

Integrating Visual Art in Waste Management: A Practical Approach with Emphasis on Sugarcane Waste

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Abstract: In recent times, waste menace has become a global challenge that threatens man and his environment. The management of waste that accrue domestically, industrially and commercially are global issues that require the attention and involvement of every field of which visual art is inclusive. This study presented the possibilities of using visual art in the management of commercial waste generated from sugarcane by recycling them into a work of art. Being practice-based research, the practice - based methodology was adopted with the aesthetic and artistic possibilities derivable from sugarcane waste practically x-rayed. The conceptual framework of the study was inspired by Marcelina Akputajor, a Nigerian artist who uses waste cloths from tailoring houses to create astonishing works of art. Based on the stated objectives, the findings of the study were discussed with recommendations proffered for future art scholarship. Conclusively, the study's contributions to knowledge were established.

Keywords: Sugarcane waste, Visual Art, Waste, Waste Management.

1. Introduction

Man's endless activities generate both useful and unwanted products. As the useful products accruing from his limitless activities, impact positively on his health and environment, the unwanted ones known as waste, impact negatively on him. Waste, the product of man's activities is usually discarded based on its negative impacts on his health and environment. Wastes according to Osita and Adiele (2020), are such a huge phenomenon that can disrupt or disorganize a healthy environment. Considering the negative effects of improper waste disposal and management on human health and the need to attain a sustainable environment, proper management of waste is essential in every environment.

The global awareness on waste management has made man's environment a repurposed one where nothing is considered as waste. Wastes are exploitable potentials that can become sources of pleasure and wealth. Unmanned resources have earned the name, environmental waste instead of untapped natural wealth (Bassey & Osita, 2020). The concept of waste is to a large extent subjective. A substance can only be regarded as waste when the owner labels it such (Amasuomo & Baird, 2016). In this instance, what is seen as waste can be wealth to

another.

In recent times, waste can be managed by transforming them into useful purposes. With recent art innovations and the clamour for sustainable environment, visual artists strive to create sustainable works of art. They explore their ingenuities and skills using materials discarded as wastes in their environments. Artists, upcycle, recycle and reuse discarded materials and objects from their environments to transform them into useful artworks. Art being a veritable medium for addressing various problems that confront man be it social, spiritual, environmental, political and religious was presented in this study as a potential tool in waste management. An attempt was made to minimise commercially generated waste from sugarcane at Madalla market in the Federal Capital Territory Abuja using the instrument of visual art.

A. Statement of the Problem

The massive sugarcane wastes, generated at Madalla market of FCT Abuja, pose serious threat to man's health and the environment. They mar the beauty of the environment, expose the soil to erosion, breed rodents, snakes and scorpions thereby exposing the lives and health of the market users and the environment to danger. In view of this, the need to reduce waste by transforming them into purposeful use inspired this research. The research explored the artistic possibilities derivable from sugarcane wastes by using them as a creative resource. In doing so, two problems were addressed; the problem of waste reduction and the problem of medium in visual art.

B. Aim and Objectives of the Research

The aim of this research was to use visual art as a tool to manage sugarcane waste while the objectives were to:

1. prepare sugarcane waste (sugarcane barks) for artistic use.
2. use sugarcane waste to explore the negative technique in the creation of a representational form.
3. use colours to explore the aesthetic value of sugarcane waste.

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C. Research Questions

Based on the stated objectives, the following questions were addressed:

1. How can sugarcane waste be prepared for artistic use?
2. How can sugarcane waste be used to explore the negative technique in the creation of a representational form?
3. In what way can colours be used to explore the aesthetic value of sugarcane waste?

D. Significance of the Study

This research, sought to use visual art as a veritable tool in the management of sugarcane waste. It x-rayed the possibilities of transforming sugarcane waste into a work of art using the negative technique. Artists at different times and contexts have attempted to manage environmental waste by adopting waste materials like bottles corks, plastic objects, pieces of cloth, metal objects, toys, buttons, and other discarded objects within their vicinities as creative mediums. However, available records to the best knowledge of the researcher show no evidence of any artist that has attempted to reduce commercially generated sugarcane waste by transforming them into an artwork using the negative technique. Note, the negative technique in art means emphasising an empty or a negative space to define a form. It could also be referred to as the subtractive method of creating an art form.

By adopting sugarcane waste as a medium in the studio art-practice of this practice-based research, an awareness has been created that sugarcane waste can serve as a medium of expression in art.

This research attempted through art- practice and theory to provide vital document for the visual artist on the role of visual art in waste management.

E. Scope of the Study

The researcher used sugarcane waste collected at Madalla market near Zuba in the Federal Capital Territory, Abuja as a medium of expression. The choice of this location was due to its vicinity to the Federal Capital Territory College of Education Zuba, Abuja where this research was conducted. This was the best choice as there is no established difference between the sugarcane waste generated at Madalla market in the Federal Capital Territory Abuja compared to the waste samples of this same plant commercially generated in other markets across the Federal Capital Territory. This study is subjective being subject to the researcher's perception and articulation.

F. Limitation of the Study

The accumulated sugarcane waste at the Madalla market, posed a great risk at the point of collection having become a breeding ground for harmful insects, snakes and rodents.

G. Conceptual Framework

This research was built on the framework of Marcellina Akputojor, a Nigerian artist who uses waste cloths generated from tailoring houses as medium of artistic expression.

2. Literature Review

For the purpose of this research, the reviewed literature shed light on the concept of visual art, waste, waste management, visual art in waste management, sugarcane but with greater emphasis on related artworks. The review of related artworks, was necessary for the contributions made by other artists on the subject and the practical nature of the study.

A. The Concept of Visual Art

Visual art is an art form that creates works that are primarily visual in nature such as; ceramics, drawing, painting, photography, video, filmmaking and architecture (UVA, 2021). It is a creative art that is appreciated by sight. It communicates visually and appeals primarily to the visual senses. According to UIS UNESCO (2021), visual arts are those art forms that focus on the creation of works that are primarily visual in nature or multidimensional objects. Visual art combines skills and knowledge to create objects that are capable of evoking thoughts, emotions and feeling which address man's psychological, societal, religious and environmental problems. In this study visual art was used to address the environmental problem of waste. It was adopted as a tool in the management of commercially generated sugarcane wastes.

B. The Concept of Waste

Wastes as noted by Ivanova et al. (2016), are the unwanted by-products of human activities generated from and within the environment. In another literature, Cheremisinoff (2003) asserts that wastes are essential products of human activities, the result of inefficient production processes whose continuous generation is a loss of vital resources. In a similar perspective, Brunner and Rechberger (2014), affirm that human activities inevitably result in wastes. Sridhar (2017), opined that waste is any matter which has no further use based on the composition e.g. garbage, trash, junks, domestics or ashes. It may be domestic, hazardous, nonhazardous or infectious. Though several definitions of waste proposed by different scholars exist, one common thread among these definitions is - waste is a material that is not wanted by its producer.

The term waste as noted by Dijkema et.al (2000), is subjective. A substance that is regarded as waste may be a resource to another. A material can be regarded as waste when the owner labels it as such (Dijkema et al., 2000). The subjective nature of the term 'waste' conceptually provides a new window in visual art practice. Unwanted objects and materials generated from man's activities that are discarded as wastes today, have become sources of inspiration and mediums of expression to the visual artists. In this study, commercial waste that accrued from sugarcane was explored as medium of artistic expression.

C. Waste Management

Waste, the integral aspect of every human environment can constitute serious threat to man and his environment if not properly managed. Against this backdrop, Nanashaitu and Adebisi, (2018), note that waste management is very important to the environment as wastes are a huge menace when

unmanaged. Waste management according to Achi *et al.* (2012), covers the point of collection, segregation, storage, transportation, processing, recycling, treatment and disposal of waste materials. Irrespective of the importance of proper waste management to human health and the environment improper waste management, characterise most Nigerian towns and cities in terms of open dumping, general land filling, open burning or incineration, which cause more problems and are highly unsustainable (Achi *et al.* 2012). Proper waste management as Onyeniyi (2011) notes, reveals aesthetic appeals of place and creates jobs for recyclers and others involved in any aspect of the waste stream.

Waste management has been a challenge in Nigeria, owing to the fact that environmentally sustainable approaches such as resource reuse, recycle, reduce and upcycle have not been well integrated into waste management. Against this backdrop this study sought to address the problems of sugarcane waste management by presenting the possibilities of recycling them into a work of art.

D. Visual Art in Waste Management

Visual art discipline has thrived based on the elements of the ecosystem. These elements have been used from time immemorial by artists to communicate values, wellness beauty, peace creativity etc. to target the audience and many have made fortunes out of this. It is saddening to note that the environment from which visual artists have thrived are undergoing some forms of antagonism in terms of degradation (Nanashaitu & Adebayo, 2018). Wastes as Odoh *et al.*, (2018) note is generally seen as potent creative resources by visual artists.

The recent awareness on environmental protection has awoken the spirit of revival and rebirth in the minds of the contemporary artist in the areas of painting, sculpture, ceramics, graphics and textiles. Artists adopt discarded objects and materials considered to be wastes in their environments as their mediums of expression. What we regard and treat as wastes in our environments today, like papers, plastics, empty cans, cloth, bottle corks, and so many others are useful to the visual artists who transform them into objects of aesthetics. Visual art, having the capacity of using skills to transform wastes generated from man's activities into useful purposes plays a significant role in giving back to the environment what came out from it as waste in appreciable form.

E. Sugarcane

The generic name for sugarcane *Saccharum*, originated from the Indian Sankrit term 'Sharkara' for the crude sugary product obtained from the honey reeds. (Brumbley *et al.*, 2008). Sugarcane also known as *saccharum* is a perennial food crop that food processors use to make sugar. It is an agricultural grass crop that grows in tall stems with feathery flowers. Most of the world's sugarcane is grown in subtropical and tropical regions. It is also grown for bio-fuel production especially as the canes can be used directly to produce ethyl alcohol (Yamane n.d). Sugarcane bark; the major constituent of sugarcane waste was explored as a creative resource in this study.

F. Review of Related Artworks

Portraits Created with Found Materials by Jane Perkins (1930 - 2022)

Jane Perkins creates art out of discarded or once used loved objects that have since been forgotten. Her media include discarded buttons, toys jewelries, old shells and beads. Perkins, inspired by Impressionism and famous portraits, created some of the most famous paintings by using lots of small objects to make up pictures. She often started by trying to match the colours before finding the most appropriate shape to suit each brushstroke or pixel. Perkins applied colours first on a surface to serve as her guide in her choice of objects (Cowan, 2014). Her portraits, stylistically mosaic emerge from dark and monochromatic backgrounds as shown in Fig 1, and 2. They were created with buttons, beads, toys and other small fabricated objects that were arranged in accordance with shapes to suit every space. This study just like Perkins, adopted waste as a medium of expression but differ in terms of content. Perkins recycled man-made inorganic wastes into art, while this study recycled semi- organic wastes generated from nature (sugarcane barks) into art. Perkins used waste in a direct approach in her realistic representations, while this study adopted the negative technique in the creation of representational form with sugarcane waste.



Fig. 1. Young woman in the third world- Contemporary art recycled from junks by Jane Perkins
Source: <https://vsemarkt.com>janep Perkins>



Fig. 2. Portrait of Queen Elizabeth recycled from discarded objects, toys and shells by Jane Perkins
Source: <https://vsemarkt.com>jane-perkins>

Michael Moerkerk – Turns Old Keys and Coins into Beautiful Art

An Australian artist known as Michael Moerkerk, turns discarded keys and coins into bottles, lampshades and other recycled metal sculptures. (Panda 2015). In the bid to maintain sustainable environment Moerkerk, sees the need to put back into use old and discarded objects that were littered around his environment. Conceptually, this research and Moerkerk relate. By converting heaps of sugarcane wastes into an artwork, both attempted to use visual art, to minimise environmental waste. Contrastingly, Moerkerk reduces waste by recycling inorganic man- made objects (keys and coins) into sculpture (three-dimensional art pieces) as shown in Fig. 3 and 4. This research reduced waste by transforming natural waste (sugarcane barks) into a painting (two- dimensional artwork).

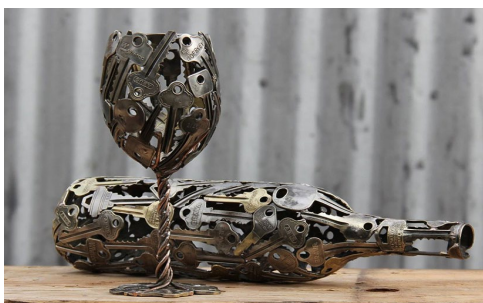


Fig. 3. Wine cup & and bottle recycled from discarded keys by Michael Moerkerk

Source: <https://www.demilked.com/old>

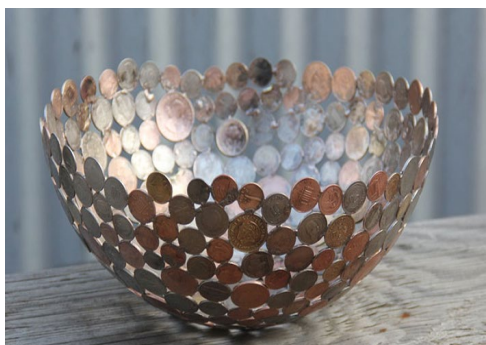


Fig. 4. A plate recycled from old coins by Michael Moerkerk

Source: <https://www.demilked.com/old>

Ernest Nkwocha (1986)- Creates Artworks with Condemned Tyres

Ernest Nkwocha is a Nigerian sculptor, who creates art with used and discarded tyres. His love for wild life is evident in most of his sculptural pieces that depict animals that have symbolical meanings attached to them in African society, He makes his artworks with old tyres littered around Lagos. His choice for condemned tyres as a medium of expression is driven by his desire to clean up Lagos (Umoru-Oke & Adenkabi 2018). His adoption of waste as a medium of expression also inspired this study. Though both used waste as medium of expression, the content of their mediums differ Nkwocha uses old and discarded tyres as creative resource, while this study used discarded natural material (sugarcane barks).



Fig. 5. 450 ×336 an alligator/crocodile created with old discarded tyres by Ernest Nkwoch

Source: <https://aworanka.com>

Artwork Created with Wastes from Waste Cloths by Marcellina Akpotojor (1998)

Recently, fashion houses appear to be massive sources of textile waste. Repurposing fabrics wastes by recycling them through textile art is therefore expected to go long a way in reducing the massive wastes generated in fashion houses. Marcellina Akpotojor, a Nigerian artist, uses textile art to explore the hidden beauty of waste materials generated from cloths. She uses fabric wastes (cut out cloths) to create unique and astonishing works of art. Combining collage and painting techniques using cut out cloth pieces as shown in Fig. 6, Akpotojor not only creates aesthetics and wealth, she contributes her quota in maintaining a sustainable environment. She minimises massive wastes generated by tailors in sewing houses in Lagos city of Nigeria.

The conceptual framework of this study was influenced by Marcellina AkpotpJOR who creates artworks from discarded pieces of cloth from tailoring houses. In this study, an attempt was made to create artwork from commercial waste generated by sugarcane sellers at the Madalla market of the FCT. Both utilised waste as a medium of expression but the content of their mediums differs. Akpotojor uses waste cloths to create art while this study created art with sugarcane waste.



Fig. 6. Marcellina Akpotojor, New Generation, 2019,60 ×72 inches, fabrics and acrylics on canvas

Source: <https://www.textileartist.or>

3. Methodology

Being qualitative research (practice- based research), the practice-based methodology was adopted. The practiced-based methodology as it relates to this study entailed the various

practical actions that were undertaken and the outcome of the actions in attaining the purpose of the study. It implied the steps adopted by the researcher in the creation of artwork as well as the artwork created. They include: data collection, data instrument, tools for data collection and data analysis. Before discussing these undertaken actions, it is pertinent to throw a brief light on research data and their sources,

A. *Data and Sources of Data:*

Primary and secondary data constituted the data for this research. Primary data entailed the raw data that were used to achieve the aim of the study. They include: sugarcane barks, photographs, sketches and drawings. Secondary data were the documented information (writings and pictures) used in the study. Both data were obtained from the primary and secondary sources. The primary source of data entailed photography, sketching and drawing. The secondary sources include internet, art books, art journals and art catalogues.

B. *Methods of Data Collection*

The researcher accessed the internet, consulted art books, journals and catalogues to retrieve documented information that constituted the secondary data. Primary data (sugarcane waste) was physically collected from the dumping site at the Medalla market. Primary data collection also entailed photographic images of the collected waste that were snapped using a camera at a close range. More so drawings of the collected sugarcane waste were created to enable the researcher have detailed knowledge of their formal values which were needed in the creation of an art work.

C. *Instrument for Data Collection*

Being qualitative research the observational method was adopted as the data instrument. Sugarcane wastes collected were subjected to close observation for in-depth study of their formal values. From the observations made sugarcane waste (sugarcane bark) is thick and hard but texturally smooth. Characterised by deep purple colour, it is segmented with the inner side of the bark fleshy and whitish.

D. *Tools for Data Collection*

Tools used in data collection include, shovels, truck, wheelbarrow, camera, laptop, pencils, pastels, pen, strawboard, cardboard papers and fixative. Wastes were physically collected with shovels, wheel barrow and transported to the research site with a truck. Photographic images of the collected wastes were taken with a camera for detailed study of their formal values. The laptop was used in retrieving information from the internet. Pastels, pencils and pen were used in drawing on strawboards and cardboard papers while fixative (Winsor and Newton) was used to fix the charcoal and pastel drawings.

E. *Data Analysis*

The data analysis showed how the collected data (sugarcane waste) was used in the creation of an artwork. It was divided into six stages. Each stage described the practical actions that were undertaken in achieving the aim of the study. Note, stage 1, 5 and 6 addressed the stated objectives.

Stage 1: Preparation of Collected Data: Sugarcane barks collected from Madalla market shown on Plat V, were washed and dried to clean off the accumulated dirt as shown on (Plate VI). Subsequently, they were selected and cut into thin sizes for artistic use as shown on Plates VII, VIII and IX. Stage 1 addressed the first objective of the study - to prepare sugarcane waste for artistic use.

Stage 2: Preparation of the Work Surface: The work surface (synthetic material) was mounted on a board with top bond gum.

Stage 3: Preliminary Studies: Thumb nail drawings of sugarcane, sugarcane barks, a bird and a nest on Plates I, II, III and IV were drawn on strawboards using pencils, and pastel for detailed knowledge of their formal values and to serve as guides in the final creation of artwork.

Stage 4: Transfer of Drawing to the Work Surface: The thumb nail drawing of a bird building a nest on Plate IV was transferred to the work surface in an enlarged form as seen on Plate X

Stage 5: Application of Sugarcane Waste on the Work Surface: The thinly cut Sugarcane barks were pasted individually with top bond gum only on the background of the work surface allowing the composition (a bird building a nest) to appear in a negative form (Plate XI). Th fifth stage addressed the second objective of the study – to explore the negative technique in the creation of a representational form, using sugarcane waste.

Stage 6: Colour Application: Oil and acrylic colours were carefully applied with pointed bristle paint brushes on the sugarcane barks to enhance their aesthetic values as shown on Plate XIV. The sixth stage addressed the third objective of the study - to enhance the aesthetic value of sugarcane waste using colours.

F. *Work Development*



Plate I: sugarcane
Pencil on Paper
35 ×25 cm, 2024



Plate II: Sugarcane waste
Pencil on Paper
35 cm ×45 cm, 2024



Plate III: thin cuts of sugarcane waste/barks
Pencil on Paper
35 cm × 25.4 cm, 2024



Plate IV: A bird building a nest
chalk Pastel on Paper
35 cm × 45cm, 2024
(Thumb Nail Drawing)

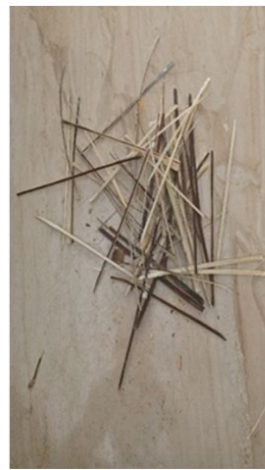


Plate IX: Thin cuts of Sugarcane waste ready artistic use.

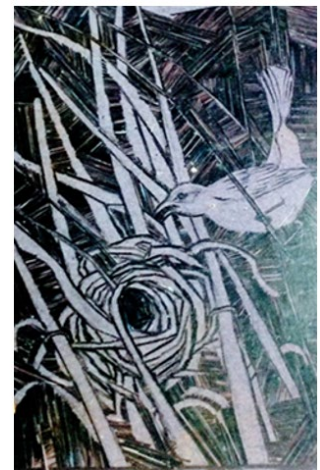


Plate X: The thumb nail drawing on Plate IV transferred & enlarged on the work surface.



Plate V: Collected sugarcane From Madalla market



Plate VI: Cleaning and Selection of Sugarcane waste for artistic use



Plate VII: Selected Sugarcane barks



Plate VIII: Attendant cutting sugarcane waste into thin shapes for artistic use



Plate XI: The Researcher applying thin cuts of sugarcane barks individually on the background of the work surface to bring out the intended form in a negative form



Plate XII: Application of Sugarcane waste on the work surface in progress



Plate XIII: A negative form-Bird building a nest, created with sugarcane waste



Plate XIV: The researcher painting and observing as colours are applied on sugarcane barks

A. Findings

This study having presented the possibilities of reducing commercially generated sugarcane wastes by adopting them as medium of artistic expression and transforming them into a work of art has made the following findings:

1. By washing, disinfecting, drying, cutting and trimming sugarcane barks into thin rectangular sizes they became a possible medium for artistic expression.
2. By limiting the application of sugarcane waste /sugarcane barks on the background of the painting surfaces the drawn forms were revealed in negative forms.
3. The application of colours (acrylic and oil paints) on sugarcane barks while aesthetically enhancing its textural value also presented it as possible surface for painting.
4. Dry sugarcane barks stick more easily when gummed on a synthetic material than the wet ones.



Plate XV: Title: *Building One Nation*, Medium: Sugarcane Waste, Size: 5ft x 3ft, Year: 2024

4. Work Analysis

The artwork titled *Building one Nation* measuring 5ft by 3ft shown on Plate XV, was created with sugarcane barks pasted individually with top bond gum on a synthetic material (the work surface). In this work a bird is seen diligently building its nest in a turbulent atmosphere represented with sugarcane barks stylistically pasted from different angles. The work echoes focus, hard-work and perseverance amidst turbulent times. Visually dominant on the background are sugarcane barks harmoniously coloured with the bird and its nest appearing in a negative form, revealing the work surface (synthetic material).

5. Conclusion

This research, entitled Integrating Visual Art in Waste Management: A Practical Approach with Emphasis on Sugarcane Waste, explored the possibilities of using visual art as tool in sugarcane waste management. The study presented sugarcane waste as a possible creative resource in visual art practice. Sugarcane waste was explored using the negative technique to create a representational form. The conceptual framework was influenced by Marcellina Akpotojor, who creates astonishing art works using waste materials generated from tailoring houses. Contrastingly, this study used sugarcane wastes in a negative form. The reviewed literature focused on

four artists, who used waste as their creative resource. They were reviewed as they relate to this study. Being practice-based research, the practice-based methodology was adopted. The study relied on both the primary and secondary data to achieve its aim. Conclusively, having presented the possibilities of using sugarcane waste as an art medium and transforming it into an artwork this study attempted to establish that visual art could serve as an alternative tool in waste management.

6. Recommendations

- 1) With the global call for environmental awareness with emphasis on the negative impact of waste on human health and the environment, visual artists should explore more possibilities of managing environmental wastes by adopting them as mediums of artistic expression.
- 2) More researches should be carried out by visual artists using limitless wastes generated in their environments with emphasis on technique. More techniques should be explored in their use of wastes as art mediums.
- 3) Waste material adopted as a creative medium can be aesthetically enhanced in so many ways. Artists using wastes as creative mediums should go beyond the use of colour as was used in this study as an aesthetic medium.

7. Contributions to Knowledge

- 1) The transformation of sugarcane wastes into a work of art, having opened a new window in sugarcane waste management, has added to the existing knowledge in waste management as a whole.
- 2) The adoption of sugarcane waste as an art medium has advanced knowledge in Visual Art Scholarship.

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