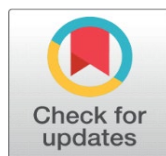


## TEXTILE UPCYCLING FOR SUSTAINABLE FASHION: A CASE STUDY FROM NIFT SHILLONG

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### ABSTRACT

The Northeast region of India, renowned for its abundant cultural variety, is home to a vivid drapery of traditional textiles essential to maintaining that diversity's spirit. With their combination of generations-old indigenous designs, materials, and techniques, these textiles are a living tribute to the North East's rich cultural inheritance. The North East has been a melting pot of varied tribes for generations, creating a cultural fusion where several tribal groups speak different languages, uphold their ancient rituals, maintain independent economies, and produce one-of-a-kind crafts and fabrics. In the past, when there were no other ways to verify a person's goods and familial responsibilities, these textiles frequently functioned as identity cards. This paper will take you on a tour of the North East's elaborately woven clothing and its way of draping the rectangular unstitched textile to make it look like apparel, many of which still exist today. The clothing, which is mostly made of unstitched fabric and is worn in various elegant, opulent, innovative, and different ways, gives rise to a distinct style and greatly influences how modern women dress. This paper will stress the importance of traditional textile apparel of the North East and explore how new traditions have been created by transferring artistic ideas through upcycling the present woven textile by using a zero-waste pattern method by the students of the fashion design department for sustaining the textile and styling to suit the tastes of the adopting lifestyle. The effort provided the students with a future business opportunity, alternative sources of cheaper materials, enriched creativity, and fun. The findings showed that the students' attitudes toward the use of materials and design techniques had changed noticeably.

**Keywords:** North East textile craft, Sustainability, Upcycling, Zero-waste, Fashion



### 1. INTRODUCTION

The inhabitants of Asian countries wear different costumes than those of other nations. Countries on the same continent also have different fabrics and clothing. Each state in India has a unique traditional clothing that is unique to it. Every village in our nation's northeast has a distinctive traditional dress code that dates back to ancient times. These variations are evident in the material, colour, and pattern choices made by each group. These differences may be due to cultural influence, suitability to the climatic condition of the region, availability of raw materials and also differences in taste of design (Guite, 2010). Dresses, as well as designs, colours and motifs on textiles, not only reflect cultural identity but also symbolise the possession of rich traditional knowledge and also source of their history (Teron & Borthakur, 2012). North East India is home to 145 distinct tribes, each with its own distinctive cultural identity and traditional garb. Indigenous groups have been using traditional handlooms since ancient times.

In these costumes, design plays an important role. Design is normally created out of local needs and thus carries an identity. Individuals' labelling of themselves as members of particular groups and their design of various utility items carry their own identity. To retain the identity, specific practices followed by a community form a culture and thus retaining and changing in time makes a tradition. Geographic location-specific elements and environmental variations

influence it. Religious and ritual practices protect the values of a society (Mookerjee, 1998). Certain use of utility items and clothing becomes a part of a culture.

In this context, the possibility of combining artisan and modern fashion has drawn a lot of interest, primarily because of its potential to lead to more sustainable futures (Ferraro et al., 2011). Hur and Beverley (2013) investigated how craft may support sustainable fashion production and consumption. According to Cox and Bebbington (2015), there are goals that social sustainability and craft practice have in common. Craft might open up new markets for its goods if it helps achieve sustainable development principles. According to Jung et al. (2015), the craft is a type of production where culturally significant designs, items, and endeavours may take shape.

This paper explores how to include a locally sourced material into a zero-waste fashion design process, thereby upcycling and enhancing the garment's visual appeal without compromising the fabric's essential qualities. As Northeast with its myriad traditional costumes proves the zero waste technique and its diverse origin can be utilised by transforming or modifying through various diversification and combination with the help of new technology to get a fresh insight, which can also contribute new market value as Indian design. The work of Thenuwara (2012) in her book "Hand Woven Heritage," to nurture a particular creativity or a craft, it is vital to know about the craft and make it beneficial in the contemporary economy. Encouraging the creation of fresh knowledge and awareness in the domains of textile and fashion design is the aim of this paper

## 2. LITERATURE REVIEW

### NORTH EAST TEXTILE CRAFT

Northeast India possesses a very rich cultural heritage, unique to its diverse application, as also seen in the cases of other parts of India, specifically, the North East region has experienced varied ethnic existence with community-specific culture, tradition, customs, rituals, etc. trade their materials to others and to cater likeness of the new customers of other cultures, a recent change in the attitude of local artisans is being observed to incorporate new ideas (Barua, 2007).

Textiles of the Northeast are not just cloth, but they tell stories about their entire communities. Every cloth represents the crafted or written stories and aesthetic traditions of their weavers. Each motif and design has its own story of origin that reflects the community's culture, tales, and history. Textiles of the Northeast reflect the unique identity of the people. Among the other expressions of cultures like wood carving, basketry, tattoos, cane craft etc., textiles have carved out a special niche, with each community becoming identifiable through its distinctive weaving techniques, sarongs (wraparound) decorated with different motifs, colours, or designed patterns (Verman, 2022) This distinctiveness plays a significant role in constructing identity and marking cultural variations within tribal communities. All motifs are more than just decorative items but have an independent cultural value, with each piece of cloth serving more functions than just clothing persons or families. According to Sirawung Raiping, the diverse ethnic culture and traditions of the Northeast are gradually responding to globalization in present times, with weavers and weaving societies customizing their products.

### SUSTAINABILITY IN FASHION

According to Simonetta Carbonaro (Swedish School of Textile, Boras), sustainable fashion can be described as a balance of three main factors: economic sustainability, social sustainability, and environmental sustainability. Their imbalance is caused by the lack of awareness about these issues in our culture (Black, 2013). Different approaches to the production of sustainable textiles are developing internationally. Cultural studies theorist Susan B. Keiser describes fashion as a social process of negotiation and navigation of what is to come. People combine various elements for their style not only to present who they are at the moment but more accurately, who they are becoming. This process of identity creation and transformation is a collective one and, therefore depends on social circumstances. Since the 1990s two approaches to sustainable production of clothing have been developing: Eco-efficiency and Eco-sufficiency. The first one is an aspiration to produce more products from less material, while the second method lies in developing various services and getting more benefits from fewer goods.(Niinimäki, 2011) . Sustainability as a self-sustaining system based on ecological balance. Such a system does not take more from the environment than it gives back. In the fashion industry, this idea is reflected in production processes which do not pollute the environment and do not deplete non-renewable planetary and human sources(Brown,2010)

## UPCYCLING IN FASHION

Upcycling is a growing trend in fashion, especially for young emerging designers. Unlike recycling, upcycling does not require specific technologies or investment for the transformation process. The main feature of this method is almost always an obvious presentation of a source of material, its previous outlook, and its function. So, as a method, it is used not only in the creation of unique pieces but also as a promotion of more conscious consumption of fashion and as 'eco-fashion'. Margaryta Zubrii in 2019 in her study mentioned that two main kinds of upcycled fashion must be defined. The first one lies in the use of previously unused materials - leftovers from other clothing or textile production. The other way is to work with already-used materials. It can be not only clothing but also printed advertisement banners, military textiles (such as parachutes), furniture leather, etc. Designer like Christopher Raeburn a British brand established in 2010 and based in London, is a great example of a sustainable and successful company, which combines different transformative methods, using recycled materials together with the upcycling method, promoting sustainability and responsible consumption of fashion.

The upcycling method deals with both pre-consumer and post-consumer waste. The main task for a designer is to create aesthetically and ethically pleasant, durable garments while working with this method.

## ZERO-WASTE IN FASHION

Zero-waste was developed by Claire McCardell and Bernado Rudofsky (the 1950s), Zandra Rhodes (the 1970s) and Yeohlee Teng (the 1980s). Today zero waste is an inseparable part of sustainable fashion design due to the work of Holly McQuillan, who is a pioneer of contemporary zero-waste pattern making. Holly started to develop this approach soon after her MA project in 2004. During this time she developed a few methods for zero waste design, curated several group exhibitions and published a book *Zero Waste Fashion Design*<sup>41</sup> co-authored with Timo Rissanen. Zero-waste fashion design, according to McQuillan (2011), "is a design approach that takes into account unpredictability in the process of handling materials and environmental instability with respect<sup>[L][SEP]</sup>

Zero waste is an interesting rapidly developing approach in fashion which has its advantages and disadvantages. Zero waste fashion designers must be knowledgeable on pattern making to create wearable, qualitative garments and should be able to work on long-term projects not seeking to match current trends. Also, it is best suitable for small-scale production or even individual orders, as creating a pattern, a designer should already know the fabric which will be used and build the pattern from a given material.<sup>[L][SEP]</sup>

The textiles in the Northeast have the potential to significantly contribute to the growth of the local economy, ethical commerce, and sustainable communities. This study uses a zero-waste design to upcycle the abandoned handloom fabrics from Tripura, in Northeast India, to demonstrate an environmentally and morally conscientious manufacturing strategy.

## 3. OBJECTIVE OF THE STUDY

1. Explore the **intersection between sustainability, fashion, and traditional textiles**
2. Investigate the potential of **zero-waste fashion design** as a sustainable approach to garment production
3. Examine the **utilization of discarded traditional textiles**, from Tripura, for upcycling into zero-waste apparel
4. Analyze the **challenges and opportunities associated with zero-waste** pattern-making and garment construction in the context of sustainable fashion
5. Identify strategies for **fostering collaboration between fashion designers and artisans** to promote ethical craftsmanship and sustainable fashion practices<sup>[L][SEP]</sup>

## 4. METHODOLOGY

This paper features the design exploration of the existing discarded woven wraparounds by upcycling into zero-waste pattern apparel undertaken by five fashion design students of the National Institute of Fashion Technology, Shillong as a part of their design curriculum under the craft cluster development initiative. These explorations are guided design innovation initiatives under the mentorship of the author. This explorative study is based on a collaborative approach with the weavers at the Sonam Mahila Tant Silpa Samabaya Samiti which is the co-operative society located in the Shankhala cluster in West Tripura of North East India. The project of craft design was pursued as a classroom exercise and hence was limited in time duration. The duration of the project was between Sept-Nov 2019, hence the study had the following limitations:

- Explorations concerning fabrics were limited to the wraparound available at the society

- As there were only 5 students in the group who wanted to do this project only 5 upcycled apparel were designed from the existing wraparounds for upcycling
- The project was executed as a classroom project and the apparel designed and developed were presented for evaluation by the jury, quantitative feedback could not be taken

## 5. TEXTILES OF NORTHEAST

Weaving is a traditional occupation for a broad range of social groups in the Northeast consisting of the eight states is a veritable salad bowl of communities consisting of Assam, Arunachal, Nagaland, Manipur, Mizoram, Tripura, Meghalaya and Sikkim. The looms used in the Northeast states are fly shuttle looms and throw shuttle looms, but loin looms, are different from other loom types used in the rest of India and especially prevalent in mountain areas. Every weaving motion is done by hand, and there is no pedal for the shedding motion. The loin loom is a simple device, although products woven on it vary in textures, hues, and designs, and the weavers mostly use acrylic and cotton yarn. One of the uniqueness of the wraparound of the Northeast plays a significant role in constructing identity and marking cultural variations within tribal communities. All motifs are more than just decorative items but have an independent cultural value, with each piece of cloth serving more functions than just clothing persons or families.

The below textile traditions of some communities are cited for their community-specific character differences for reference.

**Assam:** The Boro's who are the aboriginal people of Assam wear a single-piece attire which is known as 'Dakhana' and has a yellow-green colour body with some designs in red and brown colour made of hand-spun yarn. These are mostly made in the country looms.



**Fig 1:** Attire of Bodo Dakhana (Photography: self)

**Arunachal Pradesh:** Adi females wear a wraparound which is known as a 'gale' and it mostly concentrates on simple straight lines as designs which are mostly woven in the loin loom with colours like black, yellow, dark blue, green, scarlet and madder.





**Fig 2:** Gale Attire of Adi group (Photography:self)

**Nagaland:** The Naga women's skirt is impossible to describe as all the varieties of skirts vary from village to village, clan to clan in the same village and even family to family. The skirt includes red and black stripes with a little yellow in the black stripes, red, black and white stripes and is mostly made in loin loom.



**Fig 3:** Attire of Nagaland with different wraparound. (photography: NIFT Shillong students)

**Manipur:** Traditionally Manipuri women use floral and striped design wrap-around skirts known as 'Phanek'. They are handwoven on loin loom using cotton, silk and other synthetic yarns. Blue, green, orange and red are the common shades used for the design.



Fig 4: Manipuri Phanek (Source:internet – 5 dress of Manipur)

**Mizoram:** Mizoram produce 'Puans' in numerous designs on traditional loin looms. These are lungis worn by women are their native dress with beautiful design and intricate embroidery, which is invariably worked out along with the weave.



Fig 5: Mizo Puan (Photography: self)

**Meghalaya:** The Garo women wear a wrap-around which is called 'Dakmanda' which are made in the fly shuttle loom with beautiful flower motifs with cotton and acrylic yarn with vibrant colours.



**Fig 6:** Garo Dakmanda (photography: DRC WSC Guwahati)

**Tripura:** The woman of Tripura wears a large piece of cloth wrapped around their lower part which is known as 'Rinai' which is fastened around the waist and falls to the knee.



**Fig 7:** Lower wrap around Rinai and upper cloth risha (photography- NIFT Shillong students))

## 6. MOTIVATION OF CREATION

Traditional attire is the only distinctly visible element with various colour combinations with motifs, which may be considered one of the very strong design components that prevailed in the Northeast. The wrap-around of the Northeast itself makes a beautiful attire but the people outside the Northeast do not know about the beauty. So, the cluster taken for the study is the Sonam Mahila Tant Silpa Samabaya Samiti of the Shankhala cluster in the West Tripura where there are 462 registered weavers under the cooperative society. The weavers are provided with a training programme for the production of diversified products. Traditionally the weavers are skilled to produce traditional fabrics in loin looms as well as throw shuttle looms and fly shuttle looms. The major products of the cluster are cotton and acrylic.



In this paper, the zero-waste approach is done by one group of fashion design students who made 5 apparel out of rectangular pieces of fabric i. e wrap around. Here the design approach used is to create new garments from discarded or surplus goods. The exciting possibilities and uniqueness of Tripura's textiles are paired with this zero-waste method of clothing fabrication. The student's special zero-waste design technique maximises the handwoven fabric's potential. This approach to fashion design treats textiles, the foundational material of apparel, with attention.



Fig 8: Textile of Tripura (photography: NIFT Shillong student))

## 7. ANALYSIS

In the process of designing zero-waste apparel, designers should take into account certain factors, according to Rissanen and Mcquillan (2016). These factors include:

- The type of clothing and its fundamental influences will affect how designers apply the zero-waste method, changing the fundamental garment's visual aspect.
- The breadth and length of the fabric will determine the designer's or pattern maker's strategy for applying the zero-waste principle to a specific type of clothing.
- The designer or pattern maker needs to understand the characteristics of the fabric and how they will impact the final appearance of the garment.
- It's crucial to consider what to apply and how to apply particular features or components to a garment.
- When attempting to support the zero-waste principle, closing details and other supporting aspects will need to be carefully considered.

Keeping in view the above points the students explored 50 zero-waste designs on paper and keeping in consideration to eliminate all fabric waste, either through the use of patterns made from whole Rinai, interlocking pattern pieces or multiple sizes. Later they decided to keep one size and explore with fabric width by giving a closure detail on each apparel. The analysis of five separate zero-waste patterns identified the following three essential issues.

1. The patterns sometimes only work for one garment size
2. The patterns only work for the intended textile width
3. The pattern pieces are sometimes off-grain
4. Need to use both draping and block methods together on some garment

The outcome taught the students that zero-waste depends on the method of the patterns and design of apparel. The knowledge and experiences of the student and pattern can reduce the waste of fabric according to the design and style, and creative design for sustainability may reduce the waste of fabric.

## 8. DISCUSSIONS

Soon, being sustainable won't be an option—it will be required. Incorporating sustainable and ethical concepts into the development of textile handloom items will help raise awareness in both local and global markets, particularly as the demand for ethical and sustainable products grows. Raising the level of living in rural areas and satisfying the demand of ethical and environmentally conscious consumers for fashion items requires upcycling through the zero-waste





The above designs show that apparel could be engineered to use the full width of fabric, creating little waste. Concerns for fabric waste must be managed with requirements for garment fit, appearance and value when creating or producing a zero-waste garment. Most of the challenges encountered in this project arose from trying to achieve this balance, as it would have been relatively easy to build a zero-waste apparel

## 9. CONCLUSION

The work of this paper may be considered as a case study covering the whole Northeast part of India where a mixed cultural prevalence with old tradition as well as contemporary need-based craft and designs are seen. This study tries to understand the items mostly seen and used that can represent identifying various specific design characters. The tribes of the Northeast were not aware of the format aspect of design making because their designs had evolved from various needs and daily requirements with locally available materials.

The findings demonstrated that the Rinai was employed in a way that was both functional and aesthetically pleasing, without detracting from its inherent value. Additionally, zero-waste design experiments necessitate that designers think beyond the boundaries of fashion design, incorporating the skills of pattern-making and textile design (Senanayake & Gunasekara: 2020). The author inputs zero-waste pattern development into the fashion design curriculum and encourages students to come up with new ideas for artisans that involve fusing traditional textiles and design. This research encourages students to incorporate traditional textiles in their design projects. Thus, when local crafts set out to attract new-age consumers, the blending of tradition and modernity becomes apparent.

## 10. LIMITATIONS AND FUTURE STUDIES

We speak of globalisation and open trade. The easy availability of foreign utility items has flooded the local market. Conscious efforts are on to preserve and promote the local produce for the local domestic market as well as to get international market. Producers should carry the identity of the areas of their origin not only for the trade but also to preserve the pride of originality. Rapidly growing urban awareness makes an individual accommodate significant other realities and at the same time wish to preserve traditional practices. At a time when the global market is reverting to tradition, this region has continued with its traditional techniques both with the manufacturing and dyeing of textiles. Experimentation, blended clothing, new designs are helping this textile heritage to remain relevant and still much in fashion.

## CONFLICT OF INTERESTS

None

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