

Value Added Products From Textile Waste

Paper id:15575 Submission Date: 10/01/2022, Date of Acceptance: 21/01/2022, Date of Publication: 23/01/2022

Abstract

Textile is one of the basic needs of the human being which originated from nature. The history of textile is ancient which dated back to prehistoric times. The textile industry was developed due to industrialization and the introduction of new manufacturing techniques. Introduction of science and technology in the textile industry brings new fiber, yarn, and fabric for human consumption. This advancement affects the rate of textile production and consumption. The rate of textile consumption increases due to many reasons like increase in population, change in the fashion, etc. A rise in consumption rate also increases textile waste. Development in the textile industry and rising production rate also increases textile waste. The majority of the textile waste comes from a household source which becomes an origin of the environmental pollution. Most of the recovered household textiles are sold or donated. The remaining ones go to either a textile recovery facility or the landfill. 'Reduce, reuse and recycle' are key approaches in textile waste management. Household textile waste includes articles which are worn out, damaged, outgrown or out of current fashion. Textile waste management becomes essential to preserve the environment. Textile wastes are used for making rugs, bed sheets, pillow covers, caps, wiping or polishing clothes etc. Researchers, designers, entrepreneurs, textile industries etc. are taking interest in making something innovative and useful products from textile waste. These products are developed for consumer's consumption. This helps in reducing the burden of household textile waste on the environment. Textile waste can be reused by changing into something new useful product which makes textile industry environmental friendly.

Key Words: Textile, Recycle, Innovative, Waste.

Introduction

Textile is one of the important part of human life. Textile is required to protect our body from outer environment, maintain body temperature, used as a mean to show human status etc. It has its importance over society from centuries. With advancement in technology, textile sector became one of the increasing sector. With increasing population, the demand of textiles also increases.

Textile industry is one of the primary industries which satisfies one of the primary needs of humans and hence will become as an inevitable part of human's life. Textiles also affects the environment. With increase in consumer purchase, many of the textiles products are going into the garbage. Textiles are also made of synthetic or chemical fibers which are degrading slowly and ultimately polluting the environment.

The textile waste is categorized into two groups- pre consumer waste and post consumer waste. Pre consumer waste can be recycled. But, post consumer waste recycling requires more time and energy, that's why this area showed less importance. But nowadays due to sustainability concept, people are thinking about reusing post consumer waste also. This will help in reducing pollution level caused due to textile waste especially post textile waste.

In accordance with this, the increasing consumer appeal for products made with recycled content has increased its marketing potential and overall value. The majority of textile and clothing waste is originated from household sources, and becomes known as post-consumer waste. The retail industry, garment-making process, and yarn and fabric manufacturers further contribute to the accumulation of textile waste. This type of waste is referred to as post-industrial waste. Together, these two types of waste provide a vast and increasing potential for recovery and recycling (Increasing Need for Textile and Clothing Requirements, 2022).

Objective of the Study.

1. To identify the situation of textile waste.
2. To identify the practices of textile recycling.

Shobha Bora

Assistant Professor,
Dept. of Home
Science,
Shri Guru Nanak Dev
P.G. College,
Nanakmatta,
Uttarakhand, India

Jyoti

Assistant Professor,
Dept. of Home
Science,
Shri Guru Nanak Dev
P.G. College,
Nanakmatta,
Uttarakhand, India

**Review of Literature
Recycling**

Textile waste recycling is the process of recovering old clothing and other textiles for reuse or material recovery. The textile recycling industry relies on it as a foundation. After donating, collecting, sorting, and processing textiles and eventually transferring recovered materials to end users; are the steps involved in the textile recycling process.

Methods of textile recycling are-

1. **Upcycling or reworking:-**

Upcycling of used clothes and textile to new clothing , household textiles and other textile products has started to gain ground in the market. This is today also often called reworked fashion or clothes. Reworkers typically take used clothes transforming and revitalizing them into new fashion cloths or accessories. Accessories could be handbags, shopping bags and glasses cases.

2. **Physical recycling**

In Physical Recycling Manufacturing waste and post-consumer products are reprocessed into new products using reclamations process or commingled plastics waste processing. Due to its simpler, cheaper and more environmentally friendly process, physical recycling is more favorable than chemical recycling. **(Kumar, 2020)**

3. **Chemical recycling**

Chemical recycling is to convert high molecular weight polymers into low molecular weight substances. The obtained substances can be used as the reactants for preparations of other chemicals and polymers. Recycling of textile waste can serve as a means of providing solutions to many economic, environmental and social issues. **(Kumar, 2020)**.

**Global Textile Waste
Recycling Practices**

Faced with the mounting issue of textile waste, designers and entrepreneurs are rethinking our discards, changing how we think about waste and what we do with it. From mending apparel to turning it from old to new to recycling garment waste into renewable fiber, some companies are showing the rest of the industry what can be done when we rethink products and resources that otherwise would have been destined for the rubbish bin.

Tonlé

Even when designing with textile waste as a resource, there is still a certain amount of waste in the production process. Designing textiles out of waste from garment factories in Cambodia, Tonlé wanted to eliminate this final 2-3% of waste to make their company truly zero waste. All of the small scraps of fabric that aren't used in their designs are used to make recycled paper, which is in turn used to create the Tonlé hangtags(Tonlé, 2022).

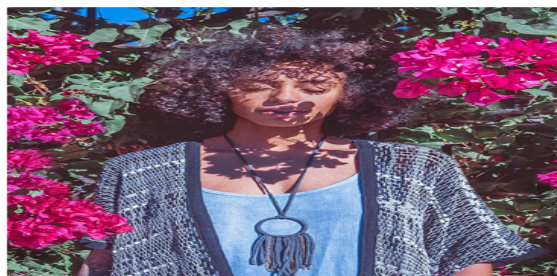


Figure 1

Sword and plough

Sword & Plough is considered as a socially conscious brand that recycles military surplus fabric into stylish purse and bags. It works with American manufactures which employ veterans and denote 10 % of profit back to veteran organizations. The notable feature of this brand is its commitment to empowering veterans with dignified employment and green environment. Since the bags are made from military fabric, they are known to last long and are "rugged and refined" **(Sword and Plough, 2022)**.



Figure 2



Figure 3

Looptworks

Looptworks was founded in 2009 by Scott Hamlin and Gray Peck that aims at sustainable enterprise. The working principle of Looptworks is “rescuing high quality, unused material and converting it into something beautiful and useful for your everyday life in the name of limited edition, hand-numbered goods. Looptworks’ products include preexisting neoprene to create sleeves and cases for tech products such as tablets, laptops, backpacks, women’s and men’s apparel(Looptworks, 2022).



Figure 4

Textile Recycling Practices In India

At household level

Many recycling activities can be seen in day to day lives of many Indians which are lasting since long and generally considered as low standard and substitute to overcome financial crises. Some of the common and long standing practices are- use of old clothe for new born child as they are comparatively soft, free from surface finishes, easily available and low in cost. Soft cotton clothes and sarees are commonly used as very good substitute of sanitary napkins as these are more hygienic and cheaper. Use of old clothes for dusting and moping in household activities, Use of fabric scraps for stuffing soft toys, pillow and mattresses, use of old precious silk sarees in making of cushions, curtains, bedcovers and other household items and passing precious traditional textile pieces generation to generation as memento are some of the very common practices still continue in India and many parts of world (Jain and Gupta, 2016).



made from recycled weft yarn (from knitted)

Figure 5

Recycling of Textile Wastes in Craft Clusters of India

Different traditionally practiced Indian textiles techniques used to upcycle and recycle textile waste, including fabric waste, rejected garments, used garments and fabrics, finished and processed textile products and other kinds of hard textile waste. The findings reveal that many artisans, weavers, craftspeople, self-help groups, and fashion

and textile designers from different Indian states are practicing many traditional textile techniques to recycle and up-cycle textile waste. Among these techniques, the famous techniques identified include Kantha of West Bengal, Sujani of Bihar, Kathputlis of Northern Indian states, Panja Dari of Haryana, Namda and Gabba of Kashmir, Kausti of Karnataka, Patchwork and Chindi Rugs. (Singh and Rani, 2021)



Recycled caps with hand embroidery of the Bakkarwal tribes of Kashmir, India.

Figure 6

GOONJ

Founded in 1998 by Ashoka Fellow Anshu Gupta, the GOONJ project collects unused clothing from all over India to then recycle the materials to provide clothes, sanitary and many other basic amenities to people living in poorer communities across the country. The 300+ volunteers and mass participation of housewives, professionals, schools, colleges, corporates, exporters, hotels and hospitals behind the recycling and distribution center help to send out over 20,000 kgs of recycled waste materials every single month. A vast network of more than 100 grassroots agencies is also helping GOONJ reach parts of 20 states of India. Recently declared Indian NGO of the Year, GOONJ has also won the prestigious Development Market place award from the World Bank on making a sanitary napkin out of waste cloth. The Global Oneness Project recently published a short documentary film about the GOONJ project, which wonderfully captures the essence of this inspirational and highly sustainable initiative (GOONJ, 2021).

Conclusion

Textiles are recycled both for the domestic and the global market. Ninety-nine percent of used textiles are recyclable. The recovery of textiles and clothing for recycling provide both environmental and economic benefits. In the domestic market recycled textile products are generally found in the form of floor mats, wipes and rugs. The fibres extracted during recycling of clothing are converted into recycled yarns and it is used in different textile products and also as fillers. Textile and clothing recycling can give old clothes, linens, and other textiles a second life. Clothing & textile recycling reduces the need for landfill space, pressure on virgin resources & encourages the development of additional markets. Raw materials created from recycled content generally cost less, making their use attractive and desirable to manufacturers. This in turn leads to the development of more markets for reclaimed fibers. Clothing & textile recycling result in less pollution and energy savings. Textile recycling also results in better economics since it provides job opportunities for people. More people get into curtain making, making rags, blankets, accessory making like belts, ribbons, laces and others. This also creates jobs for people to make socks, handbags, shoes, gloves, hats and other products that could be created with these recycled textiles. Textile recycling also teaches everyone to reuse, reduce and recycle these products instead of throwing them away.

References

1. GOONJ. <http://www.goonj.org/>. 2021
2. *Increasing Need for Textile and Clothing Requirements.* <https://harmony1.com/clothing-textile-recycling/>. 2022
3. Looptworks. Retrieved from <https://www.looptworks.com/>. 2022
4. Kumar, J. A. *Methods and technologies for textile wastes recycling.* <https://www.textiletoday.com.bd/recycling-textile-wastes/>. 2020
5. Singh, S. and Rani, J. *Traditional Indian Textile Techniques Used to Upcycle and Recycle Textile Waste.* Researchgate. https://www.researchgate.net/publication/357182449_Traditional_Indian_Textile_Techniques_Used_to_Upcycle_and_Recycle_Textile_Waste. 2021.
6. *Sword and Plough.* <https://www.swordandplough.com/>. 2022.
7. Tonlé. <https://tonle.com/pages/about-us>. 2022