Investigation of artisanal tanning in Lesotho communities using a Setlokoa cowhide dress as a case study.

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Abstract.

Cowhide dress (mose oa khomo) used to symbolise Basotho women's traditional attire, but recently it has only been associated with a small group of women who participate in initiation ceremonies. Seshoeshoe, a modern cloth and European print developed over time with different styles, is now generally considered 'traditional'. As a result, the intangible cultural heritage of crafting mese ea khomo and other Sesotho material cultures is disappearing. Basotho used to produce leather and cowhide products in large numbers and had their methods of leather preparation, tanning and conservation. However, with the introduction of Christianity, industrialisation and urbanisation, traditional customs including attire, have increasingly waned. And the decline in the traditional use of cowhide and leather products has resulted in an alarming abandonment of the associated skills. It has resulted in the gradual extinction of indigenous knowledge as part of intangible heritage.

The research uses a Setlokoa cowhide dress as a case study to understand the skills behind the crafting of mose oa khomo. It further investigates the traditional conservation methods and the significance of mose oa khomo in Sesotho tradition, including the symbolic meaning of the patterns of beads and copper rings used to adorn the dress. Interviews, observation and literary sources revealed that leather preparation and tanning is no longer gender-based among the Basotho. It is no longer only done at khotla but has become primarily a communal activity done jointly by men and women. In addition, mafura a lefehlo (fat prepared with sour milk) and red ochre are used for tanning, softening, and conserving leather products, and have not been documented to date.

Furthermore, this research's case study was my paternal grandmother's initiation graduation and wedding dress which she later used during crucial initiation ceremonies. Since there is no doubt that hide preparation and tanning is rapidly disappearing because it is currently rarely done, this study has documented the current methods used in leather manufacturing and conservation. A condition assessment was done on the case study with signs of deterioration identified and possible treatment options suggested based on current conservation methods used to preserve and restore leather, glass and copper objects since the case study contains these three materials. This research forms the basis for conserving Sesotho material culture as it is the first study to document cultural objects traditionally produced in the country and aims to investigate Lesotho intangible and tangible cultural heritage for conservation.

Keywords:

Mose oa khomo, conservation, intangible heritage, indigenous knowledge, material culture, deterioration, treatment, leather preparation, hide tanning, Basotho, traditional attire.

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DECLARATION OF ORIGINALITY

I hereby declare that the research titled *Investigation of artisanal tanning in Lesotho communities using a Setlokoa cowhide dress as a case study* is my own original work. Where other people's work has been used (either from a printed source, Internet, or any other source), this has been properly acknowledged and referenced in accordance with departmental requirements.

I have not used work previously produced by another student or any other person to hand in as my own. Additionally, I have not allowed and will not allow anyone to copy my work with the intention of passing it off as his or her own work.

Mabokang Mokotjo.

Table 1. Sesotho words used in this mini dissertation.

SESOTHO WORDS	ENGLISH MEANING
Basotho.	Sesotho speaking people.
Batlokoa.	Sesotho ethnic group living at Mokhotlong District.
Bohoko.	Part of sour milk separated from mafura a lefehlo
Furu.	Animal food.
Ho kena	An action where Basotho initiates enter their second stage of initiation
Ho ngoaela.	To scrape the hide
Ho ritela	To brew beer.
Ho suoa	Hide tanning.
Ho thethesa bohali	To soften the hide with hands
Ho tlala.	To dance in a drunken manner/like someone in trance.
Joala.	Beer.
Khathola	A type of cowhide dress.
Khotla.	Basotho traditional court.
Lebollo.	Initiation
Lekele.	Four ribs of the slaughtered cow cooked for hide scrapers
Lenkatsana.	A type of cowhide dress.
Lesokoana	A wooden stick used to mix food.
Letsoku.	Red ochre
Liepa mere.	Traditional doctors.
Lifaha.	Beads.
Likhoaikhoai	Scraping tools
Likhohloane.	Copper rings
Linyepa.	Threaded beads worn on the waist by Basotho women.
Litsoako	Wheat meal used to brew Sesotho traditional beer.
Mafura a lefehlo	Fat made of sour milk
Makontsiri	Loose Threaded beads attached to initiates' cowhide dresses in a manner that they sway sideways
Makonopo	Buttons
Mokhehle.	A cowhide dress worn by teenage girls

Matlalo/makoko	Hides
Mese ea khomo	Cowhide dresses/plural.
Moiteli	Shredded dry cow dung
Mohlono.	Tiny cowhide threads scratched on the hide to enhance the beauty of the dress.
Mokorotlo songs/lipina tsa mokorotlo.	Songs sung by Basotho men.
Mmampharoane.	Lizard.
Mmela	Milled sorghum / malted grain
Morepo	A cloak like blanket made of sheep skin.
Moroko	Malted grain
Mosana poieana	A short type of cowhide dress
Mose oa khomo.	Cowhide dress.
Mosotho	A Sesotho speaking person born from Basotho parents
Mosuoela	A mixture of cow dung and animal food
Phaate	A maternity cowhide dress
Pipa mpa	Milled sorghum used to brew Sesotho traditional beer
Sebeto.	A type of cowhide dress decorated with different decorations like beads and copper rings.
Setea	A type of cowhide dress decorated only on the waist or without any form of decoration.
Sereleli.	Whisked sour milk
Seroebele	A type of whistling
Seshoeshoe	Basotho traditional dress made of European print.
Sesotho	A culture of Basotho
Setlokoa	A culture of Batlokoa
Thats'ana.	A part of Basotho
Thethana	A fringed skirt.
Tsikitlane.	Gazania sp.
Ts'otso.	Unprocessed animal fat.

CHAPTER ONE

Introduction and background of the study

This chapter introduces the mini-dissertation by outlining the primary needs and arguments of the study. The first part of this chapter presents the Sesotho terminology and phrases used frequently throughout this study. It then looks at the context and aims of the research, it further discusses the key research questions which guide this study's restrictions and boundaries. The outline structure of chapters within this research project concludes this chapter.

1.1. Introduction.

In Lesotho, the concept of conservation is mainly associated with the conservation of flora and fauna. As a result, very little has been done to conserve Basotho's tangible and intangible heritage and material culture. As innovations replace old traditional practices, Sesotho indigenous knowledge systems disappear at an alarming rate due to lack of proper documentation and conservation. Britannica (2018) defines material culture as "tools, weapons, utensils, machines, ornaments, art, buildings, monuments, written records, religious images, clothing, and any other ponderable objects produced or used by humans". Literature shows that these artefacts are collected and kept in museums for conservation and preservation as a symbol or evidence of human survival. These artefacts are also a testimony of human existence and intellect. As such, any process in their manufacturing is worth conserving and analysing for reference and continuity (Olsen, 2003:90).

According to Prown (1982:2), cultural beliefs and values are attached to the making of any material culture, and the loss of this knowledge creates a massive gap in that society's cultural norms and development. For instance, Riep (2011:258) indicates that different ethnic groups found in Lesotho today, especially The Batlokoa, who have a long history of beadwork, have distinct patterns of beadwork they use to make the waistbands of traditional "thethana" a fringe skirt worn by Basotho girls. Currently, the beadwork this group was well known for has declined only few individuals are still involved. This study aims to bridge the gap and bring forward the importance of the conservation of Sesotho tangible heritage. This study focused on preserving and conserving Basotho women's traditional cowhide skirt (mose oa khomo), symbolising traditional attire. It also investigated the traditional processes and materials used

to manufacture and adorn mose oa khomo using the skirt manufactured in a Setlokoa traditional way as a case study.

1.2. Use of Sesotho words.

The research focuses on the case study of mose oa khomo, translated as a cowhide dress, traditional Basotho women's attire. As such, Sesotho terminology is repeatedly used. Most Sesotho words used are in South Sotho as spoken and written in the landlocked country of Lesotho. The spelling used in this mini dissertation is generally accepted in Lesotho and may differ slightly to South Sotho as written and spoken in South Africa. As this research unfolds, many Sesotho words are used; however, they have been translated to allow for better understanding and avoid confusion on the reader's part.

Included in the text is an English translation or approximation of the meaning of all Sesotho terms in brackets on their first use. However, to avoid cluttering the text, these translated terms are not in brackets afterwards. However, a list of Sesotho words used in this study has been included and terms have in many cases been footnoted.

1.3. Location of the study.

As indicated above, Lesotho is my home country. Mose oa khomo, this research's case study, is a personal item, that was gifted to me by my grandmother. It is one of the dresses she used to wear when she attended Setlokoa[1] traditional ceremonies. She was a Mosotho woman who lived in a small village called Tsitsa at Tlokoeng in the Mokhotlong District in the northeast of the country of Lesotho. Mokhotlong northern part borders with Free State province of South Africa, and its eastern flank borders the Kwa-Zulu-Natal province of South Africa. This particular area of Lesotho includes the highest terrain of the Maloti Mountains range.

My grandmother was also one of the few women who did beadwork in her village. Because of this personal connection, the present research is very close to my heart as through my findings, I will increase my understanding of my grandmother, identity, and culture. Malingoaneng at

[1] Setlokoa a culture belonging to a Sotho ethnic group called Batlokoa/ Tlokoa living in the Northern mountains (Mokhotlong) of Lesotho.

Mokhotlong District is this study's area focus, and this is where the case study of this research was crafted, as shown in figure 1.

Figure 1: Maps depicting Malingoaneng at Mokhotlong District Lesotho, Maps by Lets'eng Diamond Surveys.

1.4. Introduction, background and contextualisation.

Mose oa khomo[2] is a cowhide skirt that has been Basotho women's traditional dress before the European print cloth (seshoeshoe). There are different cowhide skirts or mese ea khomo[3] *(*mese is the plural of mose). Some are just the skirts women used to wear daily, while others were only worn during traditional ceremonies. These skirts were also adorned differently according to their purpose of use.

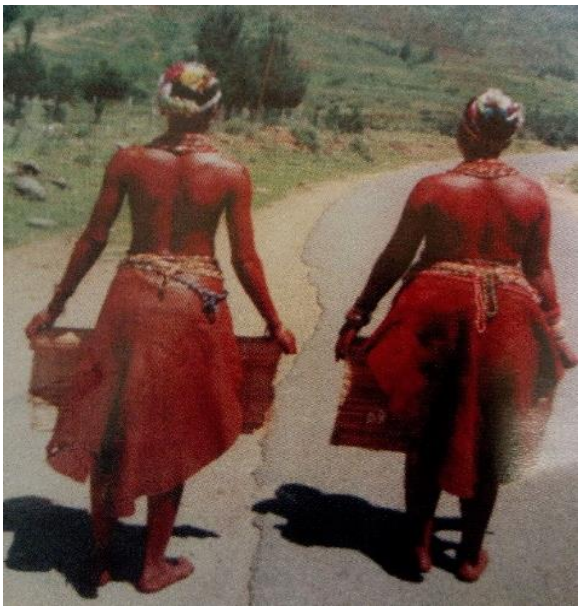
In recent years Basotho women have stopped wearing mese ea khomo as often as they used to do, reserving the attire only for the minimal number of women who still participate in initiation ceremonies. Nowadays, as Christianity encourages the locals to shun away from 'heathen practices' (Machobane & Manyeli, 2001:70), most Basotho women are Christians and no longer attend initiations regardless of their core traditions to Basotho. As a result, the indigenous knowledge skills applied in the crafting of mese ea khomo and other Sesotho material culture of its kind will be lost unless action is taken to preserve and conserve the skills and knowledge. The present research is thus going to focus on the conservation and

[2] Mose means a dress or a skirt, while khomo means a cow so in general mose oa khomo is translated as a dress or skirt made of cow hide.
[3] Mese is the plural of mose in Sesotho language.

preservation of Sesotho material culture by using a mose oa khomo crafted in Setlokoa as a case study.

Usually, mese ea khomo are worn with the inside out, as it is easy to anoint the inner side of the hide with fat to seal and waterproof it and use red ochre to give it a red colour (Tlali, 1972:4). The exterior surface of the hide with the fur then becomes the inner side of the skirt to provide warmth for the women (Tlali, 1972:5).

Some skirts are adorned with beads of different colours, buttons, mirrors, copper rings and studs (Tlali, 1972:5). There are several types of mese ea khomo and can be worn differently. Usually, when women decide to wear mese ea khomo with beads only, they also wear linyepa[4] (beaded waistbands) made with different colours around their waists (Segoete, 1940:13; Martin, 1903:27; Tlali, 1972:5). Figure 2a depicts two Basotho girls wearing mese ea khomo on lithethana[5] and linyepa while figure 2b shows how mose oa khomo looks like at the back. Figure 3 portrays women initiates wearing mese ea khomo with linyepa only.



[4] Senyepa is a plural of senyepa, they are the beads Basotho women wear around their waist on mose oa khomo.
[5] Lithethana is a plural of thethana, the fringed skirt

a b

Figure 1 a b: Mese ea khomo worn with linyepa and lithethana. Photos from one of the framed photos in one of the offices in the Department of Culture Maseru. Photographer unknown.

Figure 2: Women initiates wearing mese ea khomo without linyepa, litulu or lithats'ana. Photo from (Warden, 2021) (29/02/2021).

1.5. Problem statement.

Before the arrival of the missionaries around 1833 in Basutoland, the Basotho used to make their clothing using mainly cowhide and the hides of other animals, this means they had leather preparation and tanning skills. However, the Basotho no longer wear traditionally manufactured leather clothing daily or during their traditional ceremonies. The decline has led to the extinction of Basotho's traditional leather preparation, tanning skills and leather conservation methods.

The seshoeshoe dress has replaced mose oa khomo as the symbol of traditional attire for women (Pheto-Moeti, 2007:1). Even skirts made and cut like mose oa khomo are made of synthetic material that looks like leather. The only time Basotho women wear authentic mese ea khomo is during women's initiation ceremonies. This is due to close interaction with European missionaries and industrialisation within the country (Machobane & Manyeli, 2001:72). As a result, the use of mose oa khomo has been in decline since 1833 (Machobane & Manyeli, 2001:72). Artisans who still know of or manufacture these kinds of items are dwindling. Unless the original processes and materials used and the indigenous conservation methods are preserved, no one will soon know how these artefacts were manufactured, and Lesotho will have lost part of its tangible and intangible cultural heritage.

Recognising this, Lesotho is in the process of building its first national museum and is currently in the process of acquiring different artefacts from all over the country through the Department of Culture. In addition, there are ongoing negotiations for the repatriation of Basotho artefacts from other countries. As a result, there is a need for the museum to have records of thoroughly studied and well-researched objects. Among the artefacts already collected, there are objects made of grass, paper, bone, stone, and leather - leather is the focus material of this study. These objects were collected from the four corners of Lesotho, and as a result, they represent all the ethnic groups found in the country. However, none of these objects has been thoroughly researched and documented for preservation and conservation purposes. This research's interviews will be critical cultural documents and form a foundation for documenting Basotho's tangible and intangible material culture for conservation purposes. To meet benchmarking standards, the museum must have clear policies and guidelines to promote the preservation and conservation of its collections. Viable traditional practices can inform these policies in addition to international conservation practice.

1.6. Key research questions.

The research question thus revolves around the traditional manufacturing of mose oa khomo, with several sub-questions, namely:

(a) What are the traditional techniques used for manufacturing mose oa khomo?

(b) What tools are used in traditional leather preparation, tanning and manufacturing of mose oa khomo?

(c) What is the cultural significance of the material and techniques used to manufacture mose oa khomo?

(d) Which materials are used for decorating?

1.7. Aims and objectives of the study.

According to (Parani, 2007:498), "dress is one of the most important means by which an individual constructs and projects his or her identity outwards, and by which this identity is perceived by others within the framework of social interaction".

Mose oa khomo on its own represents the basis for Basotho women's traditional dress. However, it is slowly losing its significance since it has been replaced by seshoeshoe. Mose oa khomo's cultural significance is rapidly shifting to represent a small group of women participating in initiation. Since it has become common to use dress as a social and cultural identity, I believe that mose oa khomo should remain a symbol of cultural identity for all Basotho women, not only a fraction of them (Disele, Tyler & Power, 2011:16). As a result, it is paramount to understand mose oa khomo's meaning and significance as a traditional dress and its relation to Basotho cultural identity (Parani, 2007:499). Through this study, different types of mose oa khomo's significance to Sesotho culture have been investigated. This research explores the symbolic meaning of the patterns and other materials used for decorations. Different types of mese ea khomo and the meaning behind their distinction has also been investigated. Though the Setlokoa dress has been used as a case study, it has also been compared with other mese ea khomo manufactured in sekhalahali[6] as Batlokoa refer to other Sesotho speaking people within the country.

1.8. A preliminary outline of chapters.

The research is outlined in six chapters. Chapter one introduces the research topic, provides the background of the study, statement of the problem, aims and objectives of the study, research questions and research outline.

Chapter two reviews and explains available published literature relevant to the research topic and explained concepts and words that form the basis of the research.

Chapter three discusses the research design and methodology used. It includes the research paradigm, sampling strategy or selection of participants, data collection, data preparation, data analysis, research quality, ethical considerations, limitations, delimitations of the study and the expected outcomes of the study.

Chapter four is based on interviews with various artisans and community members and focuses on fieldwork data analysis and results. The chapter also presents the overall findings and discussions.

[6] Sekhalahali is any Sotho ethnic group living in Lesotho other than Batlokoa.

Chapter five describes the case study and explores the findings by discussing its provenance, conservation issues around the dress, condition assessment and the treatment recommendations for the dress.

Chapter six summarises the research findings and offers some concluding remarks and recommendations.

CHAPTER TWO

Literature review

2.1. Introduction.

This chapter explains some of the more significant concepts and essential terminology used throughout the study. It also reviews and explores the literature relevant to the present research. The literature review introduces the structure of hide and skin and explores the differences between the two. It also discusses the nomenclature of the skin, different types of hides, and outlining different steps in hide preparation. Artisanal and industrial hide processing are then compared to understand how the two processes and the resulting products differ.

Furthermore, this chapter looks at hide processing in Africa in general and then explores what main practices are found in Southern Africa before moving to hide processing practices specific to Lesotho. As applicable in Lesotho, different adornments on hide garments have also been discussed, along with their deterioration processes. Finally, the chapter looks at the conservation of leather, glass beads and metal attachments as typically found on mese oa khomo.

2.1.1. Introduction to skin and hide.

According to Leach (1995:1), “hides are defined as the external integuments of large animals while smaller animals provide skins”. The distinction between the two is mainly about size and thickness (Elliot, 1985:3). Also, both hides and skins are built with the same tissues, which differ in proportions and sizes, depending on the variety of species seen through the microscope (French & Hides, 1949;69). Skins and hides can be attained from many domesticated and non-domesticated animals. Hides and skins are secondary agricultural commodities of some enterprises like meat, milk, wool and mohair production (Leach, 1995:6; Elliot, 1985:3). Table 2 below, extracted from Leach (1995:1), outlines the types of animals that produce hides.

Table 2: Types of animals that are used to produce hides.

SOURCES	HIDES	SKINS
Mammals	Cattle Buffalo Horse Elephant	Sheep Goat Pig Impala Rabbit Mink
Reptiles		Snake
Amphibians		Frog
Birds		Ostrich

According to Leach (1995:7), although hides and skins are mainly sourced from domestic animals, the animals are generally not kept for hide and skin production. These are rather by-products of other activities. These products only become available upon the death of the animals, either through natural cause or through deliberate slaughter (Leach, 1995:7). How hides and skins are obtained play a significant role in determining the market value of the hides and skins produced (Jabbar, Kiruthu, Gebremedhin, & Ehui, 2002:6) For instance, many hides and skins may have cuts from knives used during slaughter (Jabbar et al., 2002:7). Regardless of these issues, the tannery facilities use hides and skins collected from individual farmers or bought from abattoirs (Jabbar et al., 2002:7).

After the animals' death, hides are processed to be used to manufacture other products. Animals' hides are used to make clothes, whips, thread, shoes, writing tools, bookbinding and kayaks (Maxwel, 2007:38). Ancient civilizations have been using animal hide as dress since pre-historic times and used different preparation methods to turn the hide into different types of dress adequate for people's use (Appiah-Brempong, Essandoh, Asiedu, Dadzie and Momade, 2020:1). According to Kite and Thompson (2006:1), people can use the hide to produce different objects due to the hide's unique properties. These include "flexibility, a relatively high tensile strength with particular resistance to shock loads, resistance to tearing, puncturing and abrasion, low bulk density, good heat insulation and water vapour transmission. They also include mouldability, resistance to wind and liquid water, and an ability to be stretched and compressed without distorting the surface" (Kite & Thompson, 2006:1).

2.1.2. Nomenclature skin and hide.

To reduce confusion this study will refer to the living structure as 'the skin' and the harvested structure as 'the hide', direct quotes will keep the convention of the quoted author. This study uses for the most part the contributions of Dignard & Mason (2018), Maxwell (2007), Rifkin (2011) and Hildebrand (1982) to lay the basis of understanding as to how hide is structured and how different tanning methods affect these structures differently.

The living skin of an animal is the largest organ of an animal which functions as a barrier from environmental factors (Maxwell, 2007:20). It prevents rapid water loss, resists physical stress, and can repair itself when the animal is still alive (Maxwell, 2007:20). Figure 4 below shows the structure of the skin.

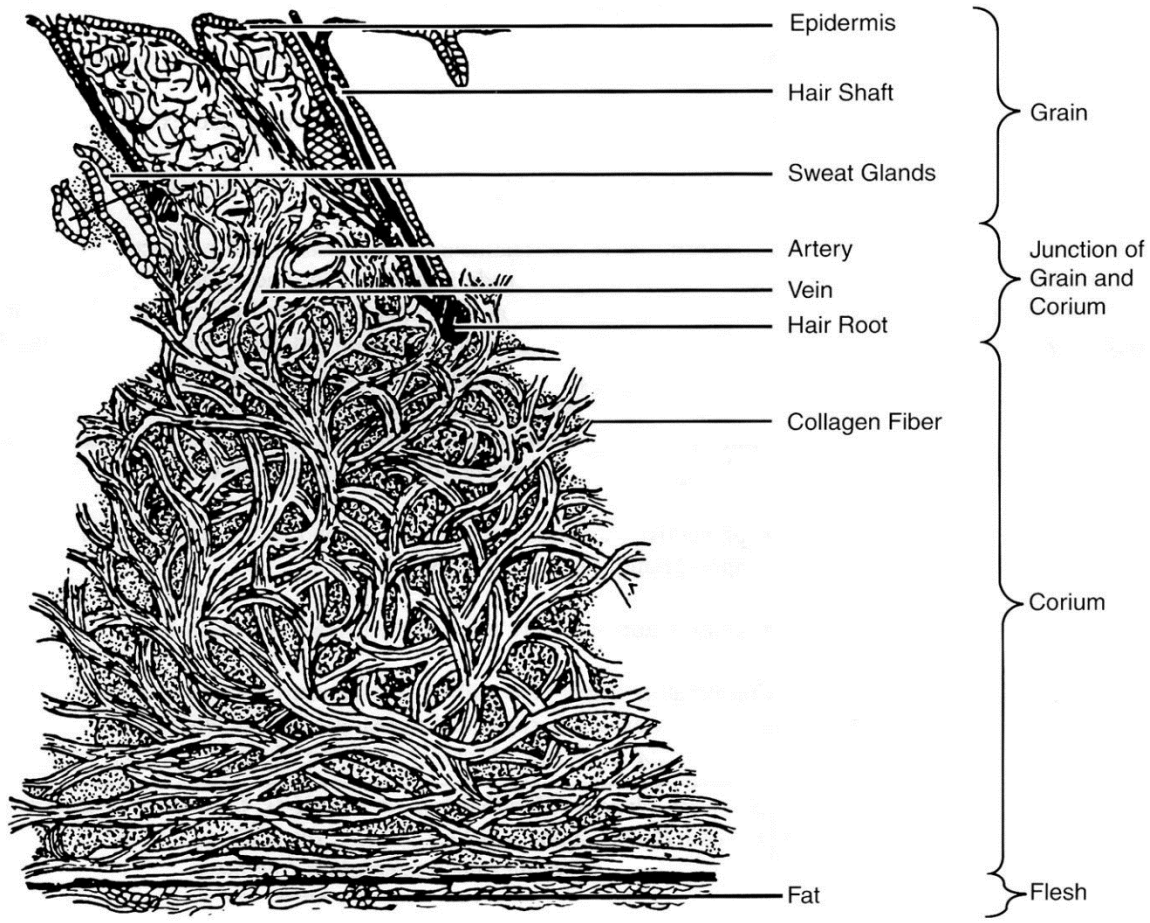


Figure 3: A skin structure indicating three parts of the skin (National Park Service, 1996:S2).

The hide, once removed from the animal, can be understood to be a sheet containing hair, sweat glands, fat and blood vessels, as well as its basic constituent of collagen fibres (National Park Service, 1996:S2). These tissues in the living animal skin are organized into the epidermis, dermis and hypodermis (Hildebrand, 1982:96). Upon harvesting the hide, the outermost layer is known as the grain and the innermost layer the flesh (see Figure 4). If the hide is to be hairless, the fur and hair are removed to expose the grain layer, and the fats, glands, blood vessels and connective tissues are removed from the innermost layer to expose the corium where the main network of collagen fibres lies (See Figure 4). The collagen layer in the corium consists of a random network of fibres arranged in long, large, wavy bundles, that can be seen through a microscope (Dignard & Mason, 2018). These collagen fibres are responsible for the hide's strength, elasticity and flexibility characteristics (Dignard & Mason, 2018). These characteristics are crucial in leather processing (Kite & Thompson, 2006:2).

However, before hide can be made into the artefacts mentioned earlier, it must undergo various steps performed with great care to avoid reducing its value (Maxwell, 2007:38). This is because untanned hides putrefy (decay) quickly and desiccate (dry out), making them inadequate for clothing, while tanned hides protect the wearer from cold temperatures, moist wind chills and allow mobility (Rifkin, 2011:132). The Canadian Conservation Institute (1992) states that the processes hide undergoes to be turned into leather affect the hide's chemical properties and ability to resist water. This tanning process also changes the hide's toughness, flexibility, colour and strength.

2.1.3. Tanning nomenclature.

Hides can be used in various states, they can be used as raw hides, semi-tanned hides, and leather (Dignard & Mason, 2018). Each of these three degrees of tannage has unique characteristics (National Park Service, 1996:S3). Rawhide is the hide that has been treated with the most basic treatment, that consists of either de-fleshing, soaking in water and then dried or epilation, de-fleshing and soaking it in water before drying to produce a tough, stiff and rigid hide (Dignard & Mason, 2018; Dirksen, 1997:8) One of the good characteristics of rawhide is that it is stable and shrinks once dry, which is favourable for producing certain types of objects like tools and furniture (Dignard & Mason, 2018). It is, however, highly susceptible to moisture because there are no tanning agents added to it so that it will decompose when it gets wet (Dignard & Mason, 2018).

In semi-tanned hides, collagen has minimal bond breakage because their preparation includes soaking in aqueous solutions, de-fleshing, epilation, scraping, twisting, and other mechanical processes to soften the hide (Dignard & Mason, 2018). The semi-tanned hide is tanned chiefly fats, smoke, oil and alum tanning processes that will be explained further in Section 2.2 (National Park Service, 1996:3). In some societies like Makololo of Linyathi in Namibia, the hides are sometimes worked using the brain of the flayed animal, Xhosa and Zulu use clotted sour milk (Badenhorst, 2009:40). Semi-tanned hides are somewhat resistant to water but if they become saturated with water, they become brittle, stained and stiff (Dignard & Mason, 2018).

The National Park Service Handbook (1996:S3) indicates that the term 'leather' is only used to refer to a fully tanned hide. This process is mainly achieved with chrome, vegetable tannages or a combination of both. However, it is important to note that most tanning techniques rely heavily on mechanical processes if not to soften the hide, but also to facilitate the introduction of the tanning agent to the corium (National Park Service, 1996:S3).

2.2. Hide processing.

Human beings have been processing hides since pre-historic times throughout the world (Tsegaye, 2019:1). Hide processing entails a series of processes. While some societies still use traditional methods, others have developed new ways to process hide into durable leather (Thanikaivelan, Rao, Nair & Ramasami, 2005:39). Processes and the order of these processes depend on the final product required, the artisanal tanner, and or a cultural group's tradition. This study focuses on artisanal tanning, so methods and variations of artisanal tanning will be presented. A complete list of operations involved in hide processing is shown in the diagram in figure 5 below.

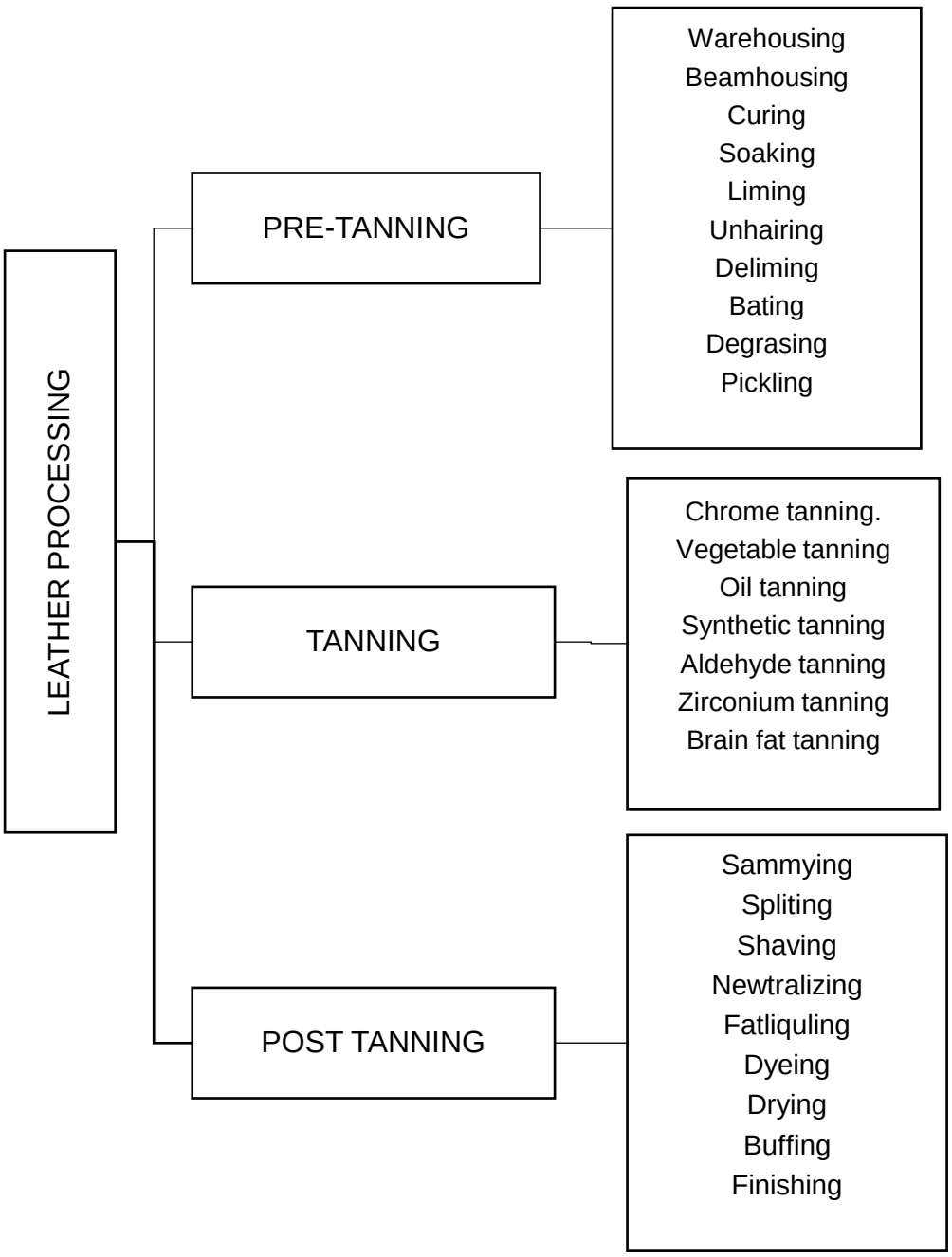


Figure 4: Hide processing processes. Adapted from (Thanikaivelan et al 2005:39) and (Maina et al 2019:23).

If a hide is not to be processed immediately, curing is the first step of preservation immediately after the flaying of the hide. Curing is achieved through salting the animal hide and sun drying it (Appiah-Brempong et al., 2020:5). The first step in the processing of a hide according to Thanikaivelan et al. (2005:41), is soaking it. This is meant to wash away the salts used in the curing process and returns the hide to its soft, supple texture and the appearance of a newly flayed hide. It is also meant to clean surface dirt, blood stains and dung (Maina, Ollengo &

Nthiga, 2019:113). Soaking also loosens the hair and the epidermis allowing it to be removed with relative ease during the scraping and epilation process (Dirksen, 1997:7).

After soaking in water, the next step is most often liming; Thanikaivelan et al. (2005:41) state that it is meant to remove the hair and flesh as well as to split up the collagen layer in the corium physically and chemically. This process is crucial because it leaves the corium ready to convert to leather (Thanikaivelan et al., 2005:41) Without exposing the corium, the tanning solution would not be able to infiltrate in and around the collagen fibres (Thanikaivelan et al., 2005:42). Deliming is the third step which is meant to reduce the pH and alkalinity of the hide or to neutralise the lime present on the hide (Thanikaivelan et al., 2005:42).

Deliming is followed by bating. Thanikaivelan et al (2005:42) define bating as "a complete removal of unwanted interfibrillar materials and short hairs through the use of enzymatic applications". If chrome tanning is to be used, then pickling would be done next; Thanikaivelan et al. (2005:43) define this as "a process in which the partially anionic matrix is temporarily converted into a cationic matrix to prepare the stock for the subsequent chrome tanning operation". When the pickling is done, then the tanning process can begin.

According to Dirksen (1997:8), Tanning is "the chemical process that stops the natural decay process of raw skin". During tanning, the hide is turned into a stable material, that is capable of resisting microbial attack, humidity and desiccation (Rifkin, 2011:132). A colour change may also occur during the tanning process according to Vichi, Eliazyan and Kazarian (2018:7150) changing the hide from a light brown-red colour to a dark brown, as oils and waxes are used to ensure the leather remains pliable, flexible and are often mixed with different pigments and colourants for decorations. The hides can either go through chrome, vegetable, oil, brain fat, aldehyde or zirconium tanning depending on the desired outcome of the tanning process (Kite & Thomson, 2006:80; Thanikaivelan et al., 2005:39). The last stage is the post tanning processes that can include shaving or splitting, neutralising, re-tanning, dyeing, fat liquoring, staking and finishing (Kite & Thomson, 2006:81).

2.3. Artisanal vs Industrial Processing.

For centuries, leather manufacturing has been for local markets. However, like any other localised activity, improved transportation means access to new markets (Beghetto, Zancanaro, Scrivanti, Matteoli & Pozza, 2013:13). This shift brought about many changes in leather manufacturing, and while developing nations still practice traditional leather production

methods, other developed societies have moved on to industrialised methods (Jabbar et al., 2002:7). Artisanal leather production most often consists of much physical work that lasts for long hours and uses a vegetable tanning technique (Appiah-Brempong et al., 2020:2). On the other hand, modern leather production involves chemicals, equipment, sophisticated machinery and modified practices and usually chrome tanning (Appiah-Brempong et al., 2020:1). Artisanal production is often practised in ad hoc workshops with open pits and uses simple tools, while industrial processing is carried out in well-structured factories (Appiah-Brempong et al., 2020:2). Table 3 has been adapted from Maina et al. (2019:213, 216), and Appiah-Brempong et al. (2020:4), it compares both artisanal and industrial processes.

Table 3: Artisanal vs Industrial hide processing summary.

STEPS/PROCESSES	ARTISANAL	INDUSTRIAL
CURE	Salted and sun-dried	Salted or frozen.
SOAKING	Soaked for 24 hours and washed	They are soaked in a water mixture of sodium sulphate, sodium carbonate, soaking proteas, detergents and biocides.
LIMING	Soaked in liming water mixture of calcium carbonate and wood ash	Immersed in the liming mixture of sodium hydrosulphate, calcium hydroxide and sodium sulphate, (liming and epilation are done simultaneously).
UNHAIRING	Unhaired with knives	
FLESHING		They are carried out with a fleshing machine.
SPLITING	Not done	Hides are split into layers longitudinally.
DELIMING	Immersed in a water solution of sliced pumpkin fruits, ground pawpaw.	Immersed in a solution of ammonium chloride.
BATING	Submerged in a water solution of sliced pumpkin fruits, ground pawpaw.	A solution of proteolytic enzymes is applied to the hides. (It can be an animal pancreatic or a bacteria source).
DEGREASING	Excessive fats are removed mechanically.	A combination of protease and lipase are used to break down the fats.
PICKLING	Not done	A solution of sodium chloride, sulphuric and formic acids are used for pickling.
TANNING	Vegetable tannins like pounded pods acacia Nilotic in water are used for tanning.	Mostly with chrome tanning using chromium sulphate. But other tanning methods can be applied.
SAMMYING	Not done	Excess water removed mechanically.
SPLITING	Not done	Leather is split to the desired thickness.
SHAVING	Not done	Leather is shaved to ensure its smoothness.
NEUTRALISING		Alkalising with sodium carbonate or sodium bicarbonate and sodium acetate.
RE-TANNING	Not done	It is done with chrome and aluminium zirconium salts.
FAT LIQUORING	Use of vegetable oil	Emulsified sulphated oils are applied.
DYING	Vegetable material soaks or ochre applied	Natural and synthetic dyes are applied.
WASHING	Not done	Unbound chemicals are removed from the leather with water.
DRYING	Sun-dried	Vacuum and toggle drying.
FINISHING	Stretching and trimming with pair of scissors.	Includes polishing, buffing, trimming, surface coating and embossment.

2.4. General aspects of Artisanal processing.

In most developing countries, artisanal leather production is a significant source of livelihood (Appiah-Brempong et al., 2020:2). However, the lack of innovative technologies and understanding of chemical processes involved in leather tanning has decreased the quality of leathers produced (Appiah-Brempong et al., 2020:2). For instance, some activities in figure 6 employed in industrial leather processing, which makes the leather more durable and increases its aesthetic, are not applied in artisanal production (Appiah-Brempong et al., 2020:1).

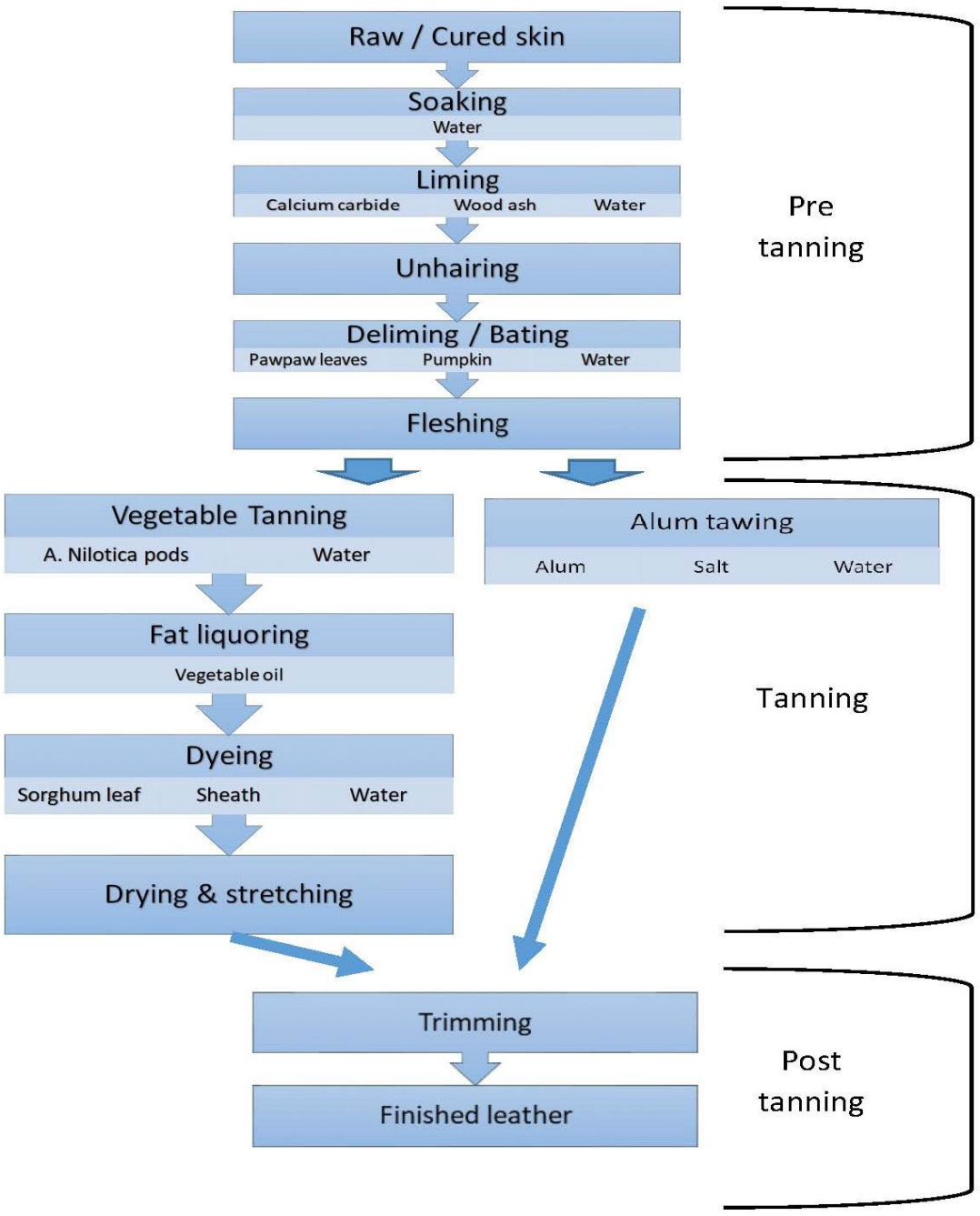


Figure 5: Artisanal hide processing processes adapted from (Appiah-Brempong et al 2020:3).

The unstructured and inadequate spaces where hides are processed is another factor that affects the quality of artisanal leather processing (Appiah-Brempong et al., 2020:1). An example of an open tannery space of an artisanal tannery is depicting in figure 7.

Figure 7: Artisanal tannery site in Ghana copied from (Appiah-Brempong et al 2020:2).

2.5. Hide processing in Africa.

Most African countries are highly engaged in the leather production industry, and although this is mainly a by-product of the meat industry, it is among the top income-generating sectors for rural area populations (Zekeya, China, Mbwana & Mtambo, 2019:471-427; Gebremichael, 2016:2). However, African hides fail to compete in the world market as they are regarded as poor quality (Jabbar et al., 2002:6). The failure results from hides in Africa being primarily produced through artisanal methods also referred to as traditional methods (Adem, 2019:2). Other factors include pastoralist or semi-pastoralist methods of animal husbandry, unstructured slaughterhouses that lead to mistakes; including improper flaying methods, inappropriate tools used, and post-slaughter damages to the hides (Jabbar et al., 2002:7). In addition, the African leather industry lacks supply chain linkages, access to adequate equipment, and there are environmental issues that affect the quality of production (Jabbar et al., 2002:7).

Table 4: Tools used for hide processing in Southern Africa.

TOOLS	USES
Knives	To skin the animal, carve wooden pegs to trim hides.
Small, sharpened sticks/pegs	To peg down and stabilise the hide during drying
Axes blade, hoes, animal teeth and sharpened stones	To scrape off the flesh and fat from hides.
Awls	To make standard holes for pegging or stretching.
Pounding and hammering stones	To pound tannins for tanning mixtures, for epilation and softening hides.
Two poles	To stretch hides during drying,
Wooden brush with iron teeth or spikes	To scrape the hide to soften it and to remove the hair.
Thick sticks	To bit hides to ensure that any hard areas are softened and to shake off any surface dust.
Dry grass	To cushion the hide during the beating.
Granite stone	Used to rub the hide to soften it further.
Wooden frame	To support the hide during rubbing.
Dried aloe leaves and polished bones	To scrape the hide to render it pliable.
Adzes	For scraping hides.
Soaking tub	For soaking hides.
Flat top sandstones	To re-sharpen the iron scrapers.
Brushes with stiff bristles	Used for cleaning tubs and tools.
An axe	For bark chopping.
Cooking pots	For extracting tannins from the plants and tree leaves.

2.6. General leather preparation in Southern Africa.

Several authors have published information regarding hide tanning and leather preparation in Southern Africa, including Mabille (1906), Kuckertz (2000), and Badenhorst (2009). In Southern Africa, leather processing often differs according to the resources available (Badenhorst, 2009:37).

2.6.1. Hide Procurement.

In Southern Africa, Schlupp and Mackinnon (1922:56) observed that there were two ways hides were collected: from meat traders or families and dead or newly slaughtered animals. Hide from dead animals were not considered as valuable as the newly slaughtered hides (Schlupp & MacKinnon, 1922:57).

2.6.2. Hide Preparation.

Badenhorst (2009:37) states that there are three stages to be followed before hide can be considered durable leather: preparation, tanning and finishing. The preparation stage with dry hides begins with them being dusted thoroughly and then soaked in warm water for two to three days to prepare them for de-fleshing and epilation, while for fresh hides epilation starts directly (Gebremichael, 2016:5).

De-fleshing, the process that removes any remaining flesh, debris and fats, is performed after the hide is stretched on the ground with wooden pegs with the flesh side facing upwards (Badenhorst, 2009:38). If done immediately after flaying, the hide can be salted and pegged down to dry for five to seven days. Then it is de-fleshed with sharpened stones, an axe blade, or aloe leaf. If the hide is already dry, then it will have to be soaked first (Badenhorst, 2009:41).

Epilation is optional in Southern African artisanal hide preparation and methods vary between Southern African societies (Badenhorst, 2009:41). The Bantu speaking communities in South Africa bury the hide in a pit of about 15 cm deep for at least a week if temperatures are favourable, if not it can take up to four weeks for the hair to be detached (Badenhorst, 2009:41). The second option for epilation is to submerge hides in a tub of water and *ice plant*[7] leaves for a week in summer and three weeks in winter. Ice plant leaves are said to have high salt content (Badenhorst, 2009:37).

In the case of Nguni and Sotho speaking language ethnic groups, Badenhorst (2009:37) observed that hide preparation takes a long time and needs much strength to carry out (Lee, 1979 cited by Badenhorst, 2009:37). For instance, the !Kung people of Botswana take fifteen hours to prepare hides (Badenhorst, 2009:37).

In the early 1920s, the Karoo San hunter-gatherers processed their animal hides mechanically by scraping and rubbing. The hides would then be folded to be danced upon (Rifkin, 2011:134). The hide would then be buried in the sand for several hours, once the hide had dried, a mixture of red clay and fat would be applied and rubbed into the hide (Rifkin, 2011:134).

[7] Ice plant is a type of evergreen succulent groundcover with purple flowers referred to as Delosperma cooperi in Latin, and trailing Iceplant, hardy iceplant or pink carpet in English.

2.6.3 Hide Tanning.

In Southern Africa, hide tanning can be done by three different methods. The first process is done by saturating hides with oil. Animal brains are most commonly used as a source of oil because of their high-fat content, this fat source use is commonly known as brain tanning (Badenhorst, 2009:37). Submerging hides in a mixture of salt and alum is another method (Badenhorst, 2009:37). Vegetable tanning is also practised by using tannins derived from plant material including acacia inner bark or pods, chestnut wood, oak bark, or the juice of grapevines (Badenhorst, 2009:37).

The *Nama*[8], one of the Khoisan groups in Namibia use the tannin technique for tanning their hides (Badenhorst, 2009:37). The traditional tanning method is as follows: the fresh hide is dried by pegging it on the ground, ensuring that the hairy side is facing upwards until it is dry enough to be softened (Badenhorst, 2009:38). According to Badenhorst (2009:38), the hide is then turned over and the juices of succulent plants are poured on the flesh side of the hide and left for some time. When the hide is considered soft enough, the juices are poured off. The hide is then rolled to prevent it from drying out too quickly and left until it is considered ready to be worked on (Badenhorst, 2009:38). It is then spread out with the flesh side upwards, smeared with sandstone powder, and rubbed with a stone (Badenhorst, 2009:38). After enough rubbing, the hide is left out to dry to some extent before being twisted and hand kneaded (Badenhorst, 2009:38). The Nama then pour the tanning agent; the pounded inner bark of acacia, onto the flesh side of the hide and rolled it up so it would dry slowly (Badenhorst, 2009:38). Finally, the hide is pulled and stretched from different angles until smooth, and lastly, it is dried in the sun (Badenhorst, 2009:39).

The Khoekhoe traditionally use the animal fat tanning method. They rub the fat into the flesh side of the hide or mix it with cow dung and apply the same method of rubbing as described above (Badenhorst, 2009:38). The hide is then repeatedly beaten hard with sticks (Schapera, 1937:10).

The last step in hide preparation and tanning is braying, this is done immediately after tanning. This involves stretching, rolling, pulling, twisting and rubbing hides as well as trampling with feet for large hides, to ensure that they are pliable, light and soft (Badenhorst, 2009:42). At this stage, animal fat is also applied to soften the hides.

[8] Nama is one of the ethno-linguistic groups of the Khoikhoi and oldest indigenous groups in Namibia.

2.7. Gender roles in hide processing and preparation.

Baillargeon (2011), Badenhorst (2009) and Schapera (1937) have discussed general gender roles in hide preparation and processing in different societies. Baillargeon (2011:12) has observed in some cultures' clear demarcations of roles men and women play while others overlap in hide preparation and processing. For instance, in North America, many Aboriginal communities regard hide tanning as a women's job (Baillargeon, 2011:12). Nevertheless, in most Southern African ethnic societies, hide preparation and processing is regarded as men's job, although women and children also have roles to play during the process (Badenhorst, 2009:37). Badenhorst (2009:37) observed that in the case of Nguni and Sotho speaking language ethnic groups, hide preparation takes a long time and needs much strength to carry out: hide needs to be stretched, dried, scraped, trimmed, tanned and softened (Lee, 1979:276 cited by Badenhorst (2009:37). In Nama society, by contrast, women prepare the hides, while in other cultures, women would be excluded because of the places where hides are processed being prohibited (Scaphera cited by Badenhorst, 2009:37). For the majority of the Khoisan as well as the! Kung of Botswana men process the hides (Scaphera cited by Badenhorst (2009:37). Riep (2011:260) notes the hide is processed at the khotla[9] with only the men working the skin together as a communal activity. Among the Basotho, hides are processed at the village courts, where women would traditionally not be allowed, so hide processing is traditionally men's work (Badenhorst, 2009:40).

2.8. Basotho methods of hide preparation.

The Basotho use three different techniques for hide preparation described in the literature (Kuckertz, 2000:101,103 and Badenhorst, 2009:39). As a result, there is a high possibility of finding differences in the manufacture of mose oa khomo. These differences might be due to available resources and slightly different beliefs. However, all these assumptions will be discussed in chapter four.

Badenhorst (Martin cited by Badenhorst, 2009:39,40) indicates that "In Lesotho, skins were dried, rubbed over with powdered sandstones until thoroughly clean and pliable, then rubbed by hand, always keeping the hands well-greased. This skin rubbing was continued until the

[9] Khotla is a Sesotho traditional court, but other activities which can only be done by men are also done at khotla

whole skin was thoroughly pliable and soft". This process was mainly reserved for hides (Badenhorst, 2009:40). Badenhorst (2009:40) also vividly describes the Basotho soften their ox-hide by "burying them in the ground and anointing them with bile and fat, after which they are fastened with pegs to the ground and scraped with sharp hatchets. Several men in a squatting position take hold of the skin, rub it between their hands, hoist it and toss it about while they grunt, cluck, cry, howl and imitate all the animals in creation until it becomes soft as a woollen blanket". These methods are discussed in further detail in chapter four and are directly associated with particular Basotho communities. Once the hide has been fully prepared, it is ready to be used as the owner pleases. It can be cut into a dress or used as a blanket, depending on the owners' needs at that particular time.

2.9. Decorations attached to hide products and deterioration.

Since this research's case study is made of cowhide, the decorations discussed below are normally attached to cowhide items. The degradation processes these decorations might undergo, and their effects on hide will also be discussed.

2.9.1. Use of red ochre on hides.

According to Rifkin (2011:132), in most of Southern Africa, red ochre played a substantial part in hide tanning: it formed part of tanning technologies. The ochre powder has been used in the region since the middle stone age, Hodgkiss (2013:79) noting it's used as "an aggregate in hafting adhesives" and paint. Ochre is considered to assist in hide-preservation due to its antibacterial properties that may prevent the collagenase enzyme from breaking the peptide bonds of the hide's collagen network (Rifkin, 2011:133). Ochre was traditionally used to protect hides from insects, sun damage, and as medicine (Rifkin, 2011:130). Furthermore, ochre was used to cosmetically smooth out imperfections in the hide and damages that arose from the processing as well as smoothing the surface and hide edges in general (Hodgkiss, 2013:80).

Hodgkiss (2013) and Rifkin (2011) have thoroughly explained why ochre was applied on some leather objects, and they have also discussed some areas where it is found in Southern Africa. They have, however, not mentioned specific reasons for its use in Basotho culture. Interviews conducted during this research suggest that the ochre used in Lesotho has always been imported

from South Africa, brought by Indian hawkers. Furthermore, none of the authors indicated if red ochre has any impact on the degradation of hides.

2.9.2. Beadwork in Southern Africa.

The application of red ochre was not the only aesthetic treatment applied to hide products. Often, beads and other small decorative elements were added. It is then vital to discuss decorative beadwork as it relates to leather garments. The case study is adorned with tiny beads of different colours, and as such, beads form part of this study. This study must determine the value and meaning of the beads on the mose a khomo. Decorse (1989), Ogundiran (2002), Stewart et al. (2020), Nettleton (2014) and Asenso & Boasu (2019) have discussed histories of beads, their usage, meaning and role on hide or leather products in Africa- particularly in Southern Africa. They have mostly referenced the Nguni, but Basotho beads may also represent more than mere decoration.

According to Decorse (1989:41), Prehistoric, Stone Age, and Iron Age societies used different materials including bones, ostrich shells, plants seeds, clay and metal to produce beads. Ogundiran (2002:432) also argues that the use of beads dates back to about 6000 years ago. In some areas, they were used for trading. In Western Sudan, for instance, there are traces of trade in stone beads (Decorse, 1989:41). Beads were also used as status symbols, they could either indicate royalty or wealth (Ogundiran, 2002:432). Sculptures indicating high-ranking status bearing beaded attire discovered in Yorubaland that date back before the eleventh century indicate that African societies have valued beads for centuries (Ogundiran, 2002:432).

Stewart et al (2020:6454) observed that for the hunter-gatherer societies who lived in highland Lesotho, the exchange of material culture was common between families or bands to secure alliances. The hxaro[10] gifts were common, but the most valued hxaro were adorned with ostrich eggshell beads (Stewart et al., 2020:6454). Ogundiran (2002:432) highlights an example of a political system formed in Ile-Ife in Yorubaland around 800-100 A.D, where valuable stone and glass beads were commonly used in ceremonial kingship institutions.

Beads are classified according to their material, size, colour and shape, and in some societies, royalty had dedicated colours, sizes, shapes and materials for their exclusive use (Ogundiran,

[10] Hxaro: gift giving / sharing of resources practiced among Southern African cultures in relationships of mutual reciprocity as a means of minimizing family subsistence risks (Wiessner, 1977)

2002:432). Among the Mpondo and the Xhosa speaking people of South Africa, beads were also used as a currency (Nettleton, 2014:343).

Asenso & Boasu (2019:36) claim that beads can also be used for rites of passage and matrimonial religious and spiritual purposes. They further indicate that Kroboland beads are believed to have healing potential for spiritual and physical ailments. There is also a belief that the presence of beads or *bodom*[11] in the courts of Kroboland deter people from lying, while other beads are made to perform rituals and incantations (Asenso & Boasu, 2019:37). In some African societies, such as The *Krobo*[12], beads are family property handed from generation to generation (Asenso & Boasu, 2019:38).

Nettleton (2014:342) and Chahine and Kinuthia (2013:16-17) state that beadwork has always been the domain of black women in Southern Africa and that they started using small glass beads in the late 1800s. These were obtained through trade on the East Coast with European missionaries and traders in exchange for ivory and other exotic items (Nettleton, 2014:343). Nettleton (2014:342) argues that black South African women used beads as dress items for themselves and their family members. This artistic activity expanded so much so that particular styles and patterns became associated with particular ethnic groups. However, it suggests that beads are also a form of communication used by women to voice issues they cannot express openly (Chahine & Kinuthia, 2013:17). In Southeast Africa, the Nguni beadwork is for adornment and a form of expression and communication. It was predominantly used to convey love, intimacy or sexual massages since it was forbidden to express such matters openly in the Southeast African Nguni region (Chahine & Kinuthia, 2013:17).

2.9.2.1. Beadwork degradation and conservation.

Due to different factors, glass beads degrade with time and become unstable. Bead degradation can also be accelerated by the degradation of the material the beads are attached to (Stone, 2010). Many terms are used to describe deteriorating glass; these include crizzling, weeping or sweating, or it can be referred to as sick or deteriorating glass (Ohern & McHugh, 2013:2). A crizzling glass is identified by visible cracks on its surface, while weeping is noted by white crystalline growth or oily droplets on the glass bead surface (Ohern & McHugh, 2013:2). Apart from these common glass maladies, beads attached to hides can also have fatty oils and salts

[11] Bodom is a Krobo name for beads.
[12] The Krobo people from Ghana.

on them (Ohern & McHugh, 2013:2). Glass bead deterioration can also be due to their historical use, threading, substrate, storage and exhibition methods or environmental issues that include relative humidity and temperature (Ohern & McHugh, 2013:2).

The conservation of glass beads is complicated, especially with beads attached to hide because any storage temperatures set should also cater for the hide and what is adequate for glass beads might be inadequate for the hide (Ohern & McHugh, 2013:5). When exhibited, beaded items should not hang without support as this might strain the threading, and so they should always be supported (Ohern & McHugh, 2013:5).

Glass deterioration cannot be treated once the process has begun, but the progression can be slowed down by adequate environmental temperatures and monitoring (Ohern & McHugh, 2013:2). Surface salts can be removed if they are not materials like ochre or kaolin (traditionally applied) (Ohern & McHugh, 2013:5). Dry cleaning methods to remove surface soiling include vacuum cleaning while brushing or the use of non-latex polyurethane sponges (Ohern & McHugh, 2013:5). Other treatments include swabbing with ethanol or a 1:1 solution of distilled water and ethanol, but any treatment that includes water should only be done if the substrate is not affected by water (Ohern & McHugh, 2013:5). Beads attached to hide should only be swabbed with ethanol to avoid the threads and the hide coming in contact with water (Ohern & McHugh, 2013:5).

The object with beads should also be stored in dark storage as glass beads can be sensitive to light. Heavily beaded items should be stored on a flat surface to prevent distortion and breakage so that beads may not get lost (Stone, 2010). They should be supported and lightly filled with unbuffered acid-free tissue paper, rolled acid-free paper or clean cotton fabric, and if there is a need for containers, they should also be acid-free (Stone, 2010).

2.9.3. Metal decoration on leather objects/degradation and conservation.

Most historical leather objects are decorated with metal components like buttons and other fasteners. Fatty materials used to lubricate leather can react with these metals and can corrode them (Godfrey, 2017). According to Turner-Walker (2012:3), “corrosion is a general term that can describe alteration and degradation of the composition of the original surface either by external or internal chemical processes”. Corrosion is stimulated by moisture and the crystallisation of salts, mostly due to fluctuating relative humidity (Museums Galleries Scotland, 2021).

This research case study is decorated with copper rings that pierce the edges of the dress (See Fig 17). A greenish or a blue-green layer denotes copper corrosion. Copper can also develop a black patina or tarnish (Museums Galleries Scotland, 2021). Once metal attachments to leather corrode, it is not easy to treat or clean them because some of the deposits might be part of the object's history (Museums Galleries Scotland, 2021). The best care is to place them in a controlled environment and monitor them closely (Museums Galleries Scotland, 2021). Metal attachments can also be soiled or have stains that need to be cleaned., There are three cleaning methods available: mechanical cleaning, wet cleaning and chemical cleaning, depending on the location of the metal attachment (Turner-Walker, 2012:3).

Surface dirt from metal attachments can be brushed off with a soft goat hair hake brush towards a high-efficiency particulate air (HEPA) filtered vacuum, while fatty materials, if not historically attached to the object, can be wiped off with dry cotton swabs mechanically or dipped in mineral spirits (white spirit) provided a barrier is created to protect the hide(National Park Service, 1999:2). The swab must be rolled and changed often to avoid transferring unwanted materials (National Park Service, 1999:2). Bamboo sticks can be used to scratch or pick soiled hollow parts (Turner-Walker, 2012:3). Denatured alcohol can be used to remove surface tarnish, and then the object should be allowed to dry (Turner-Walker, 2012:3). For more challenging corrosion, a scalpel can be used to remove it with care using a magnifier or stereo-microscope(National Park Service, 1999:3; Turner-Walker, 2012:3).

2.10. Hide and leather conservation

2.10.1. Conservation defined.

Heritage conservation is vital for any society as it allows future generations to glimpse their ancestors' ways and helps them understand their identity. Conservation has been defined in different ways, depending on each author's field of study. This study's work is based on the definitions of Buys and Oakley (1993), McGinn (2017) and the American Institute of Conservation (2003). Buys and Oakley (1993:5) state that conservation has two aspects being "…the control of the environment to minimise the decay of artefacts and materials and treatment to arrest decay and stabilise them where possible against further deterioration". The American Institute for Conservation of Historic and Artistic Works (AIC) (2003:4) defines conservation as "…an essential means of ensuring that cultural heritage will be better preserved

for and enjoyed by the future generations". Also, McGinn (2017:37) defines conservation as "an umbrella term which regroups restoration, interventive or remedial conservation and preventive conservation or preservation".

Cultural artefacts change due to their physical composition, deterioration, and historic damage. To mitigate and prevent all these changes, conservators apply conservation strategies to prolong the life span of these artefacts (AIC, 2003:4). These conservation measures include identification, documentation, and formulating conservation policies to safeguard them. According to McGinn (2017:37), preventive conservation "involves a series of on-going processes of risk management and monitoring ranging from the integrity of the building's structure as the first line of defence, all the way to the object to prevent damage from occurring in the first place". This section's purpose is to discuss issues around hide and leather conservation, agents of deterioration that affect hide and leather objects, and outline conservation processes most suitable for hide and leather conservation.

2.10.2. Hide and Leather Conservation Methods.

The writings of Dirksen (1997), van Soest, Stambolov and Hallebeek (1984), Sendrea, Miu, Crudu and Badea (2017), and CCI (1992) have defined conservation, preservation, as well as unpacked activities entailed in the implementation of conservation and preservation. They also discussed hide and leather conservation methods. Dirksen (1997:11) argues that it is difficult to conserve hide or leather objects as one must consider the nature of hide and the processes involved in its tanning. Also, the environmental conditions that might have influenced the object in its lifetime should be considered (van Soest et al., 1984:21). According to Sendrea et al (2017:9), "conservation represents the full range of measures aimed at keeping the object in good condition and maximising its life". Usually, the conservation of hide and leather products is accomplished by either interventive or preventive conservation methods (Dirksen, 1997:12). Sendrea et al. (2017:10) state that interventive or remedial conservation (treatment) entails diverse operations carefully executed to ensure that objects retain their original shape and appearance. Preventive conservation can be further separated into passive conservation, stable and appropriate storage environments, and proactive conservation, where the situation is actively monitored and adopted to changing needs (Sendrea et al., 2017:10).

2.10.3. Agents of Degradation for Hide and Leather.

Hide or leather deterioration occurs due to different agents of deterioration. A common form of degradation of tanned leather is red rot. It is a poorly understood form of degradation, but it is commonly held that strong acids may be a cause, specifically sulfuric acid (Van Soest et al., 1984:22) The source of these acids is inadequately understood, they may have been added during the tanning process or absorbed from a polluted environment as sulphur dioxide is the main component of air pollution (Kite & Thompson, 2006:62) The effect of red rot on leather objects is irreversible- conservation measures can only be employed is to slow down the decaying process (van Soest et al., 1984:22; Kite & Thompson, 2006:232; Dirksen, 1997:14). Storage in a controlled environment to minimise contact with air pollutants is a recommended course of action (van Soest et al., 1984:22; Dirksen, 1997:14). Leather objects displaying red rot should not be exposed to water, as the damaged area will bear a dark irreversible stain (van Soest et al., 1984:23). Objects damaged by red rot should be stored or displayed in such a way as to avoid or minimize handling (Dirksen, 1997:15).

Dirksen (1997:14) indicates that leather objects exposed to excessive dryness and extreme light tend to crack, break, fade and become brittle. Objects exposed to high levels of humidity grow mould, and as a result, they become stained, have their surfaces distorted and have a distinct musty odour (Mason, 2016). If a hide or leather object has come into contact with insects, it will exhibit holes and or loosened parts, and if it has accumulated dust, insect droppings will normally stick to it. Both dust and insect droppings are difficult to remove (Mason, 2016). Additionally, dust particles can act as abrasives on the leather or hide surfaces, so care should be taken during regular maintenance cleaning (Dirksen, 1997:15).

When objects are folded or improperly stored, they become mechanically or structurally damaged, leading to cracking and splitting (Dirksen, 1997:15). Furthermore, when leather objects come into contact with metal objects, they may promote corrosion in the metal object (Dirksen, 1997:15). Leather objects that have been over or under oiled can exhibit rupture of the grain surface, leading to cracking that penetrates the underlying corium (van Soest et al., 1984:23). In addition, van Soest et al (ibid.) has observed that if commercial dressings, oils and lubricants are applied to leather, it swells, and becomes sticky. In this instance, oxidation takes place quickly, and microbiological growth can be promoted.

Dressing and lubrication of leather objects are highly discouraged due to the potential negative effects they can have. These include damage to surface finishes, increase in acidity, discolouration and formation of surface spew (Godfrey & Gilroy, 2017).

Leather objects should not be oiled, and biological infestations like mould can be avoided by adequately circulating air in storage. (Godfrey & Gilroy, 2017). Mould on leather objects can appear as black spots or white, green, and grey powdery residues, depending on the colour of the leather (Museums & Galleries of New South Wales, [sa]).

Deteriorated objects need to be tested and analysed before any treatment can be done. As a result, there are analytical techniques that have been developed and instituted to analyse leather objects in museums and other heritage institutions, these are discussed below.

2.10.4. Techniques used to analyse leather objects.

Deteriorated leather objects often need physical intervention. Different techniques are used to take samples to determine the extent of damage and decide on suitable approaches. This section is based on Vichi et al (2018), Dirksen (1997) and Sendrea et al (2017) and deals with the analytical techniques they have used to analyse different leather objects.

Sendrea et al (2017) observed that it is vital for conservators first to assess the object before they embark on any conservation treatment. According to Vichi et al (2018:1750), the first step before any conservator decides the best approach to apply is to identify the composition, alteration and conservation state of leather objects. Conservators should also investigate the effects of environment and time on the leather object by observing external signs of decay or taking samples to determine pH, the moisture, fat and sulphate content in the object (van Soest et al., 1984:21). These can be determined through the use of analytical techniques that have been embraced by conservation scientists. Infrared (IR) spectrometry techniques such as Fourier transformation infrared spectroscopy (FTIR) or an associated method, near-infrared spectroscopy (NIR) may be used to identify tannins in leather, characterisation of the leather composition, and degradation of the animal hide (Vichi et al., 2018:1750). Infra-red spectroscopy techniques can also be coupled with other analytical techniques to achieve quick and high-quality results. Fourier transform infrared spectroscopy (FTIR), for instance, is generally coupled with a focal plane array (FPA) detector to allow thousands of FTIR spectra to be collected simultaneously (Vichi et al., 2018:1750). Also, an Attenuated Total Reflection (ATR) module can be used for the measurement of FTIR spectral and a fibre optic probe for

NIR spectra. The results may be analysed statistically with Principal Component Analysis (PCA) or Canonical Variate Analysis (CVA) (Canter, Riba, Canals, & Izquierdo, 2009:12).

Budrugeac, Cucos and Miu (2011:440) also research thermal analysis methods to help assess leather objects. Micro Hot Table (MHT), thermo-gravimetry/derivative thermo-gravimetry (TE/DTG), dynamic scanning calorimetry (DSC), and differential thermal analysis (DTA) are presented as suitable for the assessment of qualitative distinction between the recently manufactured leathers and heritage items.

These techniques are classified as thermo-microscopy, which Budrugeac et al. (2011:440) define as "a technique in which the sample is observed through a microscope while it is subjected to the temperature regime". Differential Thermal Analysis (DTA) coupled with DSC are powerful analytic tools for historic leather (Budrugeac et al., 2011:440). They measure the effect of leather processing/tanning processes, by comparing the temperature differences between a processed sample and a reference sample (Budrugeac et al., 2011:441).

The DTA and DSC techniques specifically measure crystallization, decomposition, thermo-oxidation and phase transitions, the changes they record indicate the degradation of the heritage leather samples as they are compared to reference samples, indicating the extent of decay (Budrugeac et al., 2011:440).

2.10.5. Preventative conservation techniques for hide or leather objects.

According to van Soest et al. (1984:23) and Godfry and Gilroy (2017), leather objects should be stored in a regulated environment where objects are not directly in contact with sunlight or daylight. The storage room should have between 45 to 65% relative humidity and 25 degrees Celsius. Display cabinets should provide a regulated environment and protect objects from dust and encroaching pests (Godfrey & Gilroy, 2017).

2.10.6. Surface Cleaning Hide or Leather.

If objects need cleaning, it is crucial to determine the extent of tanning or type of leather, type surface, the nature of contaminants and what exactly needs to be cleaned on the object (Godfrey & Gilroy, 2017). It is also important to determine if the dirt on the object is not part of history that was accumulated when the object was still in use (Godfrey & Gilroy, 2017). Common surface deposits found on leather objects are dirt, salts, mould, fatty and gummy spew (Godfrey

& Gilroy, 2017). Historic accretions can be distinguished from mould or spew with the assistance of a stereo-microscope (Godfrey & Gilroy, 2017).

Mechanical cleaning can be applied to remove all of these types of dirt and soiling; it is important to remember that it is best to avoid water coming into direct contact with leather or hide objects (Godfrey & Gilroy, 2017). An object in good condition but with surface dirt can be dry cleaned with a soft brush or a vacuum cleaner with a soft-haired brush attachment. A stiff hog's hairbrush can be used to clean the flesh side of the leather (van Soest et al., 1984:21). Granular erasers without chlorine and sulphur can also be used to rub off surface dirt.

For leather objects coated with wax, resin or any water-resistant coating, a sponge sparingly moistened with water can be used to remove residues. Alcohol, or a 50/50 alcohol water solution, can be used, although it is highly advisable to test the solution first before carrying out the treatment to avoid surface treatment removal (Godfrey & Gilroy, 2017). Areas with a film of fatty or gummy spew can be cleaned with petroleum-based solvents like hexane and white spirit in a poultice or with a soft sponge (Godfrey & Gilroy, 2017). However, before carrying out this treatment, the solvent has to be tested on an inconspicuous area to ensure that it does not affect surface finishes (Godfrey & Gilroy, 2017). Stubborn inorganic and organic dirt can be removed with a solution of 20ml carboxymethyl cellulose, 2g distilled water and 2l X-4 hexane. The solution has to be shaken well and rubbed on the dirty surface with a clean cloth or cotton buds for small areas (Godfrey & Gilroy, 2017).

2.10.7. Reshaping Hide or Leather.

Leather and hide objects that need to be reshaped and conditioned can be humidified in a polyethylene tent, with a bowl full of cotton wool swabs containing 50/50 water and ethanol or methylated spirits (Godfrey & Gilroy, 2017). This process can be lengthy but is dependent on the object's thickness, and it should be monitored so that the object is eased and reshaped gradually with polyethylene foam (Godfrey & Gilroy, 2017).

2.10.8. Treatment of Moulds and Insect attack on Hide or Leather.

If mould is discovered on hide or leather objects, the affected objects must be immediately isolated from the collection and sealed in plastic bags and containers (Dignard & Mason, 2018). If necessary, the affected objects should first be dried before cleaning. Once dry, they can be

vacuum cleaned with a low suction vacuum cleaner in a well-ventilated space or fume hood and a dust mask should be worn as mould is toxic (Museums & Galleries of New South Wales, [sa]). A soft brush can be used for stubborn mould to direct the mould to the nozzle, or a high-efficiency particulate air (HEPA) filter fitted vacuum cleaner can be used (Dignard & Mason, 2018).

Leather objects also attract insects like beetles and clothes moths; the droppings of these insects can cause discolouration, and they can bore holes in the objects(Museum & galleries of New South Wales [sp]). To control insect infestations, immediate bagging of objects in plastic is recommended. This should be followed by a 20–30-day period in a freezer at -20°C, to kill the insects (Strang, 1997). Once this period has finished the objects may be cleaned by careful brushing and vacuuming. For the treatment of mould and insects for the collection areas, it is best to contact environmental specialists to explore suitable options (Museums & Galleries of New South Wales [sa]).

CHAPTER THREE

Research design and methodology

3.1. Introduction.

Kivunja and Kuyini (2017:26) define a paradigm as "the conceptual lens through which the researcher examines the methodological aspects of their research project to determine the research methods that will be used and how the data will be analysed". A paradigm has four elements: ontology, epistemology, methodology, and axiology (Kivunja & Kuyini, 2017:26). A researcher needs to understand that each paradigm comprises values, beliefs, norms, and assumptions. In the culture of Sesotho, it is believed that "motsebi oa tsela ke motsamai oa eona" means 'experience is the best teacher'. That is why this study is framed and organised using an interpretive or constructivist paradigm because it allowed the generation of qualitative data (Rehman & Alharthi, 2016:56).

A constructivist paradigm aims to understand social phenomena in their context and allows research methods like open-ended interviews, observation, documents, and field notes (Rehman & Alharthi, 2016:56). Because of the belief that multiple realities are constructed by people who experience them, qualitative research methods were used to collect and analyse the data (Krauss, 2005:759).

3.2. Methodology.

Bist (2014:34) defines research as "an art of scientific and systematic investigation to get information about a specific topic". Qualitative, quantitative, and mixed approaches are commonly used in research (Williams, 2007:65). Unstructured interviews were used to gather traditional manufacturing knowledge to better understand this study's hide preparation, leather tanning, use, function, and decoration. The elders within the Basotho cultural community were primarily interviewed to document the traditional knowledge related to this study. De Marrias & Lapan (2004:53) define an interview as "a process in which a researcher and participant engage in a conversation focused on questions related to a research study". As a result, a quantitative approach was used to develop a rapport with this study's participants. According to Williams (2007:65-67), a qualitative research approach is used for questions that require

textual data, and one of its identifiers is social phenomena being investigated from participants' point of view. Although relevant literature was used for this study, this was supplemented by testimonies from artisans living in targeted villages. This shaped this study's outcomes tremendously, although recently crafted leather artefacts or mese ea khomo could not be found to refer to because there is a total decline in the market for mese ea khomo.

3.3. Research approach/ Research design.

According to Creswell (cited in Williams, 2007:68), case study research demands a researcher to "explore in depth a program, an event, an activity, a process or one or more individuals". Although this case study is an object, the focus is to understand better the processes entailed in manufacturing it and similar cultural objects. As a result, interviews were conducted based on deMarrais & Lapan (2004:53) argument that each of the participants is unique and should be approached with that knowledge in mind. Igbal (2007:17) and Williams (2007:65) state that a case study must include historical data supported with literature to justify the selected method. In response, literary research of archival materials has been added and other secondary sources with specific information of the case study material to support the information gained from the qualitative interviews.

3.4. Sampling strategy/ selection of participants.

Sharma (2017:749) defines sampling as "a technique (procedure/device) employed by a researcher to systematically select a relatively smaller number of representative items or individuals (data sources) from a pre-determined population to serve as subjects (data source) for observation or experimentation as per objectives of her or his study". Since this research is based on a case study, a non-random sampling technique usually associated with case study research was used (Taherdoost, 2016:22).

A quota sampling was suitable for this research because there were predetermined characteristics of participants for this study. The sample selection was from two groups of Basotho society. The first group was leather crafters who use Sesotho traditional hide preparation methods to produce their leather products at Mokhotlong and Leribe districts (Batlokoa and Bakhalahali). The second group was people involved in Sesotho Cultural Association from the districts, as mentioned earlier. The participants were not selected due to

their academic qualifications but rather their experience in the hide and leather preparation and tanning business and their knowledge of the Setlokoa tradition.

Preliminary research was done in two areas. These are the Joalaboholo at Leribe district and the Malingoaneng at Mokhotlong district in Lesotho. Five villages from each area were selected. These villages are Halefaso, Makorong, Hatoloane, Mafikeng and Ralits'epe. Other villages would only be sampled if crafters living in them could be valuable to this study. In the Leribe district, samples were also selected from five villages: Popopo, Hakhojane, kholokoe, Hamatsoete and Hachaka. All these villages are under the area chief of Joalaboholo. The intention was to have at least ten participants from each area (two participants from each village), but some preferred group interviews. Some of the listed villages were selected because they are known to be involved in Sesotho cultural practices annually, while others have artisans making a living out of hide products. When selecting villages at Malingoaneng, villages close to the author's home village were chosen. The choice allowed the author access to some initiation institution custodians that would not have been accessible if the author were a stranger.

3.5. Data collection.

When describing qualitative research, Polkinghorne (2005:137) indicates that "it aims to describe and clarify human experiences as it appears in people's lives. For this reason, qualitative data is gathered primarily in the form of spoken or written language rather than in the form of numbers".

This study data was collected through open ended interviews with participants purposely selected due to their knowledge of Sesotho material culture, particularly traditional leather tanning and Basotho cultural way of dress. An interview guide was used that had been prepared before carrying out the interviews. Potter (cited by Polkinghorne, 2005:142) defines interviewing as "a technique of gathering data from humans by asking them questions and getting them to react verbally". These interviews were supported with relevant documentary evidence to the study. These were written material, oral, visual (photographs) or cultural artefacts (Polkinghorne, 2005:142).

The observation was also used to supplement the interviews. According to Polkinghorne (2005:142), observation is "the technique of gathering data through direct observation of the object and is used to supplement and clarify data derived from participant intensive behaviours,

clothing, facial expression, gestures and body tone". While observing, findings were noted and written down for reference during data analysis.

3.6. Data preparation.

Bhatia (2018:2) states that data preparation "aims to convert raw data into something meaningful and readable". After conducting the interviews, the data was transcribed and all the collected information from different sources was assembled into a single text for analysis. The objectives of the study were revisited to identify questions answered by the collected data (Bhatia, 2018:5). The final step was to structure and label the assembled data through coding. According to Bhatia (2018:5), coding is a process where "a researcher identifies broad ideas, concepts, behaviours or phrases and assigns codes to them".

3.7. Data analysis and interpretation.

Interview transcripts, field notes, and document evidence were used for data analysis, basing this investigation on an inductive approach. According to Patton (1980:306) in Bowen (2005:217), inductive analysis "means that the patterns, themes and categories of analysis come from the data: they emerge out of the data rather than being imposed on them before data collection and analysis". A comparative method was used to compare interview transcriptions with data collected from selected documents. According to Bowen (2005:217), a comparative method is where line, sentence and paragraph segments of the transcribed interviews and field notes were reviewed to decide the codes that fit the concepts suggested by the data.

3.8. Research quality.

A qualitative research method was used to carry out this research, and three of the most appropriate techniques employed in qualitative research were used. These are interviews, observation, and literary documents, all of which complement one another during research on a selected case study. For these reasons, there is a confidence that the findings are of good quality. This research is based on a case study, the questions posed to the informants focus on the processes entailed in the manufacturing of the case study item. The findings are also beneficial to similar pieces of hide clothing and other artefacts made of the same material

(leather). Also, Sesotho traditional conservation approaches used for mose oa khomo can be applied to other leather artefacts manufactured similarly.

3.9. Ethical consideration.

Although the case study is an artefact, interviewing people was required to obtain data about it. As a result, a referral letter was required from The University of Pretoria that introduced the author to the area chiefs of the identified villages. Another letter was required from The Ministry of Tourism, Environment and Culture (MTEC) to introduce the author to The Sesotho Tradition Institutions in the identified areas. A consent form was drafted for the participants that clearly stated that their participation was voluntary. Before every interview, a participant was constantly reminded that they could withdraw from the interview at any time. At the end of every interview, the participants and the author signed the prepared consent form. A letter was written to the area chief of Malingoaneng, where the study was conducted. All these documents are attached as appendices, and the necessary permissions had all been obtained before gathering any data. Part of this study focused on the artisans living in Malingoaneng villages where the Polihali Dam is under construction. However, the study did not intervene with any research work done for the Polihali Dam's development.

3.10 Limitations and delimitations of the study.

This study's information mainly depended on interviews (oral traditions), and as a result, the success of this study depended on the willingness of selected participants, as there was a possibility that some valuable informants might refuse to participate. Older people at Tlokoeng, who are known to refuse to provide any information related to their initiation process, were especially concerning. Also, the research required archival materials and literature - there was very little information available from archives as most Sesotho intangible heritage is not recorded.

In addition, this study is limited in scope in that it focuses on mose oa khomo as part of Basotho women's traditional dress. The skirt can, however, be worn together with four other pieces on different occasions. These are the thatsana, thethana, senyepa and morepo. All four pieces are made of different materials, which were not investigated in this study. Both thatsana and morepo are made of sheepskin; senyepa is made of beads, and thethana is made from threads

of plants often with a beaded waistband (Riep, 2011:260). However, even though the focus is only on one artefact, it will form the basis for other Sesotho leather clothing conservation.

3.10.3. Expected outcomes of the study.

All the indigenous skills and traditional practices applied in leather preparation and manufacturing of mose oa khomo have been documented in this study. Also, most of the other materials used to conserve leather, rituals, or adornment have been documented for future reference. The study has also determined reasons for the decline in using mose oa khomo as traditional attire for Basotho women. Both traditional and modern leather conservation methods have also been documented.

CHAPTER FOUR
Discussion

4.1. Introduction.

This chapter presents the overall findings of this study. It offers answers to the key research questions presented in chapter one, specifically how objects such as mose oa khomo are made. The research question revolves around the traditional manufacturing of mose oa khomo with several sub-questions:

(a) What are the traditional techniques used for manufacturing mose oa khomo?

(b) What tools are used in traditional leather preparation, tanning and manufacturing of mose oa khomo?

(c) What is the cultural significance of the materials and techniques used to manufacture mose oa khomo?

(d) Which materials are used for decorating?

To answer this question, the research focused on identifying the traditional manufacturing tools and techniques for hide preparation and leather tanning used to manufacture objects such as mose oa khomo. It further explores the potential significance of decorative treatments and elements applied to such items of traditional dress. These include identifying the traditional manufacturing tools and techniques employed in artisanal hide preparation processes at Joalaboholo and Malingoaneng. This study also investigated the different types of mose oa khomo's significance to Sesotho culture.

Through this study, the symbolic meaning of the patterns and other materials used for decorations are explored. To achieve a better understanding of such traditional practices, the research aimed to document the skills applied in the manufacturing of cowhide dresses, to document Sesotho traditional recipes of materials used to soften hide and to find out more about and compare different types of Sesotho cowhide dresses. It also investigates the history behind the case study artefact.

The research is thus descriptive, documentary, and archival to a certain extent and hopes to capture the intangible knowledge and skills of leather tanning and manufacturing practices, that are slowly being lost, as explained in the introduction to this research. As explained in chapter three, two different areas (Joalaboholo and Malingoaneng) were used. Joalaboholo is in the lowlands located near one of Lesotho's only two industrial towns, namely Maputsoe. Malingoaneng, on the other hand, is a rural area situated in the mountainous region of Mokhotlong.

Despite similarities, the processes of leather preparation and tanning are slightly different. These differences are due to the availability of modern tanning machinery in the towns near Joalaboholo, and the constant supply of wild animal hides from the neighbouring farms.

4.2. Sources of cowhides for the manufacturing of cowhide dresses.

The two areas under study are highly different topographically. However, this study has established that Lesotho does not have many sources for cowhides regardless of the area. Hide artisans depend on the frequency at which individuals slaughter cows. Where the use of cowhide processing was regular, this has been affected by the unavailability of cowhides, and people have thus turned to use a variety of textiles and synthetic materials. Along with these changes in resource availability, customs have also changed. Traditionally, a cow is slaughtered before a person could be buried. The slaughtered cow is called khomo ea phelehetso13 (Lesitsi, 2002:30). The traditional Sesotho name for a cowhide slaughtered for a burial ceremony is kobo ea mofu, which translates to the deceased's blanket. Most families at Joalaboholo burry cowhide with the deceased. In Tlokoeng, the hide of khomo ea phelehetso is not buried with the deceased; instead, it is prepared and tanned to be used by the immediate family because it is regarded as the deceased's blanket. It can only be used as a mat, as Basotho culture believes it will bring bad luck if worn. It is cut into cowhide leather strips used to tie luggage over donkeys, mules, or horses when worn out.

4.3. The state of cowhide usage at Joalaboholo.

Joalaboholo is found in the lowlands of Lesotho in the Leribe district. It is one of the areas adjacent to Ficksburg (in South Africa). As a result, people from Joalaboholo and the

13 Khomo ea phelehetso is a cow slaughtered for the deceased person its hide is called his blanket.

neighbouring farms do business together and have footpaths across the Mohokare River (Caledon River) which they use to facilitate their good business relationship. The Mohokare River is the border that separates Lesotho and South Africa. Among the business they do is the trade in animal hides; farm owners will sell them to the artisans from villages in Joalaboholo. When I asked about his constant supply of hides, one of the interviewees, ntate Moiloa (2021), said:

> "Monga polasi e ka mose ho noka ena ea Mohokare ke eena ea mphang makoko a mangata ana hobane ke motho ea ratang thepa ea Letlalo haholo, joale ke mo suoela ona ebe eena o mpha matlalo a manyenyane ao a sa a sebelisang".

When translated, this means that the farm owner across the Caledon River supplies him with hides in exchange for his hide preparation and tanning skills, which he does for him. Since traditional societal practices have changed, due to the introduction of Christianity, urbanisation, declined usage of hide products, there is less demand for cowhide for initiation and traditional dresses, and as a result, cowhide has become expensive. Joalaboholo artisans thus do not use cowhide regularly, and often years can go by without the need to purchase a hide.

Joalaboholo is a township area and is surrounded by many Christian churches, cathedrals schools and textile factories. This situation has caused a total decline in the practice of initiation institutions in the area, and people are no longer interested in traditional practices, that in most cases demand the slaughtering of animals. Even when people decide to carry out traditional ceremonies like marriages, they seldom slaughter cows but instead buy meat because most people in Maputsoe do not rear animals. This factor has caused an increase in cattle costs in the area and makes them unaffordable for most people. The hide products are also expensive, and many people in the area cannot afford them because of their low income from fabric factories in Maputsoe, where most of them work. Thus, since the hide business does not provide a stable and regular income due to low demand, hide artisans in this area have sought other means of income such as agriculture or work at the factories and hardly ever work on hides. Some artisans who still use the traditional hide preparation and tanning methods indicated that they now also have to compete with other crafters who use mechanised equipment, as the hide prepared with machinery is finer than theirs. They even voiced their interest in trying newer technology to boost their business.

Ntate Jobo Sekautu (2021) said:

> "Mme ke hore re se bile re ntse re leka ho buisana le lekala lena la likhoebo tse nyenyane hore ba mpe ba re thuse ka ho re rekela mechine le ho re koetlisa hore re mpe re ntlafatse khoebo ena ea rona hoba joale re shoa ke tlala feela re na le litsebo".

Translated into English, he indicates that the artisans in the area are already in negotiations with the Ministry of Small Businesses to buy machines and train them to use them, as this will aid them to improve their businesses. As a result, artisans who work with hide in Joalaboholo no longer produce cowhide dresses, but other items made of wild animals hides. These include headdresses, bags, wallets and other items as requested by their customers.

4.4. The state of cowhide usage at Malingoaneng.

Malingoaneng is an area in the mountains of Lesotho where the Polihali Dam is currently being constructed. Part of the descendants of Batlokoa of Mmanthatisi who migrated during the lifaqane wars live in this area (Mabille, 1906:250). Most people living here are subsistence farmers: their lives depend on their animal's produce and what they produce from their fields. A big part of Lesotho's wool and mohair exports come from this region. Due to this lifestyle, people still keep and herd cattle, and their ceremonies are still performed by slaughtering cows. As a result, artisans in these areas still have regular access to a stable number of cowhides throughout the year.

In the more rural area of Malingoaneng, traditions persist, and the institution of initiation is still practised and valued. Initiations are performed for both women and men. More than five families initiate boys in a good year, while at least three families initiate girls. Each of the male initiates needs a prepared and tanned cowhide blanket called mokhahla. Female initiates used to need two cowhide dresses (setea and mose oa khomo), but now, some only need one for their graduation due to cultural changes. Many women also used to wear mese ea khomo when attending a ceremony which marked the end of the first stage of initiation and the beginning of the second stage of initiation (pina). One of the interviewees, Nkhono Mmatefo Mokena (2021), said the following:

> "Mese ea khomo e khabisitsoeng ne re e tena ha re ea pineng. Re ne re ekhabisa hore ho khaohe moo ho khoehlang, ke moo li ithati le mahlasoa a basali ba neng ba hlahella. Pineng mona ne re bina bosiu kaofela hofihlela ka meso ha re thobisa bale"

In translation, she explains the significance of the decorated mose oa khomo during a singing ceremony (pineng)[14] and that there used to be a competition amongst the women who attended the pina (the singing ceremony) on who has outdone the others decorating her dress. Initiation in this area also creates business for many people, like traditional doctors (liepa mere), artisans working with beads, cowhides, sheep and goat hide manufacturers, suppliers, and commercial farmers.

People in the villages of Malingoaneng keep livestock. They still pay lobola[15] using the animals and still perform "Ho thethesa bohali", which is the stage at which the bride's family acknowledges that their in-laws have finished paying the bride price for their daughter. They then slaughter a cow as a token of appreciation and seal the friendship between the two families (Lesitsi, 2002:30). These practices make it possible for hide artisans to access hides regularly.

As Malingoaneng is in the rural area of Lesotho, people still use the traditional hide preparation and tanning methods, even though this has been severely affected in the last few years. The year 2019 brought a prolonged drought, which affected farmers from this and neighbouring areas both in terms of loss of livestock and leaving them unable to tend to their fields. The Covid 19 pandemic exacerbated the situation, and due to lockdown restrictions, initiation was prohibited by law for two years until the country recovered. As a result, leather tanning and manufacturing artisans lost their source of income. These factors have led to a general decline in hide preparation, tanning and manufacturing in the rural highland area.

4.5. Hide preparation methods at Joalaboholo.

In Lesotho, hide preparation and tanning is a communal activity. However, recently urban areas like Joalaboholo no longer have communal activities like in rural areas: some activities have been commercialised and are now regarded as individuals' jobs. In Joalaboholo, artisans use wild animal hides that they purchase from a neighbouring farmer, so they are usually not personally involved in slaughtering the animals. As such, the first step in hide preparation for these artisans is soaking.

[14] Pineng is the place where a singing ceremony is held.
[15] Lobola is any form of payment a boy's family gives to the family of the girl he would like to marry, a 'bride price'.

4.5.1. Soaking and drying.

Once the artisans receive the hides, they soak them in tap water for a day or overnight in plastic containers depending on the size or thickness of the hide. The hide is then stretched and pegged down with lithakhisa, which are small, sharpened sticks hammered to the ground that hold the hide while drying. On a good, sunny day, the hide is dried within a day.

4.5.2. Scraping and softening.

Once the hide is dry, it is placed on a flat surface, and the excess flesh is removed by scraping it off with old hoe blades. Since only two people are involved in the activity in most cases, they sit opposite each other holding their hoes and start to scrape, starting from the centre working out. Most artisans also said their hides are usually small animals, so it takes them a day to scrape and soften. Once the flesh is scraped off to their satisfaction, they start to twist, flip, squeeze and stretch the hide with their hands as a way of softening it. This method is chosen because it suits the demands of their clients. To ensure their work is easier, they sit down on a flat surface and face each other to touch their shoe soles. This position ensures that the hide is worked circularly amongst the artisans so that it is softened evenly.

To prevent hide putrefaction, some artisans use animal fat (ts'otso) to soften the hide. However, the applied animal fat depends on the desired results of the end product and the client's wishes. To ensure that the hides do not attract pests, they use Blue Death™ Home and Garden pesticide. It is a branded Blue Death™ Multi Insect powder. Blue Death™ is applied on both sides immediately after the hide has been twisted and tossed with the hands. When asked if Blue Death™ was not harmful, artisans said they usually wash their hands after use and never heard anyone complain about their method.

4.6. Hide preparation methods at Malingoaneng.

Malingoaneng, as explained previously, is located in a more rural area, and although the actual hide preparation process is comparable to that describe previously at Joalaboholo, at Malingoaneng, it is interwoven in the social fabric of the community. Traditional hide preparation is a communal activity accompanied by many traditions described in detail in the following paragraphs.

4.6.1. Skinning /flaying the skin from the flash/ ho bua khomo.

Skinning is done immediately after the cow has been slaughtered and is carried out by at least two people, each working on one side. A sharp knife is used, and great care is taken to avoid tearing the hide. The slaughtered cow is flayed from the mid-point on the central side of the neck along the middle of the chest to the stomach. Once the carcass is opened, two people position themselves to skin the cow from the centre out to the end of each leg. Once they are done, the wet hide is stretched on the grass and attached to the ground with sharpened sticks called lithakhisa which are hammered to the ground to hold the hide in place until it is dry. Once stretched and pegged down, the hide is sprinkled with salt to prevent it from putrefying. In good weather, five days are sufficient for the hide to dry and be ready for scraping, but it can take up to seven days if the weather is inclement.

4.6.2. Scraping the hide/ ho fala lekoko.

Scraping is mainly done five to seven days after the cow has been skinned or flayed. The hide is judged to be at the suitable hardness, so it will not tear when scraped. Scraping is usually only carried out by men. In preparation for this activity, food and traditional beer are prepared. The main meal consists of the papa[16], head and neck of the cow. The neck and head would have been left aside for this very purpose when the rest of the meat was cooked. At Tlokoeng, irrespective of the family, any time a cow is slaughtered, the head and a neck are left aside to be cooked for the men involved in the scraping of the hide. Ntate Moalosi (2021), said, “ke nama ea bo ntate e falang lekoko”. In translation, he says that the neck and head of the cow are always left for the men who will work on the hide. Women brew Sesotho traditional beer three days before the scraping day and cook the meat on the morning when the hide is scrapped.

As the scraping work commences, a medium vessel holding a traditional beer and utensils used for drinking beer are put beside the men to drink while working. The vessel should not be empty while the men are working, so it is often refilled by the women of the family whose hide is being processed.

The scraping is done with tools called liphalo. It is usually a sharp piece of metal attached to a wooden handle that must be blunt enough to prevent tearing the hide. A hoe is preferred because it is not too sharp. When the hoe is used, four people can work on the hide at the same

[16] Papa is a staple food of Basotho, it is made of cooked maize meal and water.

time. The hide is spread on cow manure called moiteli, or a combination of cow manure and animal food (furu) manure called mosuela. These serve to cushion the hide and prevent tearing.

A hoe blade attached to an average stick is used to scrape the hide. It is done in a way that two people hold one hoe. The first person holds the metal head of the hoe (the blade attached to the stick). The second person holds the end of the stick and stands at the opposite side of his partner. The person holding the stick then pulls the hoe towards him. As the hoe moves, the first person holds the hoe blade attached to the stick down so that when pulled, the blade scrapes off the flesh from the hide. When liphalo are used, more than four people can surround the hide and scrape the flesh off it from the centre towards them.

This activity is repeated until all the excess flesh is scraped off the hide. All the men present to do the work will take their turn to de-flesh the hide. Before the work can be finished, part of the cooked meat (consisting of four ribs of the neck called lekele) has to be brought to the workers to eat. When all the work has been done, the rest of the cooked meat, including the cow's head, is brought to the workers to eat before they return home.

The flesh or meat removed from the cow's hide is put in a basin, and once the work is done, it can be washed and then cooked or thrown away. This meat, called liphalo, derives its name from the liphalo scraping tools, which could be any tool that will do the task of scraping off the flesh. The liphalo meat, unlike other cuts, can be eaten by anybody - from children to elders. In Sesotho culture, specific cuts of meat cannot be eaten by children or young women who are likely to have children, and so this is significant as it reinforces the communal nature of the hide preparation activities.

Once the work is done, food is brought out, and all the men present eat together and drink their beer. The hide is so finely scraped that it can be tanned immediately or kept for years before it is eventually tanned. The careful scraping process removes the remaining flesh and fats left during skinning so that the hide does not become stiff or attract pests before being tanned.

When Basotho men work, especially in teams on a rotational basis, they sing Mokorotlo songs. Basotho men only sing these songs when they are happy; however, mokorotlo songs were sung at war and on happy occasions. These songs are poetic, and men usually choose the songs that go with the rhythm of their work to ensure that the work is done quickly without workers feeling that they are working. Some men from the relief team will do random dancing here and there (ho tlala), while their fellow members will encourage them with chants and whistling (seroebele). If there are women nearby, they ululate to encourage the dancers. Ululating is a

sound Basotho women make through their throats control with their tongues touching their palate in a rhythmic way that helps produce a ringing sound. If both men and women happy songs carry out the scraping task will also be sung to the rhythm of their work.

4.6.3. Hide tanning/ Ho suoa lekoko.

Hide tanning is also a communal activity at Malingoaneng, and once the family wants to tan their hide, they cook food and prepare traditional beer for their neighbours who will come and help them. In preparation, the hide is softened overnight with moroko: a wet spent grain sieved from Sesotho traditional beer. As this traditional beer is central to the hide preparation and tanning traditions, its manufacture below is outlined.

4.6.4. Malting grain/ ho putisa mmela.

According to Maneo Monyane and Mamohlotse Mohlotse (2021), to make the Sesotho traditional beer that can produce enough spent grain to soften an entire cowhide, approximately 90 litres of water is needed, to that, the following is added: 4kg of sorghum or maize meal, 1kg of wheat meal, 3kg of malted, dried, milled sorghum, dried spent grain sieved from Sesotho traditional beer and 1litre of homemade porridge yeast or a first spent grain (mohlaba[17]) collected during the sieving process (Mohlotse & Monyane 2021).

When making malted sorghum, the desired quantity of sorghum is simmered in enough warm water that it will still be covered even after the sorghum has swollen. The simmered sorghum is then covered in a container for three days. It is then poured in a sack and tied, leaving enough room for the sorghum to continue to swell. When the sorghum has sufficiently swollen, it should be easily broken with the front teeth. The sack is then placed on a flat surface, allowing the water to drip off slowly before it is covered and placed in a warm place for three days (ho putisa). Covering wet sorghum in a sack for three days ensures that the sorghum sprouts. During these three days, the temperature of the malting sorghum should not become too high, as this would cause the sorghum to rot. After three days, the sorghum will have sprouted/ malted enough to resemble threads, not just tiny sprouts. The sorghum is then spread on a sack placed in a shaded place to allow the sprouted sorghum to cool, allowing the white sprouts to bend and change to the reddish colour sorghum. When the sprouts are bent and have changed

[17] Mohlaba is the first moroko or spent grain of Sesotho traditional beer.

colour, the malted sorghum is sun-dried. It is now called mmela. When it is dry, it is milled and can be used to ferment the Sesotho traditional beer.

4.6.5. Brewing Sesotho traditional beer/ ho ritela joala ba Sesotho.

The first step in preparing Sesotho traditional beer is to heat 80 litres of water to a warm or near hot state. While the water is heating, the dry ingredients are placed in a large brewing vessel containing 4kg of milled sorghum (phaate). If there is no sorghum, maize meal can be used, although the resulting colour of the beer will be a bit lighter than when using sorghum and the darker colour derived from the sorghum is preferred. Next, 3kg of milled malted grain and 1kg of the wheat meal (litsoako) are mixed thoroughly. Ten litres of cold water are then poured into the brewing vessel, and the dry ingredients are stirred in with a mixing stick (lesokoana). The cold water is meant to protect the ingredients from being burnt when the hot water is poured in case the heated water is too hot. When the 80 litres of water are warm enough, they are poured into the brewing vessel, and the whole mixture is stirred. The temperature is tested by inserting and holding the index finger in the mixture for a minute, this is the temperature of approximately 40-45°c; if the finger can be held in the mixture for about a minute without burning, then a litre of homemade porridge yeast can be poured into the mixture, that is then stirred until well mixed and homogenous. If the homemade mixture is added too soon when the temperature of the grain is too high, the yeast is burnt, and the mixture will not ferment.

Once the brew is well mixed, the vessel is covered while it is still warm to ferment. In addition, the brewing vessel is usually placed in a warm house because, in a cold room, the fermentation process will be prolonged.

4.6.6. Ho pheha lekoele/ to cook the fermented mixture.

When it has fermented, the mixture becomes sour, and at this stage, it is called lekoele[18]. A big, clean cooking pot is put on a fire, and the water is carefully poured out of the vessel to ensure that the grain mixture has enough remaining liquid to stir what is left at the bottom of the vessel. Once the water has been brought to boil, the remaining grain mixture in the vessel is poured into the boiling water while stirring to ensure that the mixture does not make clots. It should

[18] Lekoele is uncooked fermented Sesotho traditional beer.

be stirred frequently until it is well cooked through with the consistency of porridge, at which stage it is called setoto. It is then poured into another container to cool down.

4.6.7. Ho omela setoto/fermenting beer.

When setoto[19] is warm, dried spent grain from Sesotho traditional beer (mohlaba) is added. This action is called ho omela[20]. Setoto is then stirred enough to mix mohlaba (the spent grain) and the top setoto (beer porridge). Then a match is lighted and moved in a circular on top of the vessel while it is still flaming. To clarify this, one of the informants,'me' Maneo Monyane (2021), said:

"Joala ha bo qetoa ho omeloa boa tlaboleloa, hona ho etsoa hore bo se ke ba hateha".

Translated, she said that the match is lit to ensure that nothing goes wrong with the beer fermentation. Once mixed, the mixture is covered overnight to allow it to ferment again, and at this stage, the brew is finally regarded as beer, although it has not been sieved yet. It can take six to eight hours for the beer to ferment, depending on the warmth of the weather or how well the beer is covered.

Ho omela is a crucial step of Sesotho traditional brewing as it is determined at this stage whether the beer will be tasty. This factor is due to several factors: the brewer needs to ensure that when mohlaba (the spent grain) is added to setoto (the beer porridge), it has the correct temperature. The dried spent grain acts like yeast in beer brewing. If the temperature is too high or too low, the beer will be sweet, because the wrong temperature will not allow the dried spent grain to eat all the sugars from other added ingredients. Sometimes the beer does not ferment at all because if the temperature is too high or too low the dried spent grain will either be burnt or not have enough heat to kick start the fermenting process. As the beer-making process is lengthy and tricky, there are specific protocols and restrictions on who is allowed to make it. For example, a menstruating woman should not perform the addition of the mohlaba into the setoto, as one of the informants, Nkhono Mamohlotse Mohlotse (2021) said:

> "Mosali ea linakong tsa hae tsa khoeli haa tlameha ho omela hoba o tla hata joala, habo no bela hantle hape ha bo na ho tsoa kaofela".

[19] Setoto is a cooked lekoele.

This means that a menstruating woman should not touch the beer at this stage as she can influence the outcome of the brewing process. When fermented, the beer should have a sour taste if it taste sweet it means that ho omela process was done under inadequate temperatures. Or that after ho omela the beer was not covered enough to keep warm or was kept in very low temperatures which prevented fermentation to occur at the right time.

4.6.8. Ho tlhotla/ to sieve beer.

When fermented, the beer is ready to be sieved. Here too, a menstruating woman should not be the first to start sieving the beer, as it is believed that this will influence the taste or the quality of the beer. The first part of the sieved beer fetched from the vessel before it is stirred is called mohlaba, and its spent grain is also called mohlaba. Mohlaba is the part of the spent grain usually separated from moroko[21] , the rest after mohlaba has been removed. It is dried and kept to be used when there is a need to brew beer again. The remaining spent grain (moroko) can be used in various ways, including softening hides.

4.6.9. Processing the hide with the spent grain / moroko.

The hide is laid on the grass bed, or a sail spread on a flat surface in the morning. The flesh side is faced upwards, and the spent grain or moroko is placed in the middle and spread out to cover a large area of the flesh side of the hide. The hide is folded so that the two flanks meet in the middle, and then the hide is folded in the middle and then from the sides, and finally, it is tied with hide belts to secure the spent grain. The hide is then kept closed overnight for treatment the next day.

The men will take the bundled hide and place it on a cushioned flat surface the following day. Thick wooden sticks called mekonkoana are used to beat the hide with the moroko still inside repeatedly. The hide is turned several times, and the beating continues until the hide is soft enough that it is not torn during the scratching process (ho ngoaela). The only softened side of the hide is the flesh hide. Batlokoa do not dehair their hides. They only soften the flesh side and leave the hair intact. The method of softening is used because Tlokoeng is in the highlands of mountainous Lesotho and the highlands have snowy winters and mild summers, so the hair is left to provide warmth for the user.

[21] Moroko is the spend grain sieved from Sesotho traditional beer.

Once the hide has been softened to the desired state, the spent grain is spilled out of the hide, and while it is still wet, the people start to pull, twist and scratch the hide with likhoaikhoai; these are small metal tools sharpened in a way that they will scratch and scrape, away any flesh from the hide. This process is carried out while seated and with feet touching. The hide is stretched between the seated people, each of them holding their side, stretching and squeezing it between their hands and passing it to the next person. In this manner, the hide is rotated and moved within their cycle. As they squeeze and squash the hide, they sing a song that allows them to hold a certain rhythm. One of the familiar songs sung during this process is "Mmampharoane suoa suoa, lekoko mmampharoane". Mmampharoane is a greenish and yellowish lizard that likes to move its body up and down, and the same action people do when they are softening and stretching the hide.

4.6.10. Cutting the hide and dressing with ochre and mafura a lefehlo.

Once the hide is sufficiently softened, it is ready to be cut. In the nearby villages, there were always women who specialised in cutting while others were very good with decorations so that the hide would be taken to the cutting specialist. Tlali, (1972:5) indicates that during cutting, the best part of the cow is the armpit- this is because Basotho cattle endure a lot in their lifetime. Some cattle are used to carry and haul loads, ploughing, and many other chores that damage the skin on their backs (Riep, 2011:261). For this reason, the ventral side of the hide that is undamaged is the area where the legs join the torso. These areas are highly prized and are said to make good, thick and long-lasting dresses. After cutting, the hide is decorated in different styles, which indicate their type and use.

Once the cowhide dress is cut, it is smeared with red ochre and mafura a lefehlo, fat made of sour milk. Red ochre is imported from Kwa-Zulu-Natal in South Africa. Nkhono Mmatefo (2021) relates how they buy ochre from the Indian traders from Kwa-Zulu-Natal since they started to use it:

> "Letsoku lona ngoanaka ha re na lona hae mona, ke lintho tse tlileng le ma India bokone koana. Re ne re li reka hona ho bona mono, le hona tjena ntse re le reka ho bona".

The mafura a lefehlo (fat made from sour milk) is easily made by anyone by peeling the creamy layer off the sour milk and pouring it in a basin. It is then whisked until it becomes even creamier. Once it is creamy, it is called sereleli, and this kind of fat can be mixed with traditional herbs to make a medicine used for initiation, among other uses. If it is to be used on

the cowhide dress, it should be cooked until all the fat is separated from the milk. The milk forms a layer along the pot's walls while the fat becomes a transparent oil above the hardened milk. The oil is then poured into a separate container to cool down. When it cools, it opacifies and becomes a creamy white fat. Once the mafura a lefehlo is cold, it is mixed with red ochre to produce a thick, reddish ointment that can be applied on cowhide dresses to dye them into red cowhide dress or other traditional attire. However, one of the informants, ntate Moalosi Sekati (2021), indicated that the ointment could be used on hides and used on many different occasions. It can, for instance, also be applied on the newly initiation graduates' skins.

In the two different communities, this study focused on similarities in the tools used in hide preparation. There are very minimal differences. These are listed in Table 5.

Table 5: Tools used for artisanal hide preparation.

Tools	**Uses**
Knives	Skinning, trimming
Hoe blade and liphalo	Scraping
Lithakisa/ pegging sticks	For pegging and holding the hide in place while drying
Containers/ libate	For soaking hides
Sticks/ mekonkoana	For beating the hide to ensure that it absorbs the moisture from moroko/spent grain
Shredded cow dung or grass/ moiteli	Used to cushion the hide during the beating.
Hide belts/ marapo	Used to tie the hide so that the spent grain stays in the hide during the beating
Small hammers/ hamore	To hammer the sticks that hold the hide on the ground
Likhoaikhoai/ a saw blade	A saw blade attached to a wooden stick used for scraping
Granite stone/ teotsa	To sharpen metal tools

4.7. Types of cowhide dresses.

This section outlines the types of Sesotho cowhide dresses. It looks at their different decorations, and the meaning and demarcations set by those decorations are also explored. Through this research, I found out that there are several types of cowhide dresses Basotho used. These are khathola, lekarantlana, mamosana poieana, setea, pipa mpa, sebetu, mokhehle and

mose oa khomo oa Setlokoa. However, this study discusses only four dresses: mokhese, sebeto, setea and mose oa khomo oa Setlokoa. Examples of three of them are shown in Figure 8.

a b c

Figure 8a, b and c: Three types of mese ea khomo, Sebeto and setea from Morija Museum and Archives and mose oa Setlokoa oa khomo (case study).

The two examples on the left and in the middle (Figure 8 a and b) are currently housed at Morija Museum and Archives, one of the oldest museums that records much of Sesotho intangible and tangible cultural heritage in Lesotho. The third dress, visible on the right (Figure 8c), is the case study object which forms the basis for this research. A brief description of the different types of dresses follows.

The Basotho nation consists of different clans with slightly different cultural norms and practices (Lesitsi, 2002:10). It cannot be surprising that the names of dresses differ slightly as well. This study found many have different names other than the ones used in this study.

Sesotho has a saying, “thebe e sehelloa holima e nngoe,” which means that a proper shield is cut by using another shield. One of the informants indicated that the decorations, the length of the dresses and the way dresses are cut are meant to communicate. For instance, a dress cut in a half-moon at the edge is meant for married women, while the dresses cut in V-shaped edges are for girls. Also, the decorations indicate the status of the wearer in society. Figure 8 show three different dresses, and their edges are different, meaning when they were cut, they were cut for women of different ages and statuses.

Figure 17a: Sebeto Dress: In the Morija Museum and Archives collection: Collected by Lesotho Evangelical missionaries, no accession. Photo by author. 01/06/2021.

The dress in figure 9a is referred to as sebeto. Sebeto is a cowhide dress worn by married women. Its half-moon shape and length edge are an indication that it is for a married woman (Riep, 2011:265). It can be decorated with both beads and likhohloane (copper rings). This sample has been decorated with beads and has tiny round copper balls on the waistline. It also has patches of cowhide decorated in 'V's made with beads and likhohloane stitched on the sides of the dress. This type of dress can be decorated in any way except with makontsiri (see figure 9a). The dress was mainly worn at ceremonies or any important occasions. This dress is located in the Morija Museum and Archive collection, unprovenanced and undocumented. The Lesotho Evangelical missionaries collected it before the museum started using accession numbers, so it has no accession number.

The second type of dress, in Figure 9b, is called setea, it has minimal decoration consisting of beads on the waist and a very minimal number of copper rings called likhohloane, which are only visible on the top edges of the dress. Setea is a dress worn only by female initiates during their initiation graduation after mokhehle has been burnt.

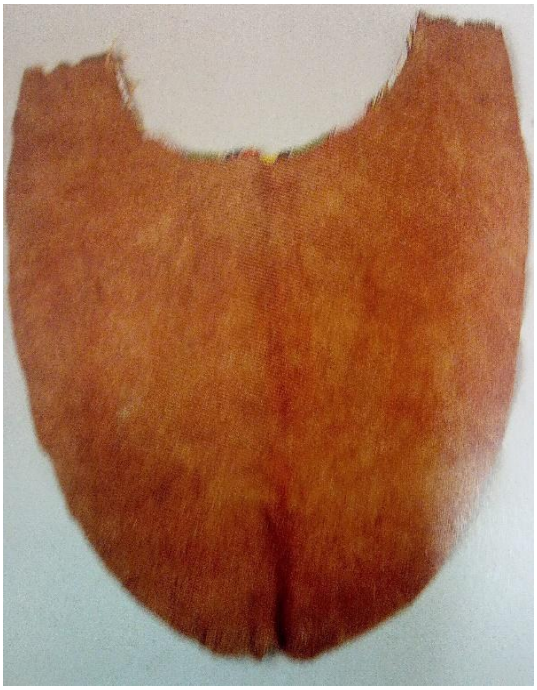


Figure 9b Setea Dress from Morija Museum and Archive. Not accessioned. photo taken by author. 01/06/2021.

One of the informants indicated that setea is part of the initiate new status of womanhood. Then the owner could wear it daily. One of the informants indicated that in the past, every Mosotho girl went through initiation before marriage. Only after initiation, a girl was considered eligible for marriage.

Figure 9c: Setlokoa, personal collection, Mabokang Mokotjo. Photo by author. 01/06/2021.

The final example is the case study item as shown in Figure 9c. The dress is an example of mose oa Setlokoa oa khomo worn by initiates during their initiation graduation ceremony. During the study, it was found that Batlokoa hide dresses do not have names that distinguish them from one another but are distinguished by their decorative patterns. However, one of the informants nkhono Mampoi Matete said the following:

> "Batlokoa mose oa bona ke mose, ha ona lebitso, empa Batlokoa mese ea bona e khaba haholo ka likhohloane tse tlohang thekeng ebe li ea theoha ho tla fihla bohareng. Ba rata likhohloane haholo hoo ba bileng ba li sebelisang le likhoetseng tsa bana ba bona Nakong eo ba ba forang".

She indicated that Batlokoa dresses are more likely to be adorned with likhohloane (copper rings) because the Batlokoa use these copper rings to perform some welcoming rituals of their newly born babies. This dress is distinguished from other dresses through the decorations of loose beads towards the lower edge. This kind of adornment is called makontsiri, which is only used to decorate dresses for newly graduated Batlokoa initiates. However, this dress can also be worn on other important initiation ceremonies like pineng (a ceremony held for the initiates to mark the end of the first stage of their initiation process).

Figure 10: Basotho girls wearing mekhehle: Phetho-Moeti (2007:1).

Another type of dress is mokhehle, and it is a dress worn by teenage girls, especially those who have seen their menstruation periods. This type of dress does not have any decorations. Figure 10 depicts Basotho young girls wearing mekhehle[22]. Mokhehle is usually above the knees, but it can be slightly below the knees, and it is also cut in the v-shaped at the edge.

4.7.1. Different decorations common for cowhide dresses.

This section looks thoroughly into decorations commonly used for different types of dresses. This section will explore the different kinds of decorations that can be done on cowhide dresses, mainly with glass beads or likhohloane. The waist of the dress is usually decorated (see Figure 11). In addition to decorating the dress, it also has a practical application to hem the dress, this ensures that the hide does not hurt the wearer through chaffing. This adornment does not have a particular decoration or choice of colours. Any available colour or pattern is appropriate.

Figure 11a and b: Waist decoration on cowhide dresses. Photo by author. 1/06/2021.

[22] Mekhehle is a plural of mokhehle which only means a type of dresses worn by teenage girls.

4.7.1.1. A combination of glass beads and likhohloane.

The remainder of the dress can then be decorated in a variety of ways. Figure 12 below depicts an appliqué technique, where glass beads and likhohloane are stitched in a pattern onto a separate patch. The patch made of the hide is then attached to the dress. This pattern also does not have any particular connotation; it is just the artisan's creativity who decorated it.

4.7.1.2. Likhohloane used as decoration.

Another decoration, shown in figures 13a and b below, is likhohloane as decoration along the sides of the dress. This decoration is associated with the Batlokoa people, who appear fond of likhohloane and use them in some rituals. Although the dress in figure 13b is not provenanced, the decorative elements and liberal use of likhohloane suggest that a Tlokoa artisan decorated this. Riep (2011:264) indicates this type of beadwork was used to weigh the edges down.

Figure 12: A combination of likhohloane and glass beads decoration. Photo by author. 1/06/2021.

A

B

Figures 13a and b: Details of dresses decorated with likhohloane along the edges of the dress. Photo by author. 1/06/2021.

4.7.1.3 Makontsiri.

Figure 14 depicts makontsiri, long trails of threaded glass beads stitched to the cowhide dresses of Batlokoa female initiation graduates called litsoejane. This form of decoration is meant to enhance the beauty of the graduates, as they coincide with the wearer's movements and attract attention to them.

Figure 14: Cowhide dress adorned with makontsiri. Photo by author. 1/06/2021.

Recently it has been coupled with mirrors which catch and reflect the sunlight, making the wearer sparkle. The mirrors are believed to brighten the graduates and bring a certain glow to them. Makontsiri is stitched on a highly scratched and scraped part of the cowhide, and they are always placed towards the edge where they will be able to swing sideways when the owner moves. A dress adorned with makontsiri can also be used as a ceremonial initiation dress, called mose oa pina, and can be worn by initiated women or young girls not old enough to be initiated.

4.7.1.4. Mohlono.

Mohlono is a pattern scratched on the cowhide with likhoaikhoai. Besides the scratch marks, the cowhide got when it was tanned, cowhide dress artisans can add more scratches to give texture to the hide's surface, as seen in figure 15. The visible threads in figure 15 are called mohlono. Mmatefo Mokena remarked that a cowhide dress with a visible mohlono is regarded as more beautiful:

> "e meng ea mekhabiso ea bohlokoa-hlokoa moseng oa khomo ke Mohlono, o etsa hore bofubelu ba mose bo loe hantle".

Figure 15: A cowhide scratched so that it has fibres of the hide visibly down, aka mohlono. Photo by author. 1/06/2021.

4.7.1.5. Metal studs/Makonopo a ts'epe.

Another unusual decorative element was discovered during the research: the addition of rounded copper studs referred to as copper studs by the Basotho. These studs are glued onto a separate piece of hide that is later sewn on the dress. In figure 16, the studs are tightly packed and glued closely to the pattern made of likhohloane. Unfortunately, the glue is unidentified at this stage.

Figure 16: Metal buttons used to adorn cowhide dress housed at Morija Museums and Archives. Photo by author 1/06/2021.

In general, the cowhide dresses, whether sebeto, setea or mose, are cut differently. Although decorated with similar materials, the style, extent, and placement of the decorative elements distinguish the dresses from one another as to their use and function. Earlier, these distinguishing decorations would give the observer clues about age, marital status and social standing in the community.

CHAPTER FIVE
Case study of mose oa Khomo

5.1. Provenance of the case study.

This case study is called mose oa khomo, which simply means ‘a dress made of cowhide’. The dress belonged to my paternal grandmother who was born in around 1922 at Liseleng in Mokhotlong district and died in 2005. My grandmother was an only child, and when she was of age (around 17-18 years) which were acceptable age for girls to be initiated, her father decided to have her initiated, he slaughtered a cow to make her a cowhide dress. The hide was processed, and then an artist was hired to cut the dress and adorn it for her initiation ceremony. The dress was thus explicitly crafted for a Tlokoa initiation graduate. One of the informants, a close relative of my grandmother, indicated that on the day my grandmother and her fellow initiates graduated, my grandfather asked for her hand in marriage and went to his home with her on the same day. This action turned the initiation dress into a bridal dress. Another one of the informants, Nkhono Mmatefo Mokena, said that my grandmother continued to wear the dress, but only during initiation ceremonies and so it became a ceremonial dress.

The dress was mainly worn for Ho kena ceremonies, a phase during female initiation where female initiates are prepared for further training in a secluded area away from home for about three months. As a result, the dress takes on additional significance as mose oa pina, making it eligible to be worn only by initiated women or young girls not yet ready for initiation. That is why my grandmother gave me the dress because I was young enough to wear it. Nevertheless, even when I matured, and it was evident that I was not going for initiation, she still wanted me to keep it, although I was also warned not to wear it anymore. The dress is estimated to be around 90 years old, but it still exists reasonably well as it was seldom used.

5.2. Description of mose oa khomo (cowhide dress/skirt) to be studied.

The case study object is a cloak-like skirt/mose with a u-shaped waist made of cowhide. It is 820mm in length and goes down until it covers the woman's rear below the knees, and it is called mose oa khomo, as Batlokoa does not have different names for their dresses. The waist is 940mm, and the width of the dress is 880mm. The belt on the left side is 860mm, and the one on the right side is 1340mm long. The sketch in figure 17 shows all the measurements of the dress.

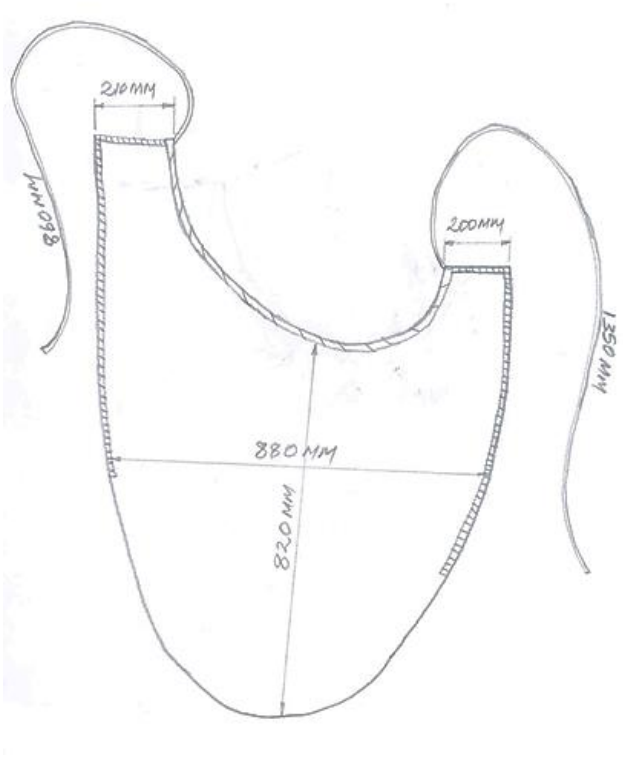


Figure 17: A sketched mose oa khomo and its dimensions. Photo by T. Mokotjo Mokotjo, (2021).

The skirt's left and right edges are decorated with small copper rings on the exterior. Figure 18 shows the exterior of the case study. The protective hem on the skirt's waist is adorned with blue, white, navy blue, black, green and red beads. Towards the bottom edge, the skirt is also decorated with loosely beaded thread attached to the hide so that the beaded thread sways sideways. These beaded threads are also folded at the edges to make decorative rings, and they are made of a combination of yellow, navy blue, white, yellow, red, green and a combination of all the colours.

Figure 18: The exterior of the case study. Ministry of Tourism Environment and Culture (MTEC) (Photograph). 17/08/2021.

The interior of the skirt still has black and white fur, although the fur has begun to wear off where the skirt has deteriorated. It is worn inside-out because it is easier to apply the mixture of mafura a lefehlo (made of sour milk) fat and red ochre on it to give it a red colour. Shown in figure 19 is a photo of the interior of the dress.

Figure 19: The interior of the case study. MTEC (Photograph). 17/08/2021.

The waist of the dress has pieces of the hide attached with a twine thread to extend the waist on both sides. Also attached at the end of the dress are the belts/hide strings inserted through the holes made on both sides, knotted at the dress's exterior and inserted throughout the interior. Figures 20 depict the knots on both sides.

a b

Figure 20: Hide strings attached to the dress to secure it and the round knots ending the beads decorations on the ends of the waist. MTEC (Photograph). 17/08/2021.

Bead hemming was used to even the waist, and another piece of cowhide is attached in the middle, and the other two pieces of cowhide are attached at the end of the waist to extend it. Figures 20 show the attached pieces.

a b

Figure 21a & b: Pieces of cowhide are attached to extend the waist and even the waist before bead hemming. MTEC (Photograph) 17/08/2021.

Figure 22 is a sketch of how this research's case study should look when worn.

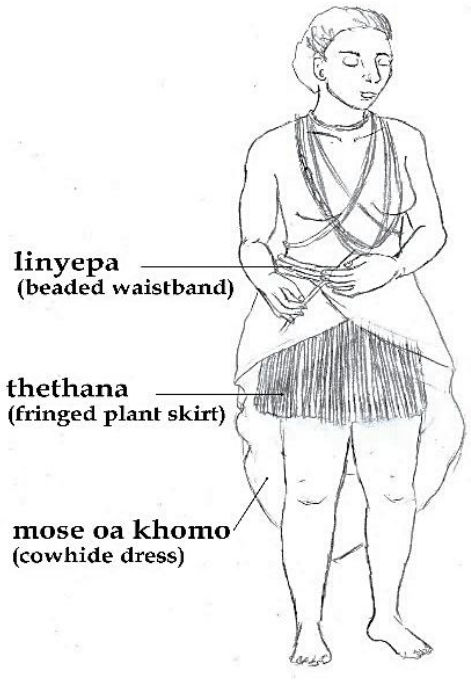


Figure 22: A sketch mose oa khomo. (McGinn, 2021). 01/09/2021.

The dress has different decorations, which are discussed below. Figure 23a shows the exterior of the dress's waist hemmed and decorated with beads. At the same time, figure 23b is the dress's interior depicting a combination of black, white, blue, red and green beads used to decorate and hem the waist, which ensures comfort for the wearer. The beads embroidery on the waist is ended at both ends of the waist with round beaded knots.

A B

Figure 23a and b: Beads used to hem and decorate the waste of the cowhide. MTEC (Photograph). 17/08/2021.

Figures 24 below shows likhohloane (copper rings) threaded along the edges of the dress to hem and decorated the edges of the dress. Figure 24a on the left side depicts how likhohloane look at the exterior, while figure 24b on the right side shows how likhohloane look in the dress's interior.

Figure 24a and b: Likhohloane (copper rings) used to decorate and hem the cowhide dress. MTEC (Photograph).

.

Figure 25a depicts makontsiri (long threaded beads), which are blue, green, yellow. White. navy blue and red glass beads also depict mohlono (hide threads scraped to go down along with and enhance the makontsiri on the dress). Figure 25b on the right depicts some beads used to attach and knot the makontsiri in the dress's interior.

a b

Figure 25a and b: Makontsiri (copper rings) used to decorate the case study. MTEC (Photograph). 17/08/2021.

This mose oa khomo can be worn either on thethana (a fringed skirt), with morepo (a top made of sheepskin) and thats'ana (a sheepskin worn on the front) or only with beaded necklaces as explained in earlier paragraphs. However, since it was gifted to me with only two beaded necklaces, it is believed that the owner wore it on the day of her initiation graduation and how she expected it to be worn.

5.3. Conservation issues around the case study.

In terms of conservation, an object is a composite object that means it is composed of elements of different materials. Composite objects tend to have complex conservation needs as the object's vulnerability, and possible deterioration depend on the materials the object is made of. In the case of composite objects, this is complicated by the presence of different materials that are not necessarily compatible in terms of their requirements for storage conditions (including temperature and humidity), treatment options and in some cases, the different elements can even negatively impact one another. This condition conservators sometimes refer to as inherent vice. Inherent vice refers to internal deterioration factors due to the raw materials used and the

manufacturing process used to create the object or the combination of materials within the object.

This particular object is made of three materials, including hide, copper rings and glass beads. As a result, any treatment used on one of these materials should be done considering the other materials that might be affected by the proposed treatment. For example, leather objects should be stored in 45-55% relative humidity areas, as they can become brittle. Although the glass and metal objects are in good condition, they can be stored in the same 45-55% humidity range. If there is any glass deterioration or oxidation in the metal, the humidity can be reduced as low as 30% RH. Humidity reduction may slow the deterioration process and stabilise the glass and metal objects but will negatively affect the leather and cause hardening and brittleness.

Leather on its own, for example, is susceptible to red rot, dehairing and inadequate fat content, which may either be due to environmental issues surrounding it or the manufacturing processes. Copper rings are prone to copper oxidation which can occur because of incorrect relative humidity, temperature, environmental pollutants and other environmental issues. As for the glass beads, they are liable to have glass disease; they can either be crizzling or weeping due to contact with water, dust, other environmental issues, and inherent vice. As a result, any suggested treatment for either material should be done considering other involved or attached materials.

5.4. Condition assessment of the case study.

The condition assessment of this object was done with only a naked eye as there was no access to any microscopy and magnification equipment at the time of assessment. Moreover, the treatment proposed is based on what is visible to the naked eyes, and as such, the proposal will not tamper with the hide structure. The dress is made of semi-tanned hide, and its interior still has hair. As such, the interior and the exterior need different treatments. The condition of the case study is concluded based on the condition assessment framework below.

Condition assessment template for the dress.

Stability	**Stable/ Good**	**Unstable/Fair**	**Highly unstable/Bad**
	No signs of deterioration	Early stage signs of deterioration	Significant damage to the object
Treatment	**Not Needed**	**Needed**	**Highly needed**
	No treatment needed except for regular monitoring	No major treatment needed but should be closely monitored	Major and urgent treatment needed, maybe separation from other objects until treated

5.4.1. Leather substrate.

The object under research is unstable and has folds due to the way it was stored. Towards the edge of the dress's interior (the side with fur), there are signs of thinning and deterioration, it has visible holes, and the hair around this area is thinning, which could mean that the object is at an early stage of red rot. This deterioration results from the use, wear and ageing, particularly where the wearer would sit whilst wearing the skirt. The fur has accumulated surface dirt. The exterior (the flesh side) has some patches of paint and holes in some hide parts. It has accumulated much dust that is embedded in the texture of the hide. The substrate without fur is also embedded with a possible combination of ochre and fats from the wear.

Figure 26 a and b: A leather substrate with indications of inherent hide oxidation and holes on the hide.

5.4.2. Beads.

Some of the beads are missing. The threads holding them in place are loosening in some places, while some are entirely missing. The beads have dust embedded in them, which might be from the mixture of ochre and mafura a lefehlo (fat made of sour milk). Some of the rings are loose, while others are missing.

Figure 27: A photo depicting some missing beads and broken threads.

5.4.3. Copper rings.

The copper rings have become greenish (due to copper oxidation), and some threads used to attach them are loose. Figure 28 depicts three issues: oxidated likhohloane (copper rings), paint on the fur of some parts of the dress's interior, and some loose threads used to attach and thread the beads.

Figure 28: Paint on the interior fur, loose threads and oxidated likhohloane. MTEC (Photograph). 17/08/2021.

5.4.4. Threads.

There are two different sizes of threads used to thread the beads and copper rings. The beads used to hem the waist are sewn with thin thread, while the thread used to sew the copper rings is thick. However, both threads are loosening and breaking while some are already broken.

5.5. Treatment suggestion for the object.

(a) The fur side (interior) must be vacuumed with a HEPA filtered vacuum using a nozzle brush to suck off surface dirt and loose hair. The vacuum nose pressure might be too high unless it is netted, and if a net is attached to the nozzle, the loose hair could block the net. It can be regulated to lower the pressure.

(b) The embroidered beads used to hem the waist should be cleaned with a soft brush and with cotton buds under illumination to remove surface dirt. If the surface dirt on the beads is not removed, it might trap moisture or attract insects to the hide. The threads are also closely hemmed together so that the bristles will remove the dirt between the threads. If the brush is not used with care, some loose threads might be caught in between the bristles and tear off. In areas that need a brush, it should be a very soft hake brush.

(c) The long threaded beads stitched to the hide should be lightly and carefully swabbed with cotton buds to remove surface dust because, with the swabs, any dirt will not be transferred to the leather substrate. Swabbing should be done carefully to avoid removing fats which are part of the history of the dress.

(d) The loose threads should be tied to avoid the loss of other beads; this is better than introducing new threads because the old threads share the history of the dress. New threads will lower the value of the dress.

(e) Since the oxidation is early and the corrosion has not formed a crust yet, the copper rings should be cleaned with cotton swabs. The swabs will make removal easier. It may take a long time to finish cleaning, but this method is better than any aqueous treatment because it can stain the hide.

(f) A bamboo stick can also be used to remove some grime from the copper rings. A bamboo stick will not scratch the copper rings, and while working, I propose using

a clean cotton barrier cloth between the surrounding parts. The barriers will ensure that the materials being removed do not transfer to other materials of the dress.

(g) Before removing the paint, it should be tested with cotton buds with minimal water, which cannot stain the hide. If it stains the cotton bud with both tests, it can be removed with ethanol because it cannot stain the hide and evaporate quickly.

5.6. Recommendation for storage and handling.

(a) Since hide is structurally unstable, the dress should be stored in a well-ventilated environment with a temperature of approximately 18°c and relative humidity of at least 45 -55% RH. A dry environment needs to be avoided, as this will cause the leather to split. Relative humidity above 65 will cause mould to grow on the dress of which will cause it to stain. Leather is protein to some insects, and as such, the dress needs to be stored in cold space to prevent insect infestation. Inherent chemical degradation is also possible, and it should not be placed in fluctuating environmental conditions.

(b) The dress should not be exposed to visible light, UV or infra-red. The recommended wavelength is 50 lux, and it should be stored in the dark to slow down oxidation, which has already started on the dress.

(c) Minimum handling is highly advised as frequent handling or movement (usually without adequate support) can apply stress and weaken the hide. Furthermore, some of the threads are weak, and some are already breaking, and it can also cause the loss of more beads and copper rings. If handling is to be done, nitrate gloves should be worn to avoid transferring foreign materials to the dress.

(d) If the dress is placed in storage, it should be provided with sufficient horizontal storage space to allow the dress to rest and to ensure that the long threaded glass beads and copper rings are not strained or lost.

(e) An enclosure should be made to protect the dress from dust and possible pollutants, water and other environmental forces which might negatively affect it. The enclosure should be padded with a polyethylene foam sheet, and the ends of the waist can be supported with polyethylene foam. A tissue paper can be used to create a softer cushion for the dress. It should also be padded and supported to stop further tearing and secure the copper rings and metal attachments. The dress is semi tanned, and if it is allowed to

come in contact with any liquid and left to dry, there is a high possibility that it will stiffen, shrink and be stained.

(f) It should be displayed in a display case to prevent dust, grime, insects and constant handling by visitors. It should also be padded with polyethylene foam sheet and tissue paper, while the waist ends should be supported with polyethylene foam.

(g) The dress should be monitored to ensure that measures taken for preservation are adequate.

(h) The holes seem to be due to how often the dress was used. I recommend them to be left as they are. If it becomes necessary to consolidate them, a very minimum acrylic consolidation (like Paraloid B72) can be applied slightly because the hide might stiffen if applied generously. Paraloid B72 has the advantage of not making hide products sticky.

CHAPTER SIX
Conclusion and recommendations

Lesotho's artisanal hide tanning processes are traditional communal activities that entail Sesotho indigenous knowledge systems that must be investigated, documented, and preserved. This study investigated artisanal hide tanning practices in Lesotho using a Setlokoa cowhide dress as a case study. The main findings related to the literature, research and interviews used during the study's progress are presented in this chapter. Issues arising from decisions needed to be taken regarding the conservation of the cowhide dress (mose oa khomo) that this study is based on will also be presented. Finally, the limitations of the study and recommended areas of future research possibilities will be presented.

Due to the decline in hide preparation and tanning processing in communities in Lesotho, traditional skills employed in the manufacturing of hide products and the use of those products are also declining. The focus of the study was on two topographically different areas: the highlands (Malingoaneng) and the lowlands (Joalaboholo) of Lesotho. The study questions revolve around the traditional manufacturing of mose oa khomo:

(a) What traditional techniques are used for hide preparation in manufacturing mose oa khomo?

(b) What tools are used in traditional leather preparation, tanning, and manufacturing mose oa khomo?

(c) What is the cultural significance of the materials and techniques used to manufacture mose oa khomo?

(d) Which materials are used for decorating mose oa khomo?

This study concludes that only the traditional hide and skin preparation techniques exist in Joalaboholo and Malingoaneng. No artisans who still manufacture mose oa khomo could not be found in either area.

As a result, the study then focused on hide preparation and tanning. Differences were found between the two areas. At Malingoaneng, hide processing is still a communal activity, but at Joalaboholo, it has become a job, or an activity done by skilled individuals. Differences were

also found in hide softening techniques. At Joalaboholo, artisans soak their hides in the water, while at Malingoaneng, hides are softened with spent grain.

Furthermore, the supply of hides is also different; Joalaboholo artisans get their hides from their neighbouring farms in South Africa. At Malingoaneng, people still have access to several hides due to their continued practice of Sesotho traditional institutions like lebollo[23] and traditional marriages. This study also agrees with Mabille's (1906:373) statement that in Sesotho, hide scraping is only done by men, although the activity is no longer practised only at khotla[24], but at the place of the family owning the hide. Recently Basotho women also participate in the softening of the hides.

This study found that hide processing consists of several intangible cultural knowledge. For instance, the processes of making mafura a lefehlo (sour milk fat) and moroko (spent grain) are used for hide scraping, softening and preservation. These two materials are unique to Basotho culture, making them a new addition to artisanal hide processing in Southern Africa. The most important aspect is that the skills the informants have were acquired from their childhood. Most artisans learned the craft from observing or assisting their parents, grandparents and their parents neighbours. And traditional institutions like initiation (lebollo) play a big role disseminating skills from one generation to another. Basotho used to have gender based spaces like khotla, boys learned different skills from their fathers at this place. Girls went to thakaneng[25] to be advised and taught different skills they will need in future by elderly women who lived an exemplary life in the village. This study also found that if the skills are used frequently, they are perfected in time, and this brings new innovations as they are passed on from one generation to another. However, both khotla and thakaneng are no longer in existence in the villages.

Chapter two of this research presents the scarcity of information concerning the processing of hides and the construction of mose oa khomo. The scarcity of information is due to the small number of published and documented information on tanning processes and specific techniques

[23] Lebollo is a Sesotho name for initiation.
[24] Khotla is a Sesotho traditional court, but other activities which can only be done by men are also done at khotla.

[25] A chosen house of an elder woman where village girls were gathered to be advised and taught different skills which they can use in future.

employed in the manufacturing of mose oa khomo in Lesotho. This lack of documented and published resources forced this research to rely on interviews about these practices.

However, due to several issues, including the inaccessibility of informants, data collection was not accessible. Most artisanal informants had migrated to urban areas or South Africa to find jobs. Some available artisans were also reluctant to provide information without any form of payment. The final setback was the COVID-19 pandemic, it significantly prevented this study's complete information capture. Restrictions due to the pandemic prohibited crucial ceremonies, which could have assisted this study with witness testimonies. As a result, this research information is solely from the informants.

There are apparent differences in artisanal hide processing between the lowlands (Joalaboholo) and highlands (Malingoaneng). Artisanal hide practices in the lowlands are more directed on individual business models, while in the highlands, artisans continue to work communally and still use traditional methods, regardless of the continuous changes they are forced to adapt to.

These issues have resulted in an incomplete collection of data and knowledge surrounding artisanal hide processing and the techniques used to make mose oa khomo in Lesotho. As a result, this study concludes that there is a need for further research into tanning techniques. The focus should also be directed into the intangible cultural processes attached to the rituals and ceremonies associated with this dress.

Different patterns used to decorate mese ea khomo were also identified during the study, although they could not fully be explored due to the constraints discussed in the previous paragraphs. That is why this study concludes that Sesotho patterns are used for communication; especially patterns made of beads and likhohloane[26] (copper rings). Also, the same patterns can be used to show the status of the wearer in society. Further research is needed to thoroughly document the decorations and patterns used on mese ea khomo and their overall significance.

This study concludes that most tools used are similar to the artisanal tools used in other parts of southern Africa, as indicated by Rifkin (2011), Schlupp & Mackinnon (1922), Gebremichael (2016), Bardenhost (2009) and Mabille (1906).

In both study areas, informants indicated that specialized tools were crafted for scraping and preparing hides. These tools were no longer extant in both areas due to the infrequency of their required work. The unavailability of proper tools is why artisans in the highlands opted to use

[26] Likhohloane are copper rings used to decorate different types of hide clothing especially cowhide dresses.

the hoe blade as an alternative. Also, artisans at Joalaboholo, who would have worked on hides daily, now only work if they have a customer. The fact that these artisans usually work in factories full-time indicates a declining sector and the loss of a set of skills along with it. For these reasons, the research has concluded that artisanal hide processing as a sector has declined in Lesotho. There is a need for further, serious investigation and documentation of other activities involved in Sesotho artisanal hide processing and tanning processes.

Chapter five of this research highlights the mose oa khomo, which is the basis of this study. Its provenance and conservation issues are presented. Through the analysis of the interviews conducted, this study concludes that Batlokoa artisans manufactured the case study. The conclusion is supported by the generous use of likhohloane on both sides of the dress. The study has established that this mose oa khomo was part of an initiation graduate regalia due to the bead patterns used to decorate it. The use of makontsiri (long threaded beads) at the back of the dress is said to only be used to adorn Batlokoa initiation graduates. Informants indicated that this mose oa khomo is also a wedding dress, indicating that the owner got married wearing it the same day she graduated from initiation. Further research is required to establish if this practice was a common practice or not.

Although available informants had a lot to say, this study could not find illustrations, and their invaluable knowledge could not be backed up with documentation and illustrations. As a result, this study concludes that further research and documentation of other mese ea khomo is needed for conservation.

The condition assessment of this mose oa khomo indicates that the dress is unstable, as the hide has surface dirt and tears. The likhohloane (copper rings) are oxidising, and some makontsiri (long threaded glass beads) are also missing. Given the nature of the information gathered during the conservation assessment and the study overall, further research is required before a conservation treatment can be carried out on this mose oa khomo. Concerns and issues surrounding the long-term conservation of this, and other associated dresses also need urgent attention.

Regardless of all these challenges, this study shows clearly how much Sesotho intangible cultural heritage is being lost, especially concerning hide processing practices. Therefore, there is a need for vigorous documentation and research of Sesotho material culture to avoid a total loss. As such, this research has established the following areas of importance which need further investigation, namely:

(a) Comprehensive analysis of the significance of spent grain (moroko) on hide softening.

(b) Analysis of how sour milk fat and ochre tans the hide after it has been processed.

(c) Further research into the specific types of décors and their overall cultural significance.

(d) Conservation and analysis of the case study mose oa khomo will inform the conservation of the other two dresses presented and the significance of their different adornments. These other dresses are housed in Morija Museum and archives and are in poor condition, requiring urgent intervention.

Most importantly, the research results suggested that artisanal hide preparation and tanning methods in Lesotho have declined and hide trade chains in Lesotho are non-existent. The scarcity of well-decorated cowhide dresses in both the studied areas indicates the decline in cowhide dresses manufacturing and a loss of beadwork skills in Lesotho.

This research shows that the Sesotho artisanal hide preparation and tanning methods are unique, but despite this, Joalaboholo artisans are focused on the industrialisation of hide processing. This study did not explore this, as it was outside its scope of research.

This study has also established that the construction of the Polihali dam at Malingoaneng will displace most of the community. The displacement poses a threat that community structures will be broken, and it will most likely lead to a further decline and loss of essential intangible cultural skills. As most communal traditional activities will be disrupted, this study represents an urgent and loud call for intensive documentation. This study has formed a basis for documenting intangible and tangible heritage resources needed to preserve and conserve valuable cultural heritage in Lesotho.

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APPENDICES.

Appendix 1. A requisition to conduct a study at Malingoaneng.

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

School of the Arts
Tangible Heritage Conservation

07 March 2021

Area Chief
Tloha-Re-Bue
Malingoaneng
Mokhotlong Tlokoeng

REQUEST FOR PERMISSION TO CONDUCT A RESEARCH IN YOUR AREA

Chief Masiphola Sekonyela

My name is Mabokang Mokotjo I am pursuing a Master of Social Sciences specializing in Tangible Heritage Conservation (Masters) at The University of Pretoria. My research is on CONSERVATION AND ANALYSIS OF MOSE OA KHOMO (COWHIDE DRESS). I am interested on traditional skills employed in the manufacturing of mose oa khomo, specifically methods used for hide preparation and decoration. I wish to understand, and document traditional knowledge systems used for cowhide artifacts. For this research, I am using my family's cowhide dress as my case study.

I sincerely seek your permission to approach cowhide artisans and members of cultural groups from several villages in your area.

Upon the completion of my study, I intent to provide a copy of my research to the Lesotho Arts and Cultural Gallery and Museum.

Yours faithfully

Mabokang Mokotjo.

Page 1 of 1

SCHOOL OF THE ARTS
UNIVERSITY OF PRETORIA
FACULTY OF HUMANITIES

Appendix 2. A requisition letter to conduct a study at Joalaboholo.

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

School of the Arts
Tangible Heritage Conservation

07 March 2021

Area Chief
Joalaboholo
Tsikoane
Leribe 300

REQUEST FOR PERMISSION TO CONDUCT A RESEARCH IN YOUR AREA

Chief Mamojela Molapo

My name is Mabokang Mokotjo I am pursuing a Master of Social Sciences specializing in Tangible Heritage Conservation (Masters) at The University of Pretoria. My research is on CONSERVATION AND ANALYSIS OF MOSE OA KHOMO (COWHIDE DRESS). I am interested on traditional skills employed in the manufacturing of mose oa khomo, specifically methods used for hide preparation and decoration. I wish to understand, and document traditional knowledge systems used for cowhide artifacts. For this research, I am using my family's cowhide dress as my case study.

I sincerely seek your permission to approach cowhide artisans and members of cultural groups from several villages in your area.

Upon the completion of my study, I intent to provide a copy of my research to the Lesotho Arts and Cultural Gallery and Museum.

Yours faithfully

Mabokang Mokotjo.

Appendix 3. Questions for the study: Interview questions in English.

1. What kind of hide is suitable for manufacturing mese ea khomo?
2. What steps are required to process and prepare the hides before they are ready to be made into mese ea khomo?
3. Who in the community is allowed to prepare hides and decoration of mese ea khomo? Is there any ritual around who is allowed to participate in the hide processing and manufacture of mese ea khomo?
4. How is hide preparation and manufacturing of mese ea khomo shared between groups of people in a community?
5. Why is cowhide for mose oa khomo cut in an apron pattern?
6. What decorations are deemed acceptable for a mose oa khomo?
7. Have there been decorative styles and materials used in the past that are not used today? What types of decoration or styles of decoration are used today for decorating mose oa khomo?
8. Do any of the bead decorations have any cultural significance? Do any of the decorations on this mose oa khomo (case study)have any cultural significance?
9. Is cowhide preparation seasonal? If so, what is the reason for this? Was this always the case? What were the reasons in the past?
10. Is the application of animal fat and ochre on mose oa khomo only for decoration, are there any other reason this is done?
11. Do different colours of beads have any cultural significance?
12. How many artisans are involved in the manufacturing and adornment of mose oa khomo in the village?
13. Are the youth in this village interested in cowhide preparation and manufacturing?
14. How do you get the cowhide you use for manufacturing mose oa khomo?
15. Who taught you how to do this?
16. How long have you been following this practice?
17. How does one get better at this?
18. How does one generation learn from the previous?

Appendix 4. Lipotso tsa boithuto. Interview questions in Sesotho

LIPOTSO TSA BOITHUTO.

1. Ke mofuta ofeng oa letlalo la khomo o nepahetseng sebakeng sa ho etsa mese ea khomo?
2. Ke methati efe eo letlalo la khomo le fetang ho eona pele le ka lokela ho sehoa ho etsa mese ea khomo?
3. Ke bo mang ka hara motse ba lumeletsoeng ho nka karolo ha ho lokisoa letlalo la khomo ho etsa mese ea khomo? A na ho na le mosebetsi o tlamehang ho etsetsoa motho ea tlo nka karolo tukisong ea letlalo la khomo?
4. Mosebetsi oa ho lokisetsa letlalo la khomo ho etsa mese ea khomo o arolelanoa joang ka hara lihlopha tse fapaneng tsa sechaba?
5. Hobaneng mese ea khomo e sehoa ka mokhoa oo o sehoang ka ona?
6. Ke mekhabiso efeng e lokelang mese ea khomo ka ho fapana?
7. A na ho na le mekhabiso e neng e sebelisoa khale empa ese e sa sebelisoe morao tjee? Mekhabiso ea morao tjee eona ke efe?
8. Ekaba ho na le mekhabiso e bolelang hohong kapo ho khabisoa feela? A na mekhabiso ee e moseng oa ka e na le seo e se bolelang bochabeng?
9. Ke nako efeng ea selemo eo ho lokisoang matlalo a khomo? Haeba ho joalo mabaka ke afeng? A nae sale ho ntso le joalo le mehleng ea khale? Teng mabaka e ne e le afeng?
10. A na ho tlotsa mose oa khomo ka mafura a lefehlo le letsoku ke sebakeng sa ho khabisa feela kapa ho na le lebaka le leng?
11. Na mebala e fapaneng ea lifaha ena seo e se bolelang sa bochaba?
12. Ke batho ba bakae ba iphelisang ka ho etsa mese ea khomo ka hara motse ka moo?
13. Na bacha ba sebaka see ba na le thahasello mosebetsing oa letlalo la khomo?
14. Matlalo ao le a sebelisang ho etsa mese ea khomo u a nka kae?