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BARK CLOTH: Swedish consumer attitudes towards sustainable fabrics.

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Declaration

I therefore declare that this thesis is my own research and it has been conducted in Sweden. Other countries like Uganda and German feature in this study because they were relevant in this research. Empirical data gathered and the references used in this thesis have been approved and acknowledged.

This Masters’ thesis is submitted to the University of Borås in partial fulfilment for the award of Masters of Fashion Management specialising in Marketing and Retailing.

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Abstract

The fashion industry is faced with a challenge of the world’s population today and it is therefore looking for other alternatives of dressing up the entire population since cotton is at its annual maximum yield. This study introduces an African crafted sustainable textile fabric called Bark cloth. The research includes the details of the fabric, the production process and what the fabric can be used for in order to give the reader a deeper understanding of the fabric and the consumer attitudes towards sustainable fabrics.

A qualitative methodology is used and that is to say; interviews have been conducted as well as empirical data review which is used as basis on both primary and secondary data hence this helped in providing valid information for this study. The study findings and results are greatly based on the field study the author made recently in Uganda to broaden this project and the study is also based on the information that was gathered from the other empirical sources such as interviews and the literatures. The study scope outcomes will be applicable to the fashion industry in general since cotton can be substituted and it will also be very useful at the Swedish School of Textiles for future references and also at the Textile museum in Boras.

Key words
Bark cloth, Identity, Consumer, Market, Consumption and Sustainability
1. Introduction

This chapter introduces the background of this thesis. It also illustrates and clarifies the problem and the purpose of this thesis project.

1.1 Background

Statistics today show that the world population has increased to seven billion people and as humans, we know that every single person needs clothes to wear. According to the Delta Farm Press (12/12/03) The International Cotton Advisory Committee projects that the world cotton production will decrease by 11 percent to 23.2 million tons (106.56 million bales) between 2013 and 2014 due to the continued low cotton prices and increased attractiveness of competing crops. The big population today is also taking over the land that was once used to grow cotton for settlements and farming which means that the cotton production in the world is decreasing. There are other textile materials that can be used alongside the little cotton available today. These positive possibilities also include extracting natural fibers from the forests around the world. The author chooses to write about one of the natural textile fabrics extracted from forests called Bark cloth. It is extracted from a Fig tree species scientifically known Ficus Natalensis and traditionally known as ‘Mutuba tree’ in Luganda and it is found in Uganda in East Africa. This tree is grown just like any other tree. The difference is that the bark of this tree is harvested periodically to make this fabric. The bark cloth making is an ancient craft performed by the Baganda people who live in the Buganda kingdom located in central and southern parts of Uganda. The author is inspired to write about bark cloth because the fabric is still a new fabric to the European textile market and there has been no one to expose Sweden to this type of fabric.
1.2 Problem Statement

Back cloth is a very unique and a special textile fabric. It is commonly regarded as a cultural textile fabric with strong cultural ties especially in Uganda and this has made it remain unknown to the rest of the world for a very long time. There is almost no scientific study done about this sustainable fabric in the fashion industry. Sweden is widely known for its long history of being one of the fashion leaders in the world and for its population being open towards consuming sustainable products. The study aims at investigating Swedish consumers and their attitudes towards new sustainable and fashionable fabrics and the study findings and results are greatly based on the field study the author made recently in Uganda to broaden this study and it is also based on the information that was gathered from the other empirical sources such as interviews and the literatures. The analysis is drawn from the responses got from the themes created for this research and they show instance the consumer’s views and knowledge about existing fabrics and how they go about when new fabrics are launched on the market. Since back cloth is a new fabric on the Swedish market the study also shows the problems that consumers face when meeting fabrics.

1.3 Purpose

The main focus of this study is on consumer attitudes towards consuming fashionable sustainable fabrics such as bark cloth. However, this research partially shows the reader that it is possible to use the forest as an alternative and extract fabrics from the forests in a very sustainable way. It further shows the findings of; if bark cloth is an authentic textile product for Sweden and if the Sweds are willing to consume a more sustainable fabric. This study is based on both practical and philosophical aspects, although it further aims to argue from a consumer point of view basing on the consumer perspectives and attitudes in regards to consuming sustainable fabrics. The author hypotheses that fashionably consuming sustainable fabrics is everyone’s dream but, not everyone can manage to keep up with this consuming behaviour. The author greatly aims to contribute to the fashion industry in general in helping towards finding out how cotton can be substituted since it has decreased in production worldwide and this study will also be very useful at the Textile museum in Boras and mainly at the Swedish School of Textiles for future references especially in the area of sustainable fashion, function and future.

In order to serve the great purpose of this study, a research question has been created and this is; What are the Swedish people’s consumer attitudes towards the consumption of fashionable sustainable textile fabrics?
2. Theoretical Framework

This chapter introduces the selected theories and literatures as the basis for conducting this research. It illustrates the conceptual framework that aims at fulfilling the purpose as well as answering the research questions for this study.

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2.1 Identity

As observed by the author, most of the Swedish consumers are self-driven and one’s identity is very crucial in many aspects of their lives. According to Paul Ricoeur, two basic components of identity are sameness and selfhood (Ricoeur, 1991). Defining Identity as selfhood means that it is an answer to the question who am I or who one is. Identity is a fundamental core that cannot be escaped in the existential matter of being human in a social world. Identity also denotes some sense of sameness or similarity of continuity of this self in time-space. However, identity also implies to non-identity, and that there is someone or something which identities are defined against by others. Hence the similarity is intrinsically bound with the differences, just as self is intrinsically bound with other. That is why identities always have an excluding aspect: to define who one is, is also to state that one is not. Elias le Grand (2010, p.4) states it that as Stuart Hall (1996, p. 5) writes: ‘Throughout their careers, identities can function as points of attachment and only because of their capacity to exclude, to leave out, to render “outside” as objected’.

In this case, the labelling processes attributes are tied to what is called negatively loaded (stereotypical) characteristics ‘marked’ or ‘inscribed’ onto a person who displays these attributes, and who ends up with a ‘spoiled’ identity (Erving Goffman,1963; cf. Link & Phelan, 2001).

2.2 Consumer Cultural Context

In regards to the study purpose, the author chose to study the consumption behaviours from a cultural point of view as guided by the consumer culture theory which embraces this thought
Arnould & Thompson explain that consumer culture theory provides theoretical perspectives that address the dynamic relationships between consumer actions, the marketplace and cultural meanings. Furthermore, consumer culture is viewed as a social arrangement in which the relations between lived culture and social resources, between meaningful ways of life and the symbolic and material resources on which they depend, are mediated through markets (Arnould 2006) and consumers as part of an interconnected system of commercially produced products and images which they use to construct their identity and orient their relationships with others (Kozinets 2001). Kozinets (2001) also views consumer culture as an interconnected system of commercially produced images, texts, and objects that groups use through the construction of overlapping and even conflicting practices, identities, and meanings to make collective sense of their environments and to orient their members’ experiences and lives.

Consumer culture theoretical perspectives require investigation of the contextual, symbolic, and experiential aspects of consumption as they unfold across a consumption cycle that includes acquisition, consumption and possession, and disposition processes. Consumer culture theory explores how consumers actively rework and transform symbolic meanings encoded in advertisements, brands, retail settings, or material goods to manifest their particular personal and social circumstances and further their identity and lifestyle (Kozinets 2001). From this perspective, the marketplace provides consumers with an expansive and heterogeneous palette of resources from which to construct individual and collective identities (Thompson and Hirschman cited in Arnould & Thompson 2005).

In addition, consumer culture in this research constitutes, co-productive ways in which consumers, working with marketer-generated materials, forge a coherent if diversified and often fragmented sense of self (Belk cited in Arnould & Thompson 2005). The corollary premise is that the marketplace has become a preeminent source of mythic and symbolic resources through which people, including those who lack resources to participate in the market as full-fledged consumers, construct narratives of identity. In this sense, consumers are conceived of as identity seekers and makers.

The marketplace culture in consumer culture theory in this regard concerns ways in which consumers forge feelings of social solidarity and create distinctive, fragmentary, self-selected, and sometimes transient cultural worlds through the pursuit of common consumption interests (Belk and Costa cited in Arnould & Thompson 2005). In Socio-historic Patterning of Consumption, Consumer culture theory in this regard addresses institutional and social structures that systematically influence consumption, such as class, community, ethnicity, and gender. Consumers are conceived of as enactors of social roles and positions. The intention is to explore the consumer
society and how it is constituted and sustained (Arnould & Thompson 2005). In regards to the Mass-Mediated Marketplace Ideologies and Consumers’ Interpretive Strategies, Consumer culture theory examines consumer ideology systems of meaning that tend to channel and reproduce consumers’ thoughts and actions in such a way as to defend dominate interests in society (Hirschman cited in Arnould & Thompson 2005).

2.3 Sustainability and Consumption.

The clothing industry today just like the other industries, is not only faced by the financial challenges that have hit the global top agenda but also by the increasing pressure on natural recourses and environmental constraints according to the world economic forum (Sarita Nayyar 2012). In her report, she examines the consumer importance and engagement towards sustainable consumption. The consumers have fully engaged in the value chains and the upstream actions (supply) and they increasingly want the companies to provide sustainable products at the right price and performance. It is also important to note that, the consumers are the key to sustainable consumption and the power to grow this demand lies in their hands (Sarita 2012)

In regards to the suitable sustainable fashion consumption, the eco-fashion has to be involved. Eco-fashion can be defined as clothing that is designed for long lifetime use for example; bark cloth. It is produced in an ethical and authentic production system, it causes little or no environmental impact and it makes use of eco-labelled or recycled materials (Joergens, 2006; Fletcher, 2008). Sustainability issues in the clothing productions are very complex because the supply chain in the clothing industry is fragmented, complicated and widely global. For example, the processes in which fabric manufacturing takes place are by far less transparent than in food production. Thus sustainability and ethics in eco-clothing are evaluated on a very low scale, for example the use of an environmentally friendly material or production method (Fletcher, 2008; Beard, 2008).
3. Methodology

This chapter aims to present the entire operational process of the conceptual framework showing how the author illustrates and defines the methods of how both primary and secondary data were gathered and the analysis of how they were conducted.

3.1 Research approaches

This chapter introduces the entire operational process as the basis for conducting this research. It illustrates the methods of how this research is conducted in order to fulfil the purpose which is finding out the consumer attitudes towards consuming fashionable sustainable textile fabrics such back cloth as well as answering the research question for this study which is; what are the Swedish people’s consumer attitudes towards fashionable sustainable textile fabrics?

The author focused on conducting a qualitative research for this study. The information gathered includes published online articles, printed literature and empirical data collected through interviews random individuals were interviewed in Sweden, Uganda while finding out about the history and the production of Bark cloth and one telephone interview was done with Oliver Heintz the CEO of Barktex a German company that works with Bark Cloth Company in Germany. Internet sources have also been used and carefully examined in this paper with the purpose of supporting the online articles.

The research started with a deeper understanding of the Swedish forest and later continued in to the Ugandan forest. A trip was taken by the author to visit a forest in Uganda to map the bio-diversity of the forest and the land use aspects and the production of bark cloth. While in Uganda, Mabira Forest located in Mukono District, Central Uganda, covering 306 sq km was visited. The Forest is 54km from Kampala and 20km from Jinja and trails the main road from Jinja to Kampala. It is the biggest rainforest in Uganda covering about 300 square kilometres 120 sq mi, 30,000 hectares and 74,000 acres and it is one of the protected forest reserves since 1932. Eco tourism has also greatly developed around this area and it has been taking place since 1996 as a means of conserving the country’s ecosystem. The farmers living around the forest have developed a community ecotourism site where they collectively work together on projects like the back cloth harvesting and they do all this towards the goodness of the forest. The National Forest Authority center for research was also visited and consulted about the growth of the mutuba tree and the author got to know that it is more of a tropical tree and it cannot grow well in Europe.
The author also took a road trip to Masaka and Rakai district located in the southern part of Uganda along Lake Victoria shores where the mutuba tree species are commonly found and also to the sites where the bark cloth is currently and mainly being produced from in order to provide concrete information for the research.

The Bark Cloth textile fabric is a 100% plant fiber. Depending on tree each cloth made is unique and is not like any other because the species of the trees are different. The material can look like close to leather, linen or suede materials as well as get the look of fleece when it is finished. The major areas of use for this fiber are within scientific use, fashion and interior design among others. The mutuba tree’s fabric is very sustainable in all aspects. For example, no tree needs to be cut down to harvest the bark but rather you just harvest the bark of the tree and it grows bark again for as long as you let the tree stand. This is why the author was also inspired to take a step forward and make more research about this tree and the fabric and also see how the fashion sector can benefit from this research.

The author used Interviews and observation methods as a way of collecting data while conducting this research. This method was chosen because the author wanted to get a better understanding of the study and getting direct information from the right peoples’ own point of view and to also be able to provide valid information for this research. A trip to Uganda was made and the author met with the farmers who are working with the bark cloth among others who were also the main interviewees regarding production of bark cloth; they were very useful and helpful throughout the process of the bark cloth production. The interviews were not systematic while in Uganda; the questions asked to the people in Uganda were random questions that were asked by the author to different individuals basing on their experiences and expertise about the bark cloth fabric.

The author chose and used the Interviews as a way to collecting data for this research because it was the easiest way to understand the textile consumer from their own point of view. In total the author conducted ten interviews in Sweden and all of them were face-to-face interviews with these consumers. And one was conducted via the telephone as mentioned earlier. The respondents were both male and female with five professional females and six males.

Five steps in planning the interview process were conducted by the interviewer and these were:

1- Reading background material. The author read a lot of information regarding the Swedish consumer. According to the Swedish Consumer Agency, "the consumers have the power and possibility to make active choices". This helped much in knowing about the history of the Swedish
fashion, how have the consumers consumed fashion textiles in all times and other related information was of great use in giving an overview of how the Swedes are and how they consume.

2- Establishing interview objectives. The author went ahead to think through what to achieve at the end of the interviews in relation to the thesis topic. According to the topic and purpose, the questions were carefully formed in order to achieve relevant information from the respondents. 3- Deciding whom to interview. Since the research is about a textile fabric bark cloth and it’s possibilities of it being consumed in Sweden, the author, the author chose to randomly interview people that would give good information in order to make the research reliable since first-hand information regarding their consumer behaviour, sustainability and knowledge regarding textiles was achieved in the end. 4- Preparing the interviewee. The interviewer had a personal conversation with each of the respondents before the interview was conducted. The ones that were met face-to-face, they were briefed about the interview a day before the interviews. The author introduced and described the study and goals for the research. The research generally was introduced to the respondents before so that on the day for the interviews they were more aware of it and therefore more prepared. 5- Deciding on question types and structure. The questions were stated and categorized into four themes in order to get a deeper understanding of the study. The themes were; Consumer Identity and Fabrics, Consumer in a group, Knowledge about Bark cloth, Shopping effects and lastly, Sustainability and Consumption.

The types of questions asked were Open-ended. This formula was chosen because the author was interested in the consumer’s breadth and depth of reply and they and allowing the interviewees to respond how they wish and to what length they wished, was intended. With this approach, the author managed to put the interviewees at ease, as well as reflecting on the educational purpose, values, attitudes, and benefits of this research in general because the interviewees provided a lot of rich information in detail. This method also allowed the interviewer to pick up on the interviewee's vocabulary since different people in Sweden respond differently in English as a language. At the end of all it all, this interview methodology was very useful since it revealed more avenues of further questioning that may have gone untapped if the author had used other methods.

The Interviews were also recorded using a cell phone recorder. All the recordings were done with permission and understanding from the interviewees. This helped the author in providing a completely accurate record of what each person said. This also freed the author to listen and respond more rapidly when carrying out the research. Recordings also allowed a better eye contact during the interviews. The interviewer also took some notes while conducting the interviews. This helped in keeping the interviewers alert and to focus while conducting. This helped in recalling
important questions and answers that were provided. It also showed interviewees that the author was interested in the interview. Note taking also demonstrated that the interviewer was very prepared for the interviews.
4. Bark cloth

This chapter aims at presenting the information gathered while conducting this research. Much of the information in this chapter is about Bark cloth as a fabric. It explains the history and how far the fabric has come; it also shows the sustainability aspects the fabric's craftsmanship, the fabric contents and the already established companies in Europe.

4.1 History of Bark cloth

This research is a continuation of the Dignity 2012 project’s field study which was sponsored by the Swedish School of Textiles. A trip was made to Uganda to find out more about bark cloth. Bark cloth originates from Uganda in East Africa. In Uganda, the bark cloth production is mainly found in the central region of the country and it is done by the Baganda. The Baganda people of Buganda kingdom people are believed to have never walked naked neither did they ever wear skins only during the Stone Age period. A lot of improvisation and creativity is believed to be common in the African culture and heritage. The people of Buganda kingdom never walked naked because they have always improvised something to wear. According to Mr. Male the current Katikiro of Kkobe Clan in Buganda, it is noted in a book ‘shaping the society through Christianity and Culture ‘2012’ that ‘the Kkobe clan in Buganda is traditionally responsible for preparing the King's coronation bark cloth dress. Mr. Male added that ‘Olubugo was discovered during the generation of Kabaka Kintu, the first king of Buganda who reigned around the second generation of Stone Age period. Before the hoe was discovered, our ancestors discovered how to make attire for dressing. This partly explains why before modern technology, Buganda as a society lived in relative comfort and dignity.

Research has been done about bark cloth by individuals, scholars, organizations and companies and these include the United Nations Educational Scientific and Cultural Organization (UNESCO) recently recognized bark cloth among the world’s collective heritage today. In addition, an exhibition was made on Jan.2011 under the patronage of the German Commission for UNESCO on Heimtextil Frankfurt - the world's largest fair for textiles. Bark cloth is said to be the most ancient textile in the history of humanity. However, Olubugo (bark cloth) often invokes fear and it is associated with death in many circles of Uganda's society and many people till today still associate it with death. In other societies, it represents the original Africa and also symbolizes the continent's
granary of creativity and resourcefulness. It is important to note that the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 2005 recognized *Olubugo* (bark cloth) as part of the world's collective heritage with strong ritual importance among the Baganda.

### 4.2 Significance & use

According to Mutabaazi, *Omutaka (Chief)* Augustine Mutumba, a hereditary head of Kkobbe Clan

‘bark cloth was traditionally popular for clothing, beddings and also used as a wrapper for the dead. In addition, “Ow’essiga Kakinda manufactures and sews the bark cloth which the king-to-be adorns for the coronation ceremony,” This fabric in Buganda is a respected item in the burial and other cultural ceremonies of quite a number of communities in Uganda. In Tooro kingdom found in the western part of Uganda, the *Engabo* (Kings Guards) are identified from the common people by bark cloth uniforms that they wear when on duty. In Bunyoro kingdom, also found in the western part of Uganda, bark cloth is as significant as it is in the Buganda kingdom; bark cloth has a special place in their cultural settings.

Today, the *Olubugo* is used as an alternative to the canvas by painters due to its varying textures and unique lasting capabilities when well handled. Bark cloth in Buganda is worn by men and women like a toga, with a sash around the waist for women.

The common bark cloth has a terracotta color, but the bark cloth of the kings and chiefs is dyed white or black and worn in a different style to underline their status. This fabric is not only commonly worn at coronations and healing ceremonies, funerals and cultural gatherings but it is also used for curtains, mosquito screens, beddings and storage and today the production of bark cloth has prospered with many workshops in almost every village in the Buganda kingdom just as it was before the abolition of cultural Institutions in Uganda.

However, till today some people still associate bark cloth with death in Uganda. This is because before modernity was brought to the kingdom, it was the wrapper for the dead. According to Mr. Male, The bark cloth worked well because of its hard surface and before the introduction of coffins and mourners often refer to it as a suite for the dead. Despite the fear attached to it and competition from linen and the cotton fabric, the *Olubugo* or bark cloth is still useful and is used to perform many folk functions as noted by Mutabaazi.

Back cloth is scientifically used in hospitals. It contains medicinal properties like cork, phellem, and microbial flora. It has the ability to suck out water and preserve dead bodies; it also works just as goose in hospitals. When it is wrapped around a dead person, it is believed that the person will be wholly preserved for over fifty years. The fabric will suck out the water from the body and the body will not decompose. Bark cloth is also used to form energy/make fire because it burns for a very
long time. Today, bark cloth is also used for craft products such as hats, mats, book covers, purses, cloths and many more.

4.2.1 End of era
It is believed that with the introduction of cotton cloth by Arab caravan traders in the nineteenth century, production slowed down and eventually faded out and reducing the wearing of bark cloth to particular cultural and spiritual functions. Mutabaaazi(2007). But, bark cloth is still highly recognized among the Baganda community as a marker of specific political and cultural traditions. After the comeback of cultural institutions in Uganda, the production of bark cloth has been particularly encouraged and promoted in the Buganda kingdom. The Ugandan traditionalists argue that the collapse of bark cloth was never caused by the coming of cotton and linen but, by the abolition of Uganda’s cultural institutions and practices including Buganda by the late Idi Amin. When the new government came to power it restored the kingdom ship and after the restoration of cultural institutions by the current government, the people particularly started making old fashioned life styles like the production of bark cloth and it is used more fashionably in Uganda today. Mr. Male adds that the decline of bark cloth production was also due to the 'blind' following of western religions especially Christianity that branded everything African tradition devilish and as a result of this, it created discrimination and the number of bark cloth makers declined and they became marginalized in society.

4.2.2 Making a come back
It is also believed that if bark cloth use and importance are dying out as the only alternative for human dressing, it is definitely emerging elsewhere. According to Joshua Kamya, a traditional healer and supplier of bark cloth Masaka- Uganda, Bark cloth is doing well in the area of traditional healing. He then adds that "The production of bark-cloth is still alive and doing well today in some areas although disappearing in others. Even though the everyday use of bark-cloth is vanishing, its use as a cultural marker is thriving," it is common to believe that in most cases, an industry of self-expression like bark-cloth production is an adornment for it is always living and this breathing contemporary art practice is closely connected to nature.

4.2.3 Mutuba tree species
- Entakire (Has the best bark cloth quality)
4.3 Planting of the Mutuba Tree

The planting of mutuba tree is very easy and simple. A branch is cut off the main tree that has produced backcloth at least twice. The branch is then cleared by chopping off the smaller branches that have grown on it. A hole is dug and it should be 1½ feet deep with a small radius of up to 15cm or bigger depending on the size of the branch. The branch is put in the hole, and then is soil added and a stick is used to press the soil around the newly planted tree in order to make firm ground for the tree to grow. The tree takes between 2 to 4 years to mature for harvesting. The farmer will notice that the tree is ready for harvesting basing on the color of leaves, when the green color of the leaves becomes darker; it’s a sign that the tree is ready for harvesting. The tree is preferably grown in the banana and coffee plantations as a shade tree. A mutuba tree can last for more than 25 years and the farmer can harvest bark cloth every year from it.

Picture 1. The author planting a Mutuba tree
4.4 The Craftsmanship

A field visit was done by the author all the way to Busowe village, kabwoko parish, kinumba subcounty, kyotera county in Rakai District located in the southern part of Uganda, and this is where most information about bark cloth was gathered from. Interviews were done and the main interviewee was Mr. Jumba Martin Kaganda. Bark cloth making is an ancient craft performed by the Baganda people who live in the Buganda kingdom in the south Uganda. ‘For over 600 years, craftsmen of the Ngonge clan have been manufacturing bark cloth for the Baganda royal family and the rest of the community, headed by a kaboggoza, the hereditary chief craftsman, who lives in the Nsangwa village in Mawokota, situated in Mpigi District.’ Mr. Jumba said.

The inner bark of the Mutuba tree (*ficus natalensis*) or backcloth is harvested during the rainy seasons and then during the process, beaten with a wooden mallet to make its texture soft and fine and it will also be put under the sun to give it an even terracotta color. Craftsmen work in an open shed to protect the bark from drying out too quickly.

According to Mr. Jumba, the person who conducts the exercise is called omukomazi and is expected to be very skillful and patient. ‘The craftsman has to wake up very early and start on his job. But sometimes he works late till in the evening.’ says Omutaka Augustine Mutumba, a hereditary head of Kkobbe Clan. After the removal the tree trunk is wrapped with banana leaves inorder to avoid the tree form drying if it’s a sunny season and also to avoid infections that the tree can be exposed to. The protective banana leaves are removed after.

4.4.1 Materials required

Ladder: *Nkandago*

Panga: *Omwambe*

Knife: *Akaso/Akambe*

Wooden mallet: *Ensaamo*

Pic 2 – wooden mallet  
Pic 3 – the ladder  
Pic 4 – the panga
4.4.2 Production Flow Chart of Bark Cloth

The bark cloth production involves a lot of processes till its final stage when it fully becomes a fabric that is ready to wear.

**STEP 1**

The rough outer layer of the tree is carefully scraped off the tree using a small panga. After the bark of the tree is cleared, the *omukomazi* uses a knife locally known as *a kaso akoogi* to map and cut the outline of the bark needed. A ladder traditionally known as *nkandago* in, is used to reach the
higher parts of the tree that the *omukomazi* can’t closely reach. The bark is then slit vertically from a marking near the shoot to the end of the stem at the bottom to mark what should be taken off the tree. Then the bark is peeled off the tree using soft materials like a stalk of a banana leaf in order to protect the tree from piercings and scratches. The stalk is also used to prevent unnecessary cuttings or injuries on the harvest.

The tree produces an adhesive white sap once peeled and the inner part of the tree is exposed to air. The sap turns in to color brown when exposed to air. The tree is then covered with fresh banana leaves. This helps the growing bark to be fleshy. It also controls the effects of external factors like direct sunshine, piercings by passersby or insects and birds like wood peckers. This process is preferably done during rainy seasons because the weather helps the trees gain moisture and heal quickly unlike in the dry seasons.

**STEP 2**
The harvest is carefully pulled down off the tree and carefully placed down. The *omukomazi* then clears off the bark the green and brown outermost coat, so that it is smoothened. The bark is then folded, tied with a string made from banana fiber or sisal and carried home or to the working place.

The harvest is then boiled on fire. Firewood is used to make a fire used in the boiling process. The boiling point of water is normal and about 99.97 degrees Celsius at a pressure of 1 atm (101.325 kPa). The temperature of the water does not matter that much but, the timing is very crucial. The bark should be on fire for 30-45 minutes. The boiling of the bark softens the harvest and the final product (fabric) is a softer and finer. However, the harvest may also not be boiled but the final product is hard and may be used for making carpets, designing interiors like walls, ceilings and so much more.

**STEP 3**
The boiled or un boiled harvest is then laid on a wooden platform and hit with wooden mallet known as *ensaamo*. This softens and widens the harvest. During this process, if a tear or hole is noticed the *omokomazi* uses a needle and a tiny piece of sisal string to sew it together. The repairs done at this stage can never be noticed later when the product is done because the craftsman hits it up again and the products joins together.

**STEP 4**
The piece is put under the sun for thirty minutes to let some moisture to evaporate. The sun should be hot between 20 and 25 degrees Celsius. It is then taken bark to the wooden platform and hit
again. The bark is then rolled and pulled to opposite sides to stretch and produce at least three times the length after the first hitting.

The enlarged piece of backcloth is then spread under the sun and if there is no sunshine, it is still spread in one place until the sun shines. Spreading it under the sun adds color and causes tonal variation in the different pieces of backcloths. The hotter the sun, the deeper and brighter the color however it is left under too much sunshine, it can get burnt and can end up have black patches. In case one needs lighter colors or shades, the piece of bark cloth is spread under the sun for a shorter period of time.

STEP 5
For more softening of the fabric, the bark cloth hitting is done again. At this stage it is done tenderly because too much hitting could tear the product. The amount of force needed when hitting at this stage can only be judged by feeling the texture.

4.5 Companies working with Bark-Cloth

Nowadays, a large number of companies find themselves in a situation in which they feel they must take responsibility for the environmental and social aspects associated with every aspect of their production. They are motivated to improve or control environmental performance both upstream and downstream by various factors including governmental regulations, market demand, personal and business philosophy, and pressure from stakeholders.

The versatility of a long-forgotten cloth was rediscovered and industrialized by human beings. Bark Cloth has given the people of Uganda a chance to earn money in one more sphere of business apart from agriculture. Besides, an old tradition has been revived and the inhabitants of Uganda are busy with it again. Thanks to Bark Cloth Uganda has established business relations and links to many countries all over the world.

While the domestic markets for Bark Cloth have decreased and the tradition is fading, a German company has started to buy high-quality Bark Cloth from the local producers and is now trying to develop an international market for that product. The company receives financial support from a German development agency, because the project holds a high potential for developing a small-
scale rural industry and thereby creating income generating activities in an economically underdeveloped country

This study is looking into such a company which is committed to support a local industry in an underdeveloped rural area of Uganda, which may help to reduce poverty through generating jobs and income for a number of small-scale farmers.

4.5.1 The Public Private Partnership (PPP) - Programme

In 1999 a programme started with a new approach for the development co-operation by German Federal Ministry of Economic Co-operation and Development (BMZ). Under this programme, grants and co-financing are providing through public funds of such private companies which set off their sustainable projects in the developing countries. The aim is to build partnerships between private sector and public agencies which are anticipated to work more effectively through this synergy. That’s why this programme is therefore called Public Private Partnership (PPP) programme.

Today, private companies are spreading out their activities in the developing countries and now they are encouraged to start sustainable projects in which they would not invest without an additional financial incentive. These private companies started to receive financial aid and also get the advantage of the knowledge and experience of public development agencies and on the other hand public agencies benefit from the resources of private sector. It is believed that if a development project includes real business potential, the project has more chances to survive.

After the development agency has withdrawn and public financing has stopped. The German federal development agency, the GIZ (formerly GTZ), has been given the task of working with private companies in the field of technical co-operation, which includes vocational training and environmental management among other things (Reizenstein von, Eckard, 2003). As Oliver described in his interview that company is attached with this project from 2001 until 2005. With the support of this project, they help the local former to give education about land management, soil fertility programme and to get eco certifications (H.Oliver, 2012).
4.5.2 The BARK CLOTH Company

In 1999 a small German company started doing business with Bark Cloth and founded a joint-venture between Bark Cloth company and Bark Cloth Uganda Ltd. Oliver Heinz a German national is the founder of the company and Marry Barongo from Uganda is co-founder of the company. BARK CLOTH® and BARKTEX® are registered trade mark of the company. The company office BARK CLOTH Europe located in Ebringen (near to Freiburg city), southwest part of Germany. They also have their showroom which is 10 km far away from their office. The nearest airport to reach this location is tri-national Swiss-German-French airport of Basel (BSL). The company buys a Bark Cloth from local producers of Uganda, exports it to Germany and tries to develop a market for it. After a long commitment, dedication of hard working and a lot time spending with personal interest, Oliver succeed in developing a niche market for this material which is known as Bark Cloth. The company work closely with African farmers together and secure their livelihoods by buying unfinished Bark Cloth. Bark Cloth Europe combines the traditional material from the bark of the Ficus natalensis tree and modern design, which is always trying to preserve the social and environmental responsibility. Bark Cloth allows its activity to the farmers’ access to the international market for their products (Barktex.com).

For the purpose of Bark Cloth procurement, the company has chosen an area in south western Uganda which has been a traditional centre for Bark Cloth production. In this area Bark Cloth has identified some of the most knowledgeable Bark Cloth makers from around 16 villages and has set up a system of training schemes for Bark Cloth making. The number of villages has steadily increased and new villages are still joining the project. BARK CLOTH applied and later qualified for the participation in the PPP-programme and now receives financial, logistic and technical support from the GIZ(formerly GTZ) (Reizenstein von, Eckard, 2003).

The Ugandan-German family venture BARK CLOTH® is pioneer of systematic Bark Cloth development and production and dedicated to the continuing cooperation with small scale farmers in Uganda. The company began by purchasing the raw Bark Cloth and is now trying to allocate some of the further processing steps to the production areas which will guarantee that a larger
proportion of the added value remains with the local producers. The company’s intention is not to produce a finished good but to find innovative partners who want to realise their own ideas and who will be supplied with high quality Bark Cloth (Barktex.com).

4.5.3 BARTEX®

BARTEX® is another register trade mark of the company. It is the refine form of the Bark Cloth®. It can be developed by metamorphose with special unique process which also improve its properties and enhance its application. By the addition of biopolymers, natural resins, oils and waxes, BARTEX® is shaped in 3-dimenstional shapes which enhance its use in automobile, yachts and interior designing. Some application examples are shown in the pictures below;

Pic. 5 Car Interior

Pic. 6 Car Interior

Pic. 7 Car seat
Social Aspect

BARK CLOTH EUROPE and BARK CLOTH (Uganda) Ltd. believe on the true business strategy that satisfied worker lead to satisfy a customer. They chose a Districts of Rakai and Masaka which are considering poor in this region to support the local farmers. In the beginning 680 formers starts working properly by getting initially education and support. This means that a new opportunity of income for 6000 people was created. This project got a significant importance because coffee prices which is one of the major cash crops of this region severely declined and yet is was the main crop of this region. After all these activities German Ministry for Co-operation and Development BMZ has been announced in its one evaluation report that BARK CLOTH® project contribute remarkably to reduce the poverty. As Oliver said in his interview, that company pays 6000 Uganda shilling per day along with two time meals for the workers per day.

Another way to support the formers with concept of fair trade, BARK CLOTH pays 30% extra buying price for ordinary quality and 300% extra price for qualities above average of Bark Cloth material as compared to the local market. The local market exists parallel in the margin as it had existed before. BARK CLOTH helped 10 out of 19 producer groups of production to register as officially BARK CLOTH Formers and Producers Associations. This helped to these groups to get easier access to training from NGO´s, microfinance schemes and to get cheaper seeds. Normally, this privilege position of the organization helped to strengthens civil society (H. Oliver, 2012).

Together with BARK CLOTH® and BARK CLOTH (U) Limited manufacturing association has set up savings scheme. In this scheme company pays 5% in addition to agreed price and saved in this scheme for the mutuba tree farmers who are members of this organization to buy agriculture tools for them.

The production takes place under the guidelines of the ILO (International Labor Organization) and SA 8000. Prior to certification needed in a complex process with the IFOAM (International Federation of Organic Agriculture Movements) – Accredited Certification company IMO Institute for Marktökologie from Weinfelden, Switzerland standards (Barktex.de).

Environmental Aspect

BARK CLOTH® and BARK CLOTH (U) aims to support a healthy environment. They initiated lots of projects to train and support the farmers who are growing Ficus natalensis and also banana and coffee and seriously evaluated and use the natural methods, such as maintaining soil fertility, natural techniques for pest and disease control management. In their chemical dyeing and finishing
processes they also make sure the farmers strictly follow the standards needed to best achieve a low impact on the environment. They have always encouraged the Ficus farmers to use natural dyes. Natural dyes are manufactured from the plants (Reizenstein von, Eckard, 2003).

One most common method to dye the bark cloth formers used as they used Curcuma to dye bark cloth into yellow colour. The process is very simple as

- Boil the water
- Add pounded roots of curcuma and mix them until water got yellow colour. Then put the required bark cloth material into water and mix until bark cloth turns into yellow colour.
- Take out material from the water and spread in the open air.
- And finally clean the yellow coloured bark clothes and dry in the sun (P. Benjamin, 2006)

BARK CLOTH® and BARK CLOTH (U) helped to around 300 farmers to get international eco-certification of the soils. The certificate executes according to the International Federation of Organic Agriculture Movements (IFOAM) and European Union (EU 2092/91) standards and evaluated by external sources. This certification ensures delivery of hygiene, healthy to the customer along with fair trade price for the farmers (barktex.de).

As Oliver said, in his interview that; ‘they always prefer to use standardized dyes according to ISO and EU standards’.
Sustainability Aspect

BARK CLOTH® and BARK CLOTH (U) believe that sustainability at every level of their operation is the foundation of the ethical and environmental aspects of their business. They believe that their customers have an implied relationship with the farmers that promote transparency and best practices at every step, including deep planning decisions such as, from maintaining soil fertility to the finished product. They believe that the customer’s connection to the farmers produces long lasting effects which are part of the value and philosophy of their clothing and business.

During production process, usually farmers use the firewood as fuel to boil the water which causes co2 emission and wastage of wood material. To eliminate this problem, company provide state of the art solar cooker to their formers. More than 100 solar cookers have been working in this region. These solar cookers especially used as substitute of firewood which is require for Bark Cloth production process and as well as for other purpose like food preparation and dyeing finishing. This new advance technology helps to reduce the unhealthy activities which could affect the environment. These solar cookers provide to formers on a very low price and funding is supported by GIZ (formerly GTZ) and BARK CLOTH (U) LTD (H. Oliver, 2012).

Marketing Aspect

Bark Cloth is a niche product and it is seen especially in Textile fairs and on exhibitions. Oliver mentioned that company is quite flexible to meet the market demands. They always have 4000 meters of bark cloth in stock and within 10 days they can provide 6000 meters since they also have relation with the non-registered farmers where they buy quality Bark Cloth. He said ‘demand is growing every year and they are co-ordinating with lot of NGO’s, design and textile schools, design companies and other private clients to introduce this ancient textile with modern design (H.Oliver, 2013).

4.6 Physical properties of Bark Cloth

Bark Cloth is 100% cellulose fiber with small quantity of natural tannin is found in it. It is plant fiber and authentic grown on the basis of ecological forming. It is living cloth between wood and
Each Bark Cloth made from one tree, it means each Bark Cloth is unique in colour and texture and different from one another and has its own particular story. Depending on the lightness and angle makes its appearance looks like leather or the lightness and translucency delicate fleece fabrics. It did not contain any textile agents and chemical auxiliaries.

**Pic. 10** Bark Cloth

Bark Cloth against the main fibre direction has strong tear resistance characteristics. Also it has abrasion, tearing, light, water, stains and fire resistance characteristics. It can easily be used indoor textile material. Some details are as under mention:

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Standards</th>
<th>Units</th>
<th>Value</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight/Grammage</td>
<td>EN 12127</td>
<td>g/m²</td>
<td>90-380</td>
<td></td>
</tr>
<tr>
<td>Thickness</td>
<td>EN ISO 5085</td>
<td>mm</td>
<td>0.30-3.50</td>
<td></td>
</tr>
<tr>
<td>Average Piece size</td>
<td>mm</td>
<td></td>
<td>2000-3000</td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>g / cm³</td>
<td></td>
<td>0.8 - 1.0</td>
<td>Measured with multi pycnometer</td>
</tr>
<tr>
<td>Density</td>
<td>surface density</td>
<td>g / cm³</td>
<td>0.01 - 0.02</td>
<td>According to m / v</td>
</tr>
<tr>
<td>Air permeability</td>
<td>mm / s</td>
<td></td>
<td>1512 - 4692</td>
<td></td>
</tr>
<tr>
<td>Porosity/ pore volume</td>
<td>%</td>
<td></td>
<td>65.9 - 80.1</td>
<td></td>
</tr>
<tr>
<td>Abrasion resistance</td>
<td>EN ISO 12947/2</td>
<td>round</td>
<td>700-13900</td>
<td></td>
</tr>
<tr>
<td>Colour fastness</td>
<td>DIN EN ISO 105-X16</td>
<td></td>
<td>5</td>
<td>Depending on the type</td>
</tr>
<tr>
<td>Tensile strength</td>
<td>DIN EN ISO 13934-1</td>
<td>N</td>
<td>114.66</td>
<td>Depending on the type</td>
</tr>
<tr>
<td>Light fastness</td>
<td>DIN EN ISO 105-B02</td>
<td></td>
<td></td>
<td>It can be used</td>
</tr>
</tbody>
</table>

Table.1 Properties of Bark Cloth (Barktex.de)
4.7 Application of Bark Cloth®

Bark Cloth is not only used as fabric for clothing, but also in home furnishings, furniture and even processed in car consoles. Bark Cloth is imported from Uganda to Germany by air ways. Then it is sold to designers and companies in the semi-finished form. In the last couple of years Bark Cloth became highly valued by using of different companies and designers due to its unique characteristics, texture and feel for example in furniture, interior designer etc.

4.7.1 Application in Furniture

Pic 12 Capboard

Pic.13 Back of Bed
4.7.2 Application in Fashion and Accessories

Pic 14 A Stool

Pic 15 skirt and coat  Pic 16 A bag  Pic 17
4.7.3 Application in Interior designing

Pic 18 A bark cloth Jacket

Pic 19 A pair of shorts

Pic 20 Wall Decoration

Pic 21 Bark Cloth Pillow
4.8 Comparison of Bark Properties with Viscose and Cotton

On the basis of characteristics a table is made with the help information which we got from the different websites and from the case company Bark Cloth.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Bark Cloth</th>
<th>Cotton</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiber</td>
<td>Bark</td>
<td>Natural</td>
</tr>
<tr>
<td>Cost</td>
<td>Expensive</td>
<td>Low</td>
</tr>
<tr>
<td>Mass Production</td>
<td>Very poor</td>
<td>Very Good</td>
</tr>
<tr>
<td>Environmental Aspect</td>
<td>Very Good</td>
<td>Poor</td>
</tr>
<tr>
<td>Sustainable Aspect</td>
<td>Very Good</td>
<td>Poor</td>
</tr>
<tr>
<td>Strength</td>
<td>Very Good</td>
<td>Good</td>
</tr>
<tr>
<td>Water Absorbability</td>
<td>Very Good</td>
<td>Good</td>
</tr>
<tr>
<td>Chemical Resistance</td>
<td>Poor</td>
<td>Poor</td>
</tr>
<tr>
<td>Thermal Protection</td>
<td>poor</td>
<td>Good</td>
</tr>
<tr>
<td>Flexibility</td>
<td>Very Good</td>
<td>Poor</td>
</tr>
<tr>
<td>Softness</td>
<td>Poor</td>
<td>Good</td>
</tr>
<tr>
<td>Smoothness</td>
<td>Poor</td>
<td>Poor</td>
</tr>
<tr>
<td>Crease Recovery</td>
<td>Poor</td>
<td>Poor</td>
</tr>
<tr>
<td>Uniformity</td>
<td>Poor</td>
<td>Poor</td>
</tr>
<tr>
<td>Antipilling</td>
<td>Very Good</td>
<td>Good</td>
</tr>
<tr>
<td>Wash &amp; Wear</td>
<td>Poor</td>
<td>Good</td>
</tr>
<tr>
<td>Airpremibility</td>
<td>Good</td>
<td>Very Good</td>
</tr>
</tbody>
</table>

Table2. A comparison of Bark Cloth Cotton (swicofil.com)
4.9 The Higg Index

In this research, the sustainability aspect of bark cloth is constantly mentioned. In order to make the reader understand how sustainable bark cloth is, the higg index model is used to measure how much bark cloth is sustainable. This also helps to show the consumer that bark cloth is sustainable according to this evaluation process and this further helps to reveal that this fabric is not only fashionable but also a good sustainable textile fabric. After reading through the higg index results, the Swedish consumer is able to develop an attitude and make a decision whether they can identify with this textile fabric due to its sustainable state of being. The higg index goes in to detail to explain all the sub aspects of sustainability according to its standards as explained below.

Water Use and Quantity

Water is used only once during the processing of bark cloth. It is used when boiling the bark of tree in order to make it softer. After boiling, the water is poured in the banana plantation. It is usually brown in colour and it contains some organic minerals that is why it is poured in the plantation to help the soil generate the minerals. The Quantity of the water used depends on how big the cooking souse-pan is and how many backs are boiling in it. A single bark boils in approximately 10 litters of water.

Chemicals and Toxicity
The farmers that produce bark cloth in Uganda do not use chemicals at all. They have a farmers’ association and have legal laws that govern them. Any farmer caught breaking a law like using chemicals, faces a seriously punished.

Energy & Emissions
There is no direct embedded energy use and carbon in the production of bark cloth. The fire use in the boing process is made by firewood got mainly from the mutuba tree.

Waste
The waste is taken bark to the garden to decompose and make manure for the soil. It has minerals that are effective for the Ugandan soils. The waste is also managed during the processing period.
Chemicals & Toxicity
There are no chemicals involved in the cultivation of the trees and the production throughout process from the raw materials to the finished products. The government together with the farmers’ association abolished the use of chemicals because toxics are potentially dangerous to the materials and also can cause health and environmental risks if not properly handled by expertise.

Social and Labour
The farmers around the forest and the farmers who work with the bark cloth have all come up with Farmer’s Associations that Collaborate with industry peers and supply chains to achieve full life cycle transparency about the social and ethical performance impacts of both the associations and the fabrics. Mabira Forest Integrated Community Organization (Mafico) is a non-governmental organization (NGO) formed by the people living within and around Mabira forest and the Bark cloth Uganda limited are mainly the associations that the author visited. These two work alongside the National Forestry Authority (NFA) and National Environmental Management Authority (NEMA). The farmers themselves are the ones who provide the labour. All the recruited staff /volunteers under the different projects work under the direct supervision of the executive secretary. The Common Interest Group (CIG) is the lowest implementation level linked by the Common Interest Committee (CIC) through the Sub Standing Committees (SSC) to the CSC elected and approved by the District Commissioner (DC). The farmer’s associations work with projects that benefit the entire community and these include; community ecotourism activities, collaborative forest management, environmental education in Schools and communities, Nursery management for income generation, Health education at our health centers. Tree Planting activities (Enrichment tree planting and on farm) Hand crafting materials identification, designing, marketing and training, teaching in nursery, Primary and secondary schools (including academic subjects and life skills, and they also organize sport and art activities for the children. They also engage in counseling activities as well as Research under graduate and post graduate.

Land Use

The land around the forest is used in very many ways; economically, the land is used for industrialisation, there industries like Kakira sugar works, Nile breweries, Nyanza Textiles. Large scale farming also takes place in the areas sugarcane and tea is the common grown crops on large scale. Fishing also takes place on Lake Victoria and along River Nile and it’s a good business in the area. Locally, animal raring is conducted by many farmers animals like cows, goats, poultry, among others are looked after. Besides that food/cash crop growing like bananas, coffee, cassava among others. Infrastructures like roads, schools, hospitals, homes stead, commercial buildings like banks, supermarkets anymore. Tourism activities like forest walks, bird watching, Lake boat rides, beaches, River Nile, banji jumping, boat races/rides, water rafting, Scenery
views like the equator, falls and many others. Entertainment places like hotels, clubs, sports, restaurant among others are well highly used by the population.

<table>
<thead>
<tr>
<th>Higg Index</th>
<th>Quantity</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land use</td>
<td>Yield/m² 10 meters b/w the trees.</td>
<td>Trees are spaced when planting to allow good grows</td>
</tr>
<tr>
<td>Bio-diversity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemistry people</td>
<td>Nil</td>
<td>There are no chemicals used</td>
</tr>
<tr>
<td>Chemistry environment</td>
<td>Nil</td>
<td>No chemicals used</td>
</tr>
<tr>
<td>Social</td>
<td></td>
<td>Basically handled by the farmers</td>
</tr>
<tr>
<td>Waste</td>
<td></td>
<td>Waste is put bark to the garden to create manure.</td>
</tr>
<tr>
<td>Energy use &amp; ghg</td>
<td>Fire wood</td>
<td>No electronicals, the process is throughout man-made.</td>
</tr>
<tr>
<td>Environmental mgnt program</td>
<td></td>
<td>They worker under the Uganda National Forest Authority (UNFA)</td>
</tr>
<tr>
<td>Water use</td>
<td>(m³/square meter fabric)</td>
<td>During the boiling process, 1 bark boils in approximately 10litres of water.</td>
</tr>
<tr>
<td>Waste water effluent</td>
<td></td>
<td>The water is poured bark in the garden</td>
</tr>
<tr>
<td>Emissions to air</td>
<td>Nil</td>
<td>There are no emissions from machines, cars or</td>
</tr>
<tr>
<td>Waste management</td>
<td></td>
<td>Taken bark to the garden to decompose and make manure for the soil.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>-------------------------------------</td>
<td>-----------------------------------------------------------------</td>
</tr>
<tr>
<td>Pollution prevention</td>
<td>Noise pollution when working during the beating process.</td>
<td></td>
</tr>
<tr>
<td>Carcinogen-acidity</td>
<td>Nil</td>
<td>No chemicals, it’s a natural process</td>
</tr>
<tr>
<td>Acute Toxicity</td>
<td>Nil</td>
<td>No chemicals</td>
</tr>
<tr>
<td>Reproductive/Endocrine Disrupter Toxicity</td>
<td>Nil</td>
<td>No chemicals</td>
</tr>
<tr>
<td>Municipal Solid Waste</td>
<td>Nil</td>
<td>No chemicals</td>
</tr>
<tr>
<td>Industrial waste</td>
<td>Nil</td>
<td>No chemicals</td>
</tr>
<tr>
<td>Recyclable</td>
<td>Yes</td>
<td>The fabric is not recyclable, it’s maintained</td>
</tr>
<tr>
<td>Compostable waste</td>
<td></td>
<td>The waste is decomposable</td>
</tr>
</tbody>
</table>
5. Results

This chapter aims at presenting the data gathered while conducting this research. It presents the results/feedback got from the interviewees. It also presents the people that were interviewed. Lastly, this chapter presents the themes that were created by the author.

This chapter presents all the data gathered while conducting this research. It illustrates all the feedback got from the interviewees that contributed to this report. This chapter greatly aims at fulfilling the purpose of the research which is finding out the consumer attitudes towards consuming fashionable sustainable textile fabrics such as back cloth as well as answering the research question for this study which is what are the Swedish people’s consumer attitudes towards fashionable sustainable textile fabrics? The results in this chapter are gathered from the people interviewed in Sweden and they are categorised as elaborated below;

5.1 Data Presentation
The author presents the results gathered from the interviews that were conducted. Ten participants have been carefully chosen to represent the rest of the interviewees. Five males and five females have been chosen in order to get a balance with the presentation of the results. Alphabetical letters A-J are used to represent the people interviewed. Letters A-E represent the females whereas, F-J represent the males. The respondents responded according to the five themes of the questionnaire namely; the fashion consumer and fabrics, Consumer in a group, Knowledge on Bark cloth, shopping effects and lastly, sustainability and consumption.

5.1.1 Socio Demographic Characteristics
Tables 1 and 2 below show the respondents that were interviewed in Sweden in order to answer the research questions. The respondents are presented in the order of how they have been interviewed. The study participants hold various professions as shown in the tables 1 and 2. Their ages are also noted accordingly.
### Females

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Project Manager</td>
<td>B</td>
<td>Nurse</td>
<td>C</td>
<td>Housewife and school teacher</td>
</tr>
<tr>
<td></td>
<td>Age: 32</td>
<td></td>
<td>Age: 60</td>
<td></td>
<td>Age: 52</td>
</tr>
<tr>
<td>D</td>
<td>Project manager, Field of art, design and fashion</td>
<td></td>
<td></td>
<td>Age: 44 years</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Lawyer- Trade Council</td>
<td></td>
<td></td>
<td>Age: 39</td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Interviewed females

### Males

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Engineer/Computer Administrator</td>
<td>G</td>
<td>Sales Manager</td>
<td>H</td>
<td>Program Manager - SI</td>
</tr>
<tr>
<td></td>
<td>Age: 51</td>
<td></td>
<td>Age: 33</td>
<td></td>
<td>Age: 37</td>
</tr>
<tr>
<td>I</td>
<td>SJ train driver</td>
<td></td>
<td>Age: 34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>Auditor</td>
<td></td>
<td>Age: 47</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Interviewed Males

### 5.1.2 Theme 1. Consumer Identity and Fabrics

Within this theme, questions that the study participants answered included; 1. *Are you interested in textile fabrics?* 2. *What kind of fabrics do you buy?* 3. *Give examples of textile fabrics that you love most?* In this section the participants expressed their interest in fabrics, the kind of fabrics they buy and the fabrics they love most.

Most of the study interviewees reported that they had profound interest in textile fabrics. This was further confirmed by their willingness to purchase such fabrics. The study participants reported that they had bought a continuum of fabrics and these included mostly cotton, silk, linen, wool and woven materials because of the weather. When asked of the textile fabrics they love most, some still mentioned Cotton. Participants E and I mentioned ‘natural fibres’, C proudly mentioned ‘colourfully printed fabrics’, J noted that he loves fabrics that feel nice on his body. F mentioned ‘Cotton, wool and breathable synthetic fabrics such as functional underwear or Gore-Tex’. D mentioned ‘Cashmere and tencel materials’ G said ‘Rayon, but I like it on my wife and it’s her favourite’ two of the participants A and B shared similar favourites as Spandex and Lycra materials. A single person H mentioned Bark cloth as his current favourite.
5.1.3 Theme 2. Consumer in a group

In this section, this question was asked; *Are you influenced by other people’s clothes/fabrics before making a purchase?* Most of the participants admitted that they are influenced by other people’s cloths before making and when making a purchase. Some added that they wear and are influenced by brands, whatever collection the brand offers for the season, they will wear it. However participant D mentioned that ‘I guess that I am influenced on an unconscious level, since fashion always plays a role when I make a purchase.’ F ‘I am influenced by reviews of items that I am interested in purchasing, enabling me to avoid bad purchases’ C said ‘Not really, either I like it or I don’t.’

5.1.4 Theme 3. Knowledge about Bark cloth

The participants were asked; *1. Have you heard about Bark-cloth Fabric? If yes, how did you know about it?* Most of them confessed that they had never heard it before; it’s the author who introduced it to them. Participant E said ‘Yes, I have heard about it and have even seen examples of clothes made with this fabric. You told me about it and showed me examples.’ However, participant F mentioned that ‘I am aware of bark cloth, mainly through you, however, I did know of its use for native tribes before I knew of your use of it’ and D said that ‘Niklas at the Swedish Institute told me about it.’

2. *Do you think Bark cloth is an authentic product?*

According to the facial expressions observed and responses received by the author, the respondents were excited about bark cloth and they admitted that it is an interesting fabric. D mentioned that ‘Since I love textiles such as viscose, lyocell and tencel, I think this could be something for me.’ J added that ‘The use of bark cloth would be a good way to avoid water issues growing cotton as well as being a eco-friendly way of producing clothing’ In addition, Respondent E added that ‘Yes, I think it is not only an interesting product, it is also fascinating for all the reasons you just stated, namely it is a 100% natural and very sustainable fibre. Plus it looks pretty. On the negative side the pure bark cloth feels fairly stiff. A mixture with other fibres might be better marketable because then it would get softer.’

3. *Do you think Bark cloth is a good product for your country?*
All the participants agreed that bark cloth is a good product for Sweden basing on the sustainability aspect that Sweden has been trying to address for years. D affirmed that ‘If the Bark cloth is produced in a sustainable way, I think it’s a good product for every country.’ According to respondent B, ‘Depending on the price of the finished product it would be a good product for everybody or only for people with higher incomes and/or higher awareness of issues to do with the environment.’ Respondent G was however different. He mentioned that ‘I would assume that only a small portion of people living in Sweden would be interested in bark cloth clothing, however, there is probably a market in the eco-interested section of the market.’

5.1.5 Theme 4 Shopping effects

Within this theme, respondents were asked; 1. How often do you shop for new fabrics on the market? 2. How much money do you spend on fabrics per month? 3. Is there anything lacking/doesn’t exist on the market that you would be interested in? If yes, what? Almost all the respondents gave the same answer. They reviled that they do not shop so often. They shop on an annual basis. For example J mentioned that ‘once or twice a year at most, mainly replacing clothing that has worn out.’ B frankly said ‘Maybe once every two or three years’. When asked how much they spend on new fabrics they all fell in a category between 1000 - 4500SEK including accessories and this applied to both sexes since some tend to buy a number of fabrics at once. And lastly when asked about what they think is missing on the market that they would be interested in, only two participants A and I mentioned that they couldn’t think of anything but, the rest of the eight of the participants mentioned that; There’s a lack of sustainable alternatives in regards to fabrics in fashion.

5.1.6 Theme 5. Sustainability & Consumption

Regarding the question, what are your thoughts on sustainable consumption? All the ten respondents were very concerned about sustainable consumption. They seemed concerned about Sweden and the entire planet at large. See the respondent quotations below;

J ‘I think it is very important if we want to keep our planet safe.’
A ‘We all together have to be more sustainable and the only way to do it is by educating the people about sustainability.’
F ‘I believe that sustainable production is very important and am willing to pay more to achieve this goal’

B ‘I try, but I know I’m not doing it as often as I should. I still look too much at the price of a product rather than thinking of its impact on our planet.’

C ‘Today it’s a duty to think about sustainability and the most effective way is not to shop. If you have to, the best is to buy things you can keep or recycle’

Respondents D, E, I, G and H mentioned that ‘it is important to buy things made in a sustainable way.’

When they were asked if they shop in a sustainable way, most of them seemed not to have an idea about sustainable consumption. They do not know if they are or not. Only respondent D knows that she actually shops in a sustainable way. She says; ‘Yes, since almost half of my shopping comes from second hand and vintage stores.’ C said ‘I don’t consume in a sustainable way but, I try to purchase sustainable products’

The customer
In Sweden, the back cloth customer is a mature person who is working and having a good salary. The customer is between the ages of thirty and sixty years of age. These customers are aware of the fabrics and its functions they are money spenders thou rarely shop which makes them very sustainable thou’ only a few can tell that they are. This mature age group seems to be concerned about sustainable consumption and some of them are willing to pay a high price of fabrics as long it adds value to the sustainability issue at hand in Sweden however, not all them engage in this kind of consumption, and efforts should be made to see that the consumption behaviour changes and from one’s own point of view introducing to the rest of the population.

The Scarcity principle and Demand
According to Wikipedia, goods that are scarce are called ‘economic goods and the other goods are known as free goods. The Investopedia a US blog (2013), economically defines the scarcity principle as a limited supply of a good coupled with a high demand of the good which results in a mismatch between the desired supply and the demand equilibrium. In theory, the pricing theory suggests that the prices for scarce products should rise until the equilibrium is reached between the supply and the demand. In this case, according to this study, bark cloth fabric is a scarce product on the Swedish market and the consumers are interested in the product. If the population of the people who want bark cloth rises, the Ugandan producers will be put under a lot of pressure to produce more bark cloth in a short period of time to fit the demand which may affect the quality of the
fabric. By doing so, the Swedish consumers are faced with a challenge of conducting their own cost-benefit analysis since the product is highly on demand and the supply is low. However this may result in the exclusion of bark cloth and it is left to only those who can afford it but the good news is that; according to this study, the Swedish consumers are willing to take action and purchase a product that they see greater benefit from other than the cost associated with purchasing it.
6. Analysis, Discussion and Conclusions.

This chapter aims at presenting the analysis and discussion of the study results. The last subtitles of this chapter provide the recommendations and also areas for further research are provided.

This chapter presents the conclusions drawn from the results that were gathered from the interviewees. It also greatly fulfils the research’s purpose of finding out the consumer’s attitude towards consuming fashionable sustainable textile fabrics such back cloth as well as answering the research question for this study which is; what are the Swedish people’s consumer attitudes towards fashionable sustainable textile fabrics? These conclusions are also categorised according to the themes that were created in the previous chapter. They are gathered from the people interviewed in Sweden and they are categorised and elaborated below;

6.1 Consumer Identity and Fabrics

The study participants’ identify themselves with a range of textile fabrics, differences were however noticed when they were asked the textile fabric they liked most, some shared similar interests yet other individually had own favourites. Crosschecking the responses with the gender attributes of the respondents, it could be seen that male and female shared particular favourite fabric, in some instance two female respondents shared a similar favourite fabric but in general individuals solely had own favourites. Responses got however echo particular reasons why they identify themselves most with such fabrics. Some mentioned that it looks good on the wife; other mentioned that it is colourfully printed, and one mentioned that it avails functional underwear. Crosschecking the attributes of the respondents favourite fabrics with that of the bark cloth, similarities could be noticed, attributes like natural fibres, colourfully printed fabrics, a good feel on the body are also constituent to the bark cloth.

6.1.2 Consumer in a group

In addition, the respondent’s admittance that they are influenced by others before making purchase could explain why respondents shared similar interests with regard to certain fabrics; this is reported under the theme of consumer identity and fabrics. Those that revealed other reasons that compel them to purchase particular fabrics could also explain why some had unique taste for fabrics. From
the responses, it could deduced that for the bark cloth to make a break through into the market model persons that could influence others to use bark cloth fabric should exist, reviews on the bark cloth should be availed to the public and a bark cloth brand should be developed.

6.1.3 Knowledge on Back Cloth

The respondents had varying knowledge on the bark cloth; some were knowledgeable about it yet most were not. Knowledge about the bark cloth however did not mean that one knew its use. For those that did not know about the bark cloth the author introduced it to them, the one that already knew about it revealed that a colleague told him about it. When the respondents got to know about the bark cloth they quickly related it to other fabrics on the market that they are interested in, they also related it to eco friendliness, sustainability and prettiness, however on the negative it was described as a stiff fibre. The respondents thought that the bark cloth would be a good product on the Swedish market and came to this conclusion because they viewed the bark cloth as a sustainable product. Caution was however provided as the respondents advised that the price of the finished product should be friendly to the buyers, another respondent advice pointed to the fact that it would be important to mainly target customers that are interested in eco-friendly products.

6.1.4 Shopping Effects

Furthermore, the respondents reported that they do not often shop however the time gap noted is a reflection of sustainable consumption of fabrics. The amount spent on fabrics is also a reflection of the potential of the Swedish market to manage the cost of the bark cloth. All in all the behaviour of sustainable consumption held by the respondents and their financial capability is an indication of the availability and readiness of the Swedish market for the bark cloth. The respondents noting that there is lack of sustainable alternatives on the market further reaffirms the readiness of the Swedish market for such products.

6.1.5 Sustainability and Consumption

Lastly, concern was showed with regard to sustainable consumption even though they did not have enough knowledge on the concept. Their responses with regard to sustainable consumption portray a picture of individuals willing to sacrifice pleasantries so as to ensure sustainable consumption; one respondent portrays willingness to spend more on a single fabric for the sake of ensuring sustainability. Others go about it through recycling and purchasing from second hand and vintage stores.
In a nutshell, the versatility of a long-forgotten fabric has been brought back to life and is being of a great use today. Bark Cloth has given the people of Uganda a chance to guard and keep the tradition as well as making financial profits in the business apart from agriculture. The old tradition of making Bark Cloth holds a special unique craftsmanship which preserves the fabric natural and special and for that reason; Bark Cloth Uganda has established business relations and links to many countries all over the world.

While the domestic markets for Bark Cloth have made a comeback on the market, farmers work hard to produce high-quality Bark Cloth that fit in the requirements of the local and international markets. The companies working with back cloth for example the Bark Cloth Europe Company receives financial support from a German development agency, because this project is very sustainable and holds a high potential for developing a small-scale rural industry and thereby creating income generating activities in Uganda. Back cloth is an authentic sustainable product; it stands many chances and has potential of breaking through the market and of being successful on the Swedish market since the Swedish customers according to the study seem to be ready for the market of such high quality eco-friendly sustainable product.

The author hypothesized that fashionably consuming sustainable fabrics is everyone’s dream although not everyone can manage to keep up with this consuming behaviour and this has been proven thanks to the interviewees who participated to this research. Keeping in mind that consumers are no drivers for introducing new fabrics or sustainable clothing on the market the study has been based on the consumer attitudes towards consuming fashionable sustainable fabrics such as bark cloth and all the conclusions have been drawn from the interviewee’s attitudes and responses in regards to bark clothes well as other empirical studies. This research shows the reader that it is possible to use the forest as an alternative and extract fabrics from the forests in a very sustainable way. The research findings show that bark cloth is an authentic textile product for Sweden and the Sweds are willing to consume more sustainable fabric regardless of the price. This research aims to contribute to the fashion industry in general in helping towards finding out how cotton can be substituted since it has decreased on the market and this study will also be very useful at the Textile museum in Boras as well as the Swedish School of Textiles for future references especially in the area of sustainable fashion, function and future.

7.0 Areas for further Research

There is a need for a strategy to sensitize people about sustainable consumption.
There is need to explore new sustainable fabrics that are unknown to the rest of the world.
There is also need to find out ways of how to mix bark cloth with other fabric to make it softer in the texture.

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Appendix A- The Interview Questionnaire.

Name:

Profession:

Age:

The fashion consumer
1. Are you interested in textile fabrics?
2. What kind of fabrics do you buy?
3. Give examples of textile fabrics that you love most?

Consumer in a group
1. Are you influenced by other people's cloths/fabrics before making a purchase? Why?
**Bark cloth**

1. Have you heard about Bark-cloth Fabric? If yes, how did you know about it?
2. "Bark cloth is a versatile 100% natural plant fiber. It is produced from the bark of the fig-tree scientifically known as 'ficus-natalensis'. It is one of the most ancient fabrics in the whole world and it was recently recognized by UNESCO. It is a very sustainable product throughout it's growth, production and maintenance". Do you think it is an interesting product?
3. Do you think Bark cloth is a good product for your country?

**Shopping effects**

1. How often do you shop for new fabrics on the market?
2. How much money do you spend on clothes per month?
3. Is there anything lucking/doesn't exist on the market that you would be interested in? What and Why?

**Sustainability Consumption**

1. What are your thoughts on sustainable consumption?
2. Do you shop in a sustainable way?

**Appendix B – Telephone Interview**

Telephone interview with Oliver Heintz founder of Bartex.com (interview conducted 2012-12-14)

**Land use**

Q. How much land is required for growing mutuba tree?
Q. Does mutuba tree grow naturally? If yes, how much rain/ mm in an annum is good?

**Biodiversity**

Q. How is the bio diversity affected by the farming and manufacturing process of the Bark Cloth?
Chemistry people
Q. What kind of chemicals is used?
Q. How much chemicals are used for the production of bark tree?
Q. Is there any use of insecticide, fungicides, pesticides and synthetic fertilizer during bark tree farming?

Social aspects
Q. What are the working conditions and how is company dealing with the CSR and Fair-trade laws with the local farmers?

Energy use & ghg
Q. How much energy is required to produce and greenhouse gases emitted during bark cloth?

Environmental management program
Q. How much water is required to produce a square meter fabric?
Q. How much waste water effluent?
Q. How is the waste water taken care of?
Q. How much gases emissions to air during production of bark cloth?
Q. How much energy emitted from machines during production process?

Waste management
Q. Are there any waste management policies?
Q. How pollution prevention measures are taken during whole value chain process?
Q. How much of the harvest is generally discarded by making bark cloth?
Q. Is there any municipal Solid Waste or Industrial waste "Recyclable/Compostable waste"?

Carcinogen-icity
Q. Is there any chemical involved that may cause cancer? if yes then how much?

Acute Toxicity
Q. Is there any toxic chemicals involved? if yes then how much?
Appendix C – Interview guide Oliver Heintz

Telephone interview Oliver Heintz founder of Bartex.com (interview conducted 2013-01-10)

Q. What is the textile value chain process; from raw material to finished fabric?
Q. How much Bark farming is required to manufacture a certain amount of Bark fabric?
Q. How is the Bark Cloth used within the fashion area? (Outer garments, accessories, shoes and jewellery)
Q. How big is the demand for the Bark Cloth within fashion?
Q. Are there big European fashion brands using this fibre?
Q. What are future marketing plans and how can we introduce and attract this fabric to public? (As people always looking 100% cotton even including me)
Q. What are chemical properties of Bark Cloth?