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A Study on Fibers of Sustainability: Artistic Explorations of Jute

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Abstract

Jute is a leading cash crop in Assam, predominantly grown by small and marginal farmers. With rising environmental consciousness and a renewed interest in natural fibers, sustainable fiber production has become increasingly important. This paper aims for sustainable fibre derived from nature, Jute as a sustainable fibre helps to manufacture beautiful textiles, handmade decors, Bag etc.It uses primary data collected through mixed-methods approach that combines qualitative research. The Jute fibers are Sustainable and investigates agricultural byproducts from the jute plant can be repurposed into contemporary art objects. Through a practice-based methodology combining material sourcing, experimental fabrication, and critical reflection, the project interrogates themes of transformation, circularity, and value creation. The study documents a series of sculptural pieces, artworks, textiles, and hybrid installations which can be crafted from retting residues of fiber scraps, and other byproducts. Visual analyses, artist statements, and audience feedback are analyzed to articulate how waste materials can encounter aesthetic valorization without erasing their ecological memory.

Keywords: Jute waste, Upcycling, Fiber art, Sustainability, Materiality, Contemporary art.

Introduction

Jute, often called the golden fiber, is among the most affordable and strong natural fibers. India and Bangladesh dominate global raw jute production, while the fiber is mainly used for agricultural product packaging where among the natural fibers, jute ranks just behind cotton in terms of its uses and benefits. Its significance goes beyond its technical strengths like length and tensile strength, with biodegradability marking its relevance in today's eco-conscious era. As awareness of environmental issues grows, jute and related fibers are regaining popularity as eco-friendly packaging materials. Traditionally tied to packaging, jute products now span diverse applications with decorative as well as practical value. Jute originates from the fertile soils of South Asia, particularly India and Bangladesh, which together account for over 90% of global jute. India leads in raw jute production, contributing over half of world output. Within India, includes Assam, West Bengal and Bihar are the main jute producing states. Despite strong demand, the jute farming situation in the study region shows fluctuations rather than a steady rise. The jute industry plays a substantial role in the socio-economic fabric of rural communities by supporting livelihoods and aiding food security for vulnerable groups. To capitalize on environmental opportunities, it is essential to identify and address the challenges faced by jute growers in the region, ensuring a sustained and sufficient supply of fiber. Achieving environmental sustainability hinges on maintaining an uninterrupted

fiber supply, which requires evaluating and removing these constraints faced by jute farmers. (Kalita, 2023) Bangladesh is one of the major paper producer made from green jute, contributing forty percent of world's raw jute. (Hossen et al., 2020) In contrast Assam has few places where jute cultivation is practice named Nagaon , Goalpara , Chhaygaon, Darrang and Barpeta. The crops are cultivated by small scale and marginal farmers and Assam is the second largest jute- producing state. (Kalita B.J et al.2021) The important characteristic of Jute is that it blends with other fibres and affordable natural fibres.

Objectives

1) To understand the importance of Jute as fibre derived from natural resources.
2) To use of sustainable fibre byproducts into contemporary art.

Methodology

The researcher adopted the systematic data collection approach of ethnographic study to collect information for the research paper. The process of sowing the crop, harvesting and processing of the fibre are observed carefully in the area named Simna Foturi near Goroimari for in-depth study of this area for the study.Also Secondary Data has been used to study about the work of artists.

Process of Jute to Thread

The stems obtained after harvest are converted into fibres using two possible methods: retting or fresh peeling.(Adjei D et al. 2016) A.Each method yields a different type of fibre, tailored for various final applications. Retting is the most common retting method used in the area. (Fig 1)Stems, whether fresh or dried, are bundled and submerged in a water surface for eg. river, pond or dam(Fig 2). Fresh stalks require about seven days of retting, while dried stalks need roughly 9–11 days. To keep the bundles stable, stones may be placed on them or wooden stakes driven into the mud. At the end of retting, the fibers are separated from the bark by palm of hand. After the peeling process, the fibers are rinsed in the dam for hours then tied, and dried as shown in. (Fig 3) Retting yields finer, flexible and stronger yarns compared with the fresh-peeling method, and the yarn colors are typically light grey, cream, or off-white. Fresh peeling is a method where newly harvested stalks are split in half and their bark is removed before being bundled and stored for later use. These bundles can be kept for several months. When needed, the bundles are soaked in water and then struck with a wooden mallet to loosen the fibres. Fibres produced by this method typically range in color from dark grey to brown.The Jute has two varieties in traditional uses. White jute (Corchorus capsularis) was commonly used in India for clothing, with weavers employing simple hand looms and spinning wheels, and Indians—especially Bengalis—utilizing white jute for ropes and twines in households and agriculture. It is noted for its practicality in transporting grains and other farm products. Tossa jute (Corchorus olitorius) on the other hand is described as stronger, softer and silkier than white jute, performing well in the Ganges . Alongside white jute, tossa has been grown in Bengal since the early 19th century, and Coromandel, Bangladesh, is a major global producer of tossa jute.

Cultural and Economic Resonance:

Cultural resonance:
Jute is tied to craft traditional usage for our country in various ranges from packaging to textiles. The jute-based handicrafts support sustainable development in our society. It notes that a large number of artisans rely on jute crafts for livelihoods in our country and that these activities contribute meaningfully to the national economy. The jute handicraft sector tends to be gender-biased,

with many female artisans living in rural areas and slums, which helps drive women's empowerment through work in this field. The importance of nurturing and organizing value chains linked to these crafts and their marketing, highlighting their broader economic impact. It describes one of the simplest value chains: making jute handmade braids by a largely female workforce. The braid-making is presented as a micro-entrepreneurial activity that links to other crafts such as doormats, floor mats, knotted bags, and dolls. Different products developed from jute based designer fabrics developed in handloom.

Visualisation and Aesthetics of Jute:

Practical properties: Jute as a fibre is Renewable, fast-growing in nature with warm natural tones (golden-brown)appropriate for rustic aesthetic to create an Art. Jute accepts paints, dyes and surface treatments easily but also has its own distinctive presence. The strength of jute in rope/yarn form are strong which is very important for day to day life; The Jute weavers are trained in bleaching and natural-dye dyeing helps weavers broaden their product range and boost demand for export. It notes that dedicated centers for bleaching, dyeing, printing, and finishing of jute fabrics support the creation of more designer fabric-based value chains and improve the sustainability of existing ones.

Mrinalini Mukherjee is noted for her large, woven anthropomorphic sculptures crafted from dyed jute and rope. Rakhi Peswani also uses jute and other natural fibers to produce expansive, expressive sculptures inspired by instinct and emotion. Other jute artists include Manish Nai, who creates sculptures, paintings, and murals with the material, and Arka Pradhan, who makes jute wall hangings.

Jute Based Products

Weaving and tapestry are the important products where Jute yarns are eco friendly on frame looms or handlooms with finer fibers (cotton, silk) for contrast in the textiles.

The industry of Knotting and macrame installations are majorly using jute rope to create sculptural and architectural forms for eg Mrinalini Mukherjee.

The Twining and coiling create baskets or coil sculptures by wrapping jute around cores. Stitching and embroidery use jute as a bold stitch material on fabric or found materials; consider backing/support to prevent tearing.

Paper and pulp also incorporate jute fibers into handmade paper or pulp sculptures for embedded texture. Mixed-media collage: glue jute strips to panels, combine with paint, print, rust, plaster, resin etc.

Conclusion

The byproduct made of jutes are biodegradable, recyclable and reusable with natural ingredients which have non-toxic chemicals and do not harm our nature which led the jute products to consider eco-friendly. (Saikia. B. et al 2020) A Green Product and the products made from jute demonstrates sustainability, value creation from waste, and the transformation arc. The limitations are that raw material is cost effective but time taking process which sets constraints for reproducibility. By using eco friendly products we can save the environment rather using cheap polyester or polythene bags. More promotion are required to aware among the society.

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Figure Reference:

Figure 1: The Jute stems are dried under sun, Location - Goroimari
Figure 2: The Jute stems are submerged under water, Location - Goroimari

Figure 3: Close-ups of textures and fibers of Jute after taking out from water.
Figure 4: Close-ups of textures and fibers of Jute

Figure 5 : Harriet Goodall, (We Are) Diluvium, 2024, Semi-Trailer Tarpaulin, Linen, Naturally Dyed Raffia, Jute, Paper, Steel, Water-based Acrylic, Ground Earth Pigments, 100 x 100 x 10cm (Side view)

Figurue 6 : Ibrahim Mahama – Untitled (K.N.U.S.T.), 2013 (detail), jute coal sacks, dimensions Variable https://publicdelivery.org/ibrahim-mahama-jute-sacks/

Figure 7 : Door mat

Figure 8 : Door mat and Ropes - https://www.amazon.in/Pretail-Threads-String-Creative-Decoration/dp/B07JYQ2V4V#immersive-view_1760953345190

Figure 8 : Jewellery- https://www.directcreate.com/product/11984/tribal-jute-neckpiece-set-with-earrings-using-kaudi

Figure 10 : Sculpture by Mrinalini Mukherjee (Mixed Media)
https://mrinalinimukherjeefoundation.com/mrinalini-mukherjee/

Figure 11 : Sculpture by Rakhi Peshwani (Mixed Media)