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## RE-MAKING, RE-CYCLING AND RE-PURPOSING OF DISCARDED FABRICS AND CLOTH WEARS AS SUSTAINABLE ENTREPRENEURSHIP FOR WEALTH CREATION

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### Abstract

*In developed countries, re-making, re-cycling and re-purposing different types of materials are strategies that have been used to solve lots of problems in their built environments. They have been able to recycle both old and unusable materials and substances like water, plastics, metals, cable wires, wood, paper, cellophane bags, clothing, textiles, and fashion accessories to mention but a few, into useful things that could be sold for money. Largely, these strategies of remaking, recycling, and repurposing have not been given much attention for the management of waste, hence, there is a lot of litter in most localities in Nigeria. Used fabrics, a significant component of this waste, are often sent to landfills and this poses a threat to human lives in the built environment. Hence, this paper seeks to highlight what the built environment stands to gain if these fabric wastes are given a second use. This is qualitative research. Studio exploration, observations and interviews were used to collect data. Emphasis was placed on the entrepreneurial potentials in recycling, remaking, re-purposing, and reproducing fabric wastes and used clothing in Nigeria. It found out that these cloth wastes can be converted into re-usable items by carrying out some studio explorations. Also, wealth and entrepreneurship could be created through the sales of these products re-made or recycled. This will help to establish and train people in re-making, re-cycling and re-purposing of textiles and clothing, aid sustainability and provide jobs for the teeming unemployed youths. It recommends that people should invent various ways in which fabric wastes and used clothing could be re-utilized so as to ensure that they do not become a health hazard.*

**Keywords:** re-cycle, re-make, textiles, wealth creation

### INTRODUCTION

Clothing is one of the necessities of life from time immemorial. There is no gainsaying the fact that human beings cannot do without clothing. This they utilize for covering some parts of their bodies for decency, protection from weather elements, insect bites and other harmful objects. Humans also use clothing for keeping infectious and toxic materials away from the body, providing a hygienic barrier, beautification or personal adornment, insulating against cold or hot conditions, protection from ultraviolet radiation and sending social and religious cues. People clothe to showcase wealth, power, and affluence in their societies. Apart from all these mentioned above, Africans utilize their clothing and textiles for proper identification, ceremonial purposes and to depict prestige. In

Nigeria, there are more than three hundred ethnic groups and one of the means of identification is through their clothing. Some of the major ethnic groups found in Nigeria are the Igbo, Hausa, and Yoruba. These groups of people adorn themselves with different kinds of clothing, namely: African wax printed clothes, different kinds of laces and fabrics, and traditionally hand-woven fabrics that are peculiar to each group. Examples of such clothing include Akwete, Aso-oke, A'nger, Apa, Ogodogodo, Igala Achi, khasa, mudukare other imported clothing from abroad (which consists of already made apparels and second-hand apparels), among others (Chudi-Duru, 2017).

The usefulness of clothing and textiles cannot be ignored hence they are indispensable. In contemporary Nigerian society, textiles and clothing are utilized for various purposes such as to communicate status, celebrate important events, and show unity and solidarity, as uniforms for identification of various age groups, pupils and students from different schools, the armed forces, paramilitary, medical profession, etc. They are also used in different religious worship centres as uniforms for the pastoral team, and choristers; there are other commemorative textiles used by different groups such as mothers' unions, catholic women's organizations, Christian fathers, girls' guilds, girls'/boys' brigade, Anglican fathers, women's guild, etc. in the churches to commemorate some Christian events. The Muslims are not left out, even the traditional worshippers other religious sects and atheists. Clothing and textiles are utilized in most homes for different purposes such as furnishing. Textiles and clothing could be ascertained to be among the basic needs of the people, therefore there is a need to recycle, reuse, repurpose and remake them when the owners are tired of them and keep them away from landfills and also as sustainable wealth creation in Nigeria. This study is informed by the need to move from a use-and-discard economy to a reuse economy. In a society where some of the youths could earn a living through recycling, reselling, and repurposing of some used and wastes from clothing and textiles, they could also be taught how to do so, in order to give them new life. The new products could be sold to create wealth. If the factories established by some professionals in this field to recycle and repurpose could be utilized to train some jobless youths and adults, this could be one of the ways to achieve sustainable entrepreneurship for wealth creation in Nigeria, empower some people and enable them to be self-reliant.

### **Statement of the Problem**

Waste management is a problem that affects many people on the planet earth. According to Kaza et al (2018), by 2050, the world is expected to generate 3.40 billion tons of waste annually, increasing drastically from today's 2.01 billion tons. They further narrated that whether individuals are managing their own waste or the government is providing some services to their citizens, it is still a problem. Kaza et al (2018) revealed that as nations and cities urbanize, develop economically and grow in terms of population, the World Bank estimates that waste generation will increase from 2.01 billion tonnes in 2016 to 3.40 billion tonnes in 2050. They are of the opinion that at least 33% of this waste, (textile and clothing wastes inclusive) is mishandled worldwide today through open dumping or burning. Godfrey et al (2020) mentioned that available data shows that 125 million tonnes per annum of municipal solid waste was generated in Africa in 2012 of which 81

million tonnes (65%) was from sub-Saharan Africa. And this is expected to grow to 244 million tonnes per year by 2025.

Nigeria's clothing and fashion industry is quite vibrant in that they make use of clothes and textiles now and then. As a result of this, there are lots of waste incurred due to the following reasons: discarding some of them so as to be in tune with fashion, getting tired of wearing them, quest to acquire varieties of clothing, outgrowing some of them, and aging, tearing and wearing out. When these are discarded, they are called waste. This is a very big problem because it causes pollution, diseases, and environmental crisis when they are not properly disposed.

Interestingly, most of the textile and clothing waste produced in Africa, which Nigeria is part of, can be recycled, recreated, and repurposed to create new useable products. Iwuoha (2017), noted that in the USA and Europe waste production and recycling is a multi-billion dollar/ pound industry. It further mentioned some African entrepreneurs who are successful in the business of waste recycling. These young men and women have created jobs, built wealth, and saved Africa's natural environment.

It follows, therefore, that since Nigerians make use of much textiles and clothing, it has become pertinent that these discarded and abandoned clothes and pieces of cloth should be re-made or recycled and given new life to be utilized for other purposes. However, if some of the entrepreneurs could go into the business or rather set up recycling of textiles and clothing business outfits in Nigeria, it will bring into the limelight how this could create sustainable wealth and entrepreneurship. This will help to establish and train people to combat these wastes to useful items, aid the sustainability of recycling textiles and clothing, and provide jobs for the teeming unemployed Igbo youths. Also, the knowledge acquired will be beneficial to the entire country at large.

## **LITERATURE REVIEW**

### **Decomposition of textiles objects**

According to Brown (2021), a factor most people do not ever consider is the impact clothes and dress accessories have on the environment. It further narrates that textile production requires significant amounts of chemicals, water, energy, and other natural resources. According to Drew and Yehounme (2017) of the World Resources Institute, it takes 2,700 liters of water to make one cotton shirt. And when consumers throw away clothing in the garbage, not only does it waste money and resources, but it can take 200+ years for the materials to decompose in a landfill. During the decomposition process, textiles generate greenhouse methane gas and leach toxic chemicals and dyes into the groundwater and soil.

Measuring with the decomposition clock, according to Shelby (2020), leather decomposes in 40 Years. Leather shoes are specifically problematic in landfills because of the harmful chemicals

used during the tanning process. It further mentions that aluminium cans decompose in 250 Years. Aluminium cans can be recycled and back on the shelf in as little as 6 weeks but take around 250 years to decompose. It insists that aluminium is the most recyclable material. It also mentioned that plastic bottles decompose in 450 Years and disposable diapers decompose in 450 Years. Billions of disposable diapers are sent to landfills every year, and they do not decompose very well. It also revealed that plastic bags decompose in 1000 Years. It further said that along with the lengthy decomposition time, plastic bags are very troublesome because they are very difficult to recycle. Most plastic bags are either in landfill or polluting the environment. Shelby (2020) reveals that Styrofoam never decomposes. It is 95% air and lightweight, making it ideal for single-use packaging but very difficult to break down or recycle. As a result, Styrofoam stays in the landfill forever.

### **Various textile materials utilized in Nigeria**

There are various textile materials utilized by Nigerians. These are hand-woven fabrics which are indigenous to them. They are mainly cotton materials, but sometimes they are blended with other synthetic fibre materials. African wax-printed fabrics are utilized to create some apparel. And synthetic fabrics which are mostly imported from foreign countries, are made use of. Most of these fabrics are discarded after some years of use. How to recycle, reuse, and re-purpose has become a major concern to many because of the problems that are associated with them, especially their decomposition.

### **The concepts of textile recycling, re-making, and re-purposing**

#### *Textile recycling*

This is the method of reusing or reprocessing used clothing, fibrous material, and clothing scraps from the textile manufacturing process. Textile recycling could also be defined as the process by which old clothing and other textiles are recovered for reuse or material recovery (LeBlanc, 2020). He is of the view that recycling is a dynamic process and as markets are becoming flooded with specific products such as wiping and mop heads, new products are being launched into the market. Ninety-nine percent of used textiles are recyclable. The importance of recycling textiles and apparel is increasingly being recognized. According to Hertantyo (2022), recycling is a key component of modern waste reduction and it is the third component of the “Reduce, Reuse and Recycle” waste hierarchy. The necessary steps in the recycling process involve the donation of used clothing, collection, sorting, and subsequent transportation to end users of used garments, rags, and other recovered materials such as furniture and mattress material, linens, draperies, cleaning materials, and many other items. Special equipment is needed to shred fabrics, separate waste, and extract fibres. The importance of textile recycling are as follows: reduces wastes and landfill space, reduces greenhouse gases produced when textiles are burnt, reduces air and water pollution, reduces energy consumption, reduces use of fresh raw materials, creates economic development and helps to reduce unemployment problems (Abu Sayed,2023).

The importance of recycling textiles is gradually being recognized globally. According to Planet Aid (2017), the apparel industry is the largest polluter in the world, being responsible for 10% of global carbon emissions. It further mentions that the only industry that produces more pollution than textiles is oil. Over 80 billion garments are produced annually worldwide. Some of these have been recycled after being used. As such, textile recycling is a significant challenge that should be addressed as society strives to move closer to a zero-landfill society. In landfills, natural fibres can take hundreds of years to decompose. They may release methane and carbon dioxide into the atmosphere which are harmful to the body. On the other hand, synthetic textiles are designed not to decompose. In the landfill, they may release toxic substances into groundwater and surrounding soil. These toxic substances affect the water people utilize for different purposes, and also agriculture. The nutrients that enrich the soil are damaged and the crops are left malnourished.

Homestead, a company, has ventured into the business of recycling textile wastes for instance; their recycled blankets are produced from 100% recycled materials mainly using 70% wool and 30% recycled manmade fibres, like old water bottles or polyester shirts that would ordinarily end up in a landfill. The recycled fibre are sorted by colour and stripping them down to bare fibres. These are mixed with the recycled wool fibres and spun into the new repurposed yarn used to produce those blankets. They ship their products to USA, United Kingdom and Europe and also engage in online sales (Anupaya 2023).

Suga is a company that manufactures premium yoga Mats in the USA. It has found a solution to use damaged wet suits and turn them into fabulous and comfortable yoga mats. The California-based company came up with its name by combining the words 'surfing' and 'yoga'. It was founded by a lifelong surfer and yoga practitioner who sought a solution to an enduring problem by wishing to reduce his environmental footprint (Sugamats.com). Oregon leather Co. (2023), mentions that it is an Oregon-based company which produces simple wallets created from excess materials from other industries. It also repairs and maintains leather products instead of discarding them. Some are made from leather that was once used in a motorcycle jacket. The company creates hand-made stunning laptop cases, backpacks, and apparel too. According to recycledleather.hk. (2015), ELFA recycled Leather Company in the ancient town of Wuxi city, Changjing China, produces a new sustainable recycled leather alternative to traditional leather in China. It is made from discarded wet blue leather off-cuts and synthetic fibres from plastic bottles that normally end up in landfill. Weavabel (2022) mentioned another company in the USA by name looptworks. It further narrated that Southwest Airlines recently refurbished the interiors of some of their aircrafts from their fleet. The company chose more sustainable materials for the re-design, reducing the aircraft weight by over 600 pounds, resulting on better fuel efficiency and a greener flight. Their 80,000 leather seat covers were taken over by up cycling advocates Looptworks who re-purposed the 43 acres of leather from the flight interior termed operation *luv seat*. Looptworks used the original design to create a stylish one-of-a-kind bag collection instead of sending the leather to landfill. Looptworks as a company has empowered people and businesses to create less waste through circularity partnerships and limited limited-edition up cycled products. It has been transforming excess textiles

since 2009. It also launched with a mission to recover some of the 17 million pounds of excess textiles from the landfill and transform them through circular solutions including recycling, up cycling and down cycling.

According to Brut (2020), every year, in Europe alone, 4 million tons of textiles are thrown out. To prevent used clothing from being wasted, Clarisse Merlet created *FabBRICK*. She is an architect that transforms used textiles into bricks. Brut (2020) further narrates that Clarisse Merlet has made 12,000 bricks since she started this project. That represents around 5 tons of recycled textiles. It also stated that these bricks are mostly used for decoration, to make furniture, or partition walls. But in the future, the architect says “*I’d like to continue my research and make it into a real construction material.*” It is imperative, therefore, that if some recycling companies are set up in Nigeria, perhaps this could help curb some disturbing health hazards these discarded textiles pose to the environment.

### **Re-purposing of clothing and textiles**

Clothing and textiles could be re-made by converting textile waste (material) or discarded clothing into something that could be used again or sold to earn an income. For instance, worn jeans could be sewn or converted into so many other things like bags, work denim, apron, rugs, sofa jeans cushions, pen holders, slippers, rugs and other objects. Burlap could also be remade into curtains, flowers, trinkets boxes, bags, rustic twine balls, baskets, wall hangings, table mats, coasters, wreaths and other objects. Other textile fabrics and clothing could also be remade into something else, once they have been considered waste. Textile waste is a material that is deemed unusable for its original purpose by the owner. It could also include fashion and textile industry waste created during fibre, textile, and clothing production, and consumer waste created during consumer use and disposal.

According to Gadkari and Burji (2014), textile waste can be classified as either pre-consumer, post-consumer or industrial. Pre-consumer textile waste is the leftovers or by-products from the textile fibre industries and cotton industries that are re-manufactured for the automotive, aeronautic, furniture, mattress, and coarse yarn, home furnishing paper, apparel, and other industries. While post-consumer waste is defined as any type of garment or household article made from manufactured textiles that the owner no longer needs and decides to discard. Post-consumer waste could also be seen as the waste from fabrics that have already passed through the consumer market and are recycled and re-constituted into a product for the consumer market once again. This paper is concerned with the recycling and re-purposing of post-consumer textile waste.

### **Recycling and the re-purposing of textiles in Nigeria**

In some Northern communities in Kaduna, Nigeria, it was observed that recycling used clothes and pieces of cloth is done in various ways using local methods not mechanical means. These few local ways will be discussed briefly: There are some groups of people known as “*kparo*” that go from one house to the other, or door to door requesting used clothing, shoes, bags, curtains, etc. from

people. This act is usually found among the Hausa and the Yoruba. It was observed that some people usually exchanged their fairly used clothing for some other useful items like plastic basins. The people that provide used clothing and textiles are either given a little token of money in return or some plastic buckets, baskets, or basins of different sizes to depending on how new and expensive their submitted clothes are. If the clothes given are relatively new, the givers are rewarded with bigger sizes of plastic buckets or drums or basins. On the contrary, if they are relatively old, they are given smaller plastic buckets. After the collections, the cloth collectors normally take these used items to remote areas and villages to resale for economic gains. The collector disclosed this information when asked how she makes her gains from the clothes and textiles collected. That is her own means of livelihood.

Some people also donate their used clothing, shoes, etc. to orphanage homes and to the less privileged, refugee camps, etc. instead of burning or sending them to landfills as this will have detrimental effects health-wise in the society. The cloth collectors help in recycling these clothes by way of selling them to the less privileged. By doing so, the number of clothes to be sent to the landfills or burnt is reduced.

In some areas of the country, different techniques in dyeing, such as a fabric decoration, are employed to enhance the looks of worn-out clothes, especially jeans and other clothing made of cotton. This was also observed in the Northern part of the country (Kaduna and Kano states). Some of the people usually pay for a fabric dyer to dye their faded brocade ethnic garbs. This they do, to give them new life. The dyes are used to transform used clothes into new ones. Which can still be used and appreciated instead of discarding them or littering them all over dump sites to constitute a menace in the society. Some used clothes especially, denim, are repurposed by using them to construct different types of bags, wallets, and purses for pupils, students, and other people. They could also be used as patch works on other fabrics or transformed into distressed jean fashion wear which is fashionable to date.

In the 21st century, the textile and clothing industries are faced with an enormous challenge of what to do with textile waste. Gadkari and Burji (2014), note that recycling solid textile waste has been considered a viable alternative for industries. Following from the stated observations, in many parts of Nigeria, it appears that mechanized industries which handle the recycling of clothes and textiles are lacking. This is unlike in other western countries that have ventured into this business to take proper care of their environment, create more jobs (by training and employing people to work in the industry), and for wealth creation. For instance, in the United Kingdom, there are some companies established solely for recycling textiles. Salvation Army trading company ltd (SATCol) UK and Republic of Ireland is among those companies that recycle textiles and clothing. It was established in 1991 to help fund the Salvation Army's vital work with vulnerable people. According to Iris (2023), it encourages clothing reuse and recycling through a network of around 8,000 clothing banks and over 220 charity shops and donation centres. It further mentioned that textiles are the fastest growing source of waste in the United Kingdom, and the landfill full of textiles is almost being defeated hence the salvation army trading company limited and others will

be able to recycle 99% of textile waste leaving only 1% which cannot be used to landfill. They have different ways of collecting used clothing namely: clothing bank- they have over 8,000 clothing banks in car parks and other recycling centres all over the United Kingdom and republic of Ireland, where used clothing is easily collected. These banks are emptied regularly by a team of local collectors, and the contents transported to warehouses for sorting. The Salvation Army also make use of the door-to-door method, as have been discussed earlier. They have over 400,000 bags distributed to residents every week, and collected back from them on specific dates. These bags are collected with their company's vehicle for easy recognition. SATCol observed that in the door-to-door method, more clothing is collected compared to the clothing bank (Iris, 2023).

In the United States of America, more than 500 textile recycling companies are engaged in operating the stream of used textiles. These industries employ approximately 10,000 semi- workers at the first level of processing materials and creates an additional 7,000 jobs at the final processing level. The solid waste district county noted that 500 million pounds of textiles collected are used by the collecting agency, some are also sold to textile recyclers, used clothing dealers and exporters, and wiping rag graders and fibre recyclers. Primary and secondary processors account for annual gross sales of \$400 million and \$300 million respectively (Associated Recyclers of Wisconsin, 2022). It can be deduced that the country has utilized textile recycling and repurposing to create wealth and sustain entrepreneurship. The same could be practiced in Nigeria to also tackle unemployment among the teeming youth and for wealth creation.

Associated Recyclers of Wisconsin (2022), further gave an insight to recycling of textiles and mentioned that although textiles are not banned from Wisconsin landfills, because they are items that could be re-used and re-cycled in many cases. It said that majority of textile waste comes from household sources; which include discarded clothing, carpets, tyres, footwear, sheets and towels. It is of the view that the average lifetime of any clothing is deemed to be about 3 years, after which they are discarded as old clothes. It was further observed that sometimes, clothes not worn are also discarded as they have gone out of fashion or become undesirable. Most of them either go to textile recovery, are donated or sold. It can be inferred that some of those ones sold are sent to Africa for re-use. It was observed that in most markets visited in Nigeria during this research had thrift shops where second-hand clothing items (otherwise known as *okirika* or *bend down boutique*) were sold. The merchants of these second hand clothing usually buy them in bales, the clothes are stashed, compressed in over large-sized bags used for the packaging. Then some retailers buy from those that buy in bales once the bale is opened. After which they resell in their own shops. The merchants usually bring out some specific days for opening their bales of materials. Some other customers that might come to buy some clothing for their own use, buy from the retailers not from the wholesalers (merchants).

## **Entrepreneurship**

Tindall in Sanders (2012), defines an entrepreneur as someone with drive and ideas, a person with the potential and passion to create something new where there was nothing before – someone with

the ability for making a lot out of very little. He further mentions that everyone needs wealth creation to lift their standard of living and it's those with entrepreneurial skills who will make it work. Sanders (2012) further explains that some countries like China do it by combining the strength of numbers with determination to rise above poverty; the Australians make use of their vast natural resources, and the Americans build their wealth on a culture of granting immigrants the freedom to succeed in business. Each nation has fostered a culture of entrepreneurialism, and the Nigerian nation should not be left behind.

### **How recycling and repurposing of textiles and clothing could bring about sustainable entrepreneurship for wealth creation in Nigeria.**

While some people are quite familiar with recycling plastics, polyethylene, aluminium, paper, bottles, bottle corks, cans for drinks, etc., they may be less likely to understand the value of recycling all unwanted clothing and household textiles. A lot of collectors of these wastes mentioned previously, who send them to the recyclers for use, could be found in dumpsites. Consumers should not dispose unwanted textiles and clothing in the dustbin, incinerate, or deposit them in landfills because almost 100% of them can be recycled by entrepreneurs to create wealth.

It can be deduced that some people engage only in the re-purposing of clothing in Nigeria. This is to prepare them for selling as second-hand clothing in most markets. Worn-out clothes are torn or cut into smaller pieces for use as rags for cleaning, and finally thrown away into dust bins or burnt. From observations during the course of this study, some of those that burn their clothing were found to have some fetish beliefs and inclinations attached to it. This was revealed during an interaction with some women who go about hunting for used clothing to exchange for plastic containers. They pronounced that some people prefer to burn their used clothing instead of exchanging them for anything because of some undisclosed reasons.

A basic search of literature and information sources indicates that there are no known large textile recycling industries in Nigeria, perhaps because entrepreneurs have not seen textile recycling as a profitable business venture for sustained wealth creation. Since Nigerians make use of a lot of clothing, are people with a rich culture often identified from their way of clothing, are also fashion-conscious people who love fast fashion, a lot of waste will be incurred. It can therefore be posited that instead of burning or discarding used clothing in landfills, it should be recycled manually into other items that could be reused. In that way, a lot will be achieved to help the society. The recycling done in textiles according to the textile learner (2012) are:

1. Used clothing recycling
2. Used footwear recycling
3. Leather recycling
4. Cotton recycling
5. Wool recycling
6. Burlap, jute, and sisal recycling

7. Polyurethane foam recycling
8. Polyester and polyester fibre recycling
9. Nylon and Nylon fibre recycling
10. Other synthetic fibre recycling
11. Carpets and rug recycling
12. Rags and wipers
13. Used and recycled bags

### **STUDIO EXPLORATION: REMADE AND RE-PURPOSED TEXTILES**

During the course of this study, the researcher remade some old jean wears collected from some people into some re-usable items in the studio. There was experimentation to produce some reusable samples.

#### *Studio Exploration 1*

The researcher went in searching for used and discarded jeans wear to re-make into some usable items. This studio experiment 1 is on revamping an old tote bag that would have been trashed. The researcher re-designed it by utilizing some cut-outs from some discarded jeans fabrics. Materials utilized in this experiment are: different colours of old jeans clothing, a pair of scissors, fabric gum, tape, pencil or maker, an old fabric tote bag. The stages of production are shown in Plate 1 to Plate 5.



**Plate 1: (Stage 1) A sketch of the design made on the right side of the bag**

*Source: Fieldwork (2022)*



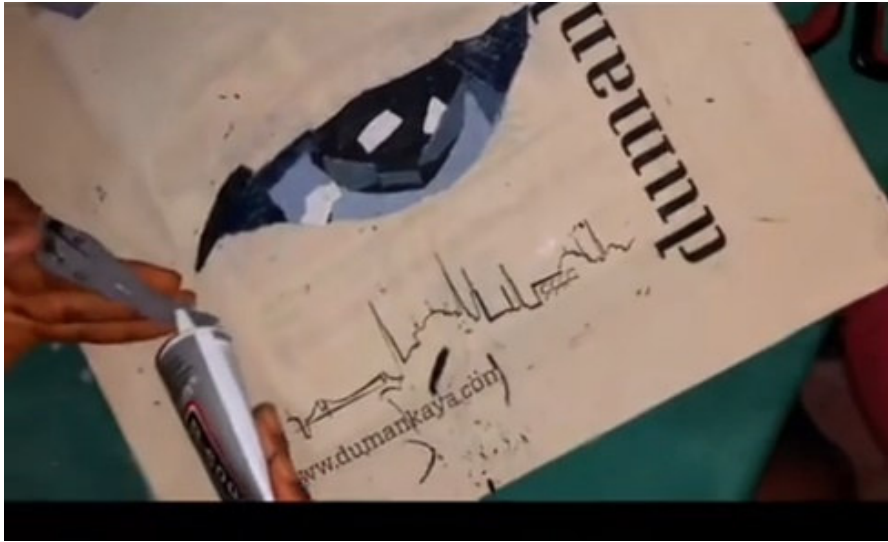
**Plate 2: (stage 2) pieces of jean fabrics cut from different coloured discarded jeans wear for the design on the bag**

*Source: Fieldwork (2022)*



**Plate 3: (stage3) The designing commences by using fabric gum to fix the cut outs to the sketch made**

*Source: Fieldwork (2022)*



**Plate 4: (stage 4) Design in progress**

*Source: Fieldwork (2022)*



**Plate 5: (stage 5) The finished work - The bag has been re- designed and given a new life**

*Source: Fieldwork (2022)*

There are some fashion designers that specialize in re-making and re-purposing old jeans wear into some usable items instead of sending them to the landfills. During the course of this study, the researcher worked with one among the fashion designers they met. Her work, which includes tote bags, distressed jean trousers and jackets and other items. She revealed that she usually buys high quality, second-hand jean trousers as well as old used jeans wear for her purposes. The apparels are then remade by giving them other styles. Advertisements and sales are carried out through social media handles.

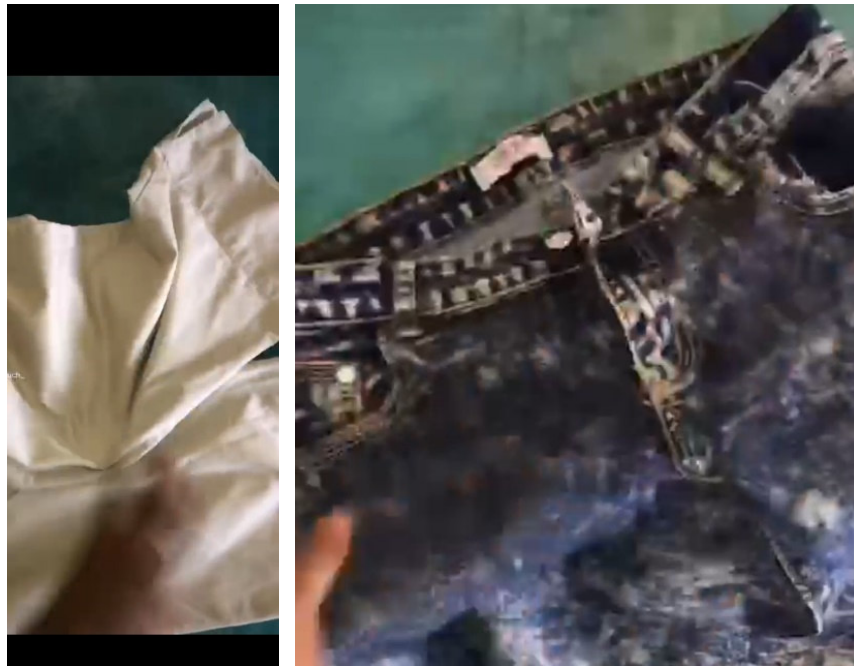
### *Studio Exploration 2*

The materials which were utilized in this studio exploration are discarded jean fabrics of different colours, scissors, thread, sewing machine and tape. Examples of the fabrics and the finished products can be seen in Plate 6 to Plate 13.



**Plate 6: Some used jeans trousers and scraps of jean fabrics for re- making useful items**

*Source: Fieldwork (2022)*



**Plate 7: Some used trousers ready for re-making**

*Source: Fieldwork (2022)*



**Plate 8: An old jeans trouser set to be re-made into another purposeful wear instead of throwing it into landfills**

*Source: Fieldwork (2022)*



**Plate 9: Joining of the two pieces of fabrics together**  
*Source: Fieldwork (2022)*



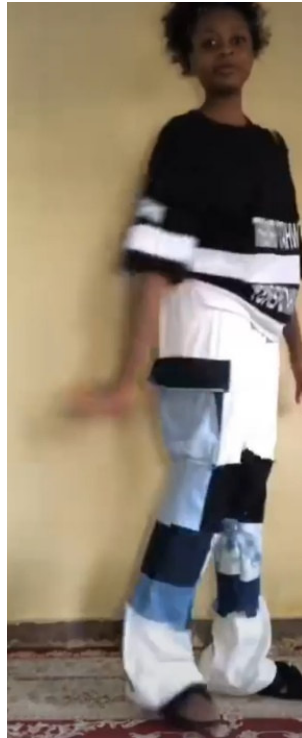
**Plate 10: Already re-made jeans wear with different coloured of old jean fabrics**  
*Source: Fieldwork (2022)*



**Plate 11: Another re-made pair of trousers**  
*Source: Fieldwork (2022)*



**Plate 12: A pair of distressed jeans trousers re-made out of discarded jeans clothing**  
*Source: Fieldwork (2022)*



**Plate 13: Re-made old jean trousers into a usable clothing**  
*Source: Fieldwork (2022)*

*Studio Exploration 3*

Other studio exploration was carried out. This can be seen in Plate 14 to Plate 16.



**Plate 14: Drafted patterns for making hats. This was used to cut out some patterns for making hats**  
*Source: Fieldwork (2022)*



**Plate 15: Re-made old jean trousers, turned into a hat**  
*Source: Fieldwork (2022)*



**Plate 16: Re-made old jean trousers, turned into a hat**  
*Source: Fieldwork (2022)*

There are some other objects that old jean fabrics can be turned into. They are as follows: Rugs (Plate 17) and Bags (Plate 18).



**Plate 17: Re-made old jean trousers into a rug**  
*Source: frugalfamilytimes.com, via Pinterest (2023)*



**Plate 18: re-made old jean trousers into a bag**  
*Source: handmadiya.com, via Pinterest (2023)*

This study was also part of a project where a student utilized some discarded scraps of African wax fabrics and other fabrics to produce some throw pillows and also used some of them as patch work on condemned tyres fully padded with foam to produce some chairs and centre tables. Examples of the scraps of fabrics the student worked with are shown in Plate 19, while the products of this process are shown in Plate 20 and Plate 21.



**Plate 19: Some fabric wastes**

*Source: Fieldwork with Joy Ndudim (2022)*



**Plate 20: Scraps of African wax printed textiles used in folding old used condemned tyres**

*Source: Fieldwork with Joy Ndudim, (2022)*



**Plate 21: scraps of African wax printed textiles used for throw pillows**

*Source: Fieldwork with Joy Ndudim, (2022)*

### **Benefits of textile recycling**

Textile recycling offers both environmental and economic benefits, they are as follows:

The demand for textile chemicals like dyes, sodium hydrosulphite, caustic soda, and other fixing agents is reduced. If they are recycled, they will not be sent to landfills. The requirement for landfill space will be reduced. Textiles buried in landfills lead to many health hazards. Synthetic fibres do not decompose, but some that are not synthetic decompose to produce methane which contributes to global warming. It will also make it possible to purchase fewer materials for use.

As recycled fibres will be readily available, there will not be any need to purchase and transport them from outside the country, thereby reducing pollution, and saving energy. Other benefits are:

- i. Lesser energy will be consumed while processing as items will not require re-dyeing or scouring.
- ii. Reduction in using water because the product will not have to be thoroughly washed with large volumes of water as for some fabrics like wool.
- iii. Pressure on fresh resources will be reduced.
- iv. New employment of workers will occur as a result of creation of jobs
- v. Entrepreneurship will be encouraged as a result of training of staff who might want to stand on their own.
- vi. Production of different items that could be re-used will occur.
- vii. Increased wealth creation in the society will result.
- viii. Reduced dumping in landfills will lead to a decrease in pollution

- ix. Reduced consumption of energy and water for the industries.

### **FINDINGS**

Most of the textiles and clothing encountered during the course of this study are recyclable by hand. It was found out that people engage in door-to-door hunting for used clothes to eke out a living because some collection centres were found to be non-existent in most communities in Nigeria. These collection centres would have made it easier for the consumers and retailers. They could also be remade and re-purposed into some re-usable items. It was also found out that lots of financial benefits could be generated by re-making, recycling and re-selling of used textiles and clothing in Nigeria instead of sending them to landfills.

### **RECOMMENDATIONS**

Following from the observations in literature and the work done during this study, the following germane recommendations are made: Collection and thrift stores in the likes of large standard supermarkets for the collection of used textiles and clothing should be established in Nigeria. Good, reusable, and worn-out textiles and clothes should be taken to thrift stores where they will be sorted out, proper sensitization should be carried out to educate people on the gains of re-making, re-using and recycling of used clothing instead of throwing their clothes into landfills or burning them. Also, people should be encouraged to go into the textile and clothing remaking business as there are not many people in that area. Remaking and re-using of clothing and textiles should be included in the curricula of school so that pupils and students will have an understanding of what it is all about.

### **CONCLUSION**

Since clothing and textiles are necessities of life, there will always be discarded clothing that can be repurposed and worn-out clothing which can be recycled. Recycling, re-making and repurposing of clothing and textiles in Nigeria can create sustainable entrepreneurship for wealth creation if professionals in that area establish industries to recycle used textiles and clothing, rather than the common practice of burning or sending them to landfills. More individuals could also key into re-purposing or re-making used clothing into reusable objects and clothes with the aid of sewing machines. The Nigerian society has a lot to gain from recycling used textile and clothing materials and using recycled materials. Recycling textiles and clothing materials should therefore be considered important, as this will prevent some health hazards, as well as boost the economy. Also, establishing some recycling factories will go a long way to offer employment to the youth who are searching aimlessly for white-collar jobs that are very difficult to get in Nigeria. If this is done, there will always be sustainable entrepreneurship to create wealth in the society.

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