

THE USE OF DATE- PALM TREE FIBRE IN THE PRODUCTION OF HANDICRAFTS

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DECLARATION

I Nakiwala Winnifred 18/U/1987/GMAID/PD hereby declare that this is my original work and it has never been submitted to any institution for the award of a master's degree.

Signed: Nakiwala Winnifred

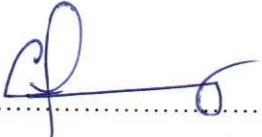
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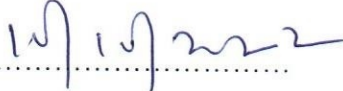
APPROVAL

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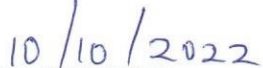
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DEDICATION

I dedicate this book to my beloved father Mr. Muganga John, mother Nasolo Agnes, Mr. Katabalwa Brian and my children Mary Benah Zzalwango, Stewart Benedict Miganda, Mugagga Hercuris Benard and Luwede Benitah for the love and support given. Please thank you.

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LIST OF ABBREVIATIONS

URI : Uganda Research Institute.

NEMA : National Environment Management Authority.

ABSTRACT

Handicraft making is a common practice that is practiced largely by women and to a small extent by men all over the world. The current study aimed at producing handicraft samples from date palm tree fibres to empower women of Naluvule village through making handicraft for sale to generate household income. The objectives of the study were; 1) to analyze which indigenous fibre materials are used to make handicrafts among local communities, 2) to explore how women in Naluvule village can use date- palm tree fibres as a material to make handicrafts and 3) to produce handicraft samples from date- palm tree fibres for the women of Naluvule village. The study employed a case study design and was carried out in Naluvule village in Wakiso district with women who make handicraft for sale and were purposively selected. Data was collected using in- depth interviews, observation and document analysis, then analyzed through studio experimentation. Findings revealed that women make handicrafts from both manufactured and indigenous materials but not date-palm tree fibres. On the other hand, studio experimentation revealed that many handicrafts can be made from date- palm tree fibres by women of Naluvule village. Handicraft samples were made from date- palm tree fibres. Crafts such as bags, table mats, center carpets, wall hangings which can generate household income were produced from successful experiments. The study recommends communities should explore their surrounding environment for craft materials before using the imported ones. More so date palm leaves are a good source of material for craft production.

CHAPTER ONE

INTRODUCTION

1.0 Overview

This section presents the background of the study, the statement of the problem, purpose of the study, objectives of the study, research questions, scope of the study and concludes with significance of the study.

1.1 Background of the study

Indigenous fibre materials are materials that are naturally and locally found in a specific place or area used by the communities to produce items for use. Many communities have used indigenous fibre materials to design day to day items such as baskets, mats, carved objects and medicinal products. According to Mutungi (2015), indigenous designs have been an activity where people express their creativity and more so their identity. In addition, indigenous materials vary depending on the geographical features, location and climate conditions of a region. The word indigenous means native or local and some indigenous materials are those found in the area local to those environments (Danio, 2012). Therefore, any product which you made using local materials would be counted as a handicraft from indigenous materials. Many crafts use local materials as this is what can be sourced relatively cheaply and easily with no transportation costs to factor in. Often materials which are abandoned in certain areas may have a symbolic relevance and sometimes used to produce handicrafts. These materials can also be symbolic of certain trades of the region, for example, in some areas of United Kingdom where coal mining was the main industry; coal carving was popular handicraft activity. Pieces of coal are carved into local

animals or even historical places of interest and sold throughout the region in a variety of craft and local shops (Richardson, 2011). On the other hand, fibre is used in production of handicrafts for example, figure 1.1, are cotton fibres and figure 1.2 are banana fibres spined to make ropes which can also be used as a material to make crafts like fabrics, baskets, mat, papers and table mats. Plant fibres are grouped into five groups including fibre, leaf, fibre baste, fruit fibre and stalk fibre (John, 2008).



Figure 1.1 cotton fibres.
Photo by: Myka Baum
Source: sff.arts.ac.uk



Figure 1.2: Banana fibre ropes.
Photo by: Guy Blomme
Source: indiamart.com

Worldwide, majority of women are the producers of handicrafts in most countries because most women and men are jobless therefore since women and men are always creative, they make handicrafts from the materials around their home as seen in figure 1.3 women

weaving baskets. However, on the other hand, men also participate in handicraft making as shown in figure 1.4 for example men who make wood products such as chairs, beds among others at Nsambya along Kansanga Gaba road.



Figure 1.3: Women weaving baskets.
Photo by: Manipadma Jena
Source: gloalissues.org



Figure 1.4: Men in a wood workshop
Photo by: Joanna Werch Takes (2015)
Source: Woodworkersjournal.com

When the researcher visited women in Naluvule Village who make handicrafts she observed that natural fibres mainly plant fibres are used as materials by artists and local skilled people to make crafts such as bags, wall hangings, hats and others to boost the tourist markets hence improving household incomes. However, despite the fact that women in Naluvule village Wakiso district use indigenous materials to make crafts which they sale to generate household

income they have not exploited most of the indigenous materials such as natural fibres found on date palm trees in their society to make crafts.

1.2 Statement of the problem

Worldwide, fibre materials for making crafts are mostly got from the particular environment in which the produced crafts are used and are always indigenous to the community. Such materials are naturally and locally found in specific places depending on geographical features, location and climatic conditions. Making crafts is a practice in most communities where several crafts are made to serve the needs of the people in that locality. Whereas women in Naluvule village like in any other villages in Uganda are endowed with local materials such as date- palm tree fibre, they still spend much money to buy materials to make handicrafts for sale. The practice of buying and using imported materials for making crafts in Naluvule has made their products expensive and less authentic. This has reduced their marketability and hence the women fail to make useful economic benefits yet they do not have any other source of income. Most of the raw materials women use is bought from the market and are not unique to Naluvule hence the products face high competition from other producers in other areas. Although Naluvule village has a variety natural plant that women can explore to make crafts, none of them has taken an interest in how such plants can be used as raw materials for craft production. Instead, women use imported materials which are expensive and products made are not specific and unique to Naluvule village. This makes the products not competitive and with less economic value.

1.3 Purpose of the study

The purpose of the study was to extract fibre from the date-palm tree as a material for exploration of handicrafts in Naluvule Village, Wakiso District.

1.4 Objectives of the study

- 1) To analyze which indigenous fibre materials are used to make handicrafts among local communities.
- 2) To explore how date- palm tree fibre can be used as a material to make handicrafts.
- 3) To produce handicraft samples from date- palm tree fibres for the women of Naluvule village.

1.5 Research Questions

- 1) Which indigenous fibre materials do local communities use to make handicrafts?
- 2) How can women in Naluvule village know date- palm tree fibre as a material to make handicrafts?
- 3) How are women in Naluvule Village empowered by handicraft samples made from date- palm tree fibres?

1.6 Scope of the study

1.6.1 Geographical scope

The study was carried out in Naluvule Village in Wakiso District along Hoima Road 8km from Kampala because the researcher stays in that location and also the women being researched on reside in the same area.

1.6.2 Content scope

The scope of the study is to explore the indigenous natural fibres found on date-palm trees as one of the materials used in the production of crafts.

1.6.3 Time scope

The researcher has stayed in that area for over 8 years but decided to use 4 years from 2016-2020 (4 years) for the study to get wide data and the respondents have been there for all those years.

1.7 Theoretical frame work

The study is guided by the Empowerment theory (Zimmerman, 1995), Empowerment is a contrast that lines individual strengths and competencies natural helping systems and proactive behaviors to social policy and social chance (Rappaport, 1981) Empowerment may be seen as a process where individuals learn to see a closer correspondence between their goals and a sense of how to achieve them and a relationship between their efforts and life outcomes (Mechani, 1991), Empowerment is both a value orientation for working in the community and a theoretical model for understanding the process and consequences of efforts to exert control and influence over

decisions that affect one's life organizational functioning and the quality of community life (Perkins & Zimmerman, 1995). The theory suggests that actions, activities or structures may be empowering and that the outcome of such processes result into a level of being empowered (Rapport, 1984; Zimmerman, 1995).

According to the researcher, empowering process is one in which attempts to gain control, obtain needed resources and critically understanding one's social environment are fundamental and it helps people develop skills so they can become independent problem solvers and decision makers.

Principles that guide the empowerment.

Community ownership: It suggests that the community has the right to make decisions about actions that affect their lives which is believed by evaluators that it can lead to program improvement when the community is empowered to exercise its legitimate authority to make decisions that direct the evaluation process (Cousins & Whitmore, 1998)

Community knowledge: Several participatory and collaborative evaluation view community members as experts on their community in transformative participatory evaluation popular knowledge is as valid and useful as scientific knowledge (Cousins & Whitmore, 1998).

Organizational learning: Organizational learning has been defined as the process of acquiring, applying and mastering new tools and methods to improve processes (Schneidermann, 2003).

The listed principles of the theory relate to the meaning of empowerment and in that way, women in Naluvule village have the right and knowledge to participate in evaluation process when making crafts from date palm fibres as a material.

This theory has been used by MA Zimmerman (2000) when he was writing the handbook of Community psychology, M.E Larkin (2007) when he was also writing the handbook of Empowerment theory in Action the wisdom of Collaborative Governance (Larkin, 2007). The theory is relevant to the study because it enabled the women of Naluvule village to identify a problem and plan possible means for altering the situation. According to (More, 1991) the Theory helps to understand what we do not know and therefore, it increases its ability to solve other problems in different times and different places.

However, there are some criticisms for the theory and one of them is that empowerment is a term frequently associated with participation that is often partly used as conceptualized. In other words, participation and empowerment are inseparable linked, they are different but they depend on each other to give meaning and purpose, empowerment represents sharing control of the entitlement and the ability to participate, to influence decisions as one of the allocations of resources (Helcombe, 1995). However, the theory remains relevant to the present study because it enables women of Naluvule village to find a problem and a solution to the cited problem.

1.8 Significance of the study

The study will academically act as reference to the researchers and teachers of art who will develop interest in experimenting or using date palm fibres in their research and teaching. This will encourage them to venture more in the field of research and also students will have a variety of materials to use when making handicrafts.

The study will benefit the general public especially women in Naluvule village who make handicrafts. They will know more about the processed date- palm tree fibre material that can be

used to make crafts, communities that make handicrafts will no longer spend much to get materials to make crafts for sale. Consequently, they will produce handicrafts cheaply and increase their household incomes.

The study will demonstrate to the policy makers the importance of managing, conserving and protecting the forest or environment to prevent sustainable use of terrestrial ecosystem. If communities do not destroy forests and the environment materials such as date- palm tree fibres will also be available to be used as materials for making handicrafts without spending much on buying materials.

1.9 Definition of terms

Artisan:	A skilled worker who practices some trade or handicraft.
Attribute:	Crediting to
Crafts:	An activity involving skill in making things by hand.
Decorative:	Serving an esthetic than a useful purpose.
Deforestation:	The removal of trees.
Empowerment:	Authority or power given in someone to do something.
Fabulous:	Extremity pleasing.
Fibres:	A thread of filament from which a vegetable tissue, mineral substance or textile is formed.
Garnish:	Any decoration added as a trimming or adamant.
Handicraft:	A work produced by hand labour or a craft that requires skillful hands.

Indigenous materials:	Are materials naturally and locally found in a specific place or area.
Indigenous:	Naturally existing in a place.
Local skilled people:	Someone who is skilled and has the knowledge and ability to do something well.
Poverty:	The state of being entirely poor.
Reclaiming:	To reuse like getting materials from waste products.
Resonate:	Sound with resonance.
Resorting:	Have recourse to.
Respondent:	The codefendant.
Spinning:	The process of converting fibres into yarn.
Unemployed:	Women without or out of job.
Women empowerment:	The process in which women elaborate and recreate what is that they can do and accomplish in a circumstance that they were previously denied.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

Historically, the earliest evidence of humans using fibres is the discovery of wool, dyes and fibres found in a prehistoric cave in the Republic of Georgia that date back to 36,000Bp (1516), Ryszard (2012) states that Natural Fibres are any hair like raw materials directly obtained from animals, vegetables or mineral sources and convertible into non-woven fabrics such as felt or paper after spring yarns. Suddell and Evans (2005) posit that the use of fibres has been in existence for about 3000 years when it was used as natural composite systems for building walls in ancient Egypt. Mohanty (2005) states that Natural fibres can be used for high tech applications such as composite pests for automobiles compared to composite with natural fibres which have advantages such as lower density better thermal and reduced skin irritation.

2.1 Indigenous fibres used by local communities as a material in production of handicrafts.

Qin (2016) states that Natural fibres are those produced by plants, animals and geological processes. They are biodegradable over time and can be classified according to their origin into plant fibres, animal fibres and mineral fibres. He also stated that plant fibres are generally composed of cellulose in combination with other components such as lignin example include cotton, hemp, flax, ramie, sisal and bagosse.

Plant fibres

They are classified according to their source in plants as stated below.

Bast or Stem fibres derived from the fibrous bundles in the inner back of plant stems,

Leaf fibres which run length wise through the leaves of monocotyledons plants and

Seed fibre hairs such as cotton among others.

Animal fibres

Animal fibre consist largely of proteins examples are silk worm, spider silk, sine wasted wool mohair and rabbit hair among others.

Mineral fibres

Asbestos is the only natural currying long mineral fibre. It has many varieties such as chrysatileomostite, crococolite, tremolite, anthoplyllite and actionolite.

2.1(a) Plant fibres

Wood provides the commonest plant fibres and it is a raw material for regenerated cellulose fibres, but wood fibres are too short for textile processing currently there is interests in promoting the use of waste products such as pineapple fibre. The best fibres were once of major importance particularly, before the supply of cotton for America for clothing and other textile, and the leaf fibres were dominant in ropes and cordage.

Table 1: Types of plant fibres

No	Type	Botanical name	Family	Importance
1	Cotton	Gossypiumsp	Malvaceae	<ul style="list-style-type: none">• It is the chief fibre plant which supplies more than 70% of the world consumption of fibres.• Fibres occur in the form of flattered twisted and fabulous hairs.• Chief use of cotton in the textile industry. Others use staffing of pillars.• Short fibres called linters or fuzz are used for superior acetates and viscose and nitre cellulose liquors.• Seed cake is used as fertilizer and as cattle cake.• Its seeds are used in diseases like gonorrhoea and gleet.
2	Jute	Corchoruscapsularis	Tiliaceae	<ul style="list-style-type: none">• It is a chief fibre yielding annual shrub• Fibres are obtained from the stem of two species.• It is the bast fibre obtained from the secondary phloem by the process of retting.• Used in making carpets, coarse materials twine gunny bags, paper and many similar articles.• Forms the base of liness and wool carpet industry.

3	Sunn hemp	CrotatoriaJuncea l	Papilioria- Ceae	<ul style="list-style-type: none"> • The fall shrub is cultivated throughout India particularly Maharashtra, Tamil, Nadur West Banyal and up • The valuable fibre is then obtained from its long stem. • The fibre is light clouded strong thick and very durable. • The fibre is used for twine flashing nets mattings, cat string bags, ropes and coarse canvas. • Fibre is particularly suitable for cigarette, paper and high-quality tissue mainly because of its high cellulose and low ash content
4	Hemp	Cannabis saliva	Cannabinc ease	<ul style="list-style-type: none"> • It is an annual plant with grooved stem and palmately divided leaves. • Oil of hemp is obtained from its seeds in making paints, vanishes and soft soap. • The fibre is long, strong and durable but lacks flexibility and elasticity and is used for the manufacture of ropes, twine carpets, nets, among others. • Plants are diaeceous and yield three products namely bastfibres from its stem oil from its seeds and narcotics from its leaves and flowers.

5	Flax	LinumUsitatissimum	Linaceae	<ul style="list-style-type: none"> • Fibres of flax are obtained from its stem. • This valuable fibre plant is much superior to cotton in quality and provides a finer fabric. • In India it is grown in up, m.p, Bihar, Rajasthan and Maharashtra as an oil seed crop. • Oil is good laxative for cattle and horses • A Poultice of crushed seeds is also useful on ulcers, inflammations among others.
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Parts of the plant fibre

Blackburn (2005) states that many useful fibres have been obtained from various parts of plants including leaves, stems (bast fibre), fruits and seeds. Geometrical dimensions of these fibres, especially the fibre length depends mainly on fibre location within the plant fibres from fruits and seeds are few centimeters long, whereas fibres from stems and leaves are much longer than one meter. He also says that with an exception of seeds and fruits fibres, plant fibres are sclerenchyma elongated cells which occur in different parts of plants mainly in the stems and leaves. These are elongated cells with tapering ends and very thick, usually heavy lignified cell walls. Sclerenchyma gives mechanical strength and rigidity to the plant since it is usually a supporting tissue in plants fibres are also associated with the xylem and phloem tissue of monocotyledonous and dicotyledonous plant stems and leaves have a soft handle and have fairly lustrous appearance. This length of fibres varies between 6-65 mm, but on average they are about 20mm.

a Bast fibres

Hearle (1963) submits that bast fibres such as flax, jute, hemp, ramie, kenaf and abaca are soft woody fibres which are obtained from stems or stalks of dicotyledonous plants the fibres occur in bundles or aggregates and consist of 10 to 25 elementary fibres within the length of 21.0mm and a diameter of 10 to 50mm.

Mohanty (2005) posits that bast fibres have a long utilization tradition. They have been used for more than 8000 years. Currently bast fibres are raw materials not only used for the textile industry but also for modern environmentally friendly composites used in different areas of applications like building materials, particle boards, insulation boards, food, cosmetics, medicine and source for other biopolymers among others

b Flax fibres

Blackburn (2005) states that; flax fibres are obtained from the stems of the plant. They run at the surface of the plant stem which is about 1m height and 2-3mm thick in the diameter (Mather 2011) flat fibre. Have a soft handle and have a fairly lustrous appearance. This length of fibres varies between 6-65mm but on average they are about 20mm long.

2.1(b) Animal fibres

Animal fibre consist largely of proteins examples are silk worm, spider silk, sine wasted wool mohair and rabbit hair among others. The researcher decided to use plant fibres because her study was about a date- palm tree fibre which is found in trees or plants may be some other time animal fibres will be searched on.

2.1(c) Mineral fibres

Asbestos is the only natural currying long mineral fibre. It has many varieties such as chrysatileomostite, crococolite, tremolite, anthoplyllite and actionolite.

2.1.1 Local communities that use plant fibre

Hand craft is an art of creating crafts by hand. In ancient India people lived in colonies known as tribal and they were used to create utility things for daily need, that art of creating the crafts known as handicrafts and also the things known as handicrafts products then people started marketing these products in the native markets. Time passed and people became more developed and civilized altogether aspects, people who were creating handicraft products have started trading their markings by increasing demand and population. Natural makings by increasing demand and population, Natural fibres are often used by Indians and they include Cotton, Jute, flax and others but cotton is the most used natural fibre in the manufacturing of paper and fabric.

Banana fibre is a natural fibre that has wide selection of uses in handicrafts product development like mats, ropes and twins. They are extracted from the bark of the banana trunk which is processed into knotted fibres which are used to create products like coasters, table mats, runners, floor mats and home furnishings (Thondhlana, 2000). In figure 2.1 banana fibres are extracted and laid on the ground in sunshine to dry and after used as material to make handicrafts.



Figure 2.1: Banana fibre extraction

Photo by: Agri K M

Source: youtube.com

Chinese rural communities living among species rich forests have little documentation on species used to make handicrafts and construction materials originating from the surrounding vegetation minor wood uses in the Heike valley in the Quisling Mountains. All local large canopy trees are used for same purpose, smaller trees and shrubs which are particularly hard are selectively cut. The bark of a few species is used to make shoes, hats, steamers and ropes, but this traditional is mainly bamboo, rattan and others which are used for make baskets making and used for brushing off the chaff during wheat winnowing (Kang & Kang, 2017). As seen below in figure 2.2 using rattan as a material to weave baskets for sale.



Figure 2.2: Aman weaving baskets

Photo by: Ravindran John Smith

Source: Smith/Dreamstime.com

Clothes made from fibres of Banana species (*Musa Balbisiana*), are today considered as one of the constituents of a special identity of Ryokyan or Okinawan culture within the broader realm of Japanese culture. This special trait of material culture was brought to attention by the Japanese Folk craft movement (*Mingei-Undo*) of the 1930s and its spiritual leader Yanagi Munegeshi (Scietsu). After a decline during and after World War II, weaving and use of boshofusaw a sudden revival in the last decades, especially after the return of Okinawan to Japan in 1972 (Hendrickx, 2007). In Japan as in many countries of East and South Asia, until the introduction of Western clothing and lifestyle, textile weaving was part of everyday life in the latter half of the 19th century and in the early 20th century in particular (Hendrickx, 2007)

Traditional fibres used in basketry reflect the local habitat they include illala palm, sisal leaf fibre, raffia, (African bamboo) fibrous tree and plant roots such as Makenge, vines leaves (banana and fan palm), cane, bark wood and papyrus. Two types of vegetative fibre are normally used to make a coiled basket, one for the inner coil and one for the wrapping other coils for example, in Uganda, baskets are woven from raffia or papyrus wrapped and stitched around a coil of banana leaf-stems. Cross is often used for the core of the coils. (Salzman & Smith, 1996). As seen in figure 2.3 below in Rwanda a woman uses spiny rush grass to weave a basket using the same technique as mentioned above.



Figure 2.3: Woman weaving a basket
Photo by: AdamWiziki (2015)
Source: contemporary-african-art.com

In Tanzania sisal was continually produced during the German administration and the British administration and was the largest export highly prized for use in cordage and carpets worldwide. At the time of independence in 1961, Tanzania was the largest exporter of sisal in the world and the industry employed over 1 million farmers and factory workers but after independence sisal production began to decline due to the drop in world prices however, in recent years the government injected funds to help revive the industry's glory. The sisal plant was used to produce a sisal line fibre. Historically this fibre has been used to produce threads and ropes for ships. Domestically the fibres are used to make various consumer handicrafts such as carpets, Bags, sacks among others (Graeme, 2009). However, it's interesting that sisal can be changed to different colours since its original colour is cream or white which can easily be put in different colours of dyes as seen in figure 2.4 below a bag made from sisal only but of different colours.



Figure 2.4: A bag made out of sisal

Photo by: Bukulu Steve

Source: commons.Wikimedia.org

Uganda has a wide array of handicraft products ranging from basketry, mats, ceramics beads, pottery, hand textiles and woven products toys, jewelry bags, leather products, batik and wood craft these products are produced in all districts and regions using local raw materials. Before Arab traders brought cotton into the country, there had been used fibres of the banana plant or the bark of the Mutuba Fig-tree (*Ficus natalensis*). Bark cloth has its origin in Uganda and is a purely vegetable fibre. No cloth is like any other cloth-there definitely is a huge selection of the most diverse soft natural colours from brown to different colorings. Bark cloth holds a high place in many rituals in the kingdoms of Buganda and Bunyoro where princess and princesses were obliged to wear them. In figure 2.5, a man is harvesting the bark of mutuba tree (fig tree) to be processed as seen in figure 2.6 men processing the bark of Mutuba tree using tools called mallets of different sizes to process bark cloth



*Figure 2.5A man harvesting the bark of mutuba fig tree.
Photo by: researcher*



*Figure 2.6: Men processing bark cloth
Photo by Fred Mutebi
Source: za.pinterest.com*

2.2 How date- palm tree fibre is used as a material to make handicrafts

Few plant species have developed into an agricultural crop so closely connected with human life as the date- palm tree; one could go as far as to say that, had the date- palm tree not been in existence, the expansion of human race in the barren parts of the “old” world would have been much more restricted. The date- palm tree not only provided and concentrated energy food, which could easily be stored and carried along on the long journeys across the desert, it also

created a more amenable habitat to live in by providing shade and protection from desert winds. In addition, the date- palm tree also yielded a variety of products for use in agricultural production and domestic utensils and practically all parts of the palm had a useful purpose and an impact on human life (Dowson, 1962).

Practically all parts of the date- palm tree except the roots are used for a purpose best suitable for them. The main division of the date- palm tree parts is made as follows the trunk, the leaves, (whole leaves, midribs, leaflet spines and sheaths of the leaf base), the reproductive organs (spathe, leaf stalk, spikelets and pollen) a number of palm extracts (Barreveld, 1993).

Husk of the nut contains fibre which is combed out and sold as coir a material for making ropes and coconut matting. The fibres are resistant to sea water so they are used as cables and rigging in ships for making mats, rugs, bags, brooms and brushes and also as olive oil filter in some European countries. The Maldives, trunk wood is for house construction and outer wood, which is hard, heavy, strong and close grained, is used for boat building. Mature fronds are commonly woven into thatching material walls of temporary buildings and screens shell which is hard and fine grained is carved into all kinds of objects including souvenirs drinking cups scoops, smoking pipe bowl (Barreveld, 1993).

Parts of the date- palm tree and how they are used as materials to make handicrafts.

1. Leaves

This is the most top part of a plant called the leaves which feed the plant with chlorophyll as seen in figure 2.7 the date- palm leaves spreading widely in the sun.



Figure 2.7: Date palm tree leaves.

Photo by: Joe Zachs

Source: permaculturenews.org

To Engels (2016), the date- palm leaves are used for roofing houses and after sometime they are removed and put in gardens when making nursery beds, they act as wind break for young or law lying plants and bushes, they are also used as weaving materials for weaving baskets, hats and artisanal crafts like animal figurines. As seen in figure 2.8, a local basket used to collect food is woven from date palm leaf veins and a fence made from dry date palm leaves.



Figure 2.8: Woven basket and a fence.

Photo by: McKay Savage

Source: kamrunnahar.com

They are also used as firewood for cooking, making mats fans and also small fishing boats.

2. Branches

Figure 2.9 are date- palm tree branches used as part of small woods for finishing boats. This is done through first soaking the branches before trying them together using the rope created from date- palm tree stalks. They are also used to make different handicrafts like baskets, chairs and many more like fences like fences as seen in figure 2.10.



Figure 2.9: Palm tree branches

Photo by: Remedy Grove

Source: remedygrove.com



Figure 2.10: Fence made from date palm branches.

Photo by: Remedy Grove

Source: remedygrove.com

3. The trunk

A date- palm tree trunk in figure 2.11 is actually an elongated stem with stem ranging in texture from smooth to rough and even knobby. Its wood fibres are used to construct wicker furniture and also used as firewood in factories that refine products. Date- palm tree wood is used as an ingredient or building material in several manufactured goods especially in areas where palms are abundant. The fibre is also woven to make carpets and wall coverings and the leftover salvage for forage fertilizer and firewood. In figure 2.12 the trunk is used to make palm wood cabinet furniture used for storing different items like food, clothes, utensils and many more.



Figure 2.11: Date palm trunk.

Photo by: Mike Comb

Source: fineartamerica.com



Figure 2.12: Palm wood cabinet furniture.

Photo by: Mike Comb

Source: www.balifunish.co

During this study the researcher established that some artisans in Uganda have now realized that date- palm fibre is of value. They are reclaiming date- palm fibres from the environment. In so doing, their actions contribute to environmental conservation. An interview with Ms. Nabakoza (not real name) of Naluvule village in Wakiso District an artisan dealing in the making of mats and bags from date-palm tree leaves portrayed that some of the fibres reclaimed from the environment were used to make crafts that were fabulous although her main objective remains to make a living out of her work. Rizza (2003) stated that under this branch of art, one's trash becomes other artists' treasure. Materials that many people might consider little more than junk are fascinating when you get right down to them making something from nothing by taking a trash and turning it into art.

In conclusion, some of the revealed literature showed that date- palm tree fibre can be used as material for making handicrafts from different parts of the date-palm tree. It also showed that there is enough date- palm fibre in the environment that can be used in making handicrafts since the plant has seeds that can be planted again and also cutting down the old trees to give space to the young ones to grow well. It equally portrayed the aesthetic value of date- palm fibre and can be used as a powerful tool of creative thinking to address the challenges of environmental conservation.

CHAPTER THREE

METHODOLOGY

3.0 Overview

This chapter presents the research design, study area, target population and sample size, data collection methods and tools, ethical consideration.

3.1 Research Design

Creswell and Clark (2007) defined research design as a procure for collecting, analyzing, interpreting and reporting data in research designs. The study used a case study research design because it is a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon with in its real-life context using multiple sources of evidence (Robson, 1993). This was relevant to the study because according to objective one which was to analyze which indigenous fibre materials are used to make handicrafts among local communities it enabled the researcher to generalize the knowledge amusing from the information collected since a real personal experience can be recorded which enlighten and reveal the real respondent's inner determination and what they know about the indigenous materials used to make crafts. The case study design enables the researcher to get in-depth and comprehensive information from the respondents which helped in getting more new information.

3.2 Study area

The study was carried out in Naluvule Village Wakiso District along Hoima Road, 8km from Kampala which is part of Buganda region surrounded by a swampy vegetation and most of

it is the date-palm trees with fibres and the researcher has stayed in that area for over 8 years observing the inadequacy of materials in the production of handicrafts.

3.3 Targeted population

All women in families who make handicrafts for sale in Naluvule Village were looked at from different households and selected because they are the dominant people who make handicrafts.

3.4 Sample size

Sample size can be defined as the subset of a population to ensure that there is a sufficient amount of information to draw conclusions (Sekaran & Bougie, 2010). Four dominant crafts women were used to ensure that there is sufficient amount of information to draw conclusions and four unemployed women who make handicrafts for sale were purposively selected because they were in position and willing to deliver data about the material, they use to make handicrafts.

3.5 Justification for population sample

The choice of the study sample was influenced by several factors such as knowledge and skills about hand craft making. The four women who make handicrafts for sale were selected as key informants in the study because they had taken many years in that activity of making hand crafts so they are believed to be the most informed people with all the necessary information about craft making, that is to say they knew where to get the materials, how much they cost, how to use them and where to sell the finished products.

3.6 Sampling technique

Purposive sampling technique also called judgment sampling is the deliberate choice of an informant due to the qualities the informant possesses. It is a nonrandom technique that does not need underlying theories or a set number of informants. It enables the researcher to decide what needs to be known and sets out to find people who can and are willing to provide the information by virtue of knowledge or experience (Bernard, 2002; Lewis and Sheppard, 2006).

A purposive sampling technique was used in order to collect data from the selected people. This was intended to collect information from the best-fit participants, relevant and more precise. The respondents were in position to deliver data about the materials they use to make handicrafts.

3.7 Data collection methods and instruments

The methods used in this study for collecting information were, in depth interviews, observation, document analysis and studio experiments as explained below;

3.7.1 In-depth interviews

An in-depth interview is a method that involves conducting intensive individual interviews with a small number of respondents, an interview guide in form of questions was used to get information from the selected four respondents who are dominant crafts women ready to answer the questions in the interview guide to achieve objective ones.

Tools

The researcher prepared an interview guide for the study. The interview guide was designed in a way that respondents were free to respond only to those questions they felt they should answer (see Appendix I), the researcher also ensured that during the interviews the respondents were in position to freely contribute to the success of the study.

The researcher also used a recorder to record different views of the respondents by switching it on which gave firsthand information about the fibres used as materials to make handicrafts.

A camera was also used to take pictures or photos of the respondents and the activities done.

3.7.2 Observation

Observation is a method where you observe participants and phenomena in their most natural settings. A check list was designed in form of questions which was used by the researcher to observe the tool, materials and methods used to make crafts this was done to obtain first-hand information and also achieve objective one

Tools

A check list designed in form of questions was looked at while observing the actions of the respondents to guide the researcher get the real information needed (see appendix II).

A camera was also used to take pictures or photos of the respondents and the activities done.

3.7.3 Document analysis

Document analysis is a qualitative research method that uses a systematic procedure to analyze documentary evidence and answer specific questions. This was used by reading different books from libraries and the internet to obtain information about the existing knowledge how date-palm tree fibre used as a material to achieve objective two.

Tool

Books and computers by going to different libraries and internet café to read about existing knowledge how date-palm tree fibres can be used as a material to make crafts the researcher made adequate use of libraries including Kyambogo University main library, internet cafe, the National Environment management Authority (NEMA), other departmental libraries located within Kampala and Wakiso and also got information from the women who make crafts from date- palm fibres and other fibres.

3.8 Procedure of data collection

The researcher picked forms from Kyambogo University to be presented when in filed looking for data, located respondents where they stay, made appointments when to meet each of them and when the time came went back to the respondents to administer the methods and tools to collect data then came back to the studio to process the data.

3.9 Data analysis

Data analysis is the process of obtaining insights from data to help inform better working decisions. The empowerment theory of (Perkins & Zimmerman, 1995) which guided the study

looked at how the empowering process attempts to gain control, obtain needed resources and critically understanding one's social environment in which helped people develop skills so that they can become independent problem solvers and decision makers. This is in line with what happens in South Africa where people thought of making clothes from animal skins which they thought of as an indigenous material to make clothes. This is the same to Uganda mainly in Buganda kingdom where people harvested the bark of mutuba tree (fig tree) to make backcloth which were used as a raw material to make clothes this showed that people were able to solve their problems of not having clothes through using their skills and knowledge, they had on craft making. When data was collected using different tools, it was arranged and coded according to the study objectives. The information that was collected was used to generate sketches and drawings that recorded into studio experimentation.

3.10 Studio experiment

The researcher carried out various experiments on selected fibres to achieve objective (iii) which was to produce handicrafts samples from date palm fibres. Data collected from field basing on the first and second objectives were interpreted in the studio and craft sample sketches were made and crafts produced which were taken back to the women who make handicrafts in Naluvule village to be used as samples to produce handicrafts for sale.

3.11 Validity and Reliability

Validity is the extent to which a measure adequately represents the underlying construct that it is supposed to measure (Drost, 2011). Reliability is the extent to which measurements are repeatable when different people perform the measurement on different occasions, under

different condition, supposedly with alternative instruments which measure the construct or skill (Drost, 2011). To ensure the validity and reliability of the instruments and methods used in the study. The researcher visited a group of artisans that make handicrafts at Nsambya along Kansanga-Gaba road. The researcher asked the artisans questions using the tools developed for the study. They all generated similar information which meant they were valid. For reliability, the researcher asked three people who are knowledgeable about case study design and after conformed the consistency of the tool, the tool was determined appropriate.

3.12 Ethical Considerations

The study was conducted within the strict ethical code guiding research at Kyambogo University. When collecting data women in Naluvule village who make handicrafts were informed by introducing an introductory letter to them and permission was asked from the women to record and take photographs

During proposal development, Plagiarism was avoided as much as possible by citing relevant sources and authorities of the secondary source of information. Data collected from people was kept confidential for the sole purpose of the research.

Women in Naluvule village who make handicrafts were assured of protection and had the right to refuse or accept to be interviewed. This gave them confidence to respond to research questions freely with no worries and hence obtaining objective data for the study.

Research tools such as interview guide and checklist contained an opening introductory letter and key informants were given a letter of informed consent requesting for cooperation of women in providing the required information for the study.

CHAPTER FOUR

PRESENTATION AND INTERPRETATION OF STUDIO FINDINGS

4.1 Introduction

This chapter presents the findings in relation to the purpose and objectives of the study. The purpose of the study was to explore the date palm fibres as a material for production of handicrafts for the women of Naluvule village. The study was guided by three objectives which were; to analyze which indigenous fibre materials are used to make handicrafts among local communities, to explore how women in Naluvule village can use date- palm tree fibres as a material to make handicrafts, to produce handicraft samples from date- palm tree fibres for the women of Naluvule village. Following these objectives, the researcher through in-depth interview four unemployed women who make handicrafts in Naluvule village were interviewed using an interview guide as presented in (appendices I). Also, observation method was used and four unemployed women who make handicrafts in Naluvule village and a checklist was used as presented in (appendices II) and the following were the findings.

4.2 Materials used by women in Naluvule village to make handicrafts

According to the data collected by the researcher women in Naluvule village used both indigenous and industrial materials to make handicrafts which they buy expensively from different sources such as markets and shops. Indigenous materials such as sisal, banana fibres, palm leaves, raffia, bean seeds to mention but a few are commonly used to make handicrafts such as bags, mats, table mats and others depending on the type of customers they sale these

crafts too these women also make handicrafts using the local and industrial materials like already made metallic wires, plastic beads, wood beads among others.

The researcher met several women involved in handicraft making. The first woman was Gertrude (not real name) who makes baskets and mats for sale. Gertrude (not real name) (figure 4.1) said that most of the materials she uses to make crafts are got from the market, nearby forests and swamps. The palm leaves she uses to weave mats are got from date- palm trees in the swamp and she processes them by sun drying them and uses dyes which she buys from the market and boils the palm leaves with the dyes to change to different colours. She also said that same times she makes different designs and colours of mats according to what the customer wants and what they can afford to pay for.



Figure 4.1: Date palm leaves and the mats made out of them.
Photo by: Researcher

Gertrude (not real name) uses banana leaf stalks (*obukedo*) which she gets from banana plants together with plastic strings which she buys from the market. She was not aware that she could process fibres from the date- palm tree which she can easily access freely. To her date palm fibres could be used in other handicrafts other than baskets she is involved in. The second

respondent was Rita (not real name) (Figure 4.2) who was found weaving a mat with date- palm tree leaves of different colours. She told the researcher that she had a customer who had ordered for the mat to be used as a wedding gift for a friend. She also added that she makes mats because the materials were easy to get from the forest and sometimes from the market. She sells the mats and uses the money to buy other materials such as plastic beads, strings and others. She added that her customers find her at home and they buy the crafts. She avoids going to the market because the transport costs are high and she cannot pay for rent.



Figure 4.2: Rita (not real name) weaving a mat using date palm leaves and the plastic bead bag.

Photo by: Researcher

She also told the researcher that she spends a lot of money on transport and buying the industrial materials for making crafts and yet most of the customers want to buy the crafts at a low price. She mentioned that many times she loses customers because she does not have materials to produce the crafts her clients want. She attributed the loss of materials the continuous deforestation due to human activities. She revealed that she did not know that the date palm tree had fibres that could be used for making quality handicrafts and had never used it before. Alice was another woman the researcher visited who makes crafts for sale, such as bags,

mats, decorative crafts, baskets to mention but a few. She uses bark cloth to make bags which she buys from Owino market in Kampala city for the baskets and mats palm leaves are used which are got from the forest in the swamp found in their village of Naluvule.

She informed the researcher that the local market for crafts in Naluvule is low hence handicraft products attract low prices She also said that, the weather disturbs her efforts to prepare local materials hence resorting to buying expensive ones from the market. She said that, when she had just started making crafts (15) years ago she had customers who would take her products in large quantity because she had variety of local materials around her home and she would not buy any materials but as time passed the materials became hard to get because all the surrounding bushes were destroyed by people who wanted to construct houses so she started buying the materials which were expensive to an extent that she could no longer make crafts in large quantities so that she can supply to all her customers. Alice (not real name) like others was not aware that date- palm fibres are a good material for craft making.

Betty (not real name) was another respondent who said that she started producing crafts after her husband got an accident. After the accident, she was forced to stay at home to take care of her husband as time passed by, she could not afford feeding the whole family so she thought of using the surrounding materials to make handicrafts. She started by weaving mats from materials got from the swamp nearby her home and when the crafts where ready she displayed them on her veranda so that she can get customers to get money to feed her family.

When she got customers, she also started making bags from date- palm tree leaves which she sold to many different customers. After sometime, she decided to make it a job so she even started buying industrial materials such as beads and plastic strings to make bags, neck less

among others. When the swamps were destroyed and the industrial materials became expensive, she lost customers because she could no longer access materials for production. When she was asked whether she had seen or used the date- palm fibres, she said that she had seen the date palm fibres but did not know how to use it as a material to make crafts because when she went to harvest palm leaves, she would leave them in the swamp.

The stories of women in Naluvule resonates other stories of women elsewhere who have benefited from craft making despite their circumstances. Women in different parts of the world also use several materials to make handicrafts for survival. For example, Pamoja is a Kenyan a social entrepreneurial project in Kenya called Pamoja helps young women to make handicrafts to earn a living. These young women joined the teenage mothers and girls' association of Kenyatta to learn vocational skills and choose craft making of which they use local materials such as beans, raffia, sisal, and plastic beads to make crafts. They also use cassava flour to mold beads for earrings, necklaces and others.

4.3 The use of date palm fibres as a material to make handicrafts

The researcher harvested and processed fibres from the palm tree. The study established that there are various categories of date palm fibre which included the dry (Figure, 4.3) and the wet ones (Figure, 4.4). In this particular study, the researcher chose to explore both the dry and wet states of the date- palm fibres. The researcher discovered that the dry date- palm fibres were easy to work with in their state. The researcher carried out several studio experimentations to find out how fibres can be extracted or how crafts could be got out of the date- palm tree fibres.



Figure 4.3 the harvested date- palm tree fibres

Photo by: Researcher

Experiments 4.3.1: Boiling date palm fibres in hydrogen peroxide

The selected date- palm tree fibres for the study were taken to Uganda Research Institute (URI) for more discoveries. The date- palm fibres in figure 4.4 were taken for processing where the researcher boiled the date palm fibres in hydrogen peroxide and the process went as follows;



Figure 4.4: The date palm fibre in its original state

Photo by: Researcher

The researcher then processed the date palm leaves to get the fibres in figure 4.7. Five date palm fibre pieces were boiled in five litres of water for 20 minutes and then hydrogen peroxide was added slowly, let to boil for more 5 minutes and within that time the fibres had been bleached and only straws of date palm fibres turned cream as shown in figure 4.5.



Figure 4.5 the process of boiling date- palm fibre in hydrogen peroxide.
Photo by: Researcher

Figure 4.5 above shows different stages of the researcher preparing the date palm fibres to be boiled in hydrogen peroxide and then removed from the mixture and put in sunshine to dry.

The purpose of boiling the date palm fibre in hydrogen peroxide was to preserve the fibre as it is done to bamboo because the researcher used the same process that is being used to preserve bamboo at (URI) Uganda Research Institute and below in figure 4.6 was the result of the process.



Figure 4.6: The date palm fibres boiled in hydrogen peroxide.
Photo by: Researcher

Figure 4.6 above is the fibre how it looks like after boiling it in hydrogen peroxide. There was change of colour and stripes of the fibres were separated from each other.

The researcher managed to get fine strips of date palm fibres which can be used as a material to make crafts. However, the researcher faced several challenges during the experiments which were the cost of hydrogen peroxide which was too high (expensive) the heat from the burning fire while boiling, challenge of climbing the date palm tree to harvest the fibre which was too hard to an extent of using a pang to harvest the date palm fibre.

Experiment 4.3.2: Boiling the date palm fibre in water and salt

After the first experiment the researcher went on with other different experiment with the fibre, the researcher placed the date palm fibre in (4) liters of boiling water, mixed with 125 grams of salt for 20 minutes as shown in figure 4.7 then put off fire then removed from water and hanged on the string to dry.

The date palm fibres were put in sunshine for 10 minutes to lose some water then the researcher started pulling out the long and thick fibres in figure 4.8 since the date palm fibre consists of 3-5 different sizes of fibres but the researcher mainly concentrated on the bigger and long fibres which looked to be more useful to the researcher in figure 4.9 below.



Figure 4.7: Boiling the date palm fibre in water mixed with salt
Photo by: Researcher

Figure 4.7 shows the process of boiling the date palm fibre in the mixture of water and salt which took 30 minutes boiling the date palm fibres the bigger sized date palm fibres were left to dry and then the researcher found out they can be woven and used as a material to make crafts.



Figure 4.8 date- palm fibres being pulled out from the boiled date- palm fibres.

Photo by: Researcher

In figure 4.8 the researcher is removing strips of date palm fibres from the boiled date palm fibres so that they can be used in the making of handicrafts.



Figure 4.9: Stripes of date palm fibres removed from the boiled fibres.

Photo by: Researcher

Figure 4.9 shows the stripes of the date palm fibres after boiling the fibre in the mixture of water and salt. Fine date palm fibres were selected after the experiment and the researcher used a wire mesh to clean them to remove small excess fibres from the strips of fibres.

After boiling the fibres in salt mixed with water, the fibres became soft, flexible and they do not brake. Through boiling the date palm fibres in the mixture the fibres were protected from being eaten by waves, however the researcher met same challenges, the process took a lot of time because the fibres need to be soaked in water for 30 minutes then put them on fire for more 30 minutes fire wood and salt were also expensive.

Experiment 4.3.3: mixing the date palm fibres in different dyes to change colour

The other date- palm fibres which were left after selecting the bigger fibres were boiled again in hot water for 5 minutes and divided into 3 portions then a green dye was mixed with the first portion of the date- palm fibres changed colour from brown to green then the second portion was mixed with the purple dye and the brown date palm fibres changed to purple and the third portion was left in its brown colour.

In that way the researcher found out that the date- palm fibres could change colour but with only colours which are stronger than the permanent colour of the date- palm fibres which is brown or light brown which meant that dyes can change the fibres to different colours selected as shown in figure 4.10.



Figure 4.10: Dipping date- palm fibres in different dyes.

Photo by: Researcher

Figure 4.10 the researcher is preparing the date- palm fibres to be dipped in different colours of dyes and different colours of fibres were got after being dipped in different colours of dyes as seen in figure 4.10.

The researcher was able to get different colours of date- palm fibres after applying different colours of dyes on to the fibres. However, the researcher faced a challenge of scarce and expensive dyes in the market and also during the process of applying the dyes they stick on the surfaces where they drop and they were hard to be removed.

Experiment 4.3.4: Using the date- palm fibres in its original state

The researcher experimented with the date palm fibres directly as it was harvested from the date- palm tree, first the researcher used the date- palm fibres to make simple bags which were not successful as seen in figure 4.11 because the fibres were peeling off and breaking which showed that the date- palm fibres could not be used as a material to make durable crafts as shown below.



Figure 4.11: Craft bags made from date palm fibres.

Photo by: Researcher

Figure 4.11 above shows bags made from date- palm fibre in its original state; the front and sideways of the bag all sides show how the fibres were peeling off and breaking. So, the researcher thought of another option of which was to put a hard board in the bag so that the fibre may not fold and break as you can see below in Figure 4.12.



Figure 4.12: Bags made from date- palm fibres.

Photo by: Researcher

Figure 4.12 above are bags made from date- palm fibres and boards fixed inside to hold the fibres firm but still the fibres were peeling off as you can see above.

The researcher was able to make different shapes of bags using date- palm fibres in their original state but however still the date- palm fibres were breaking and peeling off which showed that they would not be used as a material for making durable handicrafts.

Experiment 4.3.5: Applying bead binder on the date pam fibres

So after getting the above results in figure 4.11 and figure 4.12, the researcher thought of applying bead binder on the date- palm fibre in figure 4.13 below before using it to make handicrafts a few pieces of date- palm fibres were selected then the researcher got 400 mills of bead binder and applied it on date- palm fibres and after they were put in sunlight in figure 4.14 below to dry for 30 minutes after seeing them dry a thin layer of transparent Kavera was seen on top of the date- palm fibre in figure 4.15 below then the researcher experimented on the fibre by folding it in all angles but it did not break neither peeling off and the researcher went on to use the fibre to make different crafts.



Figure 4.13: Applying bead binder on the date palm fibre
Photo by: Researcher



Figure 4.14: Bead binder applied on date- palm fibres and put out in sunshine to dry
Photo by: Researcher



Figure 4.15: The date- palm fibres covered with a Kavera surface.

Photo by: Researcher

The researcher found it easy to apply bead binder on the date- palm fibres using a brush and the fibres became firm and intact it could not break, peel off and neither destroyed by water. However, bead binder was expansive and if exposed to direct sunshine it dries if not used in time.

Experiment 4.3.6: Socking the date- palm tree fibres got from the steam of the date- palm tree fibre in water mixed with salt for 12 hours

The researcher got the steam of the date- palm tree and banged it until it was soft and the inside fibres were separated from each other the researcher got the date- palm tree fibres and washed them several times and after socked them in water mixed with salt for 12 hours and then lied on the surface to dry before using them to make handicrafts as seen in figure 4.16.



Figure 4.16 the process of extracting and socking the date- palm tree fibres in a mixture of salt and water.

Photo by: Researcher

In figure 4.16 the researcher is banging the date- palm steam with a loge to soften it and fine cream date- palm fibres are got and washed with water for several times and then salt is put in the water to sock the date- palm fibres for 12 hours and lastly the researcher puts the date- palm fibres in sunshine to dry.



Figure 4.17: Date palm fibres from the steam of the date- palm tree.

Photo by: Researcher

Figure 4.17 above the researcher is arranging fine and long date- palm fibres got after the process in order so that they can be used to make crafts. The researcher soaked the date- palm fibres in water mixed with salt to preserve the date- palm fibres because salt is used in preservation.

The researcher managed to get fine long date- palm fibres which were cream in colour and very strong however, the researcher faced some challenges in harvesting the date palm stem, banging the stem to get fine date- palm fibres and also the salt was expensive.

A number of experiments were carried out using date- palm fibres to explore how these fibres could be turned into a material for making handicrafts. The materials used in these experiments were date- palm fibres, dyes of different colours, bead binder, salt, water, polyethene bags, fire wood, buckets and the tools were needles, a panga, a brush, a pair of scissors a comb used for weaving and the processed date- palm fibres in all experiments were used to make sample handicrafts as seen in section 4.4.

4.4 Handicraft samples from processed date palm fibres

The researcher made sample handicrafts from processed date- palm tree fibres but a few experiments were selected because their outcomes automatically ended with a fine material that could be used to make crafts.

Sample 4.4.1: Boiling the date palm in salt mixed with water

Fine date- palm tree fibres were selected as seen in figure 4.18 and after the experiment the researcher used a wire mesh to clean them to remove excess fibres from the strips of fibres.



Figure 4.18: Stripes of date- palm tree fibres removed from the boiled fibres
Photo by: Researcher

The date- palm tree fibres were used as materials to weave table mats combining them with green yarns as shown in figure 4.19.



Figure 4.19: The process of weaving date- palm tree fibres with green yarns
Photo by: Researcher

Figure 4.19 is the process of weaving date- palm tree fibres with green threads to make a craft which can also be used as a material to make handicrafts, as seen in the first step the researcher uses a weaving comb to weave a craft and then lastly a woven craft is made.

The researcher went on to use the woven craft in figure 4.19 above to make simple handicrafts which was asset of table mats in figure 4.20.

A sample product (1) from experiment 4.3.2 a set of table mats.



Figure 4.20: Set of a four (4) sitter table mat.

Photo by: Researcher

The researcher also managed to use the woven craft to make a simple hand bag as shown in figure 4.21.

A sample product (2) from experiment 4.3.2 a hand bag.



Figure 4.21: A hand bag.

Photo by: Researcher.

Figure 4.21 is a hand bag made from a woven craft using date- palm tree fibres and yarns, the craft was taken to the tailor and the bag was made but the tailor faced a challenge the fibres were hard to sow which lade to the breaking her needles so we decided to use our hands. The bag was successful made and ready to be used.

Sample 4.4.2: Mixing date palm fibre with dyes to get different colours

After getting different colours of date- palm tree fibres in experiment 4.3.3, the researcher tried to make a door mat from the coloured and the non-coloured date- palm tree fibres as seen in figure 4.22.



*Figure 4.22: the process of weaving a door mat using coloured date- palm tree fibres.
Photo by: Researcher*

Figure 4.22 in (a) the researcher is weaving a door mat using coloured date- palm tree fibres and in (b) cleaning the door mat using a pair of scissors removing excess fibres.

A sample product from experiment 4.3.3 a door mat.



*Figure 4.23: A finished door mat.
Photo by: Researcher*

Figure 4.23 shows a woven door mat in different colours of the date- palm tree fibres with an image in it, the researcher was able to weave a door mat from the coloured date palm fibres however while weaving the date- palm tree fibres were very rough to be used by fingers.

Sample 4.4.3: Using the date palm fibre in its original state

The researcher used the date- palm tree fibre in its original state but the outcome was not successful because the fibres were breaking and peeling off so another experiment was done which led to sample 4.4.4.

Sample 4.4.4: Applying bead binder on the date palm fibre

The researcher applied bead binder on the date- palm tree fibres and the result showed that the fibres could be used to make handicrafts like table mats, bags and others.

The bag

Material: Date- palm tree fibres, date- palm tree leaves, Kitengi cloth, bead binder, raffia, hard board, a liner and tough bond.

The fruit of the date- palm tree was the source of inspiration the bunch of date- pam fruits was studied to come up with the shape of the bag which can be sold and women get money for house hold income.

Below are the sketches of the bag from the source of inspiration which is the date- palm fruit.

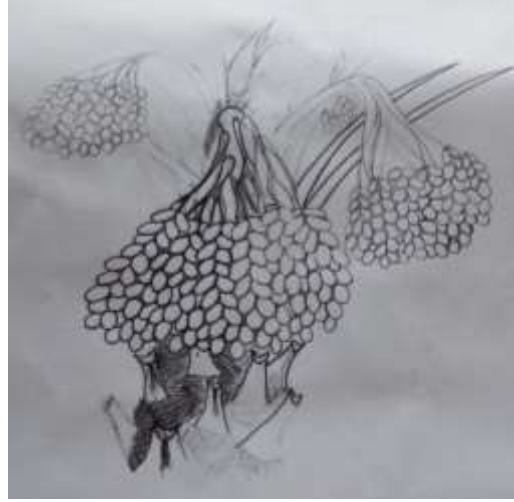


Figure 4.24: the bunch of date- palm tree fruits.
 Photo by: Researcher

The way the date- palm tree fruits appear on the date palm

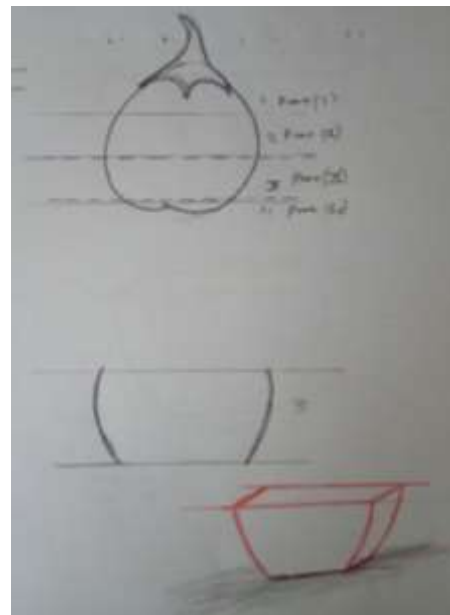
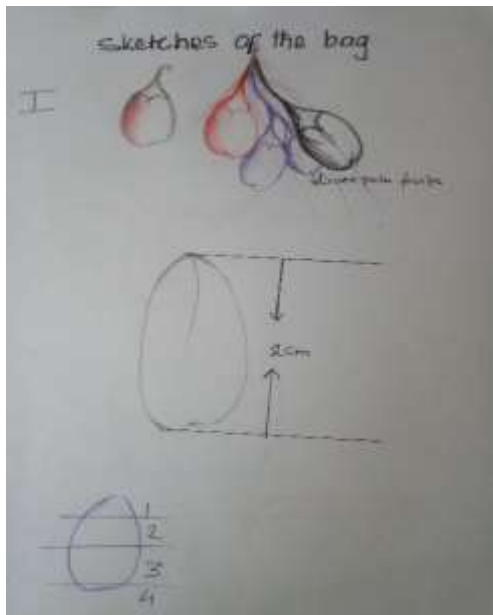


Figure 4.25 above: illustrations showing the date- palm tree fruits on the bunch and how the fruit is cut to get the shape of the bag.

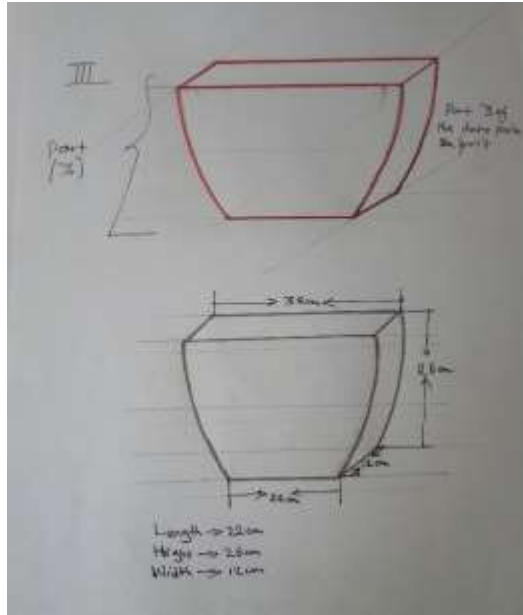
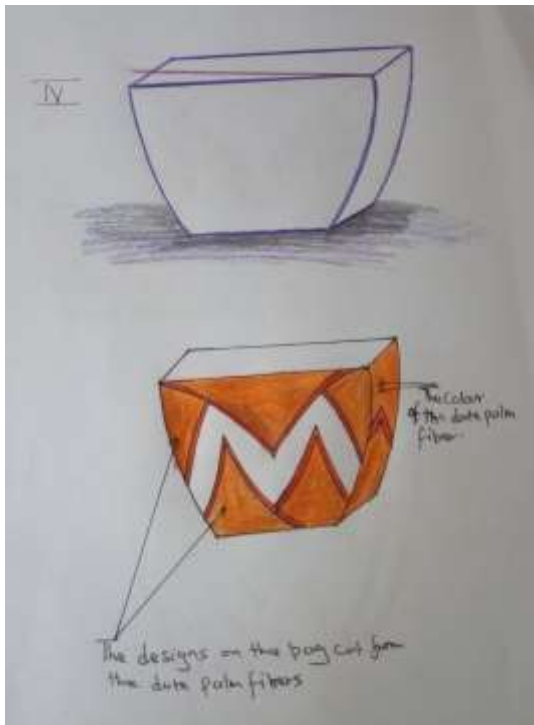
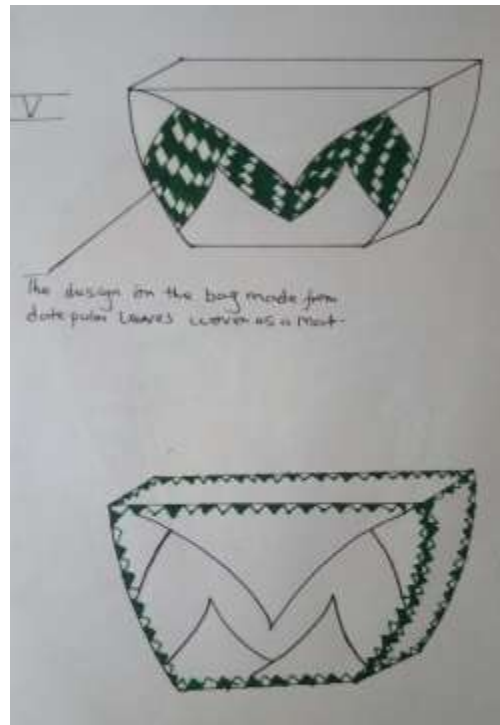


Figure 4.26 above: measurements of the bag on all sides.



a



b

Figure 4.27: The designs on the bag indifferent colours.



Figure 4.28: *The finished bag made out of date palm fibres.*

The process of making a bag from date palm fibres.



Figure 4.29: *The process of making a bag using date palm fibres which is covered with bead binder.*

Photo by: Researcher

In figure 4.29 the researcher is making a bag using date palm fibres from preparing the date palm fibre material to make the bag by cutting and applying bead binder on the date palm fibres, putting the materials together to make a bag and finished bag is seen with all sides on it.

A sample product (1) from experiment 4.3.5 a bag



Figure 4.30: A bag made from date palm fibre covered with bead binder.
Photo by: Researcher

The handicraft in figure 4.30 was made by the researcher it was easy to make because all the materials were available however there were some challenges like the high costs of bead binder.

The glass mats.

Below are the sketches of the glass mats.

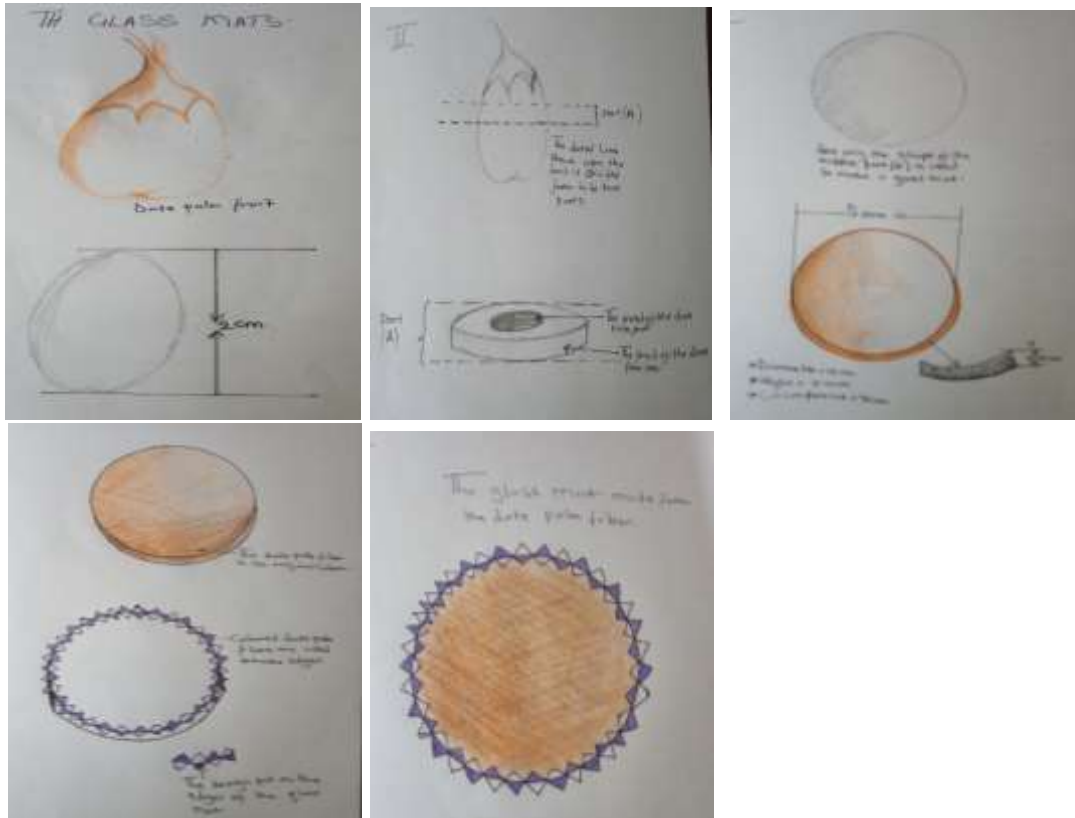


Figure 4.31: Illustrations showing the fruit of the date palm tree (*mpirivuma*) and how it is divided into sections to get the shape of the glass mat. It also shows the measurements of the glass mat in sketches

The process of making the glass mats using date palm fibres.



Figure 4.32: The process of making glass mats from date palm fibres

Photo by: Researcher

Figure 4.32 shows the researcher preparing the date palm fibres by applying bead binder on the date palm fibre to make glass mats and then weaves a finishing less from date palm leaves and then fixes it on the shaped glass mat by sawing it on the glass mat.

A sample product (2) from experiment 4.3.5 glass mats.



Figure 4.33: The glass mats.

Photo by: Researcher

Figure 4.33 is the set of glass mats made from the date palm fibres after applying bead binder on the date palm fibres.

The process went well because the researcher managed to make glass mats all the materials were available and free of charge however there was a challenge of buying bead binder which was expensive.

Sample 4.4.5: Socking date palm fibres got from the steam of the date palm tree in water mixed with salt for 12 hours.

The researcher got the steam of the date palm tree and banged it until it was soft and the inside fibres were separated from each other the researcher got the date palm fibres and washed them

several times and after soaked them in water mixed with salt for 12 hours and then lied on the surface to dry before using them.

A center carpet made from date palm fibres and yarns of different colours using a weaving comb.



Figure 4.34 a piece of a center carpet.

Photo by researcher

Figure 4.34 shows a single woven center carpet which is joined with another to make complete center carpet as shown below;

A sample product (1) from experiment 4.3.6 a center carpet



Figure 4.35: A complete center carpet.

Photo by: researcher.

Another center carpet with different design and size was made using the same proses as shown below;

A sample product (2) from experiment 4.3.6 a center carpet



Figure 4.36: A center carpet with different designs
Photo by: researcher.

Figure 4.36 is a center carpet it was made using a weaving comb but during the process of weaving it was tiresome because the weaver had to stand until the carpet is finished, the yarns used were expensive.

Another center carpet was woven using hands as shown below



Figure 4.37: Process of making a center carpet.

Photo by: Researcher

Figure 4.37 shows the process of making a center carpet the researcher starts to weave the carpet using date palm fibres and twisted banana fibre ropes then the researcher tries to garnish the carpet using different colours of yarns by making stiches on the carpet.

A sample product (3) from experiment 4.3.6 a center carpet



Figure 4.38: A center carpet made from date palm fibres.

Photo by: Researcher

Figure 4.38 shows a center carpet craft made from date palm fibres and banded with bark cloth at the edges of the carpet. But the carpet looks in a perspective form because the date palm tree as it grows the stem goes on reducing in a way that the downer part the date palm fibres are many in number and the upper part, the date palm fibres are small in number so if not noticed by the user a craft in perspective form will be seen but the researcher noticed it and dissuaded to reweave the center carpet in a different way as you will see later in the next presentation of the craft.

The researcher established that the date palm fibres were easy to weave using twisted banana fibres However; the fibres were rough to work with using fingers.

WALL HANGINGS

The researcher managed to make different wall hangings from date palm fibres mixed with coloured raffia fibres as shown below;



Figure 4.39: The process of weaving a wall hanging.

Photo by: researcher.

Figure 4.39 shows the process of weaving a wall hanging with an image of a date palm fruit designed in different colours of raffia fibres. The craft was easily made because all materials needed were readily available and cheap.

A sample product (4) from experiment 4.3.6 a wall hanging.



Figure 4.40 a wall hanging

Photo by: researcher

Another wall hanging was made as shown below;



Figure 4.41: The process of weaving a wall hanging.

Photo by: researcher.

Figure 4.41 shows the process of weaving a wall hanging with the images of date palm fruits in different colours.

A sample product (5) from experiment 4.3.6 a wall hanging.



Figure 4.42: A wall hanging

Photo by: researcher

Figure 4.42 is a wall hanging made from processed date palm fibres and different coloured raffia fibres used to weave date palm fruits as images.

Conclusions

A number of experiments were carried out using date palm fibres to explore how these fibres could be turned into a material for making handicrafts. The materials used in these experiments were date palm fibres, hydrogen peroxide, dyes of different colours, bead binder, salt, water, polyethene bags, fire wood, buckets and the tools were needles, a panga, a brush, a pair of scissors a comb used for weaving and all those were used to make sample handicrafts.

It was established that date palm fibres can be used as a material to make different handicrafts, while working with the date palm fibres it is necessary to put on hand gloves because the date palm fibres are a little bit rough.

It was also observed that the date palm fibres can be changed to different colours mostly the dark or primary colours because the date palm fibres are cream and brown in their original colours.

Experiments carried out indicated that date palm fibres can be used as a material to make three-D dimensional handicrafts that can be sold to get money.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

In this chapter the researcher presents the discussion, conclusion and recommendations done basing on the purpose of the study which was to explore the date palm fibres as a material for production of sample handicrafts for the women of Naluvule village. Discussion was based on the date palm fibres found on the stem of the palm tree.

5.2 Summary

The researcher after reading the literature realized that most handicrafts are made using fibre materials worldwide. Fibres are very useful when it comes to making crafts. Date palm trees can produce annually large numbers of natural fibres that can be utilized in different industries Al-Oqla et al. (2015) estimated that the annual date palm agricultural wastes are more than 20kg of dry leaves and fibres for each date palm tree. As visual artists our works should cease to be just works of aesthetic value but should be works which give back to the communities' goals, needs and expectations. This research therefore, aimed at making sample handicrafts from date- palm tree fibres that would be used by women of Naluvule village who make handicrafts and also start using date- palm tree fibres as a material to make handicrafts.

The researcher after various studio experiments which included experiment 4.3.1 and the researcher did not make any product from the outcome of the experiment then experiment 4.3.2 sample products in figure 4.20 and 4.21 were made, experiment 4.3.3 a sample product in figure

4.23 was made, experiment 4.3.4 sample products in figure 4.11 and 4.12 were made but they were not successful as seen in those figures mentioned above, then the researcher made another experiment 4.3.5 and sample products in figure 4.30 and 4.33 were also made, experiment 4.3.6 sample products in figure 4.35, 4.36, 4.38, 4.40 and 4.42 were made from the processed date palm fibres that would be used to empower women through making handicrafts for sale by the women in Naluvule village Wakiso District who make handicrafts.

5.3 Conclusions

According to objective (1), Different communities use indigenous fibre materials according to their geographical location but not all are explored. Therefore, educated researchers should sensitize the local communities about the available fibre materials like date-palm tree fibres so that they do not spend money on buying materials to make crafts.

The process of exploring the date-palm tree fibre to be used as a material to make crafts was successful although it had challenges of buying needed tools and other materials to use but the process went well and the fibre was processed to be used as a material by the craftsmen to make crafts.

Handicraft samples were successfully made from date-palm tree fibres although the fibres were rough and tricky to be used since they were in straps form but the researcher managed to make crafts like bags, table mats, lounge carpets and wall hangings.

There are so many products that can be made from date-palm tree fibres that the researcher has not made other researchers can explore using the date-palm tree fibre and present

to different communities who make crafts to be used as samples to make crafts for example schools and women groups to mention but a few.

5.4 Recommendations

Objective I: All craftsmen should recognize the indigenous raw materials around their communities and make good use of them other than buying materials and craft-skilled people to teach others so that they can produce quality craft products.

Objective II: Women in Naluvule Village and worldwide who make crafts to start using date-palm tree fibres as a material to make hand crafts to increase on the profits they get from selling crafts since now there is available information about date-palm tree fibre.

Objective III: The sample products made to be used as examples to make products in large quantity for sale to get money have been documented well even local skilled people in local communities can learn from them.

It is recommended that visual artists should appreciate this effort and improve on it as an innovation to contribute to environmental conservation. The study demonstrated the strengths of being creative behavior and attitudinal change to solve an existing problem of inadequate materials for craft making. It is recommended that visual artists became more creative and developed a positive attitude towards date palm fibre materials which is not always preferred by many of them in the making of their art work as a contribution towards solving the problem of inadequate material.

It is also recommended that further research should be carried out on date- palm tree firer as a material in order to establish it as a material for making handcrafts in an effort to contribute to environmental conservation.

Art education programmers should support innovations of using date- palm tree fibre as a material for making handicrafts to enhance creative thinking among artists.

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APPENDICES

Appendix I: Interview guide for in-depth interviews

1. What main activity are you engaged in other than craft making?
2. How much time do you attach to each activity?
3. Which fibres do you use when making handcrafts?
4. Where do you get your fibres from?
5. How many types of fibres do you use to make crafts?
6. Have you used the date palm tree fibres as the source of materials to make crafts?
7. If yes which part of the tree?
8. If no, why?
9. Have you ever tried to use the date palm fibre as a material to make crafts?
10. If yes, how have you used it?
11. If no, are you aware that it can be used as a material to make crafts?

Appendix II: Checklist for observation method with questions to be filled in by the researcher.

1. When do women gather to make crafts?
2. Which time do they gather?
3. Do they have time to make crafts?
4. Do they come in time?
5. Do they gather in the morning or afternoon lunch?
6. Do they like what they are doing?
7. Which crafts do they make?
8. Which fibres do they use when making crafts?
9. Where do they buy the fibre from?
10. How much do they buy the fibre?
11. How much do they use for transport?
12. How many crafts do they make a day?
13. Do they have customers?
14. Do they have customers?
15. Where do they transport their products?
16. Do they select places to take their products?
17. Do they sell in retail or wholesale from?
18. How much do they sell their products?
19. Do they get profits from their products or not?
20. Do they all go to the market to sell their products or buy fibres?