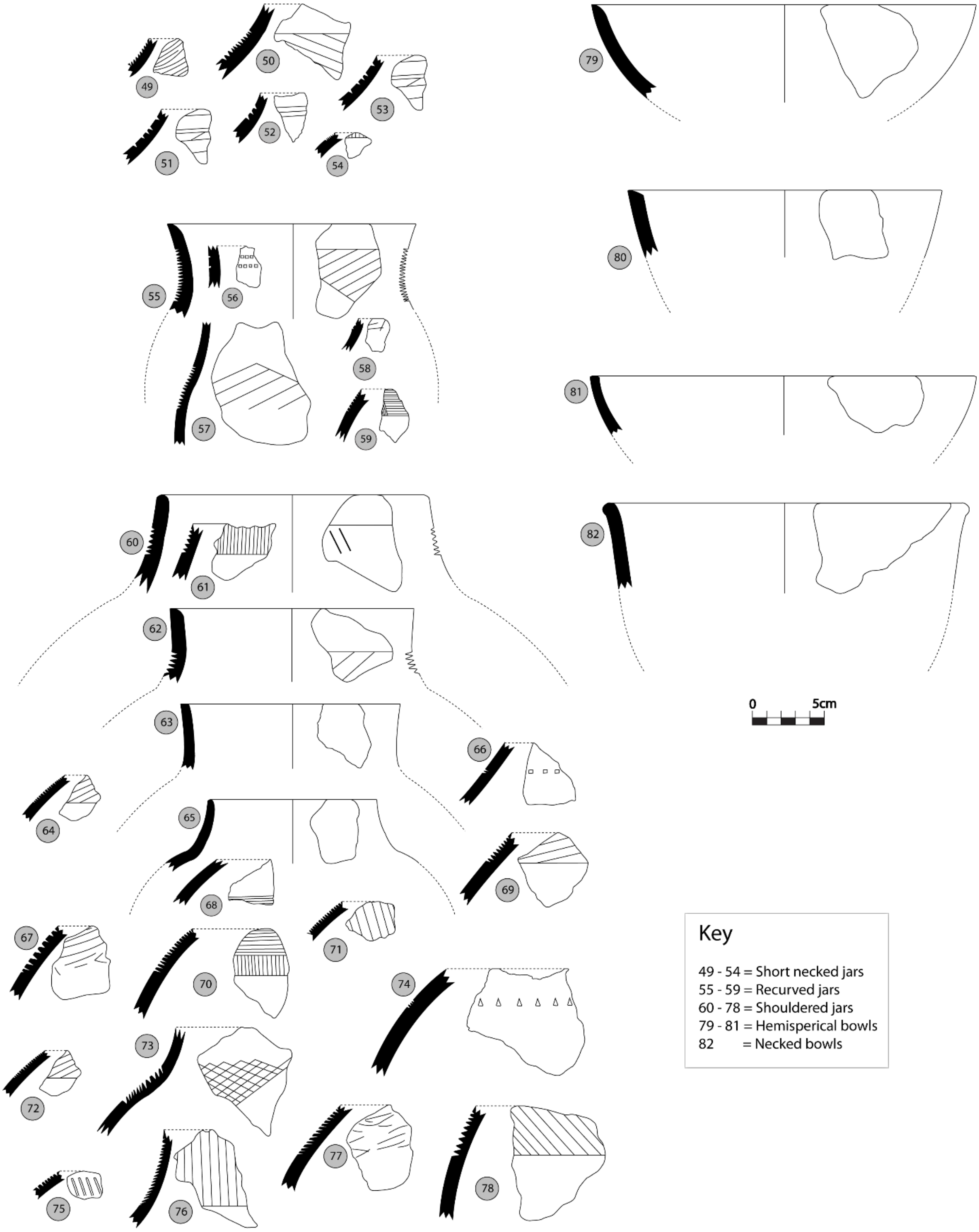


Figure 5. 7: Sample of ceramics recovered from Middle Layers of the hilltop test pits

Five vessel profiles were recreated out of the 68 potsherds (Figure 5.7) that were recovered from the middle layers of the test pits sunk at the summit of Mananzve Hill. As shown in Table 5.3 these vessel categories were composed mostly of short necked jars and shouldered jars.

Table 5. 3: Vessel Profiles of ceramics recovered from Middle Layers of the hilltop test pits

Vessel Profile	1	2	3	4	5	6	7	8	Total
Layers 3 & 4		22	11	18		13	4		68

Bottom Layers (Layers 5 & 6)

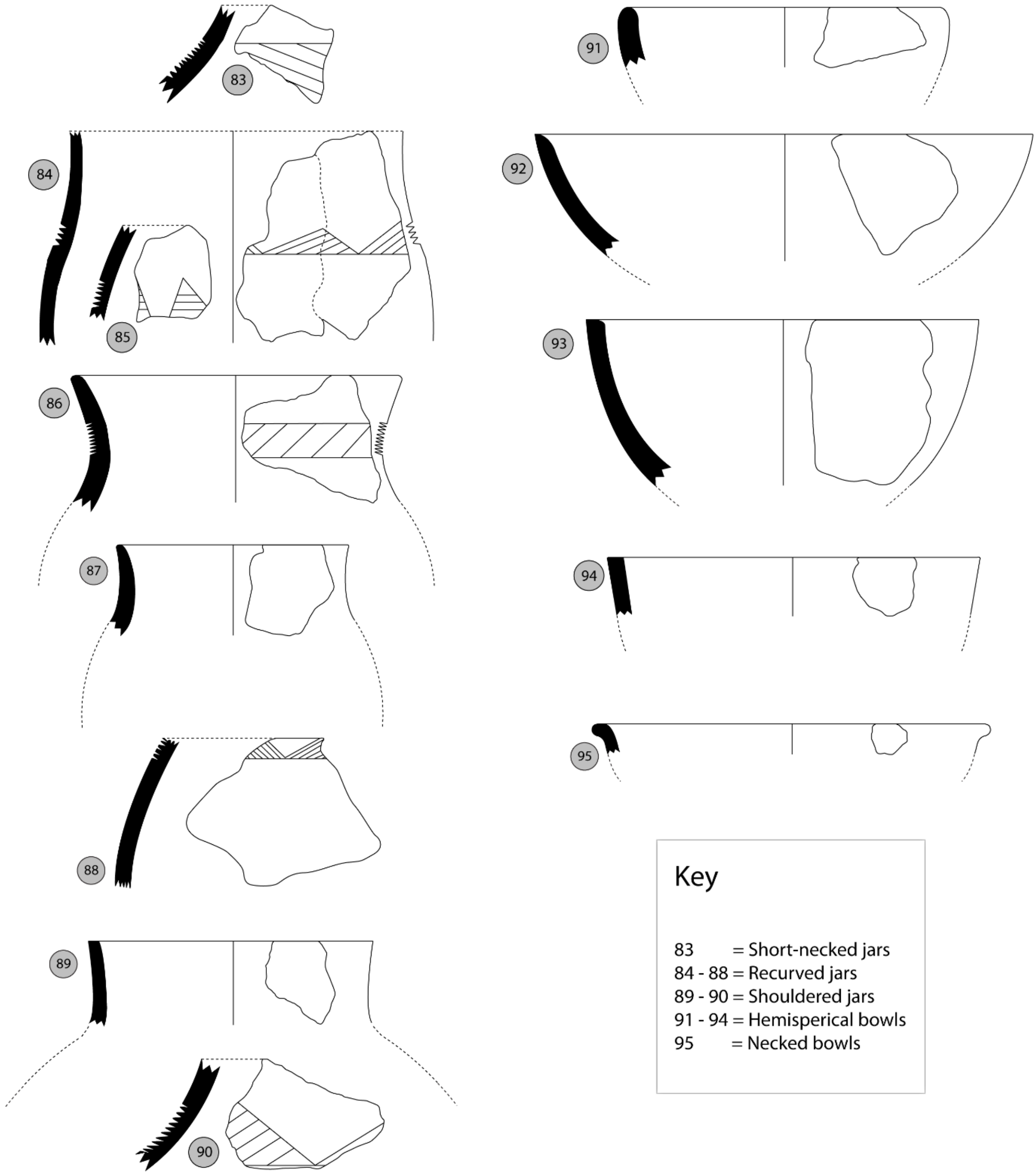


Figure 5. 8: Sample of ceramics recovered from Bottom Layers of the hilltop test pits

A total of 15 vessel profiles were reconstructed from the potsherds recovered from the bottom layers of the hilltop tests pits (Figure 5.8). As shown in Table 5.4, these vessels are fairly similar to those reconstructed from the Middle Layers. The profiles were characterised mostly by shouldered jars, followed by short-necked jars, recurved jars, hemispherical bowls and necked bowls respectively.

Table 5. 4: Vessel Profiles of ceramics recovered from Bottom Layers of the hilltop test pits

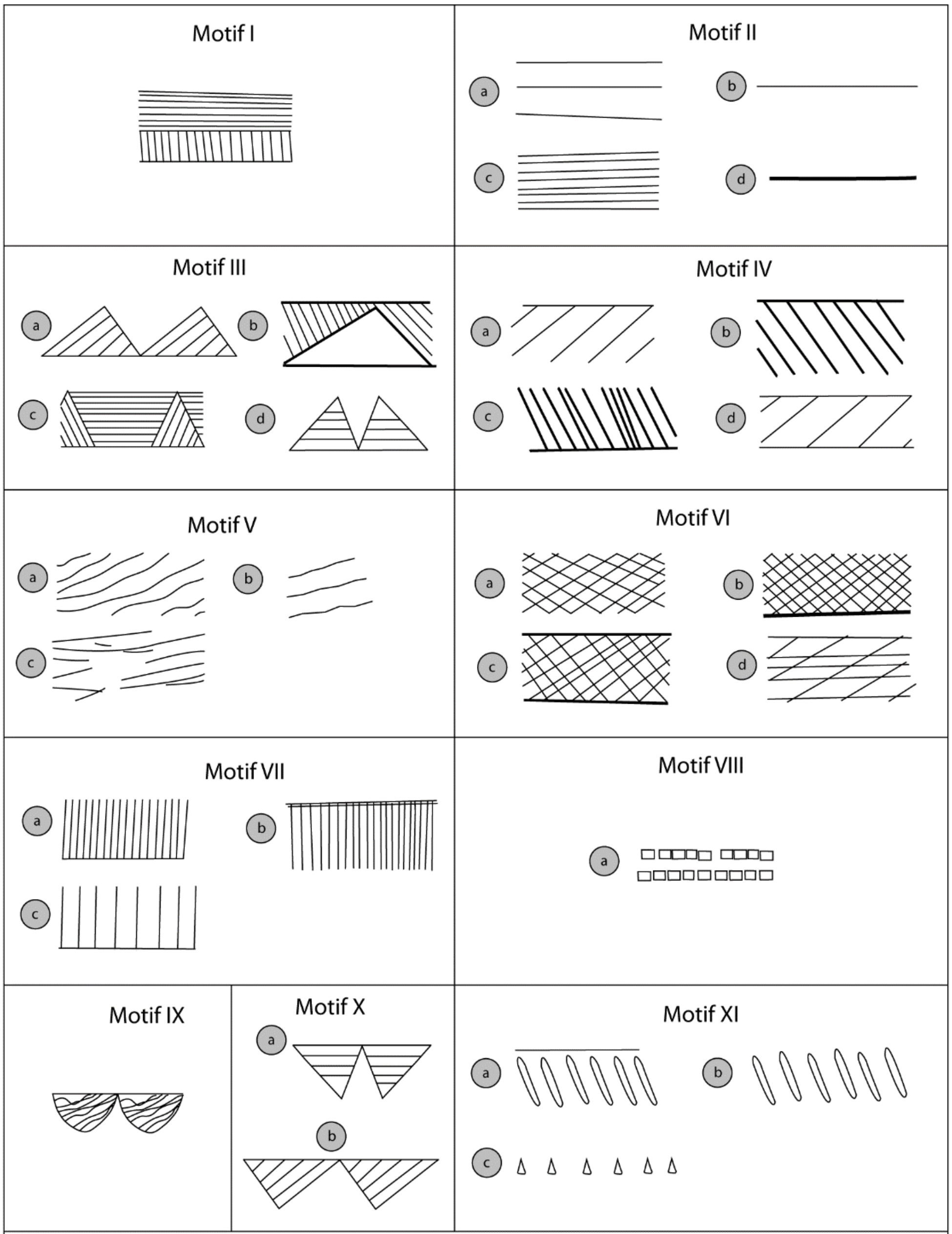
Vessel Profile	1	2	3	4	5	6	7	8	Total
Layers 5 & 6		3	8	2		1	1		15

Summary

In summary, the vessel profiles reconstructed from the potsherds recovered from the hilltop shows a variety of jars, as well as bowls that were produced and consumed by the residents of Mananzve. Two trends can be discerned from the hilltop stratigraphy. Firstly, Surface Finds and the Top Layers (Layers 1 & 2) are dominated by constricted jars and neckless jars profiles respectively while the Middle Layers (Layers 3 & 4) and Bottom Layers (Layers 5 & 6) are homogenously dominated by short-necked jars and recurved jars profiles. Lastly, the presence of constricted jars and neckless jars profiles is restricted to the Surface Finds and the Top Layers of the stratigraphy of the hilltop test pits. The forthcoming section presents decorations motifs that were identified on the vessel profiles presented above.

5.4.1.2. Decoration Motif

Design motifs, exerted on the surfaces of ceramics recovered from Mananzve were also examined as part of the multi-dimensional attributes that could enlighten one regarding the identity of the Iron Age communities that resided on the summit of the hill. These design motifs are presented in Figure 5.9 and Table 5.5 below.



Key
I = I = Horizontal and vertical bands of fine-line and broad-line incisions, II - Horizontal bands of fine-line/broad-line incisions, III = Upward facing incised triangles, IV = Oblique bands of fine-line/ broad-line incisions, V = Wavy bands of unzoned fine-line/broad-line incisions, VI = Cross hatched bands of fine-line/broad-line incisions, VII = Vertical bands of fine-line/ broad-line incisions, VIII = Horizontal/vertical/oblique bands of comb stamping with occasional incisions, IX = Downward incised arcades, X = Downward incised triangles, XI = Stamped oblique/vertical punctates

Figure 5. 9: Decoration Motifs of ceramics recovered from Mananzve Hilltop

Table 5. 5: Decoration Motifs of ceramics recovered from Mananzve Hilltop

		Surface Finds	Layers 1 & 2	Layers 3 & 4	Layers 5 & 6
Decoration Motif	I		1		
	IIa.	5	1	2	2
	IIb.	1			
	IIc.			1	
	IId.	1			
	IIIa.	5	1	13	3
	IIIb.	1		1	
	IIIc.			1	
	IIId.				1
	IVa.	2		8	1
	IVb.	1		3	
	IVc.	3		1	
	IVd.			1	
	Va.			1	
	Vb.			1	
	Vc.			1	
	VIa.	1	3	2	
	VIb.	1		1	
	VIc.			1	
	VId.	1		1	
	VIIa.				
	VIIb.	1			
	VIIc.			1	
	VIIIa.	1	1	3	
	IX.	1			
	Xa.		1		
	Xb.	1			
	XIa.			2	
	XIc.			1	
	Total	26	8	46	7

Surface Finds

Horizontal bands of fine-line/broad-line incisions and upward facing incised triangles motifs dominated ceramics recovered from the Surface Finds. These were followed by oblique bands of fine-line/broad-line incisions and other motifs whose frequency were the least dominant (see Table 5.5 above)

Top Layers (Layers 1 & 2)

Cross hatched bands of fine-line/broad-line incisions had the highest frequency among motifs while the remaining vessels had the lowest frequency (Table 5.5).

Middle Layers (Layers 3 & 4)

The majority of the decoration motifs recorded from the hilltop assemblage came from the Middle Layers (Table 5.5). Upward facing incised triangle motifs had the highest frequency followed, by motifs with cross hatched bands of fine-line/broad-line incisions.

Bottom Layers (Layers 5 & 6)

Potsherds recovered from the Bottom Layers of the excavated test pits on the hilltop were rarely decorated; hence, few motifs were recorded. Out of the total only seven motifs were reconstructed (see Table 5.5) and these were dominated by upward facing incised triangles.

Summary

Triangle motifs dominated the hilltop assemblage and these were prevalent mostly on the Middle and Bottom Layers of excavated test pits. Cross hatching and line incisions on the other hand, dominate the Top Layers and Surface Finds. Thus most of the decorated sherds from the excavated units were concentrated mostly in the Surface Finds and Layers.

5.4.1.3. Decoration Technique

Table 5. 6: Decoration Techniques of ceramics recovered from Mananzve Hilltop

		Surface Finds	Layers 1 & 2	Layers 3 & 4	Layers 5 & 6
Decoration Technique	Incisions	25	8	40	7
	Comb stamping	1		3	
	Punctate stamping			3	
	Total	26	8	46	7

Surface Finds

The majority of the decorated potsherds recovered from the Hilltop Surface Finds were incised; while only a single sherd was decorated using the comb stamping technique (Table 5.6).

Top Layers (Layers 1 & 2)

As demonstrated in Table 5.6, all the decorated potsherds recovered from the Top Layers of the excavated test pits on the hilltop of Mananzve were decorated using the incising technique.

Middle Layers (Layers 3 & 4)

Most of the decorated potsherds recovered from the Middle Layers were incised. The remainder were respectively decorated using the comb and the punctate stamping techniques.

Bottom Layers (Layers 5 & 6)

Much like the potsherds recovered in Layers 1 and 2 of the hilltop test pits, all the decorated sherds recovered from the Bottom Layers were decorated using the incising technique (Table 5.6).

Summary

Basically, the picture that emerges from the Surface Finds, Top Layers, Middle Layers and Bottom Layers shows that the majority of the potsherds were incised while the remainder were decorated using comb stamping and punctate stamping techniques.

5.4.1.4. Decoration Placement

Surface Finds

Table 5. 7: Decoration Placement on ceramics recovered from Mananzve Hilltop as Surface Finds

Decoration Placement	1 (lip)	2 (rim)	3 (neck)	4 (shoulder)	5 (neck-shoulder)	Total
Surface Finds			2	13	11	26

Most of the Surface Finds potsherds had decorations exerted on their shoulders (Table 5.7) while the remainder had decorations between their necks and shoulders.

Top Layers (Layers 1 & 2)

Table 5. 8: Decoration Placement on ceramics recovered from Top Layers of the hilltop test pits

Decoration Placement	1 (lip)	2 (rim)	3 (neck)	4 (shoulder)	5 (neck-shoulder)	Total
Layers 1 & 2			1	4	3	8

The frequency of decoration placement on vessels taken from the Top Layers of the excavated tests pits, was similar to that of the Surface Finds (Table 5.8). Most of the ceramic potsherds were decorated on their shoulders while the remainder had decorations on their neck/shoulders and necks.

Middle Layers (Layers 3 & 4)

Table 5. 9: Decoration Placement on ceramics recovered from Middle Layers of the hilltop test pits

Decoration Placement	1 (lip)	2 (rim)	3 (neck)	4 (shoulder)	5 (neck-shoulder)	Total
Layers 3 & 4			6	32	8	46

Ceramic sherds retrieved from the Middle (stratigraphy) Layers of the excavated tests pits, were decorated mostly on their shoulders, neck/shoulders and necks as shown above in Table 5.9.

Bottom Layers (Layers 5 & 6)

Table 5. 10: Decoration Placement on ceramics recovered from Bottom Layers of the hilltop test pits

Decoration Placement	1 (lip)	2 (rim)	3 (neck)	4 (shoulder)	5 (neck-shoulder)	Total
Layers 5 & 6			4	3		7

Decorations on potsherds recovered from the Bottom Layers of the hilltop test pits were exerted only on the necks and shoulders (Table 5.10).

Summary

In sum, it is clear that most decorations on the potsherds recovered from the Mananzve hilltop were exerted on their necks and shoulders and, in some instances, both areas. Basing on the stratigraphy layering of the hilltop tests pits, data on decorations placement shows a gradual development over time where potters initially focused on exerting decorations on the necks and shoulders of the vessels that they fashioned as demonstrated in the Bottom Layers. However, with time, focus was extended to the area between the necks and the shoulders, as demonstrated in the Top Layers and Surface Finds.

5. 4. 2. FOOTHILL ASSEMBLAGE

A total of 1700 ceramic sherds were recovered as surface and subsurface finds from and six test pits that were sunk at the foothill of Mananzve Hill. Out of the total, only 137 (8%) sherds were diagnostic (Appendix 2). In terms of colour, most of the sherds had a red-brown tint (49%). The remainder had grey-brown (26%) and black pigments (25%). Generally, most of the vessels had externally thickened lips (*n*=47 or 36%), followed in frequency by those with rounded lips (*n*=21 or 16%), bevelled lips (*n*=19 or 15%), tapered lips (*n*=12 or 9.1%), and squared lips (*n*=12 or 9.1%). The majority of the vessels from the foothill assemblage had polished surfaces (89%), while the remainder were graphite burnished (11%).

5.4.2.1. Vessel Profiles

Six vessel classes were reconstructed out of the 137 potsherds recovered from the foothill of Mananzve (Figure 5.4). The vessel profiles shall be presented below basing on the stratigraphy layering of the foothill test pits where the illustrated potsherds were retrieved.

Surface Finds

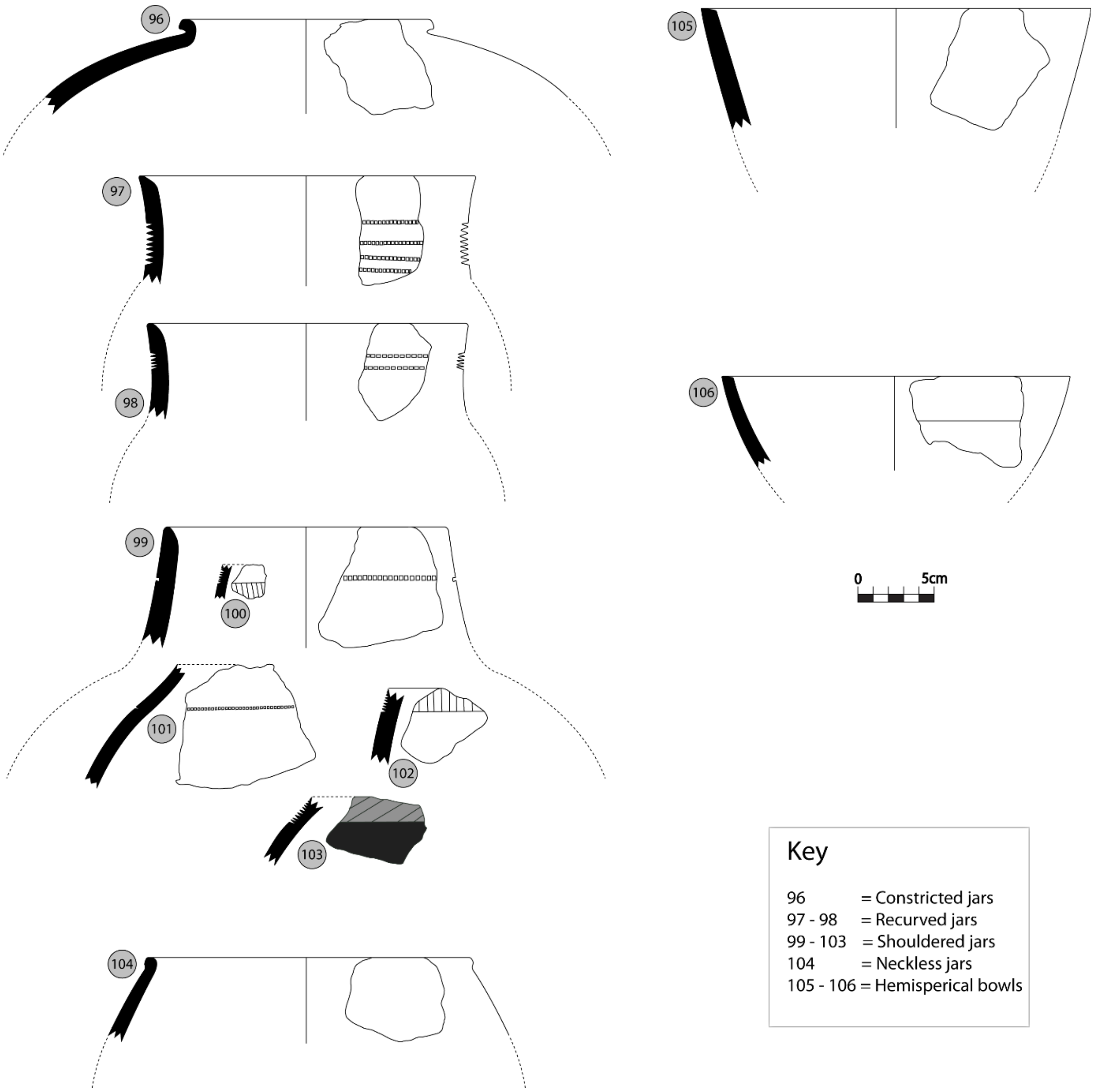


Figure 5. 10: Vessel Profiles of ceramics recovered from Mananzvev as Surface Finds

Five vessels profiles were reconstructed out of the 11 potsherds collected from Mananzve foothill as surface finds (Figure 5.10). As demonstrated above in Table 5.11 below, shouldered jars were the most prominent vessel category, followed by recurved jars, hemispherical bowls, neckless jars and constricted jars, respectively.

Table 5. 11: Vessel Profiles of Surface Finds ceramics recovered from Mananzve Foothill

Vessel Profile	1	2	3	4	5	6	7	8	Total
Surface Finds	1		2	5	1	2			11

Top Layers (Layers 1 & 2)

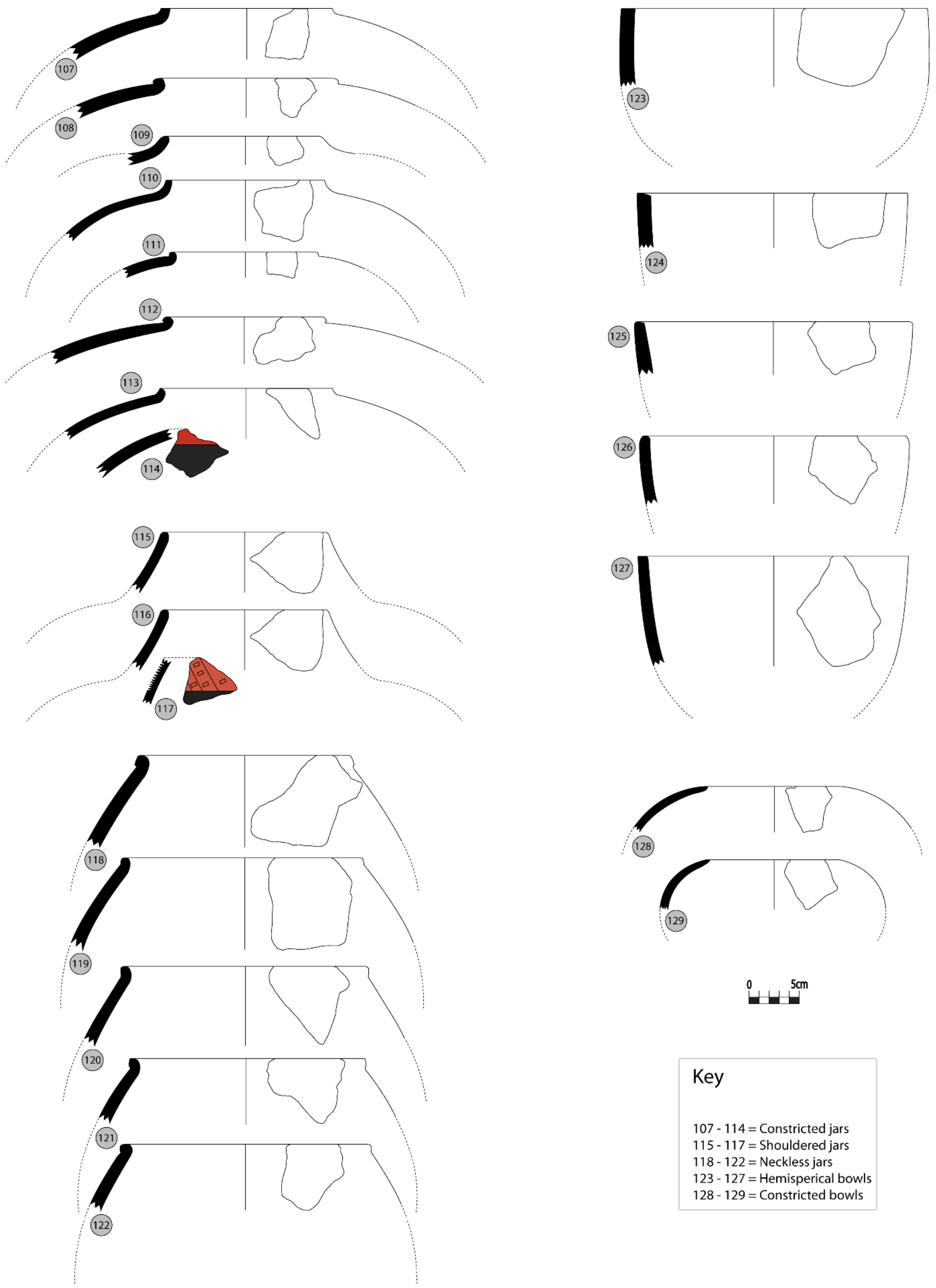


Figure 5. 11: Vessel Profiles of ceramics recovered from Top Layers of the foothill test pits

Five vessel classes were reconstructed out of the 90 potsherds recovered from the Top Layers of the test pits that were excavated on the foothill of Mananzve (Figure 5.11). These were dominated by constricted jars, followed by neckless jars, hemispherical bowls and shouldered jars. Constricted bowls were recorded as the least frequently occurring vessel category (Table 5.12).

Table 5. 12: Vessel Profiles of ceramics recovered from Top Layers of the foothill test pits

Vessel Profile	1	2	3	4	5	6	7	8	Total
Layers 1 & 2	47			6	19	16		2	90

Middle Layers (Layers 3 & 4)

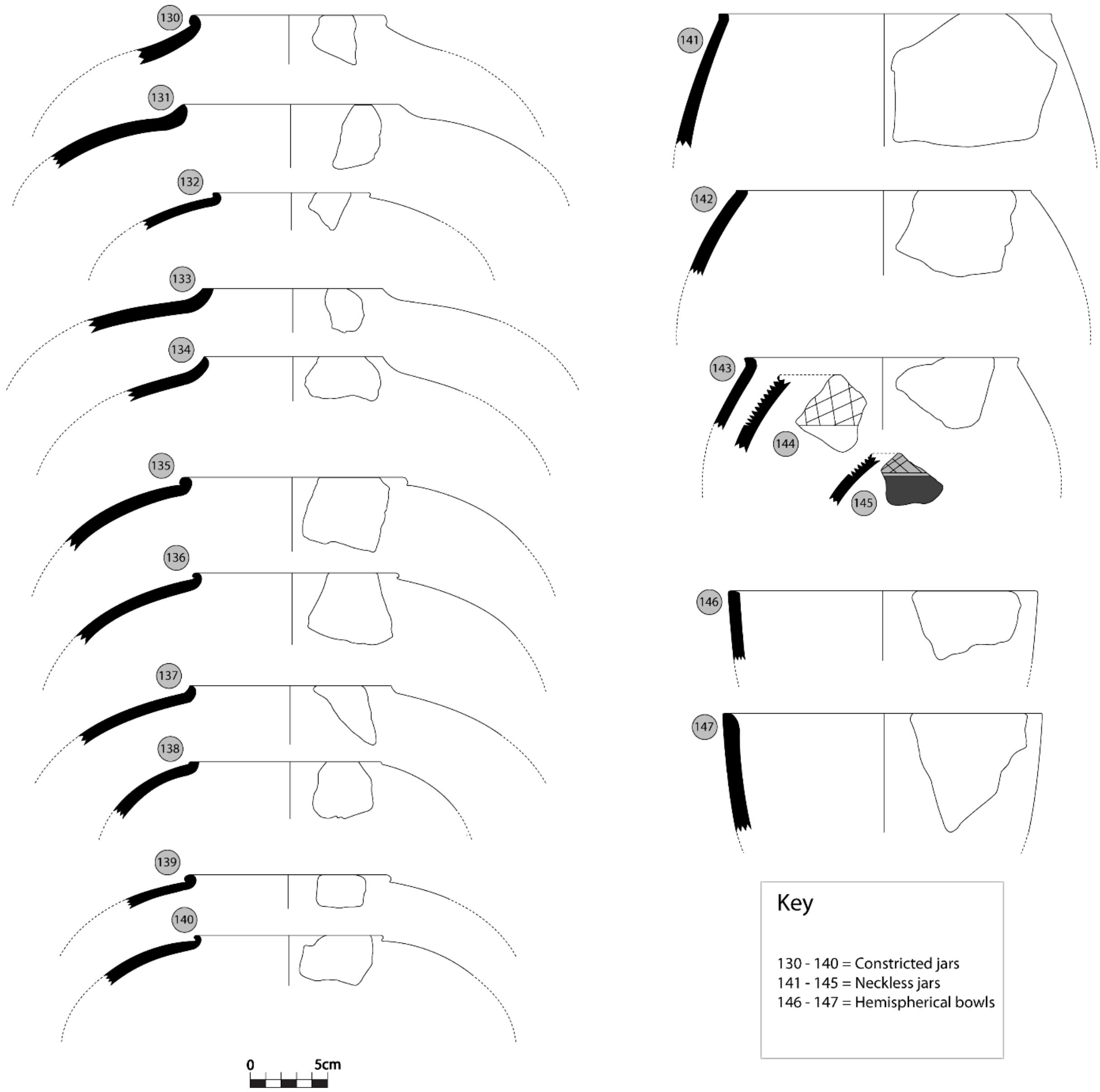


Figure 5. 12: Vessel Profiles of ceramics recovered from Middle Layers of the foothill test pits

Three vessel profiles were recreated out of the 27 potsherds that were retrieved from the Middle Layers of the test pits that were sunk on the foothill of Mananzve (Figure 5.12). Constricted jars dominated the assemblage, and these were followed by neckless jars and hemispherical bowls (Table 5.16).

Table 5. 13: Vessel Profiles of ceramics recovered from Middle Layers of the foothill test pits

Vessel Profile	1	2	3	4	5	6	7	8	Total
Layers 3 & 4	15				7	5			27

Bottom Layers (Layers 5)

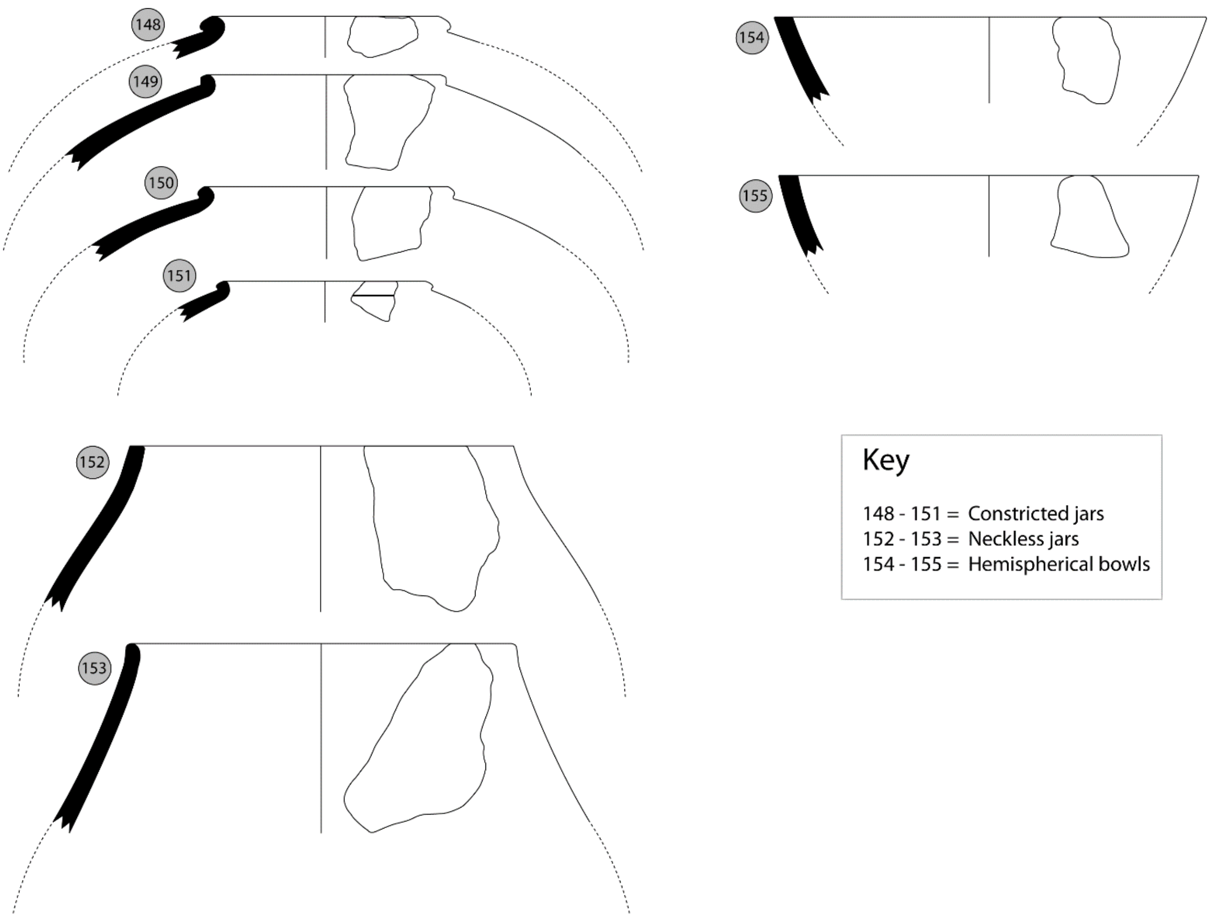


Figure 5. 13: Vessel Profiles of ceramics from Bottom Layers of the foothill test pits

Three vessel profiles were reconstructed from the eight potsherds that were recovered from the basal layers of the test pits sunk at the foothill of Mananzve Hill (Figure 5.13). These were vessel profiles comprised mostly of constricted jars, followed by neckless jars, and hemispherical jars (Table 5.14).

Table 5. 14: Vessel Profiles of ceramics recovered from Bottom Layers of the foothill test pits

Vessel Profile	1	2	3	4	5	6	7	8	Total
Layers 5	4				2	2			8

Summary

In summary, vessel profiles reconstructed from potsherds recovered from the test pits excavated on the foothill of Mananzve revealed a variety of jars and bowls. Constricted jars and neckless jars dominated the assemblage while constricted bowls had the lowest frequency.

5.4.2.2. Decoration Motif

A variety of design motifs presented in Figure 5.14 and Table 5.15 below, were recorded using the decorated potsherds recovered from the test pits that were excavated on the foothill of Mananzve.

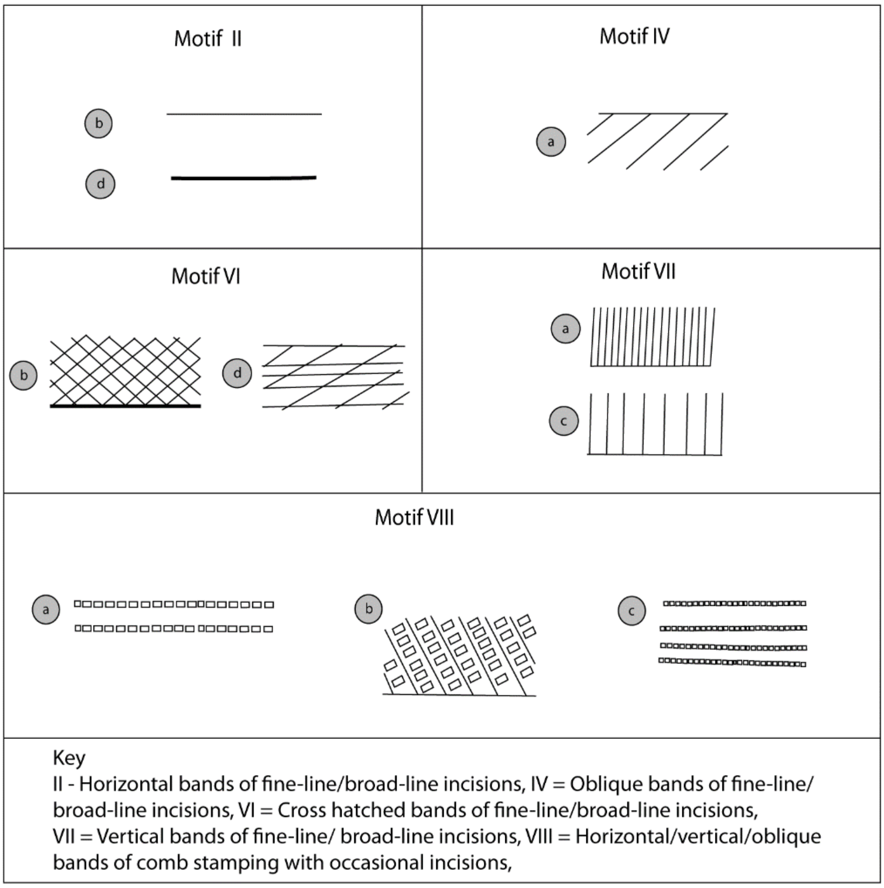


Figure 5. 14: Decoration Motifs of ceramics recovered from Mananzve Foothill

Table 5. 15: Decoration Motifs of ceramics recovered from Mananzve Foothill

Decoration Motif	Surface Finds	Layers 1 & 2	Layers 3 & 4	Layers 5
I				
IIa.				
IIb.	2	5		
IIc.				
IId.				1
IIIa.				
IIIb.				
IIIc.				
IVa.	1			
IVb.				
IVc.				
IVd.				
Va.				
Vb.				
Vc.				
VIa.				
VIb.			1	
VIc.				
VId.			1	
VIIa.	1			
VIIb.				
VIIc.	1			
VIIIa.	3			
VIIIb.		1		
VIIIc.	1			
IX.				
Xa.				
Xb.				
XIa.				
XIb.				
XIc.				
Total	9	6	2	1

Surface Finds

The majority of the decorated sherds from in the foothill assemblage were recovered from the Surface Finds and these were dominated by horizontal/vertical/oblique bands of comb stamping, with occasional incision motifs. These were followed by horizontal bands of fine-line/broad-line incision motifs and other motifs whose frequencies were recorded as the least dominant (see Table 5.15 above).

Top Layers (Layers 1 & 2)

Horizontal bands of fine-line/broad-line incision motifs had the highest frequency while the remainder, a single sherd had an upward facing incised triangles motif (Table 5.15).

Middle Layers (Layers 3 & 4)

Both of the decorated potsherds recovered from the Middle Layers of the excavated test pits on Mananzve foothill had motifs showing cross hatched bands of fine-line/broad-line incisions (see Table 5.15).

Bottom Layers (Layers 5)

The single decorated sherd recovered from the Bottom Layers of the excavated test pits on the foothill had motifs with horizontal bands of fine-line/broad-line incisions (see Table 5.15).

Summary

Horizontal/vertical/oblique bands of comb stamping with occasional incision motifs, dominated the foothill assemblage and these are restricted to potsherds recovered from Surface and Top Layers. Horizontal bands of fine-line/broad-line incision motifs were fairly represented throughout the Surface Finds, as well as the Top, Middle and Bottom Layers. Overall, most of the decorated sherds taken from the foothill were recovered from the surface.

5.4.2.3. Decoration Technique

Ceramics recovered from the foothill of Mananzve were decorated using a variety of techniques that included incising, comb stamping, and punctate stamping. These are summarised in Table 5.16.

Table 5. 16: Decoration Technique on ceramics recovered from Mananzve Foothill

Decoration Technique		Surface Finds	Layers 1 & 2	Layers 3 & 4	Layers 5 & 6
	Incisions	4	5	2	1
	Comb stamping	5	1		
	Punctate stamping				
	Total	9	6	2	1

Surface Finds

Most of the decorated potsherds recovered from the foothill among the Surface Finds were comb stamped, while the remainder were decorated using the incising method (Table 5.16).

Top Layers (Layers 1 & 2)

The majority of the decorated potsherds recovered from the Top Layers of the excavated test pits on the foothill of Mananzve were decorated using the incising technique (see Table 5.16). The remainder, a single sherd, was decorated using the comb stamping technique.

Middle Layers (Layers 3 & 4)

As demonstrated in Table 5.16, all the decorated potsherds recovered from the Middle Layers were incised.

Bottom Layers (Layers 5)

The single decorated sherd recovered from the Bottom Layers of the test pits excavated on the foothill of Mananzve was decorated using the incising technique (see Table 5.16 above).

Summary

The majority of the decorated potsherds recovered from the foothill of Mananzve were incised while the remainder were comb stamped.

5.4.2.4. Decoration Placement

Surface Finds

Table 5. 17: Decoration Placement on ceramics recovered Mananzve Foothill as Surface Finds

Decoration Placement	1 (lip)	2 (rim)	3 (neck)	4 (shoulder)	5 (neck-shoulder)	Total
Surface Finds			4	5		9

The bulky of the potsherds had decorations on their shoulders, while the remainder had decorations exerted on their necks (see Table 5.17 above).

Top Layers (Layers 1 & 2)

Table 5. 18: Decoration Placement on ceramics recovered from Top Layers of the foothill test pits

Decoration Placement	1 (lip)	2 (rim)	3 (neck)	4 (shoulder)	5 (neck-shoulder)	Total
Layers 1 & 2				5	1	6

Most of the potsherds extracted from the Top Layers of the excavated tests pit had decorations placed on their shoulders (Table 5.18), and on the area that connects their necks and shoulders.

Middle Layers (Layers 3 & 4)

Table 5. 19: Decoration Placement on ceramics recovered from Middle Layers of the foothill test pits

Decoration Placement	1 (lip)	2 (rim)	3 (neck)	4 (shoulder)	5 (neck-shoulder)	Total
Layers 3 & 4				2		2

Ceramics recovered from the Middle Layers were only decorated on their shoulders (see Table 5.19 above).

Bottom Layers (Layers 5)

Table 5. 20: Decoration Placement on ceramics recovered from Middle Layers of the foothill test pits

Decoration Placement	1 (lip)	2 (rim)	3 (neck)	4 (shoulder)	5 (neck-shoulder)	Total
Layers 3 & 4				1		1

Out of the potsherds recovered from the Bottom Layers of the text pits excavated on the foothill of Mananzve, only a single sherd had decorations exerted on its shoulder (Table 5.20).

Summary

In a nutshell, the majority of decorations on potsherds recovered from Mananzve Foothill were exerted on the shoulders, while the remainder were exerted on the necks and the area between the necks and the shoulders.

5. 5. DISCUSSION

Mananzve ceramic assemblage

The multidimensional analyses presented above shows clearly that Mananzve ceramic assemblage is diachronically characterised by a variety of jars and bowls. These are fairly represented throughout the site - except short-necked jars and necked bowls, however, both of which are restricted to the hilltop.

Constricted jars (Numbers, 1-3, 23-27, 96, 107-114, 130-140,148-151) forms the dominant vessel category. These are hardly decorated, except for a few sherds with single line incisions on their shoulders (151). The jars are largely concentrated on the foothill and their frequency is represented consistently throughout the stratigraphy of the foothill test pits. However, their frequency at the hilltop is limited to the Top Layers of the excavated test pits. This shows that producers and consumers of this ware were one of the last groups to occupy the Mananzve summit and the foothill; however, considering the density of neckless jars there is possibility that most of their settlements were concentrated on the foothill.

Neckless jars (13-16, 34-41, 104, 118-122, 141-145, 152-153) form the next dominant category. These vessels are rarely decorated, except for a few sherds with bands of cross hatching, graphite burnishing and polychrome on their shoulders. In terms of stratigraphy, their frequency is similarly to that of constricted jars. However, neckless jars are largely concentrated on the hilltop rather than the foothill.

Hemispherical bowls (17-20, 42-46, 79-81, 91-94, 105-106, 123-127, 146-147, 154-155) form the subsequent vessel category. These vessels are hardly decorated, except for a few with a combination of single line incisions, wavy lines, and upward and downward incised triangles, between their necks and shoulders. Hemispherical bowls are fairly distributed on both the hilltop and foothill of Mananzve.

Successively, the next group is comprised shouldered jars (10-12, 29-33, 60-78, 89-90, 99-103, 115-117). These are decorated with varied motifs, which include stamped and incised bands, downward and upward facing tringles, single line incisions, and vertical/oblique punctuates on their necks, rims and, shoulders. Though, mostly concentrated on the hilltop, shouldered jars do feature on the foothill. However, their stratigraphy layering extends only to the Top Layers of the foothill test pits.

The next categories consist of recurved jars (6-9, 28, 55-59, 84-88, 97-98) and short-necked jars (4-5, 49-54, 83). Prominent decorations motifs on the latter includes comb stamping, downward and upward facing triangles, and bands of wavy lines, mostly exerted on the necks and shoulders. As noted earlier, distribution of short-necked jars is restricted to the hilltop Middle and Bottom Layers. This clearly shows that the makers and users of short-necked jars came earlier than those who consumed constricted jars and neckless jars. Recurved jars are fairly decorated especially with stamped bands, incised oblique lines, incised single lines, and incised downward and upward facing triangles, on their rims, necks and shoulders. These jars are restricted to the hilltop middens except two sherds with comb stamping that were recovered on the foothill of Mananzve Hill as Surface Finds. Lastly, Mananzve's least frequent vessel categories are composed of constricted bowls (47-48, 128-129) and necked bowls (21-22, 82, 95). No decorations were recorded on constricted bowls. Decorations on necked bowls were limited to incised downward and upward facing triangles motifs and their distribution were limited to the surface and Bottom Layers of the hilltop test pits.

Identity of the Iron Age communities of Mananzve

Basically, two trends can be discerned from the Mananzve assemblage. From a quantitative viewpoint, it is evident that producers and consumers of constricted and neckless jars were the largest group which settled simultaneously on the hilltop and foothill of Mananzve, particularly the later while those of short-necked jars and necked bowls were few and restricted to the hilltop.

Secondly, from a material culture perspective, stratigraphy of the hilltop and foothill assemblages shows a cultural layering of three generations of potters and consumers of Mananzve ceramics whose identity can be defined at group level. The earliest layer is characterised mostly by comb stamped shouldered and recurved jars (6-7, 56, 66, 97, 98, 99). Though present on the hilltop, the majority of these vessels were recovered from the foothill of Mananzve as surface and sub surface data. According to established knowledge (Huffman 1974:51, 2007:143-146), as demonstrated in Figure 5.1, these jars are typical of Zhizo ceramics dated between CE 700-1020.

Furthermore, this is underscored by the fact that Mananzve falls within Huffman's geographical boundaries of the Zhizo landscape which stretches from Matopos to north-eastern Botswana (Huffman 2007:143). Nevertheless, more work is needed to excavate Zhizo middens since the sample size was too small to derive any meaningful conclusions.

The next layer of occupation is characterised by the predominance of incised ware which is associated mostly with the agropastoralists people who made and consumed Leopards Kopje ceramics (Fouche 1937; Robinson 1966; Garlake 1968; Huffman 1974:100-118; Manyanga 2006; Calabrese 2007). This applies to ceramics that were recovered mostly from the Middle and Bottom Layers of the test pits excavated on the summit of Mananzve. Basing on the work of Huffman (2007:278-295), as demonstrated in Figure 5.1 and Figure 5.2, this period at Mananzve can be further divided into three phases, which are superimposed on each other. Vessels decorated mostly with incised upward facing tringles and simple bands of oblique incisions 12, 30, 32, 33, 57,75, 78, 84-86, 88, 90) are associated with the K2 period dated between CE 1000-1200 while those largely decorated with alternating triangles (9, 22, 28, 32, 33, 49, 52, 53, 59, 60, 68) are associated with the Transitional K2 period. The final phase of the Leopards Kopje era at Mananzve is dominated by vessels decorated largely with downward facing/cross hatched triangles and burnished necked bowls (49, 50, 51, 55, 57, 62, 64, 71, 74, 73, 77, 83) are associated with the Mapungubwe period dated between CE 1250-1300 (see also Huffman 2015:18).

Lastly, presence of neckless jars occasionally decorated with cross-hatching, and constricted jars and bowls with a high frequency of undecorated sherds in the Top Layers and the foothill, points to a new group that hardly decorated their pottery. According to the regional Iron Age ceramic sequence, (Caton-Thompson 1931; Huffman 2007:258-261, Van Waarden 2012:163-165), these vessels (13-16, 107-114, 118-122, 130-145, 148-153) are typical of Khami ware which was prevalent during the Rozvi period (1685-1839) at Danamombe and Tabazikamambo. Typical vessel profiles include those illustrated in Figure 5.15 in Machiridza (2012).

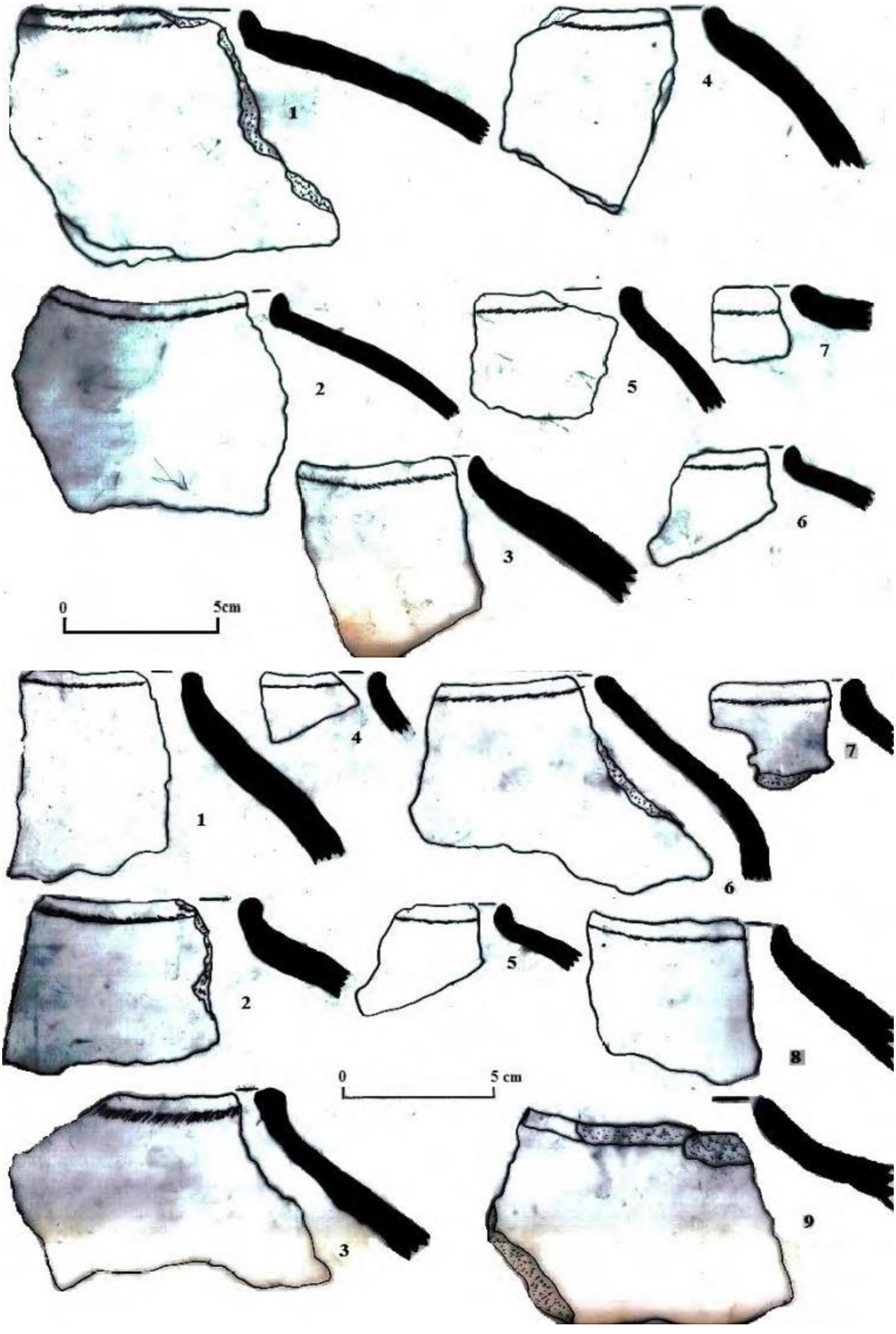


Figure 5. 15: Constricted and neckless jars from Danamombe (After Machiridza 2012:120)

This sequence is supported by Mananzve radiocarbon chronology established in the previous chapter which dates the site according to two periods. The earliest two dates, CE 1185-1275 & 1290-1400), accounts for the Leopards Kopje, which is regionally dated between CE 1000 and 1450 (Huffman 2007:278). The latest dates (CE 1680-1730) account for the Khami (Rozvi) period. However, the dates do not account for the Zhizo period; hence, more work is needed towards dating of areas designated as Zhizo during the surveys. Furthermore, layering of these cultural groups reveals that the Shashi region always attracted settlement despite vulnerability to climate and environmental variability (see Chapter Two). Similarly, this reveals awareness by these communities of the hazards posed by the landscape as well as their ability to adapt; hence, they deserve to be commended for being resilient.

5. 6. SUMMARY

Although the ceramic assemblage retrieved from Mananzve was small, the typological study proved fruitful in answering part of the research questions that informed this study. It revealed a cultural succession of three Iron Age communities associated with Zhizo, Leopards Kopje and Khami ceramics that possibly occupied Mananzve. Long-term occupation of these groups at Mananzve is a clear sign that they managed to adapt to the Shashi region, despite it being a semi-arid landscape. Nevertheless, there is a need for more artefact studies - particularly glass beads, and shell beads analyses to illuminate the cultural identity of the residents of Mananzve since it could not be defined from ceramics alone.

CHAPTER SIX

GLASS BEADS FROM MANANZVE

"…history of ornaments is probably as old as humanity…" (Bvocho 2005:409).

6. 1. INTRODUCTION

Glass beads are represented widely at Iron Age sites in southern Zambezia (Wood 2005). Most archaeologists consider them reliable 'witnesses' that have the potential to illuminate the chronology and livelihoods of precolonial societies that consumed them as ornaments or trade goods (Bvocho 2005). For this reason, numerous glass bead studies have been undertaken in the last eight decades in Botswana, Zimbabwe, South Africa and Namibia (e.g. Beck 1928, Robinson 1959; Hanisch 1980; Kinahan 2000). However, it was only recently that a comprehensive glass bead study made by Wood (2005) established a bead seriation that integrated all the bead classes from securely dated EIA, MIA and LIA sites in southern Zambezia. As a result, this glass bead typology has been adopted by a number of archaeologists as a basis for cross dating Iron Age sites without radiocarbon dates (Manyanga 2006; Robertshaw *et al.* 2010; Antonites 2012; Machiridza 2012; House 2016).

Therefore, in consideration of the aims of this study presented in the introductory chapter, Wood's (2005:39-56, 2011:67-84) bead series were used to establish the chronology of glass beads recovered from Mananzve as a step towards identifying the Iron Age groups that resided at the site. It must be noted that shell and metal beads were analysed separately and are presented with other finds presented in Chapter Seven.

6. 2. SOUTHERN AFRICA'S GLASS BEAD SERIES

In Southern Africa, glass beads have been used largely as chronological indicators for cross dating Iron Age sites (Bvocho 2005; Wood 2011). An in-depth seriation of these beads is provided by Wood (2005; 2009; 2011); therefore, an abridged version of the glass bead series extracted from Wood (2005, 2011) is only presented here in Table 6.1 and Figure 6.1 as the framework that informed classification of glass beads taken from Mananzve.

Table 6. 1: Summary of southern Africa's bead series (Extracted from Wood 2005-39-57)

Bead Series	Dates	Method of Manufacture	Colour	Shape	Diaphaneity	Size Range	Typical Sites
Zhizo	CE 700-950	Drawing	Blue, blue-green, yellow, green and cobalt blue	Cylinders, tubes and oblates	Translucent opaque	2-7.5 mm	Schroda, Zhizo Hill (Robinson 1985; Hanisch 1980)
K2	CE 900- 1200	Drawing	beads mostly range between blue-green, and light green	Cylinders, tubes and oblates	Transparent-translucent	less than 3.5 mm	K2, Malumba (Bvocho 2005; Wood 2005)
Indo-Pacific	CE 1000-1250	Drawing	brownish-red, yellow, orange, green, and blue-green	Cylinders, tubes and oblates	Opaque translucent	2.5-4 mm	Pont drift, Skutwater, K2 (Wood 2005)
Mapungubwe	CE 1250-1300	Drawing	Black brownish-red, blue-green, yellow, light-green, orange and cobalt blue beads	Oblates, cylinder (2.5-3.5 mm) tubes and oblates	Opaque beads transparent and translucent-opaque.	2.5-3.5 mm	Mapungubwe, K2, Tabazikamambo, Malumba, Mapela (Robinson 1966; Bvocho 2005; House 2016)
Zimbabwe	CE 1275-1400	Drawing	black, blue-green, yellow, cobalt-blue and brownish-red	Cylinders, oblates and tubes	Transparent-translucent	2.5-3.5 mm	Great Zimbabwe, Hlamba Mhlonga, and Thulamela (Wood 2011)
Khami	CE 1400-1700	Drawing	Black, brownish-red, blue-green, green, yellow, and deep-blue	Cylinders, tubes and oblates	Translucent-opaque and opaque-translucent	2 -7 mm	Selolwe, Mtao Village 16, Thulamela, (Manyanga 2006; Wood 2011; Van Waarden 2012).

Zhizo Series

K2 Series

Indo-Pacific Series

Mapungubwe Oblate Series

Zimbabwe Series

Khami Series

Figure 6. 1: Southern Africa's Bead Series (Adapted from Wood 2011:82-84)

6. 3. APPROACHES TO GLASS BEADS ANALYSES

For the sake of maintaining consistency and standardisation with other related studies conducted using the same methodology (Antonites 2012; Machiridza 2012), Wood's (2005) approaches[12] were adopted for the classification of glass beads recovered from Mananzve. Therefore, emphasis was placed on attributes relevant to the aims of this study and these were recorded using data capture sheets in Appendix 3.

Emphasis was placed on the method of manufacture, colour, shape (Figure 6.2), diaphaneity (Table 6.2), and size range (Table 6.3). According to Wood (2005:27), these attributes are very useful in defining a glass bead assemblage. However, other attributes such as raw material surface finish, and patination, were also recorded for the purposes of getting an insight into the respective assemblages.

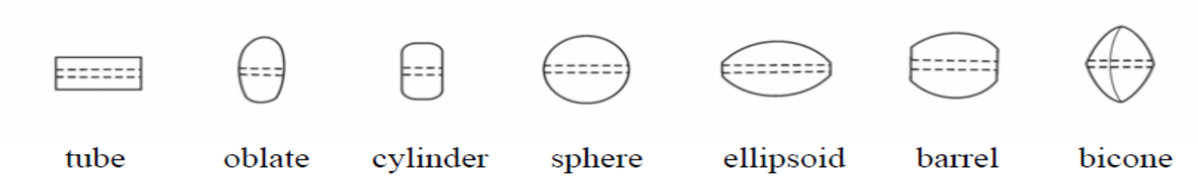


Figure 6. 2: Glass bead shapes (Adapted from Wood 2005:31)

Table 6. 2: Glass beads diaphaneity (Adapted from Wood 2005:35)

Diaphaneity	Description
Transparent	objects can be clearly seen through glass
Transparent-translucent	glass is slightly cloudy (often due to bubbles)
Translucent-transparent	glass is cloudy but light passes easily through the bead
Translucent	light passes through entire bead
Translucent-opaque	glow of light from most of bead
Opaque-translucent	slight glow of light at edges of bead
Opaque	no light seen through edge of bead

[12] Initially adapted from Karklins (1985) and Kidd & Kidd (1970).

Table 6. 3: Glass beads size categories (Adapted from Wood 2005:34)

Size	Diameter
Minute	<2.5 mm
Small	2.5-3.5 mm
Medium	3.5-4.5 mm
large	>4.5 mm

6. 4. RESULTS

A total of 90 glass beads recovered from the hilltop and foothill of Mananzve were examined and classified. All the glass beads recovered were manufactured using the drawing method (see Wood 2005) and they all had simple structures made of single layers of glass. A detailed analyses of the glass beads at individual and test pit level is provided in Appendix 3. The forthcoming sections will only provide an analyses of key attributes that informed this study at hilltop and foothill levels.

6. 4. 1 HILLTOP ASSEMBLAGE

In total 77 glass beads were recovered as surface and subsurface finds from the five test pits that were sunk at the summit of Mananzve Hill. The hilltop assemblage formed the largest sample (85%) of glass beads recovered from the Mananzve.

Colour

Blue-greens beads dominated the hilltop assemblage (Figure 6.3). Basing on Wood's (2005) seriation, these beads mostly feature in all the known glass bead series. However, most of the blue-greens from the summit were large sized which probably meant they were Indo-pacific beads which were consumed mostly during the Khami era while the small sized beads were prominent during the K2 era. Similarly, this applies to the brownish-red beads. Black beads were recovered mostly in the Middle and Top Layers of the test pits excavated on the hilltop.

Their opaqueness and devitrification largely points them to have been consumed during the Mapungubwe era. Green and yellow beads were also present and likely these were part of the Indo-Pacific series since they are mostly translucent (Wood 2011). Light-green beads from the hilltop were common and these fits best in within the K2 series since their lustre was shinny. Lastly the deep-blue beads formed the least frequent of the Hilltop assemblage and these were covered mostly on the upper layers of the excavated middens. According to Wood's series these fit best the Khami series.

Figure 6. 3: Colour frequency of glass beads recovered from the hilltop

Shape

Tabular shaped beads account for 45% of the glass beads (Figure 6.4) recovered from the Hilltop since most of their ends were left untreated. According to Wood (2005), typical beads fall mostly within the K2 and Indo-Pacific series and this corresponds with the hilltop stratigraphy, since most of the Leopards Kopje ceramics were recovered in the middle and bottom layers. Cylindrical beads on the other hand were mostly recovered from the upper layers. Considering their opaqueness and large sizes, the majority of the cylindrical beads fits best within the Khami series however the small sized and the more translucent, transparent fits within the K2, Indo-Pacific, Mapungubwe and Zimbabwe series. Uniformity among most of the oblates recovered at the hilltop places them in the Mapungubwe series however, as cautioned by Wood (2011:770) some of the large sized glass beads are better classified as Zimbabwe series.

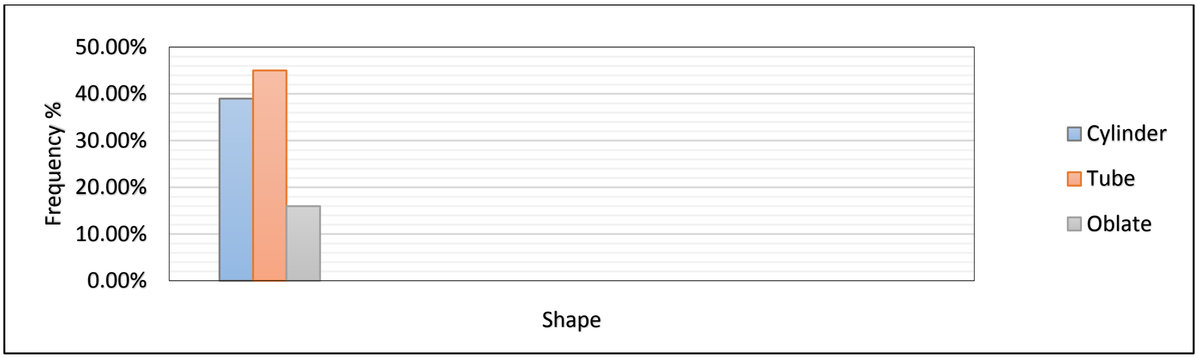


Figure 6. 4: Shape frequency of glass beads recovered from the hilltop

Diaphaneity

As depicted in Figure 6.5, the majority of the glass beads recovered from the Hilltop are opaque and, considering their colour and size, the small sized ones are described best as Indo-Pacific and Mapungubwe oblates while the large sized ones are Khami series. Similarly, translucent – opaque are widely represented as well as blue, blue-green, light-green and yellow oblates and cylinders which fit well into the Mapungubwe and Khami series. Transparent beads are represented mostly in dark green colours which mostly feature in the Zimbabwe series while translucent beads have colours that include blue-green, yellow, and green, which feature mostly in the Indo-Pacific and Khami series. A small portion of shiny light-green beads that diaphaneity which ranges between transparent and translucent was also recorded and this fits well into the K2 series.

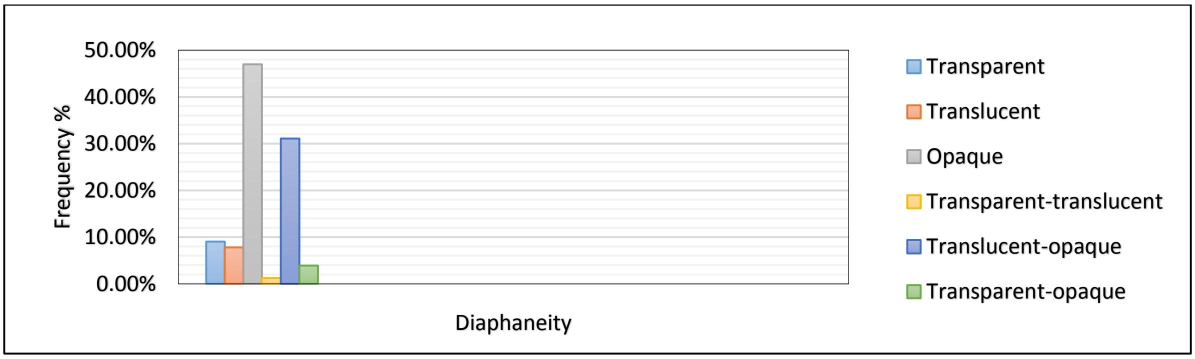


Figure 6. 5: Diaphaneity frequency of glass beads recovered from the hilltop

Size Range

The hilltop assemblage is dominated by beads with large diameters (Figure 6.6). These mostly fit well within the Khami series. Subsequent bead sizes fit well within the Zimbabwe, Mapungubwe, Indo Pacific, and K2 series (Wood 2005).

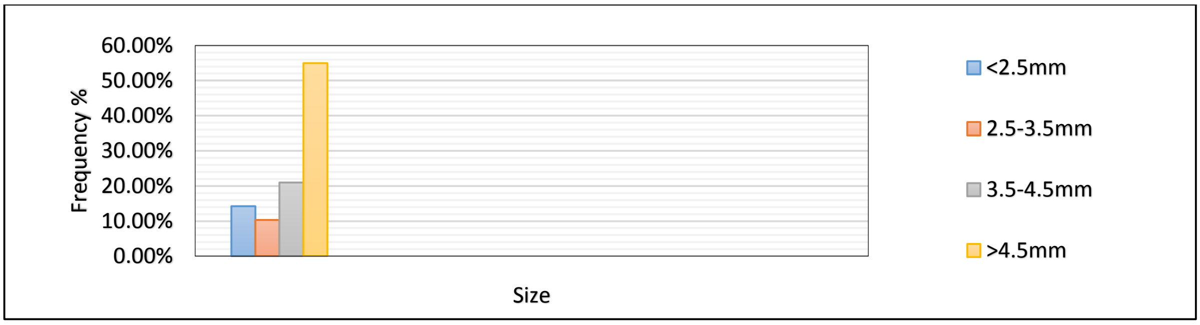


Figure 6. 6: Size frequency of glass beads recovered from the hilltop

6. 4. 2. FOOTHILL ASSEMBLAGE

A total of 13 glass beads were recovered as surface and subsurface finds from the six test pits that were sunk at the foothill of Mananzve. The foothill assemblage formed the least (15%) of the assemblage of glass beads recovered from the Mananzve.

Colour

Figure 6. 7: Colour frequency of glass beads recovered from the foothill

Blue-green, green and deep-blue beads are the dominant beads colours (Figure 6.7). Most of the beads have large tabular profiles and they are partially vitrified. These are best classified as Zhizo series, particularly the blue beads. The remainder have cylinder profiles and are large with diaphaneity that is both opaque and translucent; hence, they fit mostly within Wood' s Khami series. The same applies to the opaque black and brownish-red beads as well as the translucent opaque yellow beads.

Shape

Out of the total, 77% of the beads recovered from the foothill were cylindrical in shape while the remainder were tabular (Figure 6.8). Considering the colours of these cylinder and tubular beads, as presented above, these beads correspond mostly to the Khami and Zhizo series.

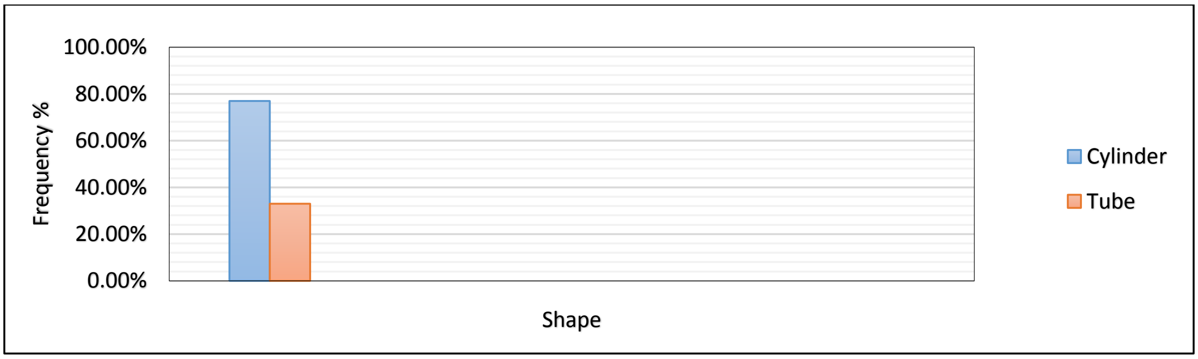


Figure 6. 8: Shape frequency of glass beads recovered from the foothill

Diaphaneity

Most of the beads recovered from the foothill of Mananzve are opaque as demonstrated in Figure 6.9. Considering the colour and shapes of the beads, as presented earlier, these are mostly Khami series. However, occasional Zhizo series do occur since some blue -greens have opaque surfaces owing to the alteration of their patina (Robertshaw *et al.* 2010:1900). The remaining translucent-opaque and opaque-translucent beads are mostly presented in yellow, green and blue green colours. These fit best within the Khami glass bead series although some of the small sized cylinders have a high correspondence with the Zimbabwe series.

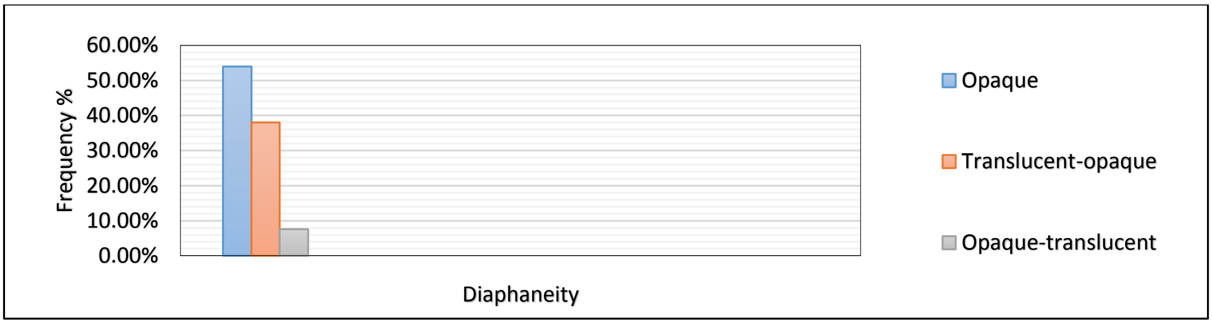


Figure 6. 9: Diaphaneity frequency of glass beads recovered from the foothill

Size range

All the foothill glass beads exceed 3.5 mm (Figure 6.10); hence, they are the largest of all the beads recovered from Mananzve. According to Robertshaw *et al.* (2012:73-1900-1901) these are largely typical of the Zhizo and Khami series, whose diameter may even stretch to 13 mm. However, there is a possibility that some fell within the Zimbabwe series, particularly, the black cylinders.

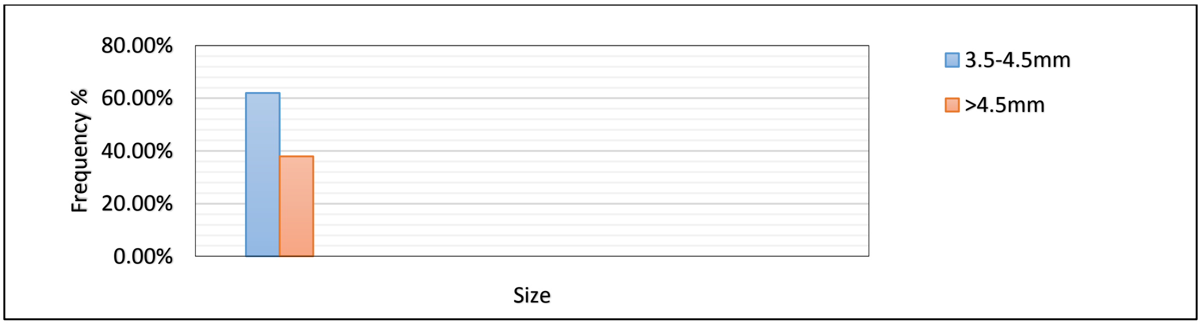


Figure 6. 10: Size frequency of glass beads recovered from the foothill

6. 5. DISCUSSION: MANANZVE GLASS BEAD ASSEMBLAGE

Much like at many other Iron Age sites in southern Africa (Bvocho 2005; Machiridza 2012; House 2016), glass beads are fairly represented at the hilltop and foothill of Mananzve. However, glass beads are represented mostly on the hilltop rather than on the foothill (Table 6.4). Basing on Wood's (2005) glass bead sequence, Mananzve is characterised by most of the southern Africa's beads except the recently discovered Chibuene series (see Denbow *et al.* 2015).

Table 6. 4: Frequency of glass bead series from Mananzve

	Zhizo	K2	Indo-Pacific	Mapungubwe	Zimbabwe	Khami	Total
Hilltop		9%	31%	18%	1%	27%	86%
Foothill	2%					12%	14%
Total	2%	9%	31%	18%	1%	39%	100%

The Khami series are predominant (Table 6.4). These beads are characterised mostly by devitrified opaque blue-green, brownish-red, yellow and black cylinders largely concentrated on the hilltop (Figure 6.11). Their frequency is represented mostly throughout the upper layers of the hilltop middens; however, few of the Khami beads were recovered from the foothill, where their frequency was consistently represented throughout the stratigraphy of the foothill test pits.

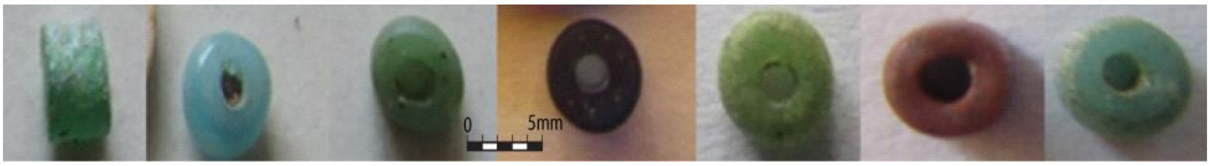


Figure 6. 11: Sample of Khami beads recovered from Mananzve Test Pits 1, 2, 3, 4, 5, and 9

The predominance of the Khami series is an indicator that consumers of Khami series were one of the latest groups that settled on both the hilltop and foothill of Mananzve. The probability is very high that these are the same people who produced and consumed constricted and neckless jars between CE 1680 and 1730. However, it seems most of these consumers who had access to Khami beads were concentrated on the hilltop, though some were present on the foothill.

The subsequent bead categories are characterised by the Indo-Pacific series. These are characterised mostly by opaque brownish-red and black beads, as well as translucent-opaque yellow, green and blue-green beads (Figure 6.12).

Figure 6. 12: Sample of Indo-Pacific beads recovered from Mananzve Test Pits 1, 2 and 3

In terms of stratigraphy, their frequency stretches from Top Layers to the Bottom Layers of the excavated test pits. However, Indo-Pacific beads were only recovered on the hilltop in association with the charcoal that dates between CE 1185 and 1275. This implies that, their consumers were probably the K2 people who produced and consumed the recurved and short-necked jars recovered on the hilltop of Mananzve.

Mapungubwe oblate series forms the next most common bead category. These beads are characterised mostly by opaque black oblate beads which are heavily devitrified; however, occasional blue-green, brownish-red and green cylinders were also recorded (Figure 6.13).

Figure 6. 13: Sample of Mapungubwe oblates recovered from Mananzve Test Pits 1, 2 and 3

Much like the Indo-Pacific series, their distribution was restricted to the hilltop however, their layering was associated mostly with ceramics from the Middle Layers and charcoal that was dated between CE 1290-1400. The reason why we have over-lapping of Mapungubwe oblate series in the layers dated to the CE 1400 is probably sociological (Bvocho 2005). Thus, glass beads were a valued possession that was passed from generation to generations throughout time; hence, they were preserved easily for a long period of time.

Successively, the next group is comprised K2 series. These beads were characterised mostly by tabular shaped and shiny translucent- light-green beads (see Figure 6.14 below).

Figure 6. 14: Sample of K2 beads recovered from Mananzve Test Pits 1 and 2

These were recovered in the same context as the Indo-Pacific beads while a few overlapped at the Middle Layers (Mapungubwe stratum).

Lastly, Mananzve's least frequent bead categories consists of Zhizo (Figure 6.17) and Zimbabwe series (Figure 6.16), respectively.

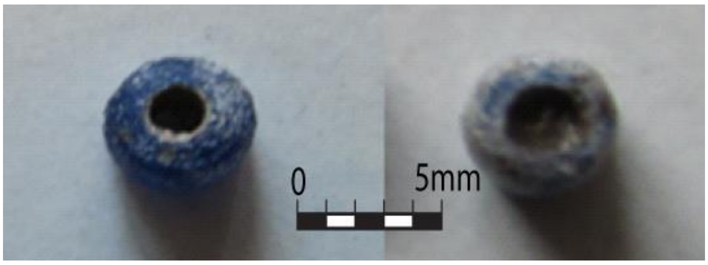


Figure 6. 15: Sample of Zhizo beads recovered from Mananzve Test Pits 8 and 11

Based on the dating of the Zhizo series (see Table 6.1), Zhizo beads must have been the earliest glass beads to have been consumed by the Iron Age communities that resided at Mananzve. However, not much information was recovered to date these beads directly. Basically, the Zhizo beads retrieved from Mananzve were characterised mostly by translucent blue beads while a single Zimbabwe bead was translucent green (Figure 6.16).

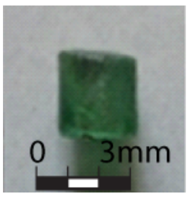


Figure 6. 16: Zimbabwe glass bead recovered from Mananzve Test Pit 3

The presence of the Zimbabwe bead is consistent with the radiocarbon dates derived from the hilltop. Although the frequency is too limited to derive any meaningful conclusion, it shows the difficulty of separating Zimbabwe from Khami given the overlaps between the two. Nevertheless, their presence implies that the Iron Age communities who resided at Mananzve had access to Zimbabwe beads at some point in time.

6. 6. SUMMARY

Basically, two trends can be discerned from the Mananzve glass bead assemblage. From a quantitative viewpoint, it is evident that glass beads were consumed by residents of both the hilltop and foothill of Mananzve. Consumers of Khami series were probably the largest group to simultaneously have settled on the foothill and hilltop of Mananzve. By contrast, consumers of K2, Indo-Pacific, Mapungubwe oblates and Zimbabwe series were restricted to the hilltop of Mananzve, while those of Zhizo series accessed the foothill as well.

Secondly, from a material culture perspective, the stratigraphy of the hilltop and foothill bead samples shows a cultural layering of three cultural groups. The earliest group is characterised by Zhizo communities, who consumed most of the Zhizo series. The next group, Leopard's Kopje is characterised by consumers of K2, Indo-Pacific, Mapungubwe Oblates. Lastly, we have the Khami communities who consumed mostly the Khami and Zimbabwe series. Though this chronology is tentative, it is supported by radiocarbon chronology and ceramic sequence established in the previous chapters. The next chapter focuses on foodways, arts and crafts objects from Mananzve.

CHAPTER SEVEN

FOODWAYS, ARTS AND CRAFTS AT MANANZVE

"...drylands are resource rich areas ..." (Manyanga 2006:204).

7. 1. INTRODUCTION

The Shashi region is endowed with a rich biodiversity. Among these resources are, wildlife, vegetation and minerals deposits. This diversity obviously made it viable for residents of Mananzve to consume a variety of food resources and to engage in various arts and crafts. This chapter gives a detailed analyses of faunal remains, a kraal, grinding stones, cereal remains, grain bins, stone walling, shell beads, spindle whorls, metals dolly holes and lithics that were uncovered at Mananzve and assesses how these contributed to their livelihoods.

Considering the fact that background on the archaeology and anthropology of material remains[13] that feature most at Iron Age sites in southern Zambezia has already been provided in the first three chapters, this chapter will avoid the temptation of repeating these backgrounds by focusing on data presentation as well as the methods and frameworks that informed the analyses and interpretation of the findings.

7. 2. FAUNA

Method

Faunal remains recovered from Mananzve was analysed on the premise that animal remains have the potential to illuminate prehistoric animal resource utilisation and past environments (Brain 1974; Plug 1997; Shenjere-Nyabezi *et al.* 2013). Based on this framework, an

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[13] Various stuudies have been made on fauna (Brain 1974; Plug 1997; Manyanga 2001), kraals (Denbow 1983; Huffman *et al.* 2013), grindingstones (Huffman 1974; Maggs 1976; Van Waarden 2012), cereal remains (Huffman 2007), stone walling (Whitty 1961; Van Waarden 2011), shell beads (Tapela 1995; Antonites 2012), spindle whorls (Huffman, 1971, 2000; Ruwitah 1999; Van Waarden 2012), metals and metal working objects (Miller & Van Der Merwe 1994; Miller 2002; Chirikure & Rehren 2006; Bandama 2013; Chirikure 2015), dolly holes (Swan 1994; Van Waarden 2012) and lithics (Walker 1995; Van Doornum 2005).

archaeozoological approach was adopted for identifying species that were exploited by the residents of Mananzve (Voigt 1983; Manyanga 2001). These were identified using an inventory of local animal species recorded during the surveys (see Chapter Two) and comparative samples housed at the Natural History Museum in Bulawayo and the UCT Faunal Laboratory. Quantification of these species was achieved using the Number of Identifible Speciments (NISP) and the Minimum Number of Individuals (MNI) methods. Basically, NISP involves the total number of identifiable bones that characterise a faunal assemblage (Manyanga 2001:47). Thus, NISP totals for Mananzve were quantified simply by calculating the fragments of the diagnostic bones. MNI totals were recorded as the minimum number of species that were anticipated from each excavation unit (Manyanga 2001:47). While there has been so much critisicm on these methodologies, as rightly pointed out by Manyanga (2001:46), even to date there is no perfect method for quantiying faunal remains; hence, the two methods remain dominant in most faunal studies (e. g. Pwiti 1996; Plug 1997; Van Waarden 2012; House 2016). Therefore, to match standards in other achaeozoological studies these methods were adopted for the study.

Results

A total of 4375 bone fragments recovered from Mananzve were analysed. Out of the total only 667 (15.2%) could be identified to a species level. The remainder (84.8%) were non-diagnostic; hence, their analyses went as far as sub-categorising them into six groups, namely skull fragments, vertebrae fragments, bone flakes, enamel fragments, rib fragments and miscellaneous.

Faunal statistics from the 11 test pits that were excavated on the hilltop and foothill of Mananzve shows that both wildlife and domestic species were exploited (see Appendix 4a for a detailed study done at test pit level). Among the 17 species expoited are tortoise, sheep, goats, cattle, ostrich, kudu and impala; however, exploitation of hyrax, klipspringer, common duiker and a cowrie were restricted to the Leopards Kopje strata on the hilltop (Tables 7.1 & 7.2). Based on the NISP/MNI, communities that settled on both the hilltop and foothill of Mananzve mostly exploited wildlife resources which contributed to 93.5/91% of their meat economy while the remainder (6.5/9%) was supplemented through domesticates (Tables 7.1 & 7.2). Domestication of cattle, sheep and goats is supported by faunal data.

Table 7. 1: NISP/MNI species representaion at Mananzve Hilltop

Specie	NISP /MNI %
Achatina sp., land snail	9/5
Struttio camelus, ostrich	6/6
Rodentia, rodent	0.4/1.2
Cypraea sp. cowrie	0.4/1.2
Hyracoidea, hyrax	0.4/1.2
Oseotragus oreotragus, Klipspringer	0.9/1
Stigmochelys pardallis, tortoise	23/21
Bird, medium	0.9/2
Bos taraus, cattle	2/2
Microfauna	3/6
Bovidae III	4/7
Bovidae II	3/6
Sylivicapra grimmia, Common duiker	0.4/1
Ovis/Capra, sheep/goat	3/5
Tragelaphus strepsiceros, kudu	0.9/2
Aespyceros meumpus, impala	3 /7
Aspatharia sp. freshwater mussel	40/23
Total NISP/MNI	100/100

Table 7. 2: NISP/MNI species representaion at Mananzve Foothill

Specie	NISP /MNI %
Achatina sp., land snail	17/26
Struttio camelus, ostrich	2/5
Rodentia, rodent	2/7
Cypraea sp. cowrie	
Hyracoidea, hyrax	
Oseotragus oreotragus, Klipspringer	
Stigmochelys pardallis, tortoise	62/26
Bird, medium	0.5/2
Bos taraus, cattle	0.5/2
Microfauna	4/8
Bovidae III	0.7/2
Bovidae II	1/1
Sylivicapra grimmia, Common duiker	
Ovis/Capra, sheep/goat	1/2
Tragelaphus strepsiceros, kudu	0.5/2
Aespyceros meumpus, impala	0.5/2
Aspatharia sp. freshwater mussel	8/9
Total NISP/MNI	100/100

Therefore, basing on the species inventory (Tables 7.1 & 7.2), tortoise appears to be the main wildlife resource that was exploited by all the Iron Age communities that are represented by the ceramics that were recovered on the hilltop and foothill of Mananzve.

A cowrie fragment (Figure 7.1) recovered from Leopards Kopje strata in Test Pit 4 Layer 2 was examined under an Optical Microscopy (OM) in the Materials Laboratory at UCT. Basing on the mophology of its teeth and shell (Figure 7.1), both of which are akin to those in Tiley and Burger (2002:4), it was identified as *Cyprae annulus*.

Basically the acheofauna from Mananzve demostrates that Iron Age communities that resided on the site thrived on a mixed animal economy where they relied mostly on the hunting of game and the domestication of cattle, sheep and goats.

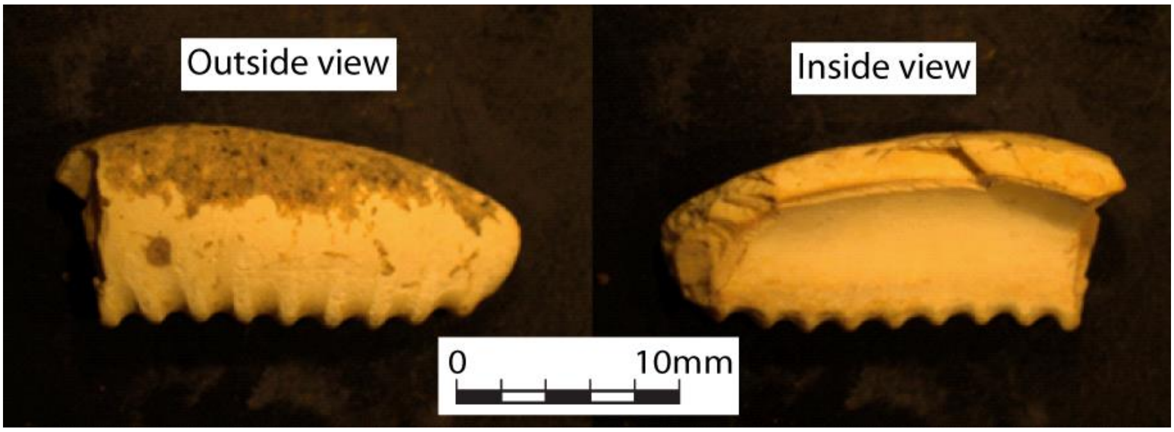


Figure 7. 1: Cowrie recovered from Mananzve Hilltop

7. 3. KRAAL

Method

A large circular kraal (Figure 7.2) on the north-western end of Mananzve foothill was mapped and excavated (Test Pit 7) in order to understand the herding practices of the residents of Mananzve.

Figure 7. 2: Massive kraal on the north-western end of Mananzve foothill. The white in the centre is vitrified dung

Results

The kraal was characterised by a massive matrix of vitrified cattle dung and Khami ceramics (see Chapter Five) whose depth extended to 80 cm. The glassy, slag-like appearance of the dung (Figure 7.3) showed clearly that it formed as a result of vitrification through internal combustion in situ (Huffman *et al*. 2013).

Figure 7. 3: Vitrified dung from the cattle kraal

7. 4. GRINDING STONES

Method

Grinding stones are regarded by most southern African Iron Age archaeologists (Huffman 1974; Maggs 1976; Manyanga 2006; Van Waarden 2012) as direct and indirect research avenues for understanding aspects of prehistoric foodways, ornamentation, medicine, technology and rituals. In light of this, grinding stones concentrated on the surface hilltop and foothill of Mananzve were examined systematically in order to understand the livelihoods of their users and how they adapted to seasonal environmental and climatic challenges posed by the Shashi region during the Iron Age.

Results

A total of 30 grinding stones (Figure 7.4), and 1[14] from Test Pit 8 Layer 2b (Figure 7.5) were documented. These were made out of a variety of igneous rock slabs which included sandstone, basalt and dolerite. The typology of grinding stones recovered from both the hilltop and foothill contexts is similar. It can be divided into two classes.

Class 1 (Figure 7.4), Numbers 1, 2,4,6,9,10 and the one from Test Pit 8 Layer 2) comprises large stone slabs with rounded depressions on the centre-wearing, resulting from continued use. These are basically known as lower grinding stones (querns) and they have average metric attributes of 55 cm (length), and 28 cm (width) and 7 cm (depth of central depression). The second type (3,5,7) is characterised by smooth, small-sized spherical-shaped handheld stones known as upper grinding stones. These grinding stones work in pairs (upper and lower). No pigments or food residues were noted; however, this does not rule the possibility. Basing on the similarities of their typology with grinding stones recovered at other Iron Age settlements in the drylands of southern Zambezia such as Toutswe (Denbow 1983:167), Tshobwane, Mutshilachokwe, Mtao Village 16 (Manyanga 2006:184) Selolwe, and Vumba (Van Waarden 2012:141, 169), these are likely to have been used for grinding small cereals. Large-sized cereals such as maize could also been also processed, but only after their introduction in the 16th century. In addition, there is a possibility that some might have been used for processing ore, medicines, snuff and make up (ochre).

[14] The grinding stone was directly recovered in associated with Khami ceramics

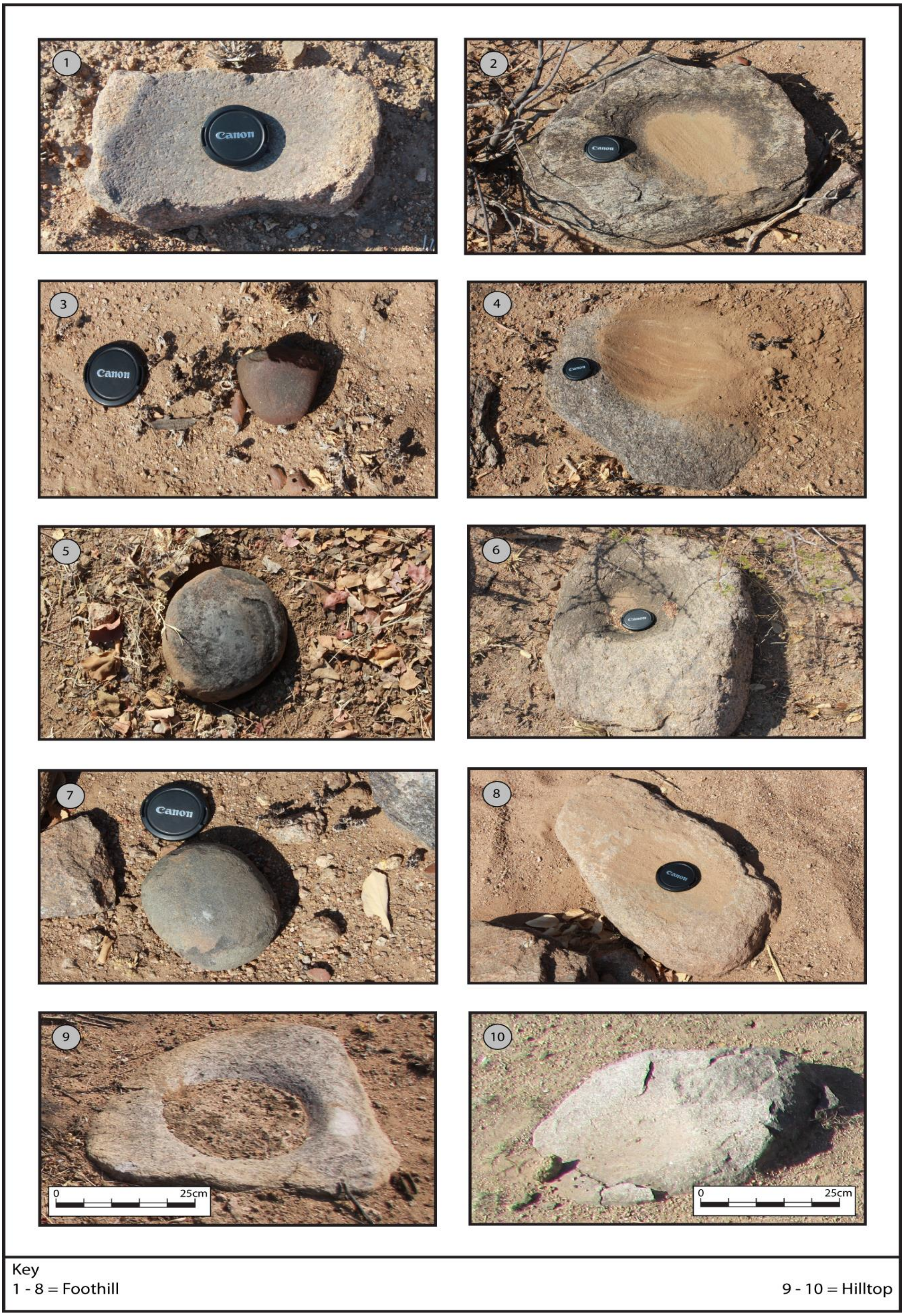


Figure 7. 4: Grinding stones from Mananzve

Figure 7. 5: Grinding stones from Test Pit 8 Layer 2

7. 5. CEREAL REMAINS

Method

Cereal remains recovered from the basal layer of Test Pit 9 were examined microscopically at the UCT Bolus Herbarium to determine the plant species represented and their importance in the livelihoods of the residents of Mananzve.

Results

Figure 7. 6: Charred sorghum recovered from of Test Pit 9

Examination of the micro-structure of the cereal remains (Figure 7.6) revealed that they are charred sorghum seeds. The seeds were recovered in the same context as ceramics classified as Khami (see Chapter Five). Nevertheless, not much data could be drawn from the analyses since the DNA *(DeoxyriboNucleic Acid)* of the seeds was destroyed as a result of burning.

7. 6. STONE WALLING

Method

Various architectural attributes of the stone walling at Mananzve were documented during fieldwork (see Table 7.3 for a detailed analyses) to understand their role in the livelihoods of the communities that built them. These attributes were recorded basing on an architectural classification system developed by Whitty (1961), Chipunza (1994), and Van Waadern (2011). Generally, Whitty's (1961: 289-297) classification (see Figure 7.7) is the standard method of classifying Iron Age stone walling in southern Zambezia. The scheme recognises four classes of drystone walling namely P (Poor), PQ (Poor Quality), Q (Quality and R (Rough) classes. Class P is characterised mostly by poorly coursed walling with blocks of uneven sizes. Class PQ is a combination of P and Q methods. Class Q is basically the opposite of class P as it is characterised mostly by neatly dressed blocks of the same dimensions that are laid evenly on top of each other. Lastly, the R type walling comprises uncoursed blocks of uneven sizes that are laid on top of each other irregularly. However, as cautioned in Chipunza (1994) and Van Waarden (2011), the difference between P and R walling is discreet, as these classes share characteristics. Therefore, more work is needed on defining the stylistic attributes of these respective classes. Nevertheless, the classification of stone walling remains possible considering their typology.

According to Van Waarden (2011), there are basically two types of walling that can be found at Iron Age sites in southern Zambezia - free standing walls and retaining walls. Free-standing walls create a physical boundary that encloses a homestead away from outsiders - for instance, the Great Enclosure at Great Zimbabwe.

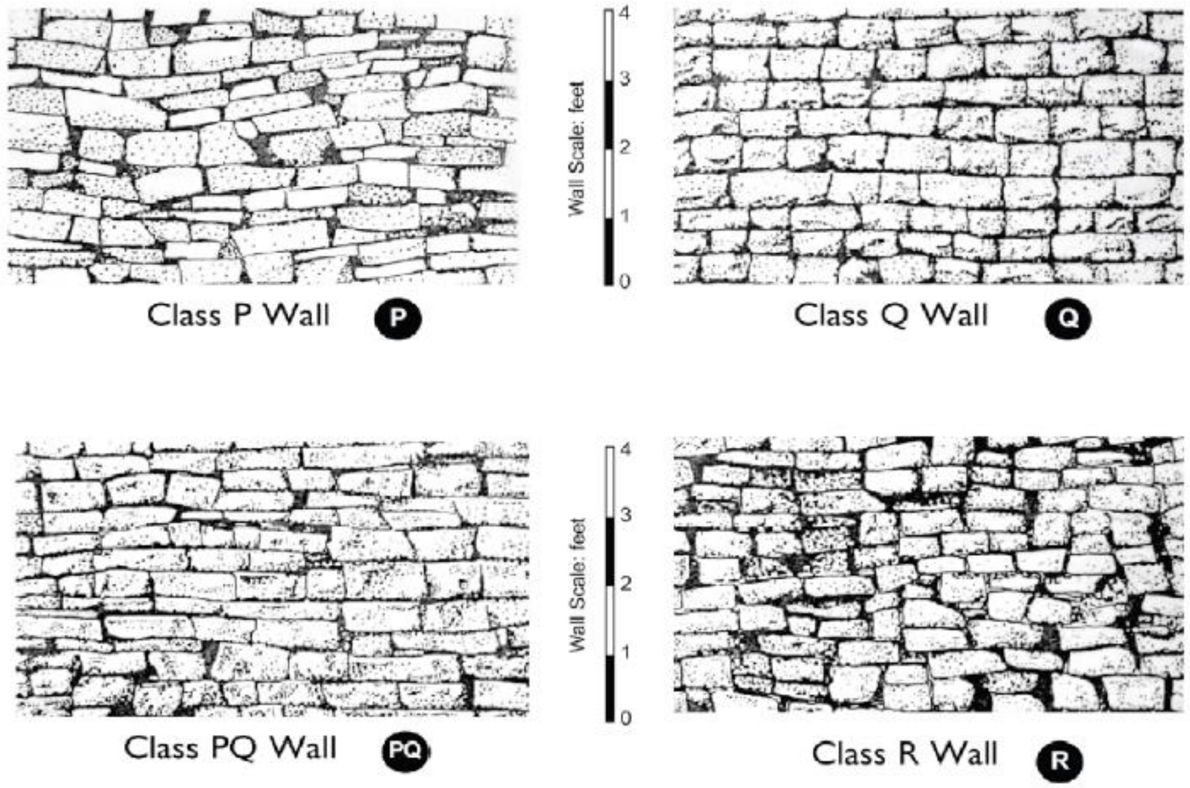


Figure 7. 7: Schematic styles of dry stone walling (Adapted from Whitty 1961:293 and Chirikure & Pikirayi 2008:981)

On the other hand, retaining walls are built as platforms to expand living space, as shown below in Figure 7.8. These walling types have been recorded at numerous Iron Age settlements in southern Zambezia, including Tabazikamambo, Mapela, Mapungubwe and Selolwe (Robinson 1965b; Meyer 1980; Van Waarden 2012; Chirikure *et al.* 2014). Based, on this framework, the next section will present walling from Mananzve.

Results

A total of 13 retaining walls mapped on the hilltop and hillslope of Mananzve (see Table 7.3 & Figure 7.9) were examined. Basically, the walls were built predominantly using undressed basalt blocks which were haphazardly and carefully fitted with smaller rocks and in some instances abutted to each other for stability purposes Figure 7.8. Walls, 1a, 1b, 2a, 2b and 2c forms the eastern-end platforms of the hill slope and the remainder forms the upper edges of the northern slope. Most of the walls have basalt rock foundations and these form a series of arch-shaped terraced platforms filled with considerable depth of deposit (see Figure 7.9). Generally, it can be observed that the style of the 13 walls examined at Mananzve is predominantly rough and the average length and height of the walls range between 0.62 m and 16.5 m. Test Pit 5, sunk against Wall 1a on the eastern platform of the hilltop, revealed a relationship between Leopards Kopje material culture (K2/Mapungubwe potsherds) and the walling. Burnt dhaka fragments, a cowrie shell, bone and shell beads were recovered on top of the bedrock that formed the walling foundation (see Chapter Four).

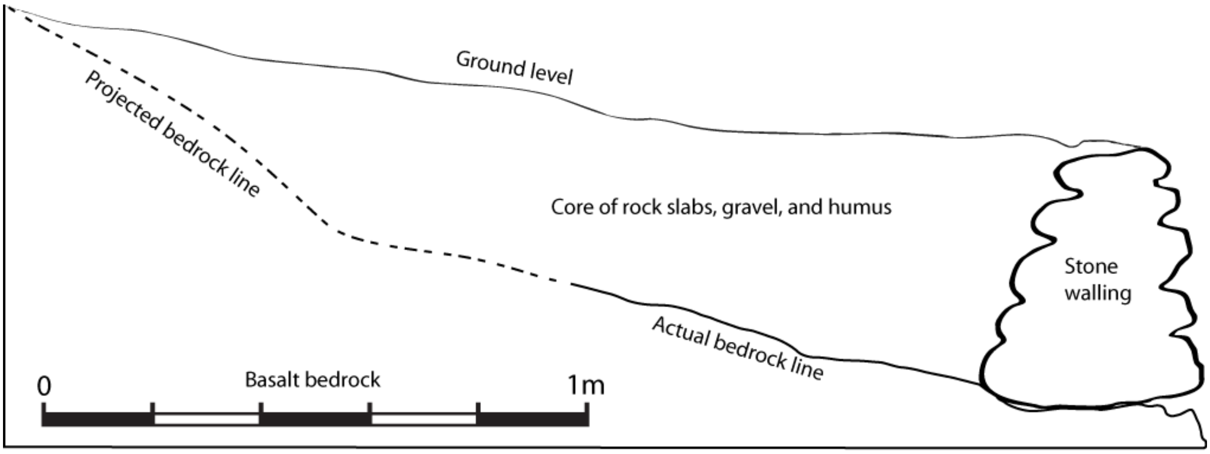


Figure 7. 8: Schematic profile of retaining walls (Wall 1a) at Mananzve

Table 7. 3: Summary of the attribute of terraced stone walling at Mananzve

Wall Name	Wall No.	Material	Form	Metric Attributes		Technique	Possible function	Style	Entrance	Butts to	Butted by	Status
				Height	Length							
East Facing Wall	1a	Basalt	Retaining	1.45 m	7.32 m	Undressed blocks	Expand living space	Rough	X?	-	-	Partly collapsed
East Facing Wall	1b	Basalt	Retaining	1.32 m	15.3 m	Undressed blocks	Expand living space	Rough	X?	-	-	Partly collapsed
East Facing Wall	2a	Basalt	Retaining	1.23 m	8.45 m	Undressed blocks	Expand living space	Rough	X?	-	-	Partly collapsed
East Facing Wall	2b	Basalt	Retaining	2.34 m	24.3 m	Undressed blocks	Expand living space -	Rough	-	-2c	-	Partly collapsed
East Facing Wall	2c	Basalt	Retaining	0.95 m	6.56 m	Undressed blocks	Expand living space	Rough	X?	-	2b	Partly collapsed
North Facing Wall	3	Basalt	Retaining	1.12 m	4.46 m	Undressed blocks	Expand living space	Rough	-	-	-	Partly collapsed
North Facing Wall	4	Basalt	Retaining	1.89 m	7.25 m	Undressed blocks	Expand living space	Rough	-	-	-	Partly collapsed
North Facing Wall	5	Basalt	Retaining	2.10 m	16.5 m	Undressed blocks	Expand living space	Rough	-	-	-	Partly collapsed
North Facing Wall	6	Basalt	Retaining	0.62 m	2.35 m	Undressed blocks	Expand living space	Rough	-	-	-	Partly collapsed
North Facing Wall	7	Basalt	Retaining	1.42 m	6.97 m	Undressed blocks	Expand living space	Rough	-	-	-	Partly collapsed
North Facing Wall	8	Basalt	Retaining	1.62 m	3.25 m	Undressed blocks	Expand living space	Rough	-	-	-	Partly collapsed
North Facing Wall	9	Basalt	Retaining	1.94 m	1.87 m	Undressed blocks	Expand living space	Rough	-	-	-	Partly collapsed
North Facing Wall	10	Basalt	Retaining	1.10 m	4.36 m	Undressed blocks	Expand living space	Rough	-	-	-	Partly collapsed

Key

Wall No. = Wall number

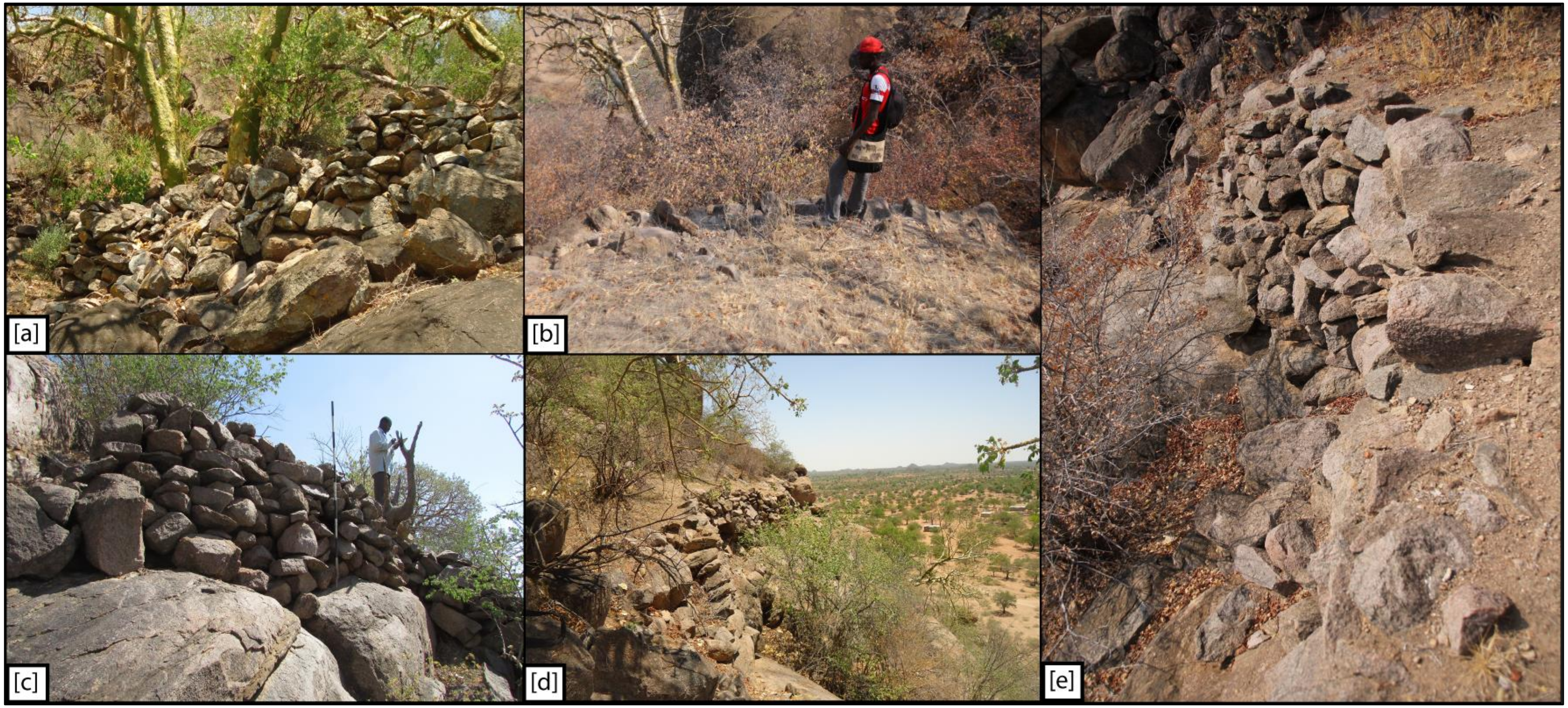


Figure 7. 9: Stone walling and terraces at Mananzve; [a] Wall 2a (east facing); [b] Terraced platform on the northern end of the hilltop; [c] Wall 6 (north facing); [d] Wall 7 (north facing); [e] Wall 5 (north facing)

7. 7. SHELL BEADS

Method

Shell beads recovered from Mananzve were analysed in order to understand the role of crafts as one of the adaptation strategies that enabled the residents of the site to sustain their livelihoods. Tapela's (1995) framework was used to characterise shell beads from Mananzve and to trace if these were an improvisation made by the agropastoralists on site or whether were simply traded as finished products from foragers who specialised in bead making. According to Tapela (1995:66) Iron Age shell beads largely differ from those of foragers when considering the sizes of their diameter. Basically, the diameters of forager beads do not exceed 7.4 mm; hence, their beads sizes are smaller. On the other hand, shell beads produced at farmer sites are both small and large sized. Most importantly they have large diameters which exceed 7.4 mm. Typical beads have been recovered from sites such as Kaitshaa, Malumba, Mutamba, Khami, Danamombe, and Rhenosterkloof 1 (Reid & Segobye 2000; Bvocho 2005; Antonites 2012; Machiridza 2012; and Bandama 2013). Therefore, emphasis was placed on attributes relevant to the aims of this study and these were recorded using data capture sheets in Appendix 4b. Recording of shell beads focused largely on the production stage and beads size (<7.4 and >7.4 mm). However, other attributes, such as surface finish, production stage and raw material were also examined for the purposes of getting an insight into the respective assemblages.

Results

A total of 186 shell beads recovered from the 11 test pits sunk at the hilltop (*n*=58) and foothill (*n*=128) of Mananzve were examined (see Appendix 4b for a detailed study at test pit level). Out of the total, the majority (*n*=143) of the shell beads from both the hilltop (*n*=47) and foothill (*n*=96) were made of ostrich egg shell, while the remainder were made of freshwater mussel.

In terms of the production stage, only 69% of the total beads recovered from the hilltop were finished products, while the remainder were semi-finished. Similar trends were also noted on the foothill assemblage, where only 25% of the total beads were recorded as blanks. The majority of the shell beads recovered from the hilltop (74%) and foothill (74%) of Mananzve had sizes that exceeded 7.4 mm (see Figures 7.10 & 7.11).

Figure 7. 10: Shell beads from Mananzve Hilltop

Figure 7. 11: Shell beads from Mananzve Foothill

7. 8. SPINDLE WHORLS

Method

Spindle whorls recovered from Mananzve were examined in order to understand cotton weaving as one of the adaptation strategies that was adopted by the Iron Age communities that resided at Mananzve to sustain their livelihoods. Therefore, for the purpose of maintaining consistency and standardisation with other related studies, methods used in Huffman's (1971), Pikirayi's (1993); and Antonites's (2012) analyses were adopted. Emphasis was placed on the following variables; raw material, diameter (inner and outer), weight, thickness and the production stage. These were recorded using a data capture sheet in Appendix 4c.

Results

A total of 16 undecorated spindle whorls discs were recovered from Mananzve foothill (*n*=9) and hilltop (*n*=7); a detailed study at test pit level is provided in Appendix 4c). As demostrated in Figures 7.12 and 7.13 all the discs were made primarily of clay, however two of these (Numbers 7, & 16) were made from recycled potsherds.

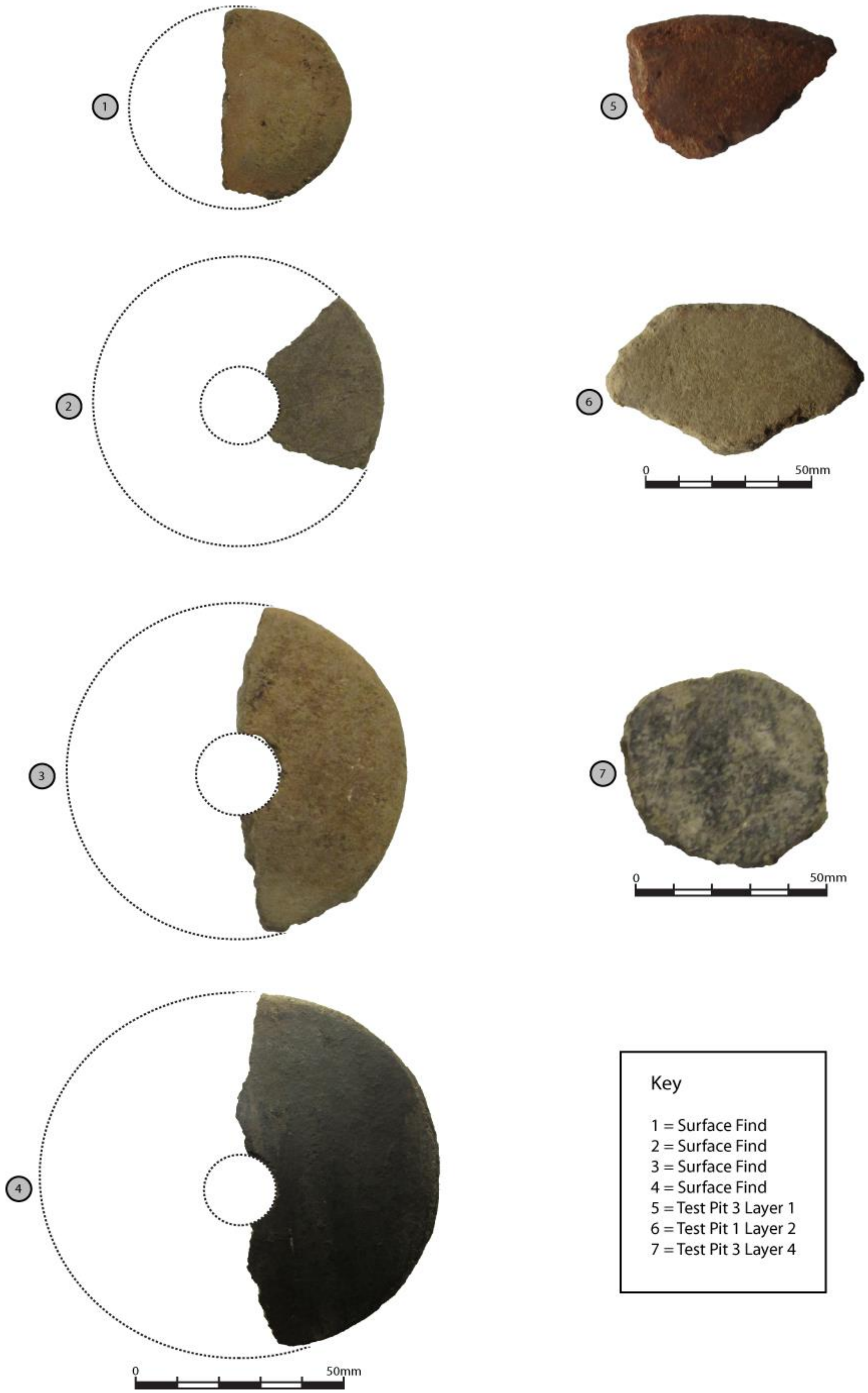


Figure 7. 12: Spindle whorls recovered from Mananzve Hilltop

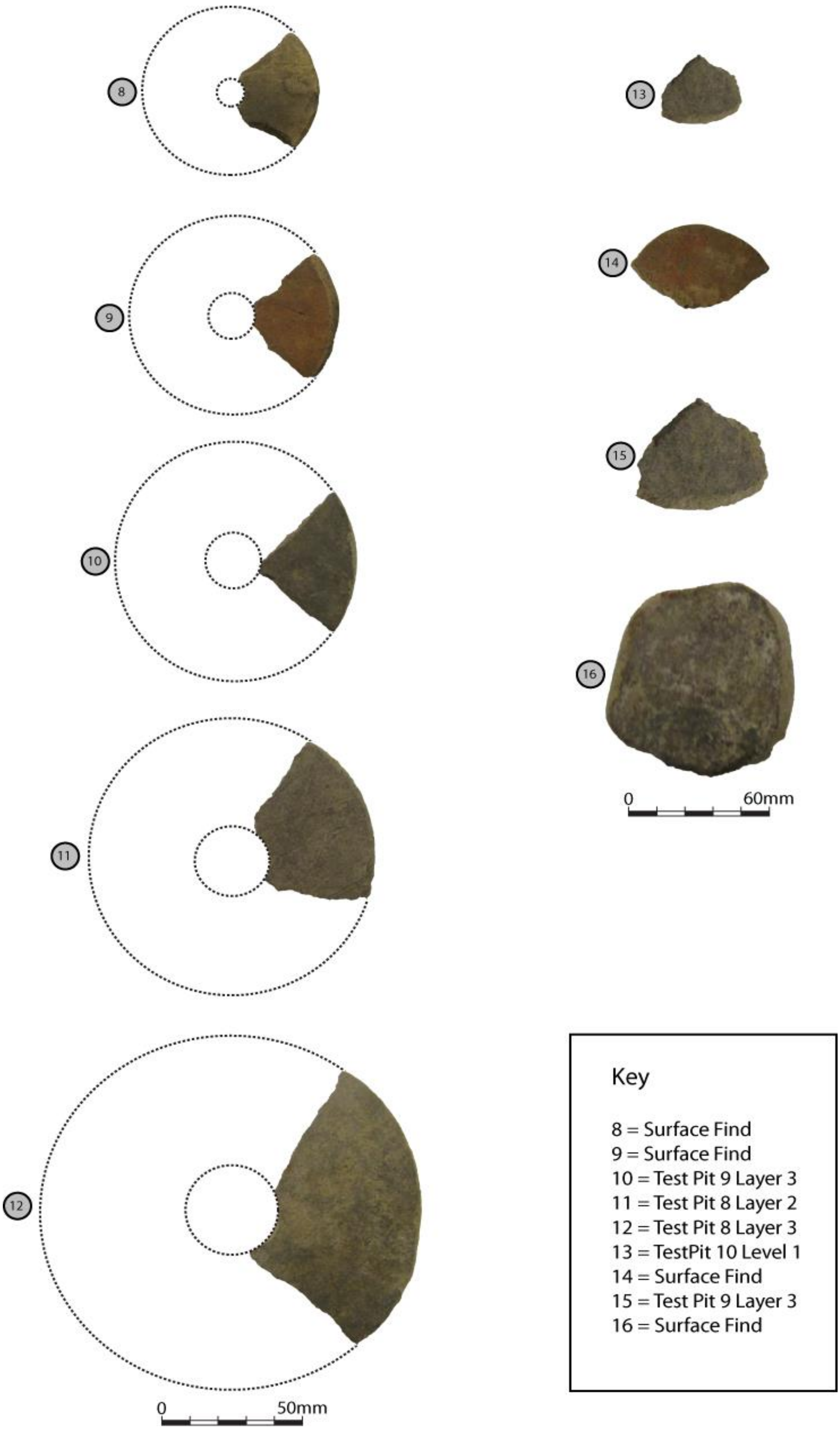


Figure 7. 13: Spindle whorls recovered from Mananzve Foothill

Most of the spindle whorls (1-4,8, 9, 14, 16) were recovered as surface finds; hence, it was very difficult to associate them with a particular group indentified as possible residents of Mananzve. However, one disc (7) from the sub-surface was recovered in Leopards Kopje (K2/Mapungubwe) strata, while the rest (5, 6, 10, 11-13, 15) were recovered in Khami strata (see Appendix 4c). Basing on their typology and metric attributes (Appendix 4c) there is no doubt that these technologies were produced on-site and used for weaving cotton. Nevertheles, a production status of 19% of the total remained indeterminate, while (50%) could be identified clearly as finished products and the remainder (31%) as blanks (Appendix 4c).

7. 9. METAL AND METAL WORKING OBJECTS

Method

Metal and metal working objects recovered from Mananzve were examined so as to understand the metal working industries of the Iron Age communities that resided on site and how these industries enhanced the livelihoods of those communities. To maintain consistency with other related Iron Age studies in southern Zambezia, these objects were classified using standard typologies taken from Miller & Van Der Merwe (1994:33-36), Chirikure & Rehren (2006), Bandama (2013:269-273) and, Bandama *et al.* (2016).

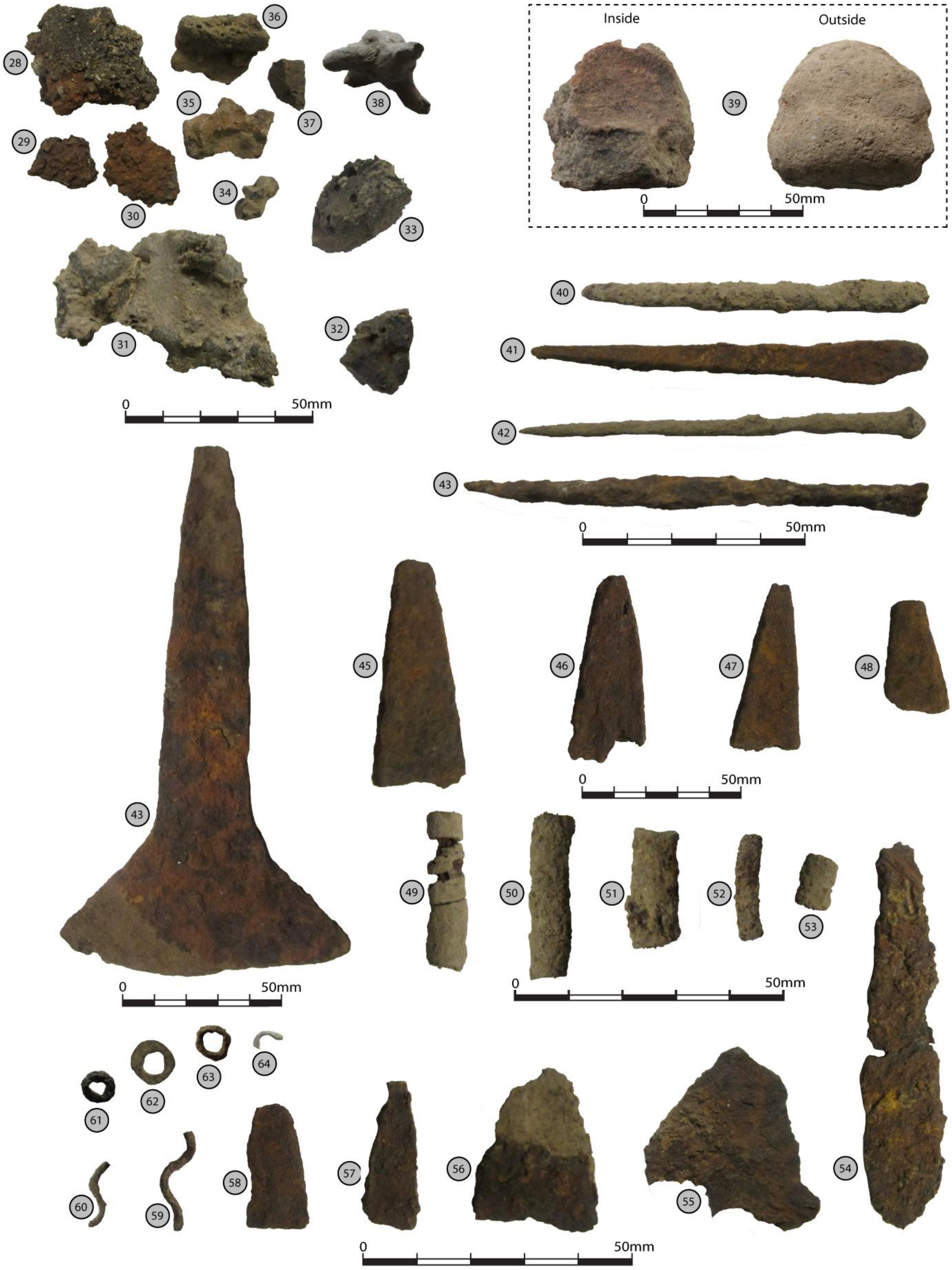
Results

A total of 64 objects made of either clay, iron or copper were recovered from Mananzve (Figure 7.14 & 7.15). Basically, most of the objects recovered from both the hilltop and the foothill were similar in typology; hence, most of them could be categorised equally into non-metallurgical objects, technical ceramics, and metallurgical objects as demonstrated in Appendix 4c.

Most of these objects were recovered as surface-finds; hence, most likely these are the end products of smelting and smithing activities, which took place during the Khami era.

Key
1- 6 = Slag, 7 = Tuyere, 8 - 9 = Complete and broken iron axe heads, 10 = Broken iron arrowhead
11 - 12 = Iron needles,13 = Iron nail, 14 - 19 = Iron blades, 20 = Iron scrapper, 21- 24 = Iron bangles
25 = Cuprous wound wire bangle, 26 = Iron wire knot, 27 = Iron bead

Figure 7. 14: Metal and metal working objects recovered from Mananzve Hilltop



Key
28 - 38 = Slag, 39 = Unused crucible, 40 = Iron needle, 41 = Iron chisel,
42 = Iron nail, 43 = Iron needle, 44 - 48 = Complete and broken iron hoe heads,
49 = Iron bangle with a fibre core, 50 - 53 = Iron bangles, 54 - 58 = Iron blades,
59 - 60 = Iron wire fragments, 61 - 63 = Iron beads, 64 - Copper bead

Figure 7. 15: Metal and metal working objects recovered from Mananzve Foothill

However, while this remains inconclusive, this applies well to the sub-surface slag nodules (6, 34, 37, 38), axe head (9), needles (40, 42), chisel (41), bangles (49-53) and wire fragments (59-60) that were retrieved in association with ceramics, which date to the Khami period. The remainder (10, 24) were found in association with Leopards Kopje (K2/Mapungubwe) ceramics.

7. 10. DOLLY HOLES

Method

Dolly holes on the north-eastern section of Mananzve foothill were examined in order to understand their role in the livelihoods of the Iron Age communities that resided on site.

Results

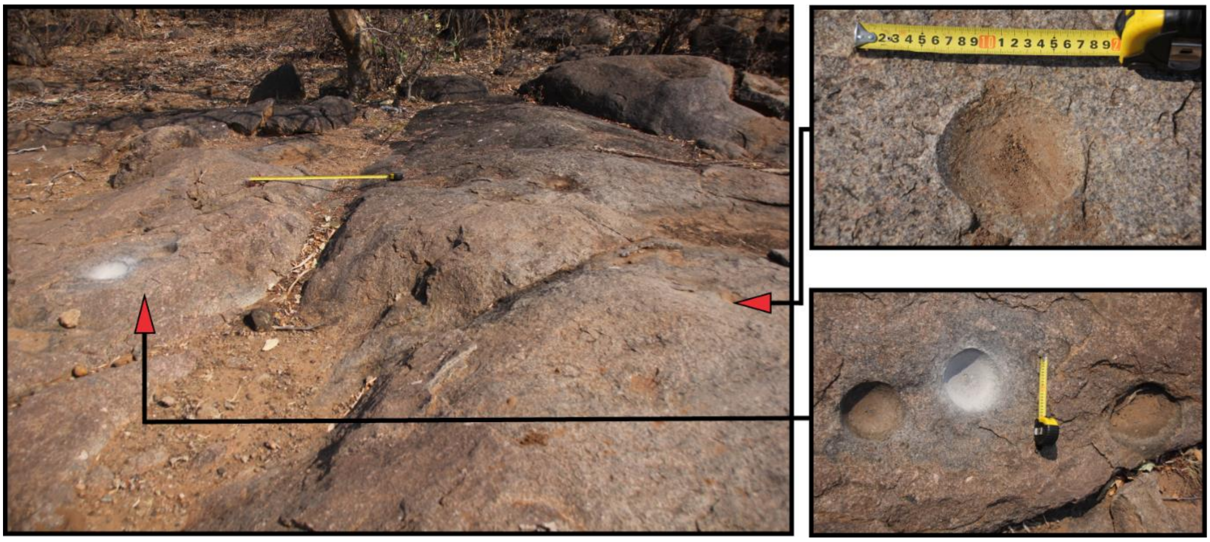


Figure 7. 16: Dolly holes on the north-eastern section of Mananzve Foothill

Four oval-shaped depressions exerted on a dolerite bedrock with an average diameter of 10 cm were recorded as dolly holes (Figure 7.16). Only one out of the total had a whitish residue which is visible evidence of grinding activities. The dolly holes are yet to be dated and further examined in terms of residue analyses.

7. 11. LITHICS

Method

Lithic tools recovered from Mananzve were analysed in order to understand the contribution of crafts to the livelihoods of the Iron Age communities that resided on site. The lithic assemblage was characterised basing on the dominant typologies developed by Cooke (1969), Walker (1995), Burrett (2003) and Van Doornum (2005). These typologies were used to separate the lithics into broader categories so as to ascertain their cultural period and their role in daily subsistence. In order to achieve this, the physical attributes of the lithic assemblage relevant to the research were captured, namely; the tool type, provenance, raw material, length (maximum), width/diameter (maximum) and state (see Appendix 4e for a detailed analyses).

Results

In total, 31 formal tools were examined (see Appendix 4e). The greatest density of the stone tools came from the hilltop (*n*=17/55%) while the remainder were recovered from the foothill. The lithic assemblage from Mananzve (Figure 7.17) is generally characterised by scrapers (1-6, 9-10, 13, 19-22, 24-26), bladelets (7-8, 11-12, 14-16, 18, 23) and hammerstones (17, 27-31). Scrapers (*n*=16/52%) are the most common tool types, followed by bladeletes (*n*=9/22%) and hammerstones (*n*=6/19%). The majority of the tools were made using dolerite (*n*=10/32%), quartz (*n*=9/29%), while the remainder were manufactured using agate (*n*=6/19%), chert (*n*=4/13%), and quartzite (*n*=21/6.4%). Basing on radiocarbon dates derived from Test Pits 2 and 6 (see Chapter Four), these lithics date to the Leopards Kopje (Mapungubwe phase) and Khami (Rozvi) eras. Similarly, lithics recovered in Test Pit 1 Level 4 in association with comb stamped potsherds, are likely to have been used during the Zhizo era.

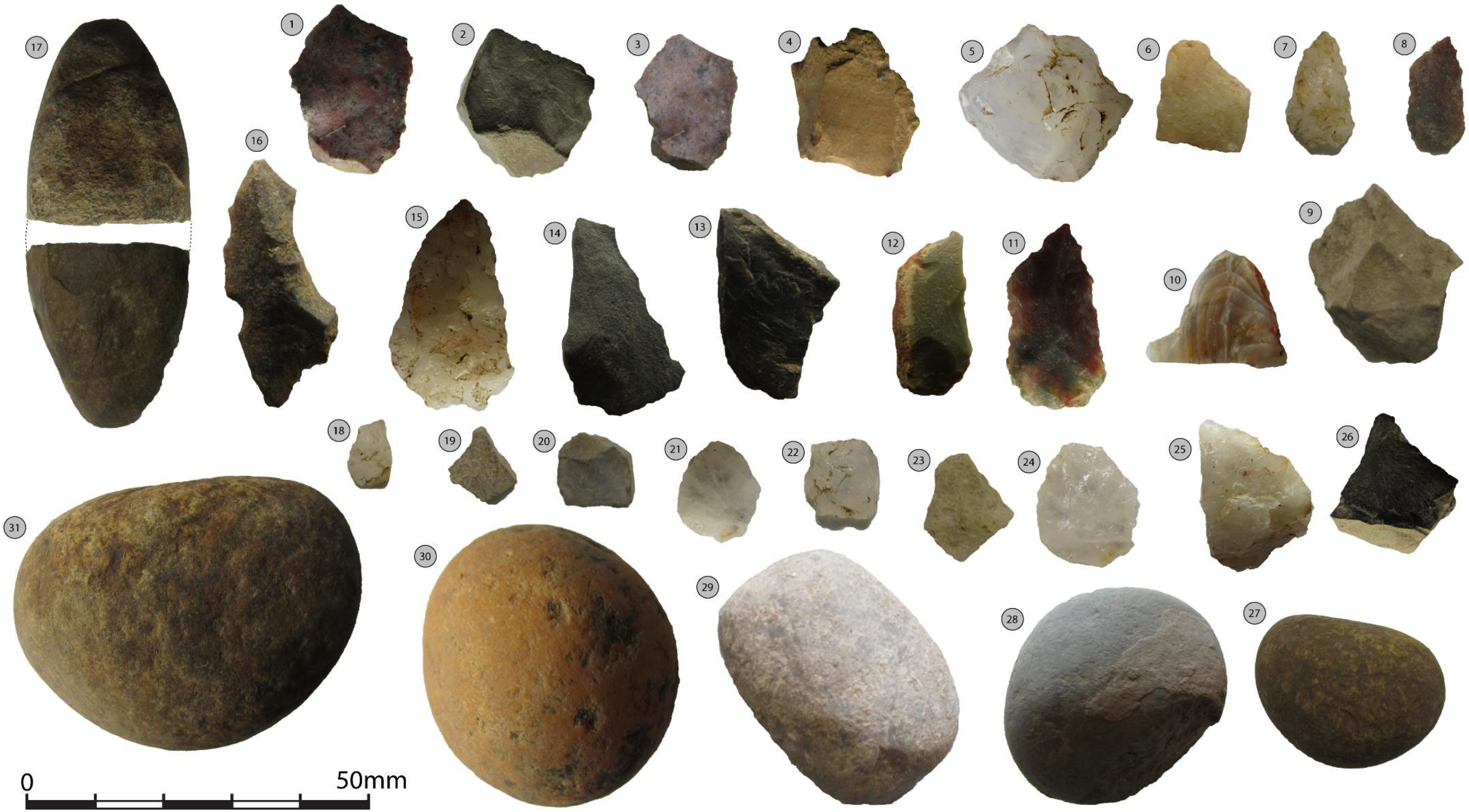


Figure 7. 17: Lithics recovered from Mananzve

7. 12. DISCUSSION

Fauna, dung from the kraal, grinding stones, cereal remains, stone walling, shell beads, spindle whorls, dolly holes, lithics, metal and metal working objects recovered from the hilltop and foothill of Mananzve enable us to reconstruct aspects of foodways, arts and crafts of the Iron Age communities that resided on site.

The faunal evidence shows that the animal economy of the residents of Mananzve hinged on the exploitation of both domestic and wild species. However, the latter was predominant, which shows a greater reliance on wild species particularly tortoise. Furthermore, fauna from Mananzve clearly shows that animal resources exploited on site were consumed by all regardless of status or whether one resided on the hilltop or foothill. However, it seems some wild species such as hyrax, klipspringer and common duiker were consumed mostly during the Leopards Kopje era. The predominance of tortoise species demonstrates flexibility and creativity in dealing with restraints on living in the dryland landscape. Thus, residents of Mananzve relied on hunting tortoise as one of their strategies to boost their meat economy. Similar strategies of relying on wildlife resources by Iron Age communities living in the drylands of southern Zambezia have been reported at other sites such as Kadzi in the Zambezi Valley (Plug 1997), Mwenezi (Manyanga 2001) in south-eastern Zimbabwe and Selolwe in north-eastern Botswana (Van Waarden 2012).

The scarcity of faunal remains belonging to domesticates within the Mananzve assemblages perhaps lies within the limitations of the present faunal sample when representing the entirety of domestic species consumed at the site and also the fact that cattle, among some Iron Age societies were exploited mostly as measures of personal wealth rather than food resources (Beach 1980, 1994). However, the presence of a massive kraal with a vitrified dung layer is direct evidence for domestication of large numbers of cattle on site. Vitrified dung is common among Iron Age sites in southern Zambezia; it has been recorded at sites such as Taukome (Denbow 1983) and Mapela (House 2016). Furthermore, erection of a cattle kraal within the core settlement area is direct evidence of a centralised penning system as a herding strategy used during the Khami period. The probability is very high that, during the ploughing season and during evenings, cattle were penned for security reasons and fed with supplementary fodder such as fnger millet and sorghum stables.

The presence of freshwater mussels at both the hilltop and foothill suggests wet conditions that promoted the exploitation of freshwater resources from the nearby rivers such as Mananzve, Mapate and Tuli; however, currently we do not have independant data to account for the climatic settings of the Shashi regon during the last 2000 years as compared to north-estern Botswana (Denbow *et al* 2008) and the Limpopo Valley (Smith *et al*. 2007). The predominance of *achatina* is probably a result of self introduction rather than human related activities.

The occurrence of a cowrie fragment at Mananzve is direct evidence of the intrusion of coastal resources in-land and confirms paticipation in regional and international trade as a strategy of bostering the livelihoods of the Leopards Kopje communities. Nevertheless, the scale of trade using cowries remains inconclusive. Tiley and Burger (2002) demostrates that these type of cowries are one of the oldest and most frequently recovered at most Iron Age sites in southern Africa such as Mapungubwe. Part of the *Cyprae annulus* cowries are believed to have been sourced from the Mozambican and Cape coast where they were brought inland by either Swahili, Portuguese or Indian merchants as a currency of exchange in regional and international trade deals (Tiley & Burger 2002). Locally, *Cyprae annulus* species are also recorded as tools for divination, onamentaion, and class distiction (Jefferys 1988; Pwiti 1996).

The ubiquity of grinding stones at Mananzve, demonstrates cereal agriculture as one of the main branches of the economy of the Iron Age communities that resided at Mananzve, and this is supported by the presence of charred sorghum remains.

The retaining walls examined at Mananzve also deserve a comment. Basing on the fact that the walls were built on foundations of basalt rocks so as to block and bind deposit that was later filled in as core, they can be interpreted best as an improvisation engineered by the Leopards Kopje communities so as to expand their living space (Garlake 1966). This strategy of expanding living space on hilltop settlements is similar to observations made on terraced hilltop settlements elsewhere in the Limpopo Valley (Meyer 1980; Manyanga 2006), north-eastern Botswana (Van Waarden 1998; Reid & Segobye 2000) and the nearby sites in south-western Zimbabwe (Chirikure *et al*. 2014).

The predominance of large sized, incomplete and complete shell beads at Mananzve shows that Iron Age groups represented by ceramics recovered from the hilltop and foothill were the producers and consumers of the shell beads. According to Tapela (1995), the typology of this trait largely distinguishes shell beads from Mananzve as products of the agropastoralists. Thus, Zhizo, Leopards Kopje and Khami groups represented by ceramics recovered from the hilltop and foothill both produced and consumed them as either adornment or trade goods. This is similar to findings recorded elsewhere at other Iron Age sites such as Mutamba and Rhenosterkloof 1, where both perforated and unperforated large sized bead blanks were recovered on site (Antonites 2012; Bandama 2013). However, this does not imply that every single bead recovered at Mananzve was produced on site rather there is a possibility that some of the shell beads were acquired through trade, as was the norm (see Reid & Segobye 2000). Furthermore, on site production of shell beads is also promoted by the presence of lithics (see Section 7.11), which are generally associated with shell bead manufacture (Van Waarden 2012).

The recovery of spindle whorls at Mananzve in both semi-finished and finished state exposes cotton weaving as an on site indigenous craft that operated at homestead level to meet the daily needs of the residents of Mananzve right from MIA to the LIA. Basing on the site stratigraphy, this happened mostly during the Leopards Kopje and Khami eras. Thus, through merging emulation and creativity these communities developed indigenous cotton weaving industries using local raw materials where flat circular discs with central perforations were used as weights for spinning cotton which was either cultivated on site or imported (Phillipson 2005). The typology of these discs is similar to that of those recovered at other Leopards Kopje and Khami settlements in southern Zambezia, such as Mapungubwe, K2, Leopards Kopje (type site), Skutwater, Bosutswe, Mutamba, Selolwe, Vumba and Khami (Robinson 1959; Gardner 1963; Huffman 1974; Meyer 1980; Van Ewyk 1987; Denbow *et al.* 2008; Antonites 2012; Van Waarden 2012). Basing on the sites radiocarbon dates and stratigraphy (see Chapter Four), the development of the cotton weaving industry at Mananzve is contemporaneous with that of the Limpopo Valley and north-eastern Botswana. Firstly, the technology mushroomed during the Leopards Kopje era (CE 1185-1275) before expanding into the Khami era (1680-1730).

Furthermore, evidence of recycling of broken potsherds to make spindle whorl discs recorded during the respective eras shows the ability to improvise and successfully experiment with new raw materials to make spindle whorl discs. Thus, instead of moulding new clay discs, the operators of the weaving machines realised the potential in broken potsherds, particularly from large vessels; hence, they perforated them and reshaped them into flat circular discs. This technique has been recorded elsewhere in north-eastern Botswana at Bosutswe (Denbow *et al.* 2008), Vumba and Selolwe (Van Waarden 2012). Others manufacturers of spindle whorl discs like those in the Shashi region went as far as experimenting with new raw materials such as soapstone, like with the one recovered at Mapate 1 during the archaeological surveys (see Chapter Four).

Metal and metal working evidence recovered from Mananzve suggests that smelting and smithing of iron and copper were carried out on-site though we have yet to identify any smelting precincts to confirm this. The presence of iron bangles wound with copper wire and a fiber core likely grass suggests experimentation with metal alloying and ornamentation. A similar technique of making iron bangles, twisted around fibre core was also practiced by the Khami metal workers at Vumba (Van Waarden 2012:142). This technology dates back to the first mellenium CE in southern Africa (Fagan 1965; cited in Bandama 2013:139). The predominance of metal objects (Appendix 4d) demonstrates a high frequency of consumption of metal objects. This corresponds with trends revealed at contemporary Iron Age sites such as Shroda, Leokwe, Selolwe, Vumba, K2, Mapungubwe and Mtao Village 16 (Hanisch 1980; Van Ewyk 1987; Manyanga 2006; Calabrese 2007; Van Waarden 2012). Iron and copper worked at Mananzve might have been sourced from the Gwanda Green Stone Belt since this is the nearest deposit; however, there is possibility that some might have been sourced from north-eastern Botswana in the Vumba and Tati Green Stone Belts which are both very close to Mananzve. The metallurgical database (Appendix 4d) we have so far highly suggests a vibrant metal working industry at Mananzve where iron and copper metal objects were produced and consumed at Leopards Kopje and Khami homesteads by any member of these respective communities for day to day and occasional needs such as hunting, fishing, leather tanning, hoe cultivation, warfare, and ornamentation.

Furthermore, considering evidence of gold milling infrastructure recorded at other contemporary settlements, such as Mapela (Chirikure *et al.* 2014) and Domboshaba (Lower village) (Van Waarden 2012:287-288) and the proposition by Huffman (2007:368) that some gold used by the Iron Age communities of the Limpopo Valley was sourced from the Gwanda Green Stone Belt, the presence of dolly holes at Mananzve is definitely an indicator that gold working was carried out on site at some point in time, and most likely during the Leopards Kopje and Khami eras. According to Van Waarden (2012:288), gold milling precincts such as dolly-holes were initially situated outside settlements and this continued until the Torwa period. However, during the Rozvi period there was a sudden shift; hence, gold milling precincts were relocated to settlements such as Domboshaba (Van Waarden 2012:288). Thus, gold processing was now done in the village as a strategy of securing gold from raiders (Van Waarden, 2012:344). Working of gold at Mananzve might have been done seasonally after the harvesting period when there was less pressure to tend the agricultural fields (Van Waarden 2012:230). This gold might have been panned within the nearby rivers such as Shashi, Tuli and Mapate but the probability is that it was sourced from the adjacent Gwanda Greenstone and the adjacent Vumba and Tati Greenstone Belts in north-eastern Botswana where iron and copper ore were sourced as well is very high. As a result, lucrative trade in gold, which they processed locally in the dolly holes enabled the acquisition of exotic goodies such as glass beads, which were recovered on site. They probably used these to acquire local commodities such as grain (Van Waarden 2012). Thus, entrepreneurship in gold working, probably enabled residents of Mananzve to grow their material wealth which in turn sustained their livelihoods during times of scarcity.

Lithics recovered from Mananzve are fairly represented throughout the hilltop and foothill; therefore, they are likely to have been used by the three Iron Age groups represented at the site. Typical lithics have also been recovered at Iron Age sites such as Mutshilachokwe (Manyanga 2006), Induna Cave in south-eastern Zimbabwe (Thorp 2010), Gosho Park in northern Zimbabwe (Burret 2003), Barleno Main Shelter in the Limpopo Valley (Van Doornum 2005) and, Selolwe and Vumba in north-eastern Botswana (Van Waarden 2012). According to Van Waarden (2012:141), there was probably a continued use of stone tools by Iron Age communities since iron tools were not always available nor were they efficient for every task. Basing on similar evidence at Vumba (Van Waarden 2012), scrapers and bladelets at Mananzve might have been used in craft production, particularly on preparing skins during leather tanning and perforating shell blanks during shell bead making. On the other hand, hammerstones were probably used to manufacture stone tools such as bladeletes and scrapers, perhaps they were also used to process ore into power, or to process pigment or edible nuts such as marula (Van Warden 2012).

For now, we do not have sufficient evidence to account for craft production and the animal economy of the Zhizo phase of Mananzve since I did not dig any Zhizo midden. However, craft production and the animal economy at Mananzve is clearly similar to that recorded regionally at sites such as Venzo Kopje (Garlake 1966), Mapela (Garlake 1968; House 2016) and other Iron Age sites in the drylands of southern Zambezia, such as Kadzi (Pwiti 1996), Tshobwane, Mutshilachokwe and Mtao Village 16 (Manyanga 2006).

7. 13. SUMMARY

Because the Shashi region is endowed with a rich biodiversity, the Iron Age communities that resided at Mananzve exploited numerous food resources and engaged in a number of arts and crafts during the wet and dry seasons. A characterisation of spindle whorls, shell beads, stone walling, lithics, dolly holes, metal and metal working debris from Mananzve has shown that residents of the site also engaged in cotton weaving, shell bead making, stone mansory, leather working, gold milling, and metal working as part of their craft production. Similary, the presence of faunal and cereal remains from wildlife and domestic species shows that the diet of the residents of Mananzve hinged on a mixed economy, which was sustained through hunting, and agropastoralism. However, a bias towards expolitaion of wildlife resources through hunting is a clear testament to the Shashi region as a rich wildlife enviroment. Thus, diversified foodways, arts and crafts played a pivotal role in the livelihoods of the residents of Mananzve, especially towards bolstering their economies; hence, they were able to survive times of scarcity during the dry and wet seasons. Moreover, these diverse strategies of adapting to sustain livelihoods during the wet and dry season are not unique to Mananzve. Similar livelihoods strategies have been recorded elsewhere in southern Zambezia and beyond (see Pwiti 1996; Manyanga 2006 and Porter 2013) particularly those landscapes thought to be conducive for hosting Iron Age economies such as the Great Crescent (Beach 1994). Thus, given these scenarios at Mananzve, as testaments to the resourcefulness of the Shashi region, it becomes problematic to continue viewing it as a marginal landscape, as has been proposed by some scholars such as Beach (1994). The next chapter provides a comprehensive discussion of the findings of the data presented in the last three chapters in light of the questions that informed this study.

CHAPTER EIGHT

DISCUSSION, CONCLUSIONS AND AVENUES FOR FUTURE RESEARCH

"The most immediate lessons archaeologists have to offer is, obviously, that humans have inhabited challenging conditions for millennia-and will likely continue to do so despite the dire predictions of climate scientists" (Porter 2013:148).

8. 1. INTRODUCTION

This chapter discusses the research findings in light of the aims that informed this study. Firstly, it presents the archaeology in and around Mananzve so as to establish the identity and settlement history of Iron Age communities that lived on the site and in surrounding areas. Secondly, the chapter will discuss the consolidated findings from material culture analyses to reconstruct the adaptation strategies that were employed by residents of Mananzve and their neighbours to neutralise vulnerabilities posed to the Shashi region. Consequently, the chapter will discuss the implications of this study for the discourse of dryland marginality in the Iron Age archaeology of southern Zambezia. The chapter will end by presenting avenues for future research.

8. 2. SETTLEMENT HISTORY

Datasets from Mananzve show that, despite the site being located in a dryland it has a long-term history of occupation that stretches from the EIA to the LIA. Basing on radiocarbon dates and the established ceramic and glass bead chronologies, this layering represents a cultural succession of three Iron Age groups that are associated with Zhizo, Leopards Kopje and Khami ceramics. A similar occupational sequence was recorded from surveyed sites that surround Mananzve and other known sites in the Shashi region, such as Mapela and Little Mapela (Garlake 1968; Chirikure *et al*. 2014; House 2016). Thus in the same manner as it is expressed at Mananzve and Mapela, Iron Age communities associated with Zhizo ceramics are probably the earliest manifestation of the Iron Age in this part of the Shashi region, followed by the Leopards Kopje and lastly by those communities that produced and consumed Khami ceramics.

Furthermore, this sequence corresponds with the culture history of south-western Zimbabwe which is generally regarded as the heartland of these respective ceramic groups (Pikirayi 2001; Huffman 2007).

Later in the historical period, the area in and around Mananzve became a homeland for the Babirwa, Ndebele, Venda, the Karanga as well (Von Sicard 1959; Beach 1994; Nyathi 2014). These historical groups later succumbed to colonialism in the 19th century. While some of their descendants relocated to neighbouring areas in southern Zimbabwe and northern Botswana, the majority remained and currently occupy the landscape as subsistence farmers.

The presence of Zhizo communities at Mananzve and the surveyed sites is expressed largely by thick recurved jars decorated mostly with comb stamping and translucent tabular shaped glass beads with untreated ends. These material remains have a high degree of correspondence with those recovered at other Zhizo settlements in the drylands of southern Zambezia such as at the sites of Schroda, and Va14 in the Limpopo Valley (Hanisch 1980; Wood 2005; Manyanga 2006) and the Letsibogo area in eastern Botswana (Huffman & Kinaham 2002/3). The question regarding the timescale when Mananzve or surveyed sites were occupied by the Zhizo communities remain unanswered since the current study did not date any Zhizo layers. Therefore, basing on radiocarbon dates from contemporary sites in south-western Zimbabwe, and north-eastern Botswana we can tentatively date the Zhizo communities as having occupied Mananzve and other sites during the period between CE 700 and 1020 (Huffman 2007).

However, the occurrence of Zhizo beads in the Leopards Kopje strata on Mananzve hilltop opens up the possibility for recycling of these beads into the 13th century. It has been demonstrated elsewhere in north-eastern Botswana (Denbow *et al.* 2008) and the Limpopo Valley (see Calabrese 2007) where respectively, Zhizo facies of Toutswe (CE 1050-1300) and Leokwe (CE 1000 -1200) lived contemporaneously with the Leopards Kopje people.

The coming of Leopards Kopje people in and around Mananzve is expressed by the appearance of incised ware, which is regionally associated with the agropastoralists ancestral to the contemporary Kalanga people who happens to reside in the study area, north-eastern Botswana and other parts of south-western Zimbabwe (Beach 1994; Manyanga 2006; Van Waarden 2012). Basing on ceramic typology (as presented in the work of Huffman 1974:100-118, 2007:278-295), the Leopards Kopje era at Mananzve can be divided further into three occupational phases though these overlap. Vessels decorated with incised upward facing triangles mark the earliest Leopard's Kopje group to settle on Mananzve and this period is regionally known as K2 (CE 1000 and 1200). A Transitional K2, (TK2) period (CE 1200 - 1250), at Mananzve is widely characterised by vessels decorated with alternating triangles. The last Leopard's Kopje group to occupy Mananzve largely consumed pots that were decorated with downward facing/cross hatched triangles which extend to the shoulders. The predominance of these vessels characterised the Mapungubwe period, dated between CE 1250 and 1300. Overall, this sequence of occupation is buttressed by the glass bead chronology of Mananzve which comprises a significant number of K2, Indo-Pacific, and Mapungubwe Oblates series which were consumed during the Leopards Kopje era (see Wood 2005, 2011). Rather than representing different groups, the absence of stratigraphic breaks in the sequence indicates possible occupation continuity from K2 to Mapungubwe phases.

Radiocarbon dates derived from the Mananzve hilltop dates the Leopards Kopje communities to have occupied the summit during CE 1185-1275 and CE 1290-1400. While the first two dates tally with the regional sequence which dates most of the K2, TK2 and Mapungubwe sites to between CE 1000 and 1300 (Huffman 2007:278), the presence of Mapungubwe ceramic types after CE 1300 supports the argument by Manyanga (2006) and House (2016) that Leopards Kopje communities continued to flourish post the collapse of Mapungubwe (CE 1290) as once argued by Huffman (2000). Rather, through adaptation these communities like those in the broader region flourished until the 15th century (see also Chirikure *et al.* 2013).

Furthermore, the overlapping of K2, TK2 and Mapungubwe ceramics and their related decoration motifs and vessel profiles deserve a commentary for the reason that similar trends were noted elsewhere at the Leopards Kopje sites of Tshobwane, Mutshilachokwe (Manyanga 2007:150) and JC Hill (Schoeman 2006:291). The probability that Leopards Kopje communities represented at Mananzve were a single entity that developed in time and space is very high.

Leopards Kopje communities at Mananzve had most of their circular rondavel houses erected on the hilltop and hillslope. This is demonstrated by the presence of ceramics, glass beads and *dhaka* house floor rubble which were solely recovered from the hilltop. Such a settlement layout has implications for the regional Iron Age sequence given a context that, archaeologists believe that Leopards Kopje people only evolved the practice of setting up homesteads on the summit of steep sided hills after CE 1250 (Murimbika 2006; Schoeman 2006; Huffman 2007). It shows that human beings selected places for building their homes as conditioned by situational and contextual needs. This has been demonstrated elsewhere at other sites in the drylands of southern Zambezia such as, Bosutswe, Kaitshaa, Dwaleng, Selolwe (Denbow 1983; Denbow *et al.* 2008; Van Waarden 2012).

The end of the Leopards Kopje era at Mananzve and surveyed sites is difficult to engage with considering the limitations in the available data sets. However, for now, available evidence clearly shows that the Mananzve Leopard's Kopje community adapted through the environmental and climatic uncertainties of the Shashi region for more than 200 years. The end of the Leopard's Kopje occupation in the broader Shashi Region is not clear but evidence from sites such as Mapela shows continued occupation into the 15th century and may have overlapped with early Khami settlements in the region. Therefore, Khami directly succeeded the Leopard's Kopje in the Shashi region and adjacent areas of southwestern Botswana. Although the early Khami phase is not represented at Manzanzve, the evidence from the wider region is abundant (see Robinson 1959, 1985; Manyanga 2006; Van Waarden 2012).

After CE 1685, Mananzve became home to later Khami communities. The typology of Khami ceramics at Mananzve and other surveyed sites is characterised mostly by neckless jars and constricted jars occasionally decorated with polychrome bands, incisions and multiple bands of cross hatching motifs. These attributes are typical of what has been recovered at other Khami settlements such as Domboshaba located in northeastern Botswana (Van Waarden 2012) and Danamombe situated in the Zimbabwean midlands (Randall-McIver 1906; Caton-Thompson 1931; Machiridza 2012). As a Khami capital, Danamombe was occupied during the Rozvi[15] phase dated between CE 1685 and 1839 (Beach 1994; Van Waarden 2012). This suggests

[15] Also known as the Changamire dynasty (Beach 1994)

Mananzve to have been probably occupied by a Kalanga community during the Rozvi phase of the Khami era. During this phase, there is a huge density of settlement debris and surface finds scattered all over Mananzve. Among those mapped and recorded included crucibles, slag, pottery, spindle whorls, shell beads, glass beads, metal (copper & iron), tools and weapons, lithics, grain bins, house foundations, and massive cattle kraals with vitrified dung deposits. Basing on the density of the surface scatter, both the hilltop and flats were occupied but it is difficult to associate these spaces with class and status since commoners could reside on hilltops and elites could also reside on flats (see Chirikure *et al* 2016).

Basing on the limited available evidence, it is possible that Khami communities abandoned Mananzve close to the mid-18th century CE. However, even after this period, other groups continued to settle in this area. A good example is the Babirwa, a branch of the northern Sotho connected to the Kgatla who migrated from north-eastern Botswana around the 1820s and later the Ndebele around the 1838 (Beach 1994; Nyathi 2014).

A continuous settlement history of Mananzve and the surveyed sites demonstrates a long-term engagement of people with their environment. The next section will discuss the adaptation strategies that were used by these Iron Age groups to maintain livelihoods.

8. 3. HUMAN ADAPTATION THROUGH TIME

A study of human behaviour through analyses of the material culture recovered from Mananzve and surveyed sites shows that Zhizo, Leopards Kopje and Khami communities residing in the Shashi region scheduled long-term and short-term adaptation strategies which enabled them to cope seasonally with vulnerability to hazards from environmental variability and climate change.

In terms of food production, the Iron Age communities represented at Mananzve focused on growing drought-tolerant crops such as finger millet and sorghum. It is possible that communities living in this area adopted various risk offsetting strategies such as alternating fields with different soils depending on timing of rains, growing crops on flood plains, water harvesting etc. to maximise their annual produce. Similar dryland agricultural practices have been reported at other sites situated in the same region such as as Toutswe (Denbow 1983:167), Vumba, Selolwe (Van Waarden 2012:141-169), Tshobwane, Mutshilachokwe, Mtao Village 16; (Manyanga 2006:147) and Kadzi (Pwiti 1996:132-133). This suggests the deployment of similar techniques across a wide area.

The presence of long-term food security infrastructure at Mananzve also demonstrates another very significant adaptation strategy. Leopards Kopje and Khami Iron Age communities represented in and around Mananzve built storage facilities in form of grain bins, particularly for long-term preservation of cereal. These are typical grain storage facilities that were constructed by the same groups in north-eastern Botswana to preserve cereals such as sorghum and millet at settlements such as Selolwe (Van Waarden 2012:112). Thus, residents of Mananzve had the ability to cope with food scarcity since they had food reserves that could last them even up to the next three years.

The Iron Age communities residing in and around Mananzve also relied on dispersal and penning herding strategies to cope with fodder scarcity and tsetse-fly infestation during the dry and wet seasons. During the dry season, cattle is likely to have been fed with supplements such as sorghum and finger millet stalls collected from the last harvests. In some instances, the cattle are likely to have been temporarily transferred to distant cattle posts situated in mopane woodlands around the Mapela area and adjacent north-eastern Botswana where they browsed on mopane and acacia. Similar strategies of herd management were also recorded at sites in north-eastern Botswana where Toutswe and Khami Iron Age communities used this strategy to reduce herds pressure on available grazing lands, through seasonal transferring of their livestock to distant cattle posts such as the Boteti Basin, Matanga, and the Makgadikgadi Pans (Denbow 1983:73; Van Waarden 2012:122-123). Furthermore, during the wet season, as practised today, most of the time, the livestock must have been monitored or penned so as to prevent them from destroying crops in the fields hence they were fed with green matter. Archaeologically, the use of penning as a herd management strategy is clearly demonstrated at Mananzve by a large cattle kraal (see Chapter Seven) at the western end of the site. Furthermore, large cattle kraals at Iron Age settlements such as K2, Mutshilachokwe, and Mtao Village 16 (Meyer 1980; Manyanga 2006) also demonstrates the presence of penning herding practices in the Limpopo Valley. This implies the use of dispersal and penning herding schemes as seasonal adaptation strategies throughout southern Zambezia.

Ability to diversify food ways also enabled the Iron Age communities residing at Mananzve to sustain their livelihoods in the Leopards Kopje and Khami eras. As demonstrated in the faunal data, the animal economy of the residents of Mananzve hinged on exploitation of both domestic and wild species. These included tortoise, sheep, goats, cattle, ostrich, kudu, impala, however, exploitation of domestic species was minimal. This shows a greater reliance on wild species particularly hyrax, klipspringer, and common duiker which seems to have been consumed mostly during the Leopards Kopje era. Basically, the pattern of animal resource exploitation whereby an Iron Age community relies mostly on wild species as an adaptation strategy is not new at Mananzve. This has been recorded elsewhere at sites such as Mwenezi in south-eastern Zimbabwe (Manyanga 2001). Thus, diversity in foodways through the exploitation of wild foods enabled the MIA and LIA communities residing at Mananzve to expand their food base as supplementary to agricultural produce.

Participation in local and regional trade was another important risk-buffering strategy that was used by Iron Age communities of Mananzve to survive in the Shashi region. Diversity of natural resource provided a platform for the Iron Age communities that resided at Mananzve to engage in trading of goods such as iron, copper, and gold all of which they extracted from the Gwanda Green Stone Belt. For instance, according to Huffman (2007:368) the metals that were used at Schroda were probably made from ore that was mined in the Gwanda Greenstone Belt. Therefore, there is possibility that Leopards Kopje communities that settled at Mananzve supplied this ore as a trade item. Similarly, this applies to the Khami period at Mananzve. According to Van Waarden (2011) part of the gold and other metals that were used at Mapungubwe are likely to have been sourced from the belt as well. This is reinforced by the presence of dolly holes on the north-eastern end of the Mananzve foothill and a fragment of an unused crucible, which possibly served as gold milling infrastructure during the Leopards Kopje and Khami era. Furthermore, the presence of a cowrie shell in Leopards Kopje stratum and glass beads that date from the Zhizo period to the Khami period shows that all the Iron Age communities that settled at Mananzve participated in regional and international trade.

The Iron Age communities that resided at Mananzve also took part in a number of arts and craft production projects that rewarded them with revenue which bolstered their livelihoods and economies. These included pottery making, metalworking, cotton weaving, shell bead making, gold working, leather working, and stone masonry. Typical arts and crafts were identified at other Iron Age settlements in southern Zambezia such as Kadzi, Kasekete in the Zambezi Valley (Pwiti 1996); Schroda, Leokwe K2, Mapungubwe, Mutshilachokwe, Tshobwane, Skutwater and Mtao Village 16 in the Limpopo Valley (Fouche 1937; Hanisch 1980; Voight, 1983; Manyanga 2006; Calabrese 2007); and Toutswemogala, Mupanipani, Tholo, Dwaleng, Bosutswe, Selolwe, and Vumba in north-eastern Botswana (Denbow 1983; Van Waarden 1998, 2011, 2012; Denbow *et al.* 2008). Thus, entrepreneurship in arts and crafts enabled the Iron Age communities of southern Zambezia to maintain livelihoods through taking advantage of the diversity in natural resources.

Probably, communal partnerships also instilled solidarity among Iron Age communities in and around Mananzve which enabled them to achieve resilience through time. Some of the partnerships might have extended to co- herding practices as evidenced by the large cattle kraal on site, helping to plough each other's field *(nhimbe)* and construction of public works such as the stone walling on the terraces of the hillslope and summit of Mananzve.

Consequently, the Iron Age communities represented at Mananzve were able to sustain their livelihoods seasonally though scheduling context-specific adaptations that enabled them to minimise climatic and environmental risk posed by the Shashi region during the wet and dry seasons.

8. 4. THE SHASHI REGION: WHY A MARGIN AND WHOSE MARGIN?

The establishment of an Iron Age sequence in and around Mananzve that stretches from the EIA to the LIA has serious implications for the current conceptualisation of the study area. Thus, the sequence contradicts the conclusion by Summers (1960) and other enviromental deternimists (e.g. Beach 1994; Huffman 2015) who regarded the Shashi region as inhospitable for human settlement during the Iron Age. While the argument made by Summers that the

Shashi region was once a tsetse-fly infested area before 1896 remains valid, the dismissal of the study area as incapable of hosting any meaningful Iron Age communities has been challenged by this study. It has shown that the Shashi region always attracted farmer settlement time and again since owing to their ability to control the flies using traditional means such as, land clearing, herd dispersal, and burning dried dung or wood to produce smoke which repels tsetse. Thus, as demonstrated in the previous section, Iron Age communities had ways of adapting to the Shashi region as a dryland hence they successfully led normal lives much like those living in landscapes rated as ideal for hosting Iron Age economies such as the Great Crescent area (Beach 1994).

Furthermore, the groups that were identified elsewhere at sites in the Great Crescent such as Tabazikamambo where Robinson (1965) recorded a layering of Zhizo, Leopards Kopje and Khami groups are the same groups that were recorded at Mananzve and other sites in the broader Shashi region such as Mapela (House 2016). A comparison of material culture such as glass bead, ceramics, crucibles, grains bins and stone walling from these respective sites with that of Mananzve shows a number of similarities in foodways, arts and crafts (Robinson 1965b: 4-7; Chirikure *et al*. 2013; House 2016). Therefore, the question that arises is; If material culture from drylands is similar to that of sites in the Great Crescent area, viewed as ideal for hosting Iron Age communities, why then are drylands such as the Shashi region viewed as marginal?

Secondly, an appraisal of the livelihoods of Iron Age communities that resided in and around Mananzve shows that they managed to adapt to the risks initiated by seasonal changes in climate by relying on the local biodiversity, which provided alternatives and opportunities to expand and secure their food base. As a result, Iron Age groups that settled at Mananzve adapted easily and led normal lifestyles, as revealed by the evidence of domestication, craft production, long-term food security, and regional and international trade networking. These aspects define the lifestyle of many other Iron Age communities in southern Zambezia. This raises the question of why we refer to these livelihoods strategies as ‘adaptation’ when it comes to communities living in a dryland landscape. Therefore, it appears that what we refer to as adaptation strategies by those agropastoral communities living in drylands is actually their day to day livelihoods or means of survival (Barker & Gilbertson 2000).

A review of the Iron Age of southern Zambezi shows that most of the novelties such as development of stone masonry, indigenous cotton weaving, glass bead re-melting and gold working were widely practised in dryland landscapes (see Huffman 2000; Miller 2002; Wood 2005; Van Waarden 2011, 2012). These include north-eastern Botswana and the Limpopo Valley, the later which despite having the same environment as the Shashi region and the former is not seen as marginal. Smith *et al.* (2007) has shown that cycles of wetness pervaded through the Limpopo Valley in times when it was assumed to be hot and arid. This cautions against a simplistic attribution of poor rains and migrations of people as inherent in some works (e.g. Huffman 2007). This problem of underestimating the creativeness of communities living in drylands is not unique to the Iron Age of southern Zambezia alone but a problem in global archaeology. For instance, preindustrial communities living in the coastal desert of Peru in South America (Thompson *et al.* 1985) and the EIA Levant communities of west-central Jordan (Porter 2013) were once looked down upon as peripheral while those living in landscapes such as the Fertile Crescent rated as ideal for food production were celebrated as great inventors (Coon 1951). However, a reappraisal of Peruvian archaeology showed that the Moche people prospered agriculturally, architecturally, technologically and in arts and crafts (Quilter 2002). Today they are a world renowned civilisation remembered for the novelty of metal soldering and builders of monumental pyramids and irrigation canals (Gamboa 2015). Thus, typical assumptions result largely from the fact that some archaeologists rely on presentist settings and models, such as the world systems theory, to interpret the archaeological record; hence, in any set up, they always want to establish that core-periphery dichotomy which undermines the adaptive capacity of those communities they rate as peripheral (Porter 2013).

Furthermore, this has been the norm in southern Zambezia, most archaeologists rely on the use of presentist settings to interpret the past, yet, in some instances, such as the one under study they end up abusing ethnography, as once bemoaned by Lane (1994). For instance, a comparison of Mapungubwe and Great Zimbabwe Iron Age sites reveals how easy it is for one to become misled by presentist models. According to Beach (1994:21), Mapungubwe is situated in a dryland while Great Zimbabwe is situated in the Great Crescent, an area that receives double the amount of annual rainfall. However, early states are associated with these places showing that humanity adapts to areas where it lives. Furthermore, just as climate is ever-changing so is culture (Porter 2013) but people adapt and in the end achieve resilience. This is why within different contexts; it is essential to understand indigenous knowledge practices that might throw light on past adaptation processes. It is these adaptation practices that when considered for various areas in southern Zambezia might illuminate regional similarities and or differences that are intellectually nourishing. When considered in its local context, an area perceived by outsiders as marginal might not be marginal to locals. Thus the local member of Member of Parliament and Councillor for the study area as demonstrated in Chapter Two considers the Shashi region his home where his life is rooted but to an archaeologist such as Huffman (2015), it is a margin with limited potential. Therefore, presentist, biased and sweeping statements by archaeologists such as Huffman (2015:21) strongly questions the relevance of labelling areas as marginal without understanding local adaptation strategies and motivates for a transformation of the discourse on drylands to consider fully the adaptive strategies that made and continue to make, this vast region, from the headwaters of the Shashi in Botswana to its confluence with the Limpopo, home to Iron Age and contemporary communities.

8. 5. CONCLUSIONS

The results of analyses of material culture recovered from Mananzve shows that this part of the Shashi region has a long history of occupation that stretches from the EIA to the LIA. Basing on radiocarbon dates and the established ceramic and glass bead chronologies, this layering represents a cultural succession of three Iron Age groups that are associated with Zhizo, Leopards Kopje and Khami ceramics. The establishment of an Iron Age sequence at Mananzve which stretches from the EIA to the LIA has serious implications for the current conceptualisation of the Shashi region. Thus, the sequence contradicts the conclusion by Summers (1960) which regarded the Shashi region as inhabitable for human settlement during the Iron Age due to the problems of tsetse-fly infestation and limited biodiversity. While the argument by Summers that the Shashi region was once a tsetse-fly infested area before 1896 remains valid, the dismissal of any chances to host any meaningful Iron Age communities has been proven wrong by this study. It has been shown that the Shashi region is rich in biodiversity and Iron Age communities lived successfully in the landscape through indigenous methods of managing tsetse-flies.

A dedicated study of material culture also shows that Iron Age groups at Mananzve were able to adapt through scheduling context-specific adaptation strategies that enhanced their livelihoods. However, from the data we have so far, it is clear that Iron Age communities practised long-term food security, craft production, regional and international trade, dryland agriculture and sustainable herding practices and perhaps control of tsetse flies to achieve resilience through time. All these enabled them to lead their daily lives just like any other Iron Age group in southern Zambezia.

Therefore, a combination of a long sequence of occupation and livelihoods that matches with those of communities living in landscapes prescribed as ideal for Iron Age economies like the Great Crescent (Beach 1994) leaves us with no option but to propose a revisit of the value system that was used to conceptualise marginality in the Iron Age of southern Zambezia. This is essential because data generated by this study shows that the Shashi region is or was not marginal and furthermore what we call 'adaptations' in drylands are actually daily livelihood strategies. Finally, as noted by Porter (2013:148) and Honourable Orders Shakespeare Mlilo (pers. comm. 2013) the grand contribution of a such a study is that the Shashi region has and will always be home for humanity no matter what climate scientists or archaeologist may think of it. Thus, to us archaeologists if we continue resisting reality we can continue calling drylands marginal but the communities that live in them will never cease to call them home.

8. 7. AVENUES FOR FUTURE RESEARCH

Excavations are needed in and around Mananzve as well as further afield in drylands of southern Zambezia such as Mberengwa district in order to expand our understanding on their settlement history, areas formerly resided by Zhizo groups should be given priority to shed more light on their archaeology. As demonstrated in this study, through scheduling context-specific adaptation strategies, Iron Age communities residing at Mananzve were able to manage risks in their daily routine time and again. Therefore, it is vital to carry out similar studies in the broader region of southern Zambezia to fully understand the adaptation strategies that were embraced to achieve sustainability and long-term resilience. Data generated is vital towards nourishing the livelihoods of the present communities living in these dry landscapes as it can enable them to cope with environmental and climatic uncertainty. Furthermore, there is need to reconstruct independent paleoclimatic and spatial data which is specific to the Shashi region using isotope techniques on baobab trees or pollen analyses and GIS as has been done in north-eastern Botswana (Denbow *et al.* 2008; Mothulatshipi 2008) and the Limpopo Valley (Smith 2005; Smith *et al.* 2007; Manyanga 2006).

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APPENDIX 1

Catchment area of surveyed sites and human adaptation strategies employed to maintain daily subsistence

Site	Site location			Nearest distance to iron deposits			Nearest distance to copper deposits			Nearest distance to gold deposits			Nearest distance to water resources			Herd management		Food storage & security			Diversity in foodways			Diversity in Arts & Crafts								Imported trade goods (glass beads)	Communal solidarity & Co-management of natural resources
	Hilltop	Plain/Foothill	Valley	0 – 19 km	20 – 39 km	40 – 59 km	0 – 19 km	20 – 39 km	40 – 59 km	0 – 19 km	20 – 39 km	40 – 59 km	0 – 0.99 km	1 – 4 km	5 – 10 km	Homestead penning	Distant cattle posts	Granaries	Drought – tolerant crops	Fertility rituals [rain-asking]	Wildlife	Domesticates	Fresh water resources	Stone masonry (walling)	Cotton weaving	Shell bead making	Iron working	Copper working	Gold working ng	Bronze working	Pottery making		
Mananzve	x	x				x			x			x	x			x		x	x		x	x		x	x	x	x	x	x		x	x	x
Mananzve 1	x	x				x			x			x	x			x		x	x		x	x			x	x	x	x	x		x	x	
Mananzve 2	x	x				x			x			x	x						x			x				x	x				x	x	
Mananzve 3	x					x			x			x	x			x			x			x			x	x	x				x		
Mananzve 4		x				x			x			x	x			x		x	x		x	x				x	x				x		
Tuli 1			x			x			x			x	x						x							x					x		
Musendami	x	x				x			x			x		x		x		x	x	x	x	x		x?	x	x	x	x	x		x	x	x
Musendami 1	x	x				x			x			x	x			x		x	x		x				x	x	x	x	x		x	x	
Musendami 2	x	x				x			x			x	x			x		x	x		x					x	x		x		x		
Musendami 3		x				x			x			x		x		x			x			x				x	x				x		
Musendami 4	x	x				x			x			x		x		x		x	x			x			x	x	x	x			x	x	

Site		Musendami 5	Musendami 6	Musendami 7	Mapate 1	Mapate 2	Mapate 3	Mapate 4	Mapate 5	Mapate 6	Mapate 7	Mapate 8
Communal solidarity & Co-management of natural resources												
Trade wealth (glass beads)		x	x									x
Diversity in Arts & Crafts	Pottery making	x	x	x	x	x	x	x	x	x	x	x
	Bronze working											
	Gold working ng	x										
	Copper working											
	Iron working	x	x	x					x	x	x	x
	Shell bead making	x	x	x	x		x	x	x	x	x	x
	Cotton weaving	x			x			x	x	x		x
	Stone masonry (walling)											
Diversity in foodways	Frash water resources											
	Domesticates	x	x		x			x	x	x	x	x
	Wildlife	x										
Food storage & security	Fertility rituals [rain-asking]											
	Drought – tolerant crops	x	x	x	x	x		x	x	x	x	x
	Granaries	x							x	x	x	
Herd manag ement	Distant cattle posts											
	Homestead penning	x	x						x	x	x	x
Nearest distance to water resources	5 – 10 km											
	1 – 4 km	x	x	x								
	0 – 0.99 km				x	x	x	x	x	x	x	x
Nearest distance to gold deposits	40 – 59 km	x	x	x	x	x	x	x	x	x	x	x
	20 – 39km											
	0 – 19 km											
Nearest distance to copper deposits	40 – 59 km	x	x	x	x	x	x	x	x	x	x	x
	20 – 39km											x
	0 – 19 km											
Nearest distance to iron deposits	40 – 59 km	x	x	x	x	x	x	x	x	x	x	x
	20 – 39 km											
	0 – 19 km											
Site location	Riverine				x	x	x	x				
	Plain/Foothill	x	x	x					x	x	x	x
	Hilltop	x	x									

APPENDIX 2

Ceramics recovered from Mananzve

Hilltop Ceramics

Surface and Test Pit 1

Attribute		Hilltop Surface Finds	Total		Test Pit 1 Layer 1	Test Pit 1 Layer 2	Test Pit 1 Layer 3	Total	
			n	%				*n*	%
Provenance	Diagnostic	44	44	90	6	4	20	30	13.7
	Undiagnostic	5	5	10		72	117	189	86.3
	Total	49	49	100	6	76	137	219	100
Vessel Shape	1.	11	11	25					
	2.	2	2	5			3	3	10
	3.	4	4	9			4	4	13
	4.	6	6	13		2	8	10	33.3
	5	4	4	9	3			3	10
	6.	8	8	18	1	2	4	7	23
	7.	2	2	5			1	1	3.3
	8.								
	Indeterminable	7	7	16	2			2	6.7
	Total	44	44	100	6	4	20	30	100
Decoration Motif	I.								
	IIa.	5	5	19.2			1	1	11.1
	IIb.	1	1	3.8					
	IIc.								
	IId.	1	1	3.8					
	IIIa.	5	5	19.2			3	3	33.3
	IIIb.	1	1	3.8					
	IIIc.								
	IVa.	2	2	7.7			1	1	11.1
	IVb.	1	1	3.8			1	1	11.1
	IVc.	3	3	11.5					
	IVd.								
	Va.						1	1	11.1
	Vb.						1	1	11.1
	Vc.								
	VIa.	1	1	3.8					
	VIb.	1	1	3.8					
	VIc.								
	VId.	1	1	3.8					
	VIIb.	1	1	3.8					
	VIIIa.	1	1	3.8			1	1	11.1
	VIIIb.								
	VIIIc.								
	IX.	1	1	3.8					
	Xa.								
	Xb.	1	1	3.8					
	Xia.								
	XIb.								
	XIc.								
	Total	26	26	100			9	9	100
Decoration Placement	Lip								
	Rim								
	Neck	2	2	7.7			4	4	44.4
	Shoulder	13	13	50			4	4	44.4
	Neck to shoulder	11	11	42			1	1	11.1
	Indeterminable								
	Total	26	26	100			9	9	100
Decoration Technique	Incisioning	25	25	96			8	8	88.9
	Comb stamping	1	1	4			1	1	11.1
	Punctate stamping								
	Total	26	26	100			9	9	100

Test Pit 2

Attribute		Layer 1	Layer 2	Layer 3	Layer 4	Layer 5	Layer 6	Total	
								n	%
Provenance	Diagnostic	14	7	5	10	10	5	51	10.2
	Undiagnostic	75	42	72	168	74	14	445	89.8
	Total	89	49	77	178	84	19	496	100
Vessel Shape	1.								
	2.			2	2	1	2	7	13.7
	3.			1	1	6	2	10	7.8
	4		3	1	4	1	1	10	31.3
	5.	13						13	25.4
	6.	1	4	1	2	1		9	18.0
	7.				1	1		2	4.0
	8.								
	Indeterminable								
	Total	14	7	5	10	10	5	51	100
Decoration Motif	I.								
	IIa.					1	1	2	8.7
	IIb.								
	IIc.				1			1	4.3
	IId.								
	IIIa.				7	1	2	10	43.4
	IIIb.				1			1	4.3
	IIIc.				1			1	4.3
	IIId.					1		1	4.3
	IVa.			1			1	2	8.7
	IVb.			1				1	4.3
	IVc.								
	IVd.								
	Va.								
	Vb.								
	Vc.								
	VIa.		1					1	4.3
	VIb.								
	VIc.								
	VId.				1			1	4.3
	VIIa.								4.
	VIIb.								
	VIIc.				1			1	4.3
	VIIIa.								
	VIIIb.								
	VIIIc.								
	IX								
	Xa.								
	Xb.								
	XIa.								
	XIb.								
	XIc.				1			1	4.3
	Total		1	2	13	3	4	23	100
Decoration Placement	Lip								
	Rim								
	Neck		1			3	1	5	21.7
	Shoulder			2	13		3	18	78.2
	Shoulder to neck								
	Indeterminable								
	Total		1	2	13	3	4	23	100
Decoration Technique	Incisioning		1	2	12	3	4	22	95.6
	Comb stamping								
	Punctate stamping				1			1	4.3
	Total		1	2	13	3	4	23	100

Test Pit 3

Attribute		Layer 1	Layer 2	Layer 3	Layer 4	Total	
						n	%
Provenance	Diagnostic	19	10	17	7	53	13.2
	Undiagnostic	242	62	38	4	346	86.7
	Total	261	72	55	11	399	100
Vessel Shape	1.						
	2.			13	2	15	28.3
	3.			2	1	3	5.6
	4.	1	1	2	1	5	9.4
	5.	15				15	28.3
	6.	1	2		1	4	7.5
	7.				2	2	3.7
	8.	2	7			9	16.9
	Indeterminable						
	Total	19	10	17	7	53	100
Decoration Motif	I.	1				1	4.8
	IIa.						
	IIb.						
	IIc.						
	IId.						
	IIIa.			1		1	4.8
	IIIb.						
	IIIc.						
	IVa.			4	1	5	23.8
	IVb.			1		1	4.8
	IVc.			1		1	4.8
	IVd.				1	1	4.8
	VIa.			2		2	9.5
	VIb.			1		1	4.8
	VIc.			1		1	4.8
	VIa.		1			1	4.8
	VIb.						
	VIc.			1		1	4.8
	VIIa.	1				1	4.8
	VIIb.						
	VIIc.						
	VIIIa.			1	1	2	9.5
	VIIIb.						
	VIIIc.						
	IX						
	Xa.						
	Xb.						
	XIa.			2		2	9.6
	XIb.						
	XIc.						
	Total	2	1	15	3	21	100
Decoration Placement	Lip						
	Rim						
	Neck						
	Shoulder	1	1	10	2	14	66.6
	Neck to shoulder	1		5	1	7	33.3
	Indeterminable						
	Total	2	1	15	3	21	100
Decoration Technique	Incisioning	2	1	11	3	17	81
	Comb stamping			2		2	9.5
	Punctate Stamping			2		2	9.5
	Total	2	1	15	3	21	100

Test Pit 4

Attribute		Layer 1	Layer 2	Layer 3	Layer 4	Total	
						n	%
Provenance	Diagnostic	9	3	1	8	21	8.0
	Undiagnostic	83	24	53	80	240	92.0
	Total	92	27	54	88	261	100
Vessel Shape	1.	2	2			4	23.8
	2.						
	3.				2	2	9.5
	4.			1	1	2	9.5
	5.	6	1			7	33.3
	6.	1			5	6	29
	7.						
	8.						
	Indeterminable						
	Total	9	3	1	8	21	100
Decoration Motif	I.						
	IIa.	1		1		2	33.3
	IIb.						
	IIc.						
	IIIa.			1	1	2	33.3
	IIIb.						
	IIIc.						
	IVa.				1	1	16.7
	IVb.						
	IVc.						
	IVd.						
	Va.						
	Vb.						
	Vc.						
	VIa.	1				1	16.7
	VIb.						
	VIc.						
	VId.						
	VIIa.						
	VIIb.						
	VIIc.						
	VIIIa.						
	VIIIb.						
	VIIIc.						
	IX						
	Xa.						
	Xb.						
	XIa.						
	XIb.						
	XIc.						
	Total	2		2	2	6	100
Decoration Placement	Lip						
	Rim						
	Neck				2	2	33.3
	Shoulder	2		1		3	50
	Neck to shoulder			1		1	16.7
	Indeterminable						
	Total	2		2	2	6	100
Decoration Technique	Incisioning	2		2	2	6	100
	Comb stamping						
	Punctate stamping						
	Total	2		2	2	6	100

Test Pit 5

Attribute		Layer 1	Layer 2	Total	
				n	%
Provenance	Diagnostic	12	2	14	10
	Undiagnostic	108	13	121	90
	Total	120	15	135	100
Vessel Shape	1.	10		10	71.4
	2.				
	3.		2	2	14.2
	4.				
	5.	1		1	7.1
	6.	1		1	7.1
	7.				
	8.				
	Indeterminable				
	Total	12	2	14	100
Decoration Motif	I.				
	IIa.				
	IIb.				
	IIc.				
	IId.				
	IIIa.		1	1	50
	IIIb.				
	IIIc.				
	IVa.				
	IVb.				
	IVc.				
	IVd.				
	Va.				
	Vb.				
	Vc.				
	VIa.				
	VIb.				
	VIc.				
	VId.				
	VIIa.				
	VIIb.				
	VIIc.				
	VIIIa.				
	VIIIb.				
	VIIIc.				
	IX				
	Xa.		1	1	50
	Xb.				
	XIa.				
	XIb.				
	XIc.				
	Total		2	2	100
Decoration Placement	Lip				
	Rim				
	Neck				
	Shoulder				
	Neck to shoulder		2	2	100
	Indeterminable				
	Total		2	2	100
Decoration Technique	Incisioning		2	2	100
	Comb stamping				
	Punctate stamping				
	Total		2	2	100

Foothill Ceramics

Surface and Test Pit 6

Attribute		Foothill Surface Finds		Test Pit 6				
				Layer 1	Layer 2	Layer 3	Total	
		n	*%*				*n*	%
Provenance	Diagnostic	11	69	1	13	12	26	8.2
	Undiagnostic	5	31		187	103	290	92
	Total	16	100	1	200	115	316	100
Vessel Shape	1.	1	9	1	8	8	17	65
	2.							
	3.	2	18.1					
	4.	5	45.4					
	5.	1	9		5	4	9	35
	6.	2	18.1					
	7.							
	8.							
	Indeterminable							
	Total	11	100	1	13	12	26	100
Decoration Motif	I.							
	IIa.		22.2					
	IIb.	2						
	IIc.							
	IId.							
	IIIa.							
	IIIb.							
	IIIc.							
	IVa.	1	11.1					
	IVb							
	IVc							
	IVd							
	Va.							
	Vb.							
	Vc.							
	VIa.							
	VIb.							
	VIc.							
	VId.					1	1	100
	VIIa.	1	11.1					
	VIIb.							
	VIIc.	1						
	VIIIa	3	56					
	VIIIb.							
	VIIIc.	1						
	IX							
	Xa.							
	Xb.							
	XIa.							
	XIb.							
	XIc.							
	Total	9	100			1	1	100
Decoration Placement	Lip							
	Rim							
	Neck	4	44					
	Shoulder	5	56			1	1	100
	Neck to shoulder							
	Indeterminable							
	Total	9	100			1	1	100
Decoration Technique	Incisioning	4	44			1	1	100
	Comb stamping	5	56					
	Punctate Stamping							
	Total	9	100			1	1	100

Test Pit 7

Attribute		Layer 1	Layer 2	Total	
				n	%
Provenance	Diagnostic	6	2	8	4
	Undiagnostic	152	18	170	96
	Total	158	20	178	100
Vessel Shape	1.	1		1	12.5
	2.				
	3.				
	4.				
	5.	4	1	5	62.5
	6.	1	1	2	25
	7.				
	8				
	Indeterminable				
	Total	6	2	8	100
Decoration Motif	I.				
	IIa.				
	IIb.				
	IIc.				
	IId.				
	IIIa.				
	IIIb.				
	IIIc.				
	IVa.				
	IVb.				
	IVc.				
	IVd.				
	Va.				
	Vb.				
	Vc.				
	VIa.				
	VIb.				
	VIc.				
	VId.				
	VIIa.				
	VIIb.				
	VIIc.				
	VIIIa.				
	VIIIb.				
	VIIIc.				
	IX				
	Xa.				
	Xb.				
	XIa.				
	XIb.				
	XIc.				
	Total				
Decoration Placement	Lip				
	Rim				
	Neck				
	Shoulder				
	Neck to shoulder				
	Indeterminable				
	Total				
Decoration Technique	Incisioning				
	Comb stamping				
	Punctate stamping				
	Total				

Test Pit 8

Attribute		Layer 1	Layer 2	Total	
				n	%
Provenance	Diagnostic	22	5	27	6.3
	Undiagnostic	296	103	399	94
	Total	318	108	426	100
Vessel Shape	1.	14	1	15	56
	2.				
	3.				
	4.	2	3	5	19
	5.	4	1	5	19
	6.	2		2	7.4
	7.				
	8.				
	Indeterminable				
	Total	22	5	27	100
Decoration Motif	I.				
	IIa.				
	IIb.	3		3	75
	IIc.				
	IId.				
	IIIa.				
	IIIb.				
	IIIc.				
	IVa.				
	IVb.				
	IVc.				
	IVd.				
	Va.				
	Vb.				
	Vc.				
	VIa.				
	VIb.				
	VIc.				
	VId.				
	VIIa.				
	VIIb.				
	VIIc.				
	VIIIa.				
	VIIIb.	1		1	25
	VIIIc.				
	IX				
	Xa.				
	Xb.				
	XIa.				
	XIb.				
	XIc.				
	Total	4		4	100
Decoration Placement	Lip				
	Rim				
	Neck				
	Shoulder	3		3	75
	Neck to shoulder	1		1	25
	Indeterminable				
	Total	4		4	100
Decoration Technique	Incisioning	3		3	75
	Comb stamping	1		1	25
	Punctate stamping				
	Total	4		4	100

Test Pits 9 and 10

Attribute		Test Pit 9					Test Pit 10			
		Layer 1	Layer 2	Layer 3	Total		Layer 1	Layer 2	Total	
					n	*%*			*n*	*%*
Provenance	Diagnostic	5	6	12	23	8	20	2	22	9
	Undiagnostic	93	70	113	276	82	198	27	225	91
	Total	98	76	125	299	100	218	28	247	100
Vessel Shape	1.	4	4	6	14	60	9	1	10	45
	2.									
	3.									
	4.							1	1	4.5
	5.			3	3	13	4		4	18
	6.	1	2	3	6	26	6		6	27
	7.									
	8.									
	Indeterminable						1		1	4.5
	Total	5	6	12	23	100	20	2	22	100
Decoration Motif	I.									
	IIa.									
	IIb.						1	1	2	100
	IIc.									
	IId.									
	III.									
	IIIb.									
	IIIc.									
	IVa.									
	IVb.									
	IVc.									
	IVd.									
	Va.									
	Vb.									
	Vc.									
	VIa.									
	VIb.									
	VIc.									
	VId.									
	VIIa.									
	VIIb.									
	VIIc.									
	VIIIa.									
	VIIIb.									
	VIIIc.									
	IX									
	Xa									
	Xb									
	XI									
	XIa.									
	XIb.									
	XIc.									
	Total						1	1	2	100
Decoration Placement	Lip									
	Rim									
	Neck									
	Shoulder						1	1	2	100
	Neck to shoulder									
	Indeterminable									
	Total						1	1	2	100
Decoration Technique	Incisioning						1	1	2	100
	Comp stamping									
	Punctate stamping									
	Total						1	1	2	100

Test Pit 11

Attribute		Layer 1	Layer 2	Layer 3	Layer 4	Layer 5	Total	
							n	%
Provenance	Diagnostic	7	2	2	1	3	15	7
	Undiagnostic	94	37	30	21	16	198	93
	Total	101	39	32	22	19	213	100
Vessel Shape	1.	4		1		4	6	40
	2.							
	3.							
	4.							
	5.					2		
	6.	3		1	1	2	6	40
	7.							
	8.		2				3	20
	Indeterminable							
	Total	7	2	2	1	8	15	100
Decoration Motif	I.							
	IIa.							
	IIb.							
	IIc.							
	IId.					1	1	50
	IIIa.							
	IIIb.							
	IIIc.							
	IVa.							
	IVb.							
	IVc.							
	IVd.							
	Va.							
	Vb.							
	Vc.							
	VIa.							
	VIb.				1		1	50
	VIc.							
	VIIa.							
	VIIb.							
	VIIc.							
	VIIIa.							
	VIIIb.							
	VIIIc.							
	IX							
	Xa.							
	Xb.							
	XIa.							
	XIb.							
	XIc.							
	Total				1	1	2	100
Decoration Placement	Lip							
	Rim							
	Neck							
	Shoulder				1	1	2	100
	Neck to shoulder							
	Indeterminable							
	Total				1	1	2	100
Decoration Technique	Incisioning				1	1	2	100
	Comb stamping							
	Punctate stamping							
	Total				1	1	2	100

APPENDIX 3

Glass recovered from the Mananzve

Hilltop Glass Beads

Surface and Test Pit 1

Attribute		Surface Finds Total	Test Pit 1		
			Layer 1	Layer 2	Layer 3
Colour	Green		1	2	
	Yellow				
	Black		3	1	
	Brownish-red		1	1	
	Light-green			1	
	Blue-green				
	Dark-green				
	Deep-blue	1			
	Blue (cobalt)				
	Total	1	5	5	
Shape	Cylinder			1	
	Tube	1	5	1	
	Oblate			3	
	Total	1	5	5	
Diaphaneity	Transparent				
	Translucent		1		
	Opaque	1	4	2	
	Transparent-translucent				
	Translucent-opaque			3	
	Transparent-opaque				
	Opaque-translucent				
	Total	1	5	5	
Size	<2.5mm			2	
	2.5 - 3.5 mm		1		
	3.5 - 4.5 mm			3	
	>4.5mm	1	4		
	Total	1	5	5	
Method of Manufacture	Drawn		5		
	Wound			5	
	Total		5	5	
Bead Typology	1. Zhizo				
	2. K2		1		
	3. Indo-Pacific		2	1	
	4. Mapungubwe		1	3	
	5. Zimbabwe				
	6. Khami	1	1	1	
	7. Indeterminable				
	Total	1	5	5	

Test Pit 2

Attribute		Layer 1	Layer 2	Layer 3	Layer 4	Layer 5	Layer 6	Total
Colour	Green	1	1	2				4
	Yellow		1	1				2
	Black		5	1				6
	Brownish-red	6	3	8	3			20
	Light-green		1		2			3
	Blue-green	1	4	9		4		18
	Dark-green							
	Deep-blue							
	Blue (cobalt)							
	Total	8	15	21	5	4		53
Shape	Cylinder	1	6	11	5			23
	Tube	3	7	10		4		24
	Oblate	4	2					6
	Total	8	15	21	5	4		53
Diaphaneity	Transparent	1	2			4		7
	Translucent	1		2	2			5
	Opaque	5	8	10	3			26
	Transparent-translucent							
	Translucent-opaque		4	8				12
	Transparent-Opaque	1	1	1				3
	Opaque-translucent							
	Total	8	15	21	5	4		53
Size	<2.5mm		3	5				8
	2.5 - 3.5 mm	2	2	1				5
	3.5 - 4.5 mm	2	3	4	1			10
	>4.5mm	4	7	11	4	4		30
	Total	8	15	21	5	4		53
Method of Manufacture	Drawn	8	15	21	5	4		53
	Wound							
	Total	8	15	21	5	4		53
Bead Typology	1. Zhizo							
	2. K2		1	2		4		7
	3. Indo-Pacific		9	7	4			20
	4. Mapungubwe	4	2	2	1			9
	5. Zimbabwe							
	6. Khami	4	3	10				17
	7. Indeterminable							
	Total	8	15	21	5	4		53

Test Pit 3

Attribute		Layer 1	Layer 2	Layer 3	Layer 4	Total
Colour	Green	2	1			3
	Yellow					
	Black					
	Brownish-red		2			2
	Light-green					
	Blue-green	3	2		1	6
	Dark-green					
	Deep-blue					
	Blue (cobalt)					
	Total	5	5		1	11
Shape	Cylinder	4			1	5
	Tube		3			3
	Oblate	1	2			3
	Total	5	5		1	11
Diaphaneity	Transparent					
	Translucent					
	Opaque		2			2
	Transparent-translucent					
	Translucent-opaque	5	3		1	9
	Transparent-Opaque					
	Opaque-translucent					
	Total	5	5		1	11
Size	<2.5mm		1			1
	2.5 - 3.5 mm	2				2
	3.5 - 4.5 mm				1	1
	>4.5mm	3	4			7
	Total	5	5		1	11
Method of Manufacture	Drawn	5	5		1	11
	Wound					
	Total	5	5		1	11
Bead Typology	1. Zhizo					
	2. K2					
	3. Indo-Pacific		4		1	5
	4. Mapungubwe	3				3
	5. Zimbabwe		1			1
	6. Khami	2				2
	7. Indeterminable					
	Total	5	5		1	11

Test Pit 4

Attribute		Layer 1	Layer 2	Layer 3	Layer 4	Total
Colour	Green					
	Yellow					
	Black	1				1
	Brownish-red					
	Light-green					
	Blue-green					
	Dark-green					
	Deep-blue					
	Blue (cobalt)					
	Total	1				1
Shape	Cylinder	1				1
	Tube					
	Oblate					
	Total	1				1
Diaphaneity	Transparent					
	Translucent					
	Opaque	1				1
	Transparent-translucent					
	Translucent-opaque					
	Transparent-Opaque					
	Opaque-translucent					
	Total	1				1
Size	<2.5mm					
	2.5 - 3.5 mm					
	3.5 - 4.5 mm	1				1
	>4.5mm					
	Total	1				1
Method of Manufacture	Drawn	1				1
	Wound					
	Total	1				1
Bead Typology	1. Zhizo					
	2. K2					
	3. Indo-Pacific					
	4. Mapungubwe					
	5. Zimbabwe					
	6. Khami	1				1
	7. Indeterminable					
	Total	1				1

Test Pit 5

Attribute		Layer 1	Layer 2	Total
Colour	Green			
Shape	Yellow			
	Black			
	Brownish-red			
	Light-green			
	Blue-green	1		1
	Dark-green			
	Deep-blue			
	Blue (cobalt)			
	Total	1		1
	Cylinder			
	Tube	1		1
	Oblate			
	Total	1		1
Diaphaneity	Transparent			
	Translucent			
	Opaque			
	Transparent-translucent	1		1
	Translucent-opaque			
	Transparent-Opaque			
	Opaque-translucent			
	Total	1		1
Size	<2.5mm			
	2.5 - 3.5 mm			
	3.5 - 4.5 mm	1		1
	4.5> mm			
	Total	1		1
Method of Manufacture	Drawn	1		1
	Wound			
	Total	1		1
Bead Typology	1. Zhizo			
	2. K2			
	3. Indo-Pacific			
	4. Mapungubwe			
	5. Zimbabwe			
	6. Khami	1		1
	7. Indeterminable			
	Total	1		1

Foothill Glass Beads

Surface and Test Pit 8

Attribute		Surface Finds	Test Pit 7		
		Totals	Layer 1	Layer 2	Total
Colour	Green		2	1	3
	Yellow				
	Black				
	Brownish-red				
	Light-green				
	Blue-green	1		1	1
	Dark-green				
	Deep-blue		1	2	3
	Blue (cobalt)				
	Total	1	3	4	7
Shape	Cylinder	1	2	3	5
	Tube		1	1	2
	Oblate				
	Total	1	3	4	7
Diaphaneity	Transparent				
	Translucent				
	Opaque		2	2	4
	Transparent-translucent				
	Translucent-opaque	1	1	2	3
	Transparent-Opaque				
	Opaque-translucent				
	Total	1	3	4	7
Size	<2.5mm				
	2.5 - 3.5 mm				
	3.5 - 4.5 mm		2	3	5
	>4.5mm	1	1	1	2
	Total	1	3	4	7
Method of Manufacture	Drawn	1	3	4	7
	Wound				
	Total	1	3	4	7
Bead Class	1. Zhizo			1	1
	2. K2				
	3. Indo-Pacific				
	4. Mapungubwe				
	5. Zimbabwe				
	6. Khami	1	2	4	6
	7. Indeterminable				
	Total	1	2	5	7

Test Pit 9

Attribute		Layer 1	Layer 2	Layer 3	Total
Colour	Green				
	Yellow				
	Black		1		1
	Brownish-red				
	Light-green				
	Blue-green				
	Dark-green				
	Deep-blue				
	Blue (cobalt)				
	Total		1		1
Shape	Cylinder		1		1
	Tube				
	Oblate				
	Total		1		1
Diaphaneity	Transparent				
	Translucent				
	Opaque		1		1
	Transparent-translucent				
	Translucent-opaque				
	Transparent-Opaque				
	Opaque-translucent				
	Total		1		1
Size	<2.5mm				
	2.5 - 3.5 mm				
	3.5 - 4.5 mm		1		1
	>4.5mm				
	Total		1		1
Method of Manufacture	Drawn		1		1
	Wound				
	Total		1		1
Bead Typology	1. Zhizo				
	2. K2				
	3. Indo-Pacific				
	4. Mapungubwe				
	5. Zimbabwe				
	6. Khami		1		1
	7. Indeterminable				
	Total		1		1

Test Pit 11

Attribute		Layer 1	Layer 2	Layer 3	Layer 4	Layer 5	Total
Colour	Green						
	Yellow		1				1
	Black						
	Brownish-red	2					2
	Light-green						
	Blue-green		1				1
	Dark-green						
	Deep-blue						
	Blue (cobalt)						
	Total	2	2				4
Shape	Cylinder	1	2				3
	Tube	1					1
	Oblate						
	Total	2	2				4
Diaphaneity	Transparent						
	Translucent						
	Opaque	1	1				2
	Transparent-translucent						
	Translucent-opaque		1				1
	Transparent-Opaque						
	Opaque-translucent	1					1
	Total	2	2				4
Size	<2.5mm						
	2.5 - 3.5 mm						
	3.5 - 4.5 mm	1	1				2
	>4.5mm	1	1				2
	Total	2	2				4
Method of Manufacture	Drawn	2	2				4
	Wound						
	Total	2	2				4
Bead Typology	1. Zhizo	1					1
	2. K2						
	3. Indo-Pacific						
	4. Mapungubwe						
	5. Zimbabwe						
	6. Khami	1	2				3
	7. Indeterminable						
	Total	2	3				4

APPENDIX 4a

Fauna recovered from Mananzve

Hilltop Fauna

Provenance	*Aspatharia sp.* freshwater mussel	*Aespyceros meumpus*, impala	*Tragelaphus strepsiceros*, kudu	*Ovis/Capra,* sheep/goat	*Sylivicapra grimmia*, Common duiker	Bovidae II	Bovidae III	Microfauna	*Bos taraus,* cattle	Bird, medium	*Stigmochelys pardallis*, tortoise	*Oseotragus oreotragus,* Klipspringer	*Hyracoidea,* hyrax	*Cypraea sp.* cowrie	*Rodentia*, rodent	*Struttio camelus*, ostrich	*Achatina sp.*, land snail	Total NISP/MNI
TP1L1	5/1															2/1		
TP1L2	3/1		1/1															
TP1L3	2/1	2/2		1/1	1/1												3/1	
NISP/MNI	10/3	2/2	1/1	1/1	1/1											2/1	3/1	20/10
TP2L1	6/1							1/1	1/1							4/1	7/1	
TP2L2	18/1	2/1							3/1									
TP2L3	6/1			1/1			2/1	2/1										
TP2L4	11/1	1/1				2/1	2/2	2/1		1/1	1/1							
TP2L5	5/1						2/1				20/3	2/1	1/1					
TP2L6	2/1							1/1			1/1							
TP2L7																		
NISP/MNI	48/6	3/2		1/1		2/1	6/4	6/4	4/2	1/1	22/4	2/1	1/1			4/1	7/1	107/29
TP3L1	4/1																	
TP3L2						1/1										5/1		
TP3L3	1/1	2/1		5/2							4/2			1/1				
TP3L4	1/1					1/1					23/8							
NISP/MNI	6/3	2/1		5/2		2/2					27/10			1/1		5/1		48/20

Provenance	*Aspatharia sp.* freshwater mussel	*Aespyceros meumpus*, impala	*Tragelaphus strepsiceros,* kudu	*Ovis/Capra,* sheep/goat	*Sylivicapra grimmia*, Common duiker	Bovidae II	Bovidae III	Microfauna	*Bos taraus,* cattle	Bird, medium	*Stigmochelys pardallis*, tortoise	*Oseotragus oreotragus,* Klipspringer	*Hyracoidea,* hyrax	*Cypraea sp.* cowrie	*Rodentia*, rodent	*Struttio camelus*, ostrich	*Achatina sp.*, land snail	Total NISP/MNI
TP4L1	8/1										1/1							
TP4L2	1/1															1/1		
TP4L3	1/1		1/1				1/1	1/1		1/1								
TP4L4	4/1							1/1							1/1			
NISP/MNI	14/4		1/1				1/1	1/1		1/1	1/1				1/1	1/1		21/11
TP5L1	10/1					1/1	1/1				3/1					1/1		
TP5L2	4/2	1/1					2/1				1/1						12/2	
NISP/MNI	17/3	1/1				1/1	3/2				4/2					1/1	12/2	39/12

Foothill Fauna

Provenance	*Aspatharia sp.* freshwater mussel	*Aespyceros meumpus*, impala	*Tragelaphus strepsiceros*, kudu	*Ovis/Capra*, sheep/goat	*Sylivicapra grimmia*, Common duiker	Bovidae II	Bovidae III	Microfauna	*Bos taraus*, cattle	Bird, medium	*Stigmochelys pardallis*, tortoise	*Oseotragus oreotragus*, Klipspringer	*Hyracoidea*, hyrax	*Cypraea sp.* cowrie	*Rodentia*, rodent	*Struttio camelus*, ostrich	*Achatina sp.*, land snail	Total NISP/MNI
TP6L1								1/1										
TP6L2			1/1					3/1			2/2				1/1	6/1	22/4	
TP6L3								7/2			1/1					1/1	9/3	
NISP/MNI			1/1					11/4			3/3				1/1	7/2	21/7	44/18
TP7L1	3/1																11/3	
TP7L2																		
NISP/MNI	3/1																11/3	14/4

Provenance	*Aspatharia sp.* freshwater mussel	*Aespyceros meumpus*, impala	*Tragelaphus strepsiceros*, kudu	*Ovis/Capra,* sheep/goat	*Sylivicapra grimmia*, Common duiker	Bovidae II	Bovidae III	Microfauna	*Bos taraus,* cattle	Bird, medium	*Stigmochelys pardallis*, tortoise	*Oseotragus oreotragus*, Klipspringer	*Hyracoidea,* hyrax	*Cypraea sp.* cowrie	*Rodentia*, rodent	*Struttio camelus*, ostrich	*Achatina sp.*, land snail	Total NISP/MNI
TP8L1		1/1				2/2		2/2		1/1	1/1				3/2	1/1	22/4	
TP8L2	12/3		1/1			1/1		5/1	1/1		3/1				4/3		15/4	
NISP/MNI	12/3		1/1			3/3		7/3	1/1	1/1	4/2				7/5	1/1	37/8	74/28
TP9L1	3/1	1/1		4/2							5/2					1/1	1/1	
TP9L2						1/1			1/1		4/1							
TP9L3											18/6						2/2	
NISP/MNI	3/1	1/1		4/2		1/1			1/1		27/9					1/1	3/3	41/19
TP10L1																	1/1	
TP10L2										1/1	231/6							
NISP/MNI										1/1	231/6						1/1	233/8

Provenance	*Aspatharia sp.* freshwater mussel	*Aespyceros meumpus*, impala	*Tragelaphus strepsiceros*, kudu	*Ovis/Capra,* sheep/goat	*Sylivicapra grimmia*, Common duiker	Bovidae II	Bovidae III	Microfauna	*Bos taraus,* cattle	Bird, medium	*Stigmochelys pardallis*, tortoise	*Oseotragus oreotragus*, Klipspringer	*Hyracoidea,* hyrax	*Cypraea sp.* cowrie	*Rodentia*, rodent	*Struttio camelus*, ostrich	*Achatina sp.*, land snail	Total NISP/MNI
TP11L1	10/1					1/1	1/1				3/1							
TP11L2	4/1						2/1				1/1							
TP11L3																		
TP11L4	3/1	1/1																
TP11L5																		
NISP/MNI	17/3	1/1				1/1	3/2				4/2							26/9

Hilltop NISP/MNI Totals

Specie	NISP /MNI
Achatina sp., land snail	22/4
Struttio camelus, ostrich	13/5
Rodentia, rodent	1/1
Cypraea sp. cowrie	1/1
Hyracoidea, hyrax	1/1
Oseotragus oreotragus, Klipspringer	2/1
Stigmochelys pardallis, tortoise	54/17
Bird, medium	2/2
Bos taraus, cattle	4/2
Microfauna	7/5
Bovidae III	9/6
Bovidae II	6/5
Sylivicapra grimmia, Common duiker	1/1
Ovis/Capra, sheep/goat	7/4
Tragelaphus strepsiceros, kudu	2/2
Aespyceros meumpus, impala	8/6
Aspatharia sp. freshwater mussel	95/19
Total NISP/MNI	235/82

Foothill NISP/MNI Totals

Specie	NISP /MNI
Achatina sp., land snail	73/22
Struttio camelus, ostrich	9/4
Rodentia, rodent	8/6
Cypraea sp. cowrie	
Hyracoidea, hyrax	
Oseotragus oreotragus, Klipspringer	
Stigmochelys pardallis, tortoise	269/22
Bird, medium	2/2
Bos taraus, cattle	2/2
Microfauna	18/7
Bovidae III	3/2
Bovidae II	5/5
Sylivicapra grimmia, Common duiker	
Ovis/Capra, sheep/goat	4/2
Tragelaphus strepsiceros, kudu	2/2
Aespyceros meumpus, impala	2/2
Aspatharia sp. freshwater mussel	35/8
Total NISP/MNI	432/86

APPENDIX 4b

Shell beads recovered from Mananzve

Hilltop Shell Beads

Surface and Test Pit 1

Attribute		Surface Finds	Layer 1	Layer 2	Layer 3	Total
Bead Type	Ostrich Egg Shell	6	2	3	4	15
	Fresh Water Mussel	1	2		2	5
	Achatina					
	Indeterminable					
	Total	7	4	3	6	20
Bead Size	<7.4mm	1	1	2	3	7
	>7.4mm	6	3	1	3	13
	Total	7	4	3	6	20
Production Stage	Complete	6	3	2	5	16
	Incomplete	1	1	1	1	4
	Total	7	4	3	6	20
Surface Finish	Charred	2	1		2	5
	Uncharred	5	3	3	4	15
	Red Ochre					
	Total	7	4	3	6	20

Test Pit 2

Attribute		Layer 1	Layer 2	Layer 3	Layer 4	Layer 5	Layer 6	Total
Bead Type	Ostrich Egg Shell			2	6	2	1	11
	Fresh Water Mussel				1			1
	Achatina							
	Indeterminable							
	Total			2	7	2	1	12
Bead Size	<7.4mm			1	1	1	1	4
	>7.4mm			1	6	1		8
	Total			2	7	2	1	12
Production Stage	Complete			1	4	1	1	7
	Incomplete			1	3	1		5
	Total			2	7	2	1	12
Surface Finish	Charred			1				1
	Uncharred			1	7	2	1	11
	Red Ochre							
	Total			2	7	2	1	12

Test Pit 3

Attribute		Layer 1	Layer 2	Layer 3	Layer 4	Total
Bead Type	Ostrich Egg Shell	2	3		2	7
	Fresh Water Mussel		1		2	3
	Achatina					
	Indeterminable					
	Total	2	4		4	10
Bead Size	<7.4mm				1	1
	>7.4mm	2	4		3	9
	Total	2	4		4	10
Production Stage	Complete	2	1		2	5
	Incomplete		3		2	5
	Total	2	4		4	10
Surface Finish	Charred		1		1	2
	Uncharred	2	3		3	8
	Red Ochre					
	Total	2	4		4	10

Test Pit 4

Attribute		Layer 1	Layer 2	Layer 3	Layer 4	Total
Bead Type	Ostrich Egg Shell	1	1	3		5
	Fresh Water Mussel					
	Achatina					
	Indeterminable					
	Total	1	1	3		5
Bead Size	<7.4mm	1				1
	>7.4mm		1	3		4
	Total	1	1	3		5
Production Stage	Complete		1	2		3
	Incomplete	1		1		2
	Total	1	1	3		5
Surface Finish	Charred					
	Uncharred	1	1	3		5
	Red Ochre					
	Total	1	1	3		5

Test Pit 5

Attribute		Layer 1	Layer 4	Total
Bead Type	Ostrich Egg Shell	2	1	3
	Fresh Water Mussel	1		1
	Achatina			
	Indeterminable			
	Total	3	1	4
Bead Size	<7.4mm	1		1
	>7.4mm	2	1	3
	Total	3	1	4
Production Stage	Complete	2	1	3
	Incomplete	1		1
	Total	3	1	4
Surface Finish	Charred			
	Uncharred	3	1	4
	Red Ochre			
	Total	3	1	4

Foothill Shell Beads

Surface and Test Pit 6

Attribute		Surface Finds	Layer 1	Layer 1	Layer 2	Total
Bead Type	Ostrich Egg Shell	5	1	7	6	14
	Fresh Water Mussel	3				
	Achatina					
	Indeterminable					
	Total	8		8	6	14
Bead Size	<7.4 mm	1		2	2	4
	>7.4 mm	7		6	4	10
	Total	8		8	6	14
Production Stage	Complete	2		7	6	13
	Incomplete	6		1		1
	Total	8		8	6	14
Surface Finish	Charred					
	Uncharred	8		8	6	14
	Red Ochre					
	Total	8		8	6	14

Test Pit 7

Attribute		Layer 1	Layer 2	Total
Bead Type	Ostrich Egg Shell		2	2
	Fresh Water Mussel			
	Achatina			
	Indeterminable			
	Total		2	2
Bead Size	<7.4mm		1	1
	>7.4mm		1	1
	Total		2	2
Production Stage	Complete		2	2
	Incomplete			
	Total		2	2
Surface Finish	Charred			
	Uncharred		2	2
	Red Ochre			
	Total		2	2

Test Pit 8

Attribute		Layer 1	Layer 2	Total
Bead Type	Ostrich Egg Shell	14	23	37
	Fresh Water Mussel	22	3	25
	Achatina			
	Indeterminable			
	Total	36	26	62
Bead Size	<7.4mm	6	8	14
	>7.4mm	29	16	45
	Total	35	24	59
Production Stage	Complete	28	18	46
	Incomplete	8	8	16
	Total	36	26	62
Surface Finish	Charred	1	4	5
	Uncharred	35	22	57
	Red Ochre			
	Total	36	26	62

Test Pit 9

Attribute		Layer 1	Layer 2	Layer 3	Total
Bead Type	Ostrich Egg Shell	4	1	2	7
	Fresh Water Mussel		1		1
	Achatina				
	Indeterminable				
	Total	4	2	2	8
Bead Size	<7.4mm	1	1		2
	>7.4mm	3	1	2	6
	Total	4	2	2	8
Production Stage	Complete	1	1	2	4
	Incomplete	3	1		4
	Total	4	2	2	8
Surface Finish	Charred			2	2
	Uncharred	4	2		6
	Red Ochre				
	Total	4	2	2	8

Test Pit 10

Attribute		Layer 1	Layer 2	Total
Bead Type	Ostrich Egg Shell		3	3
	Fresh Water Mussel		1	1
	Achatina			
	Indeterminable			
	Total		4	4
Bead Size	<7.4mm		1	1
	>7.4mm		2	2
	Total		4	4
Production Stage	Complete		3	3
	Incomplete		1	1
	Total		4	4
Surface Finish	Charred		2	2
	Uncharred		2	2
	Red Ochre			
	Total		4	4

Test Pit 11

Attribute		Layer 1	Layer 2	Layer 3	Layer 4	Layer 5	Total
Bead Type	Ostrich Egg Shell	13	6	6	3		28
	Fresh Water Mussel	1			1		2
	Achatina						
	Indeterminable						
	Total	14	6	6	4		30
Bead Size	<7.4 mm	4	2	1	1		8
	>7.4mm	10	4	5	3		22
	Total	14	6	6	4		30
Production Stage	Complete	13	6	6	1		26
	Incomplete	1			3		4
	Total	14	6	6	4		30
Surface Finish	Charred	1	1	6			8
	Uncharred	13	5		4		22
	Red Ochre						
	Total	14	6	6	4		30

APPENDIX 4c

Spindle whorls recovered from Mananzve

Provenance		HT/SF	HT/TP 1/L1	HT/TP 3/L2	HT/TP 3/L4	FH/SF	FH/TP 8/L2	FH/TP 9/L3	FH/TP 9/L3	FH/TP 10/L1	*n*	%
Material	Clay	4	1	1	1	4	1	2	1	1	16	100
	Soapstone	-	-	-	-	-	-	-	-	-		
	Total	4	1	1	1	4	1	2	1	1	16	100
Outer-diameter	<99mm	4	1	1	1	4	1	2	1	1	16	100
	100>mm	-	-	-	-	-	-	-	-	-		
	Total	4	1	1	1	4	1	2	1	1	16	100
Inner-diameter	<49 mm	4	1	1	1	4	1	2	1	1	16	100
	50>mm	-	-	-	-	-	-	-	-	-		
	Total	4	1	1	1	4	1	2	1	1	16	100
Weight	<99g	4	1	1	1	4	1	2	1	1	16	100
	100>	-	-	-	-	-	-	-	-	-		
	Total	4	1	1	1	4	1	2	1	1	16	100
Thickness	<24mm	4	1	1	1	4	1	2	1	1	16	100
	25>mm	-	-	-	-	-	-	-	-	-		
	Total	4	1	1	1	4	1	2	1	1	16	100
Production Stage	Finished	1	1	-	-	3	1	1	-	1	8	50
	Incomplete	3	-	1	-	1	-	-	-	-	5	31
	Indeterminable	-	-	-	1	-	-	1	1	-	3	19
	Total	4	1	1	1	4	1	2	1		16	100

Key

HT=Hilltop FH=Foothill SF Surface Find TP=Test Pit L=Layer TR= Trench

APPENDIX 4d

Metals recovered from Mananzve

Hilltop Metals

Category	Object ID	Object Type	Provenance	Material	Length	Width/Diameter	Weight	Production Stage	State
Non-Metallic	1.	Slag	Surface Finds	Oxide waste product			102.1 g		Uncorroded
Objects	2.	Slag	Surface Finds	Oxide waste product			21.1 g		Uncorroded
	3.	Slag	Surface Finds	Oxide waste product			25.2 g		Uncorroded
	4.	Slag	Surface Finds	Oxide waste product			20.0 g		Uncorroded
	5.	Slag	Surface Finds	Oxide waste product			15.3 g		Uncorroded
	6.	Slag	Test Pit 2 Layer 1	Oxide waste product			60.2 g		Uncorroded
	Total						243.9 g		
Technical Ceramics	7.	Tuyere	Surface Finds	Vitrified clay + slag	35mm	49 mm (outer)	288 g	Finished	Slightly corroded
	Total						288 g		
Metallic Objects	8.	Axe head	Surface Finds	Iron	201.4 mm	48.7 mm (maximum)	325.3 g	Finished	Slightly corroded
	9.	Axe head	Test Pit 3 Layer 1	Iron	57.5 mm	10.2 mm (maximum)	35.9 g	Finished	Fairly corroded
	10.	Spear head	Test Pit 2 layer 3	Iron	78.7 mm	3.5 mm (maximum)	22.5 g	Finished	Fairly corroded
	11.	Needle	Surface Finds	Iron	120.1 mm	4.2 mm (maximum)	24.5 g	Finished	Fairly corroded
	12.	Needle	Surface Finds	Iron	68.4 mm	3.8 mm (maximum)	34.3 g	Indeterminable	Very corroded
	13.	Nail	Surface Finds	Iron	60.6 mm	7.6 mm (maximum)	11.4 g	Finished	Fairly corroded
	14.	Blade	Surface Finds	Iron	61.2 mm	22.2 mm (maximum)	25.6 g	Indeterminable	Very corroded
	15.	Blade	Surface Finds	Iron	49.4 mm	20.7 mm (maximum)	15.6 g	Indeterminable	Very corroded
	16.	Blade	Surface Finds	Iron	48.3 mm	9.5 mm (maximum)	8.4 g	Indeterminable	Very corroded
	17.	Blade	Surface Finds	Iron	38.7mm	30.3 mm (maximum)	18.2 g	Indeterminable	Very corroded
	18.	Blade	Surface Finds	Iron	37.4 mm	33.5mm (maximum)	12.4 g	Indeterminable	Very corroded
	19.	Blade	Surface Finds	Iron	10.8 mm	21.5 mm (maximum)	3.0 g	indeterminable	Very corroded
	20.	Scraper	Surface Finds	Iron	79.8 mm	7.2 mm (maximum)	13.4 g	Finished	Fairly corroded
	21.	Bangle	Surface Finds	Iron	272.2 mm	7.7 mm (approximate)	245.6 g	Finished	Slightly corroded
	22.	Bangle	Surface Finds	Iron	150.5 mm	7.8 mm (approximate)	156.2 g	Finished	Fairly corroded
	23.	Bangle	Surface Finds	Iron	60.2 mm	9.1 mm (outer)	7.2 g	Indeterminable	Very corroded
	24.	Bangle	Test Pit 2 Layer 4	Iron	72.1 mm	6.2 mm (outer)	10.5 g	Indeterminable	Very corroded
	25.	Wound wire bangle	Surface Finds	Cuprous	110.5 mm	7.4 mm (approximate)	5.3 g	Finished	Slightly corroded
	26	Wire knot?	Surface Finds	Iron	42.3 mm	3.1 mm (maximum)	3.2 g	Finished	Slightly corroded
	27.	Bead	Test Pit 2 Layer 1	Iron	3.5 mm	7.5 mm (outer)	0.9vg	Finished	Slightly corroded
Total	27						979.4 g		

Foothill Metals

Category	Object ID	Object Type	Provenance	Material	Length	Width/Diameter	Weight	Production Stage	State
Non-Metallic Objects	28.	Slag	Surface Finds	Oxide waste product			180.1 g		Uncorroded
	29.	Slag	Surface Finds	Oxide waste product			112.1 g		Uncorroded
	30.	Slag	Surface Finds	Oxide waste product			118.4 g		Uncorroded
	31.	Slag	Surface Finds	Oxide waste product			134.6 g		Uncorroded
	32.	Slag	Surface Finds	Oxide waste product			87.5 g		Uncorroded
	33.	Slag	Surface Finds	Oxide waste product			119.6 g		Uncorroded
	34.	Slag	Test Pit 9 Layer 3	Oxide waste product			30.9 g		Uncorroded
	35.	Slag	Surface Finds	Oxide waste product			86.7 g		Uncorroded
	36.	Slag	Surface Finds	Oxide waste product			98.3 g		Uncorroded
	37.	Slag	Test pit 9 Layer 3	Oxide waste product			29.4 g		Uncorroded
	38.	Slag	Test pit 9 Layer 3	Oxide waste product			39.8 g		Uncorroded
	Total						1037.4 g		
Technical Ceramics	39.	Crucible	Surface Finds	Clay			36.7 g	Indeterminable	Uncorroded
	Total						36.7 g		
Metallic Objects	40.	Needle	Test pit 10 Layer 1	Iron	46.9 mm	4.5 mm (maximum)	3.2 g	Finished	Fairly corroded
	41.	Chisel	Surface Finds	Iron	91.7 mm	10.4 mm (maximum)	10.4 g	Finished	Slightly corroded
	42.	Nail	Test Pit 6 Layer 1	Iron	95.8 mm	7.6 mm (maximum)	3.3 g	Finished	Slightly corroded
	43.	Needle	Test pit 10 Layer 1	Iron	88.4 mm	5.2 mm (maximum)	3.7 g	Finished	Fairly corroded
	44.	Hoe head	Surface Finds	Iron	202.3 mm	117.8 mm (maximum)	410.2 g	Finished	Fairly corroded
	45.	Hoe head	Surface Finds	Iron	50.4 mm	20.4 mm (maximum)	30.4 g	Finished	Fairly corroded
	46.	Hoe head	Surface Finds	Iron	52.8 mm	21.4 mm (maximum)	23.4 g	Finished	Fairly corroded
	47.	Hoe head	Surface Finds	Iron	50.7 mm	21.9 mm (maximum)	25.1 g	Finished	Fairly corroded
	48.	Hoe head	Surface Finds	Iron	28.2 mm	8.1 mm (maximum)	11.9 g	Finished	Fairly corroded
	49.	Bangle	Test pit 8 Layer 1	Iron + fibre (grass?)	38.1 mm	7.6 mm (maximum)	1.9 g	Finished	Very corroded
	50.	Bangle	Test pit 11 Layer 3	Iron	30.5 mm	7.3 mm (maximum)	10.2 g	Finished	Fairly corroded
	51.	Bangle	Test pit 6 Layer 1	Iron	24.1 mm	6.5 mm (maximum)	3.5 g	Finished	Very corroded
	52.	Bangle	Test pit 8 Layer 1	Iron	17.2 mm	7.1 mm (maximum)	7.1 g	Finished	Very corroded
	53.	Bangle	Test pit 8 Layer 1	Iron	10.2 mm	6.7 mm (maximum)	4.5 g	Finished	Very corroded
	54.	Blade	Surface Finds	Iron	72.4 mm	7.8 mm (maximum)	13.2 g	Finished	Very corroded
	55.	Blade	Surface Finds	Iron	42.4 mm	31.1 mm (maximum)	34.4 g	Indeterminable	Very corroded
	56.	Blade	Surface Finds	Iron	38.5 mm	24.1 mm (maximum)	22.4 g	Indeterminable	Very corroded
	57.	Blade	Surface Finds	Iron	33.5 mm	14 mm (maximum)	13.3 g	Indeterminable	Very corroded
	58.	Blade	Surface Finds	Iron	23.5 mm	13.2 mm (maximum)	11.7 g	Indeterminable	Very corroded
	59.	Wire fragment	Test pit 11 Layer 1	Iron	18.5 mm	3.3 mm (maximum)	3.2 g	Finished	Fairly corroded
	60.	Wire fragment	Test pit 6 Layer 1	Iron	12.6 mm	2.3 mm (maximum)	1.9 g	Finished	Fairly corroded
	61.	Bead	Test pit 7 Layer 1	Iron	3.1 mm	6.3 mm	0.89 g	Finished	Slightly corroded
	62.	Bead	Test Pit 11 layer 1	Iron	3.4 mm	8.3 mm	1.2 g	Finished	Slightly corroded
	63.	Bead	Test Pit 11 Layer 1	Iron	2.9 mm	6.2 mm	0.8 g	Finished	Slightly corroded
	64.	Bead	Test Pit 11 Layer 1	Copper	2.8 mm	6.8 mm	0.87 g	Finished	Fairly corroded
Total	37						652.66 g		

APPENDIX 4e

Lithics recovered from Mananzve

Tool ID	Tool Type	Provenance	Raw material	Length	Width /Diameter	State
1.	Scraper	Foothill Surface	Agate	25 mm	7 mm	Complete
2.	Scraper	Test Pit 4 Layer 2	Dolerite	13 mm	10 mm	Complete
3.	Scraper	Test Pit 3 layer 4	Agate	20 mm	16 mm	Complete
4.	Scraper	Test Pit 6 Layer 1	Chert	22 mm	17 mm	Complete
5.	Scraper	Test Pit 8 Layer 2	Quartz	12 mm	15 mm	Complete
6.	Scraper	Test Pit 6 layer 1	Quartz	15 mm	12 mm	Complete
7.	Bladelet	Test Pit 2 Layer 3	Quartz	18 mm	10 mm	Complete
8.	Bladelet	Test Pit 10 layer 2	Quartzite	13 mm	8 mm	Complete
9.	Scraper	Test Pit 1 Layer 1	Chert	26 mm	23 mm	Complete
10.	Scraper	Test Pit 3 Layer 4	Agate	16 mm	21 mm	Complete
11.	Bladelet	Test Pit 7 Layer 1	Agate	28 mm	13 mm	Complete
12.	Bladelet	Test Pit 3 Layer 4	Agate	24 mm	11 mm	Complete
13.	Scraper	Test Pit 3 Layer 4	Dolerite	29 mm	18 mm	Complete
14.	Bladelet	Test Pit 3 Layer 4	Dolerite	33 mm	18 mm	Complete
15.	Bladelet	Test Pit 7 Layer 2	Quartz	31 mm	16 mm	Complete
16.	Bladelet	Test Pit 3 Layer 4	Agate	27 mm	15 mm	Complete
17.	Hammerstone	Test Pit 7 Layer 2	Dolerite	60 mm	25 mm	Complete
18.	Bladelet	Test Pit 8 Layer 2	Quartz	10 mm	6 mm	Complete
19.	Scraper	Test Pit 1 Layer 2	Dolerite	12 mm	10 mm	Complete
20.	Scraper	Test Pit 9 Layer 3	Chert	11 mm	11 mm	Complete
21.	Scraper	Test Pit 5 Layer 2	Quartz	15 mm	12 mm	Complete
22.	Scraper	Test Pit 3 Layer 4	Quartz	12 mm	11 mm	Complete
23.	Scraper	Test Pit 1 Layer 1	Dolerite	17 mm	13 mm	Complete
24.	Scraper	Hilltop Surface	Quartz	19 mm	15 mm	Complete
25.	Scraper	Test Pit 3 Layer 4	Quartz	23 mm	16 mm	Complete
26.	Scraper	Test Pit 6 Layer 1	Chert	20 mm	18 mm	Complete
27.	Hammerstone	Test Pit 6 Layer 1	Dolerite		27 mm	Complete
28.	Hammerstone	Test Pit 11 Layer 1	Dolerite		32 mm	Complete
29.	Hammerstone	Test Pit 10 Layer 2	Dolerite	33 mm	42 mm	Complete
30.	Hammerstone	Test Pit 1 Layer 1	Quartzite		41 mm	Complete
31.	Hammerstone	Test Pit 1 Level 3	Dolerite		51 mm	Complete