

Sustainable Development Strategies in the Indian Textile Industry

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Abstract

The Indian textile industry has a rich history, a cornerstone of the nation's economic and cultural heritage. However, in the modern era, it faces challenges related to sustainability, including environmental concerns, ethical labour practices, and economic viability. The textile and clothing industry is one of the most polluting industries globally and needs to rethink its strategies. This paper explores various sustainable development strategies that can be implemented within the Indian textile industry to address these challenges. By adopting a holistic approach that encompasses environmental, social, and economic dimensions, the industry can not only thrive but also contribute positively to the global sustainability agenda. This paper discusses key strategies such as resource optimization, circular economy principles, ethical labour practices, and market diversification, providing insights into their benefits and potential implementation.

Keywords: Indian textile industry, Textile sustainability, Environmental impact of textile industry, Eco-friendly textiles in India, Textile skill development

INTRODUCTION

Indian textile industry is the second largest in the world. The fundamental strength of the textile industry in India is its strong production base of a wide range of fibre/yarns from natural fibres like cotton, jute, silk and wool, to synthetic/man-made fibres like polyester, viscose, nylon and acrylic. India's textiles industry has a capacity to produce a wide variety of products suitable for different market segments, both within India and across the world. The

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Indian textile and apparel industry is expected to grow at 10% CAGR from 2019-20 to reach US\$ 190 billion by 2025-26. India has 4% share of the global trade in textiles and apparel. The Indian textile industry has long been celebrated as a vital contributor to the nation's economy, dating back several centuries to its rich historical tapestry. However, the industry has not been without its challenges, particularly concerning sustainability. As the global discourse on environmental conservation, ethical labour practices, and economic viability has gained momentum, the Indian textile industry faces the imperative to adapt and embrace sustainable development. The significance of the Indian textile sector cannot be overstated. It is not only one of the largest industries in the country but also one of the oldest, with a cultural and economic heritage deeply entwined with the fabric of Indian society. Its multifaceted nature encompasses a wide spectrum of activities, ranging from cotton farming and textile manufacturing to garment production and export.

This industry has around 4.5 crore employed workers, including 35.22 lakh handloom workers, directly and indirectly, making it a cornerstone of livelihoods across the nation. However, this mammoth industry's growth has come at a cost. Environmental degradation, unsustainable resource consumption, and inadequate labour conditions have cast a shadow on its legacy. To address these issues, the Indian textile industry is compelled to transition towards sustainable development. This journey necessitates a comprehensive examination of environmental, social, and economic aspects. The environmental dimension involves reducing the industry's environmental footprint, minimizing water usage, curbing pollution, and adopting eco-friendly raw materials and manufacturing processes. The social aspect demands an emphasis on fair labour practices, gender equality, and skill development to ensure the well-being of the workforce. Meanwhile, the economic facet underscores the need for sustainable business models that are not only profitable but also considerate of long-term economic stability. The transformation towards sustainable development is not merely a choice but an imperative, and the Indian textile industry stands poised at a crucial juncture of this transformative journey.

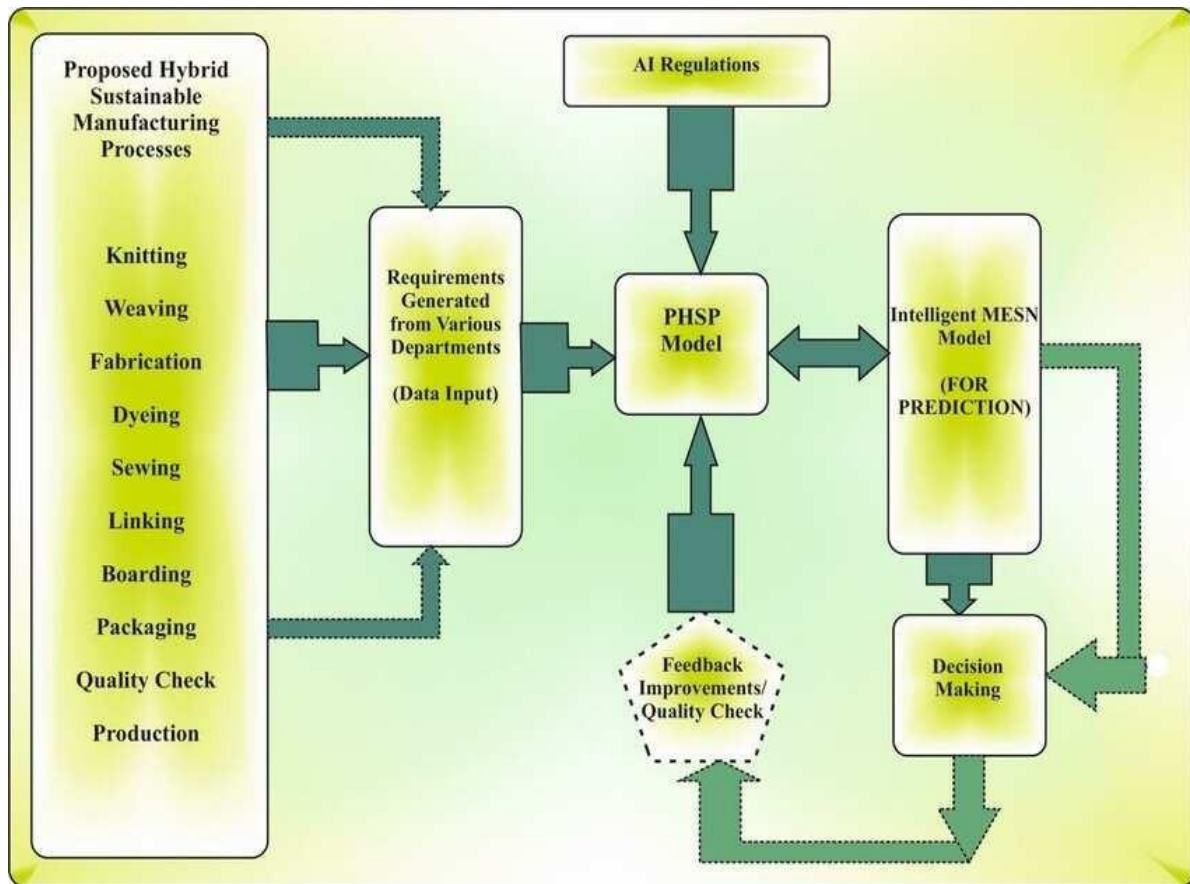


Figure 1: Proposed Hybrid sustainable Practices in Textile Industry

Social Sustainability

Social sustainability in the Indian textile industry is a critical aspect. Here are some key considerations for promoting social sustainability in the Indian textile industry:

- 1. Fair Labor Practices:** Ensuring fair wages, reasonable working hours, and safe working conditions for textile workers is paramount. This includes adhering to minimum wage laws, providing proper safety equipment, and creating mechanisms for workers to voice their concerns without fear of retaliation.
- 2. Gender Equality:** The industry traditionally employs a significant number of women, particularly in the informal sector. Promoting gender equality by ensuring equal pay, safe working environments, and opportunities for women in leadership positions is crucial.
- 3. Child Labor:** Eradicating child labour is a fundamental social sustainability goal. This involves strict enforcement of laws against child labour and

creating awareness among manufacturers and consumers about the onsequences of using child labour in the supply chain.

- 4. Skill Development and Education:** Supporting the education and skill development of textile workers, especially in rural areas, can uplift communities and create a more skilled and capable workforce.
- 5. Healthcare and Benefits:** Access to healthcare services, insurance, and other benefits is essential for the well-being of textile workers and their families. Companies can provide such benefits or collaborate with local authorities to ensure healthcare access.
- 6. Community Engagement:** Engaging with local communities and involving them in decision-making processes can help address concerns and ensure that the industry's activities have a positive impact on the broader community.
- 7. Consumer Awareness:** Educating consumers about the importance of socially sustainable products can drive demand for ethical and responsible textiles, encouraging companies to prioritize social sustainability.

Additionally, international partnerships and certifications can help ensure that Indian textile products meet global social sustainability standards, enhancing the industry's reputation and marketability on a global scale.

Economic Sustainability

To promote economic sustainability in this industry, several key factors should be considered:

- 1. Efficient Supply Chain Management:** Streamlining the supply chain from raw materials to finished products can reduce costs and increase efficiency. This includes optimizing procurement, production, and distribution processes.
- 2. Export Promotion:** Encouraging exports of textile products by offering incentives and removing trade barriers can boost foreign exchange earnings and contribute to the industry's economic sustainability.
- 3. Market Diversification:** Reducing dependence on a single market and diversifying export destinations can mitigate risks and enhance economic resilience.

- 4. Government Policies and Support:** A stable and supportive policy environment, including tax incentives and infrastructure development, can encourage investment and growth in the textile sector.
- 5. Global Integration:** Participating in global value chains and collaborating with international partners can open up new opportunities for economic sustainability.
- 6. Brand Promotion:** Building strong textile brands associated with quality and sustainability can enable Indian textile products to command premium prices in domestic and international markets.
- 7. Market Intelligence:** Access to market information and trends can help textile businesses make informed decisions about product development and market strategies.
- 8. Financial Sustainability:** Ensuring that textile companies maintain healthy financial practices, manage debt effectively, and reinvest in the business for growth is essential for economic sustainability.

By addressing these factors, the Indian textile industry can not only remain economically sustainable but also continue to be a major contributor to India's economic growth, employment generation, and export earnings.

Environmental Sustainability

To ensure environmental sustainability in the Indian textile industry, several key strategies and practices should be considered:

- 1. Water Management:** Implement water-efficient processes and technologies to reduce water consumption during textile production. Invest in water recycling and treatment facilities to minimize wastewater discharge and pollution. Promote responsible water usage across the supply chain, including farmers, dyers, and manufacturers.
- 2. Energy Efficiency:** Adopt energy-efficient machinery and practices to reduce energy consumption during various stages of textile manufacturing. Invest in renewable energy sources, such as solar and wind power, to reduce the industry's carbon footprint. Conduct energy audits to identify areas for improvement in energy efficiency.
- 3. Chemical Management:** Replace hazardous chemicals with eco-friendly alternatives in dyeing, finishing, and other processes. Implement closed-loop

systems to capture and safely dispose of chemicals, preventing their release into the environment. Ensure compliance with chemical management regulations and standards.

- 4. Sustainable Materials:** Explore the use of sustainable and organic fibers, such as organic cotton or recycled polyester, to reduce the environmental impact of raw materials. Encourage responsible sourcing and supply chain practices to reduce the carbon footprint associated with material transportation.
- 5. Waste Reduction and Recycling:** Implement waste reduction strategies to minimize textile waste during production and cut-and-sew processes. Promote recycling and up cycling of textile waste and end-of-life products.
- 6. Green Design and Sustainable Fashion:** Encourage sustainable fashion practices by designing products that are durable, timeless, and have a lower environmental impact.
- 7. Eco-friendly Packaging:** Reduce the use of single-use plastic packaging in the textile industry. Opt for biodegradable or recyclable packaging materials.

By adopting environmentally responsible practices and technologies, the industry can significantly reduce its ecological footprint and contribute to a more sustainable future.

Government Policies

Government policies and regulations play a crucial role in shaping the Indian textile industry. These policies are designed to promote growth, ensure quality, and address various challenges faced by the sector. Here are some key government policies and regulations in the Indian textile industry:

- 1. National Textile Policy (2019):** The National Textile Policy aims to make India a global textile and apparel hub by focusing on various aspects, including technology adoption, skill development, employment generation, and sustainability. It emphasizes promoting technical textiles, increasing exports, and attracting investments in the sector.
- 2. Textile Parks and Clusters:** The government has initiated schemes to set up textile parks and clusters across the country. These clusters aim to promote economies of scale, enhance competitiveness, and provide necessary infrastructure.

- 3. Technology up Gradation Fund Scheme (TUFS):** TUFS provides financial assistance to textile units for modernization and technology up gradation. It encourages the adoption of state-of-the-art machinery and equipment to improve productivity and product quality.
- 4. Labor Laws and Regulations:** India has various labour laws and regulations that govern workers' rights, wages, working conditions, and safety standards in the textile industry. Compliance with these laws, including the Factories Act, is essential for ensuring worker well-being.
- 5. Environmental Regulations:** The textile industry must comply with environmental regulations related to water and air pollution, hazardous waste disposal, and energy conservation. Environmental clearances are required for certain textile projects, especially those with potential environmental impacts.
- 6. Quality Standards:** The Bureau of Indian Standards (BIS) sets quality standards for textiles and apparel. Compliance with BIS standards is necessary for ensuring product quality and consumer safety.
- 7. Investment Promotion and Facilitation:** The government promotes foreign direct investment (FDI) in the textile sector through policies that ease investment procedures and offer incentives.
- 8. Sustainable Practices and Initiatives:** The government encourages sustainable practices in the textile industry, such as the use of eco-friendly dyes and technologies. It supports initiatives related to organic textiles and sustainable manufacturing.

It's important to note that government policies and regulations in the Indian textile industry may evolve over time in response to changing economic, environmental, and social factors.

Challenges and Barriers

The Indian textile industry faces several challenges and barriers to achieving sustainable development. Here are some of the key challenges and barriers:

- 1. Water Scarcity and Pollution:** The textile industry is a heavy consumer of water, and India faces water scarcity in many regions. This poses a challenge for sustainable water management. Textile dyeing and finishing processes can release pollutants into water bodies, contributing to water pollution.

- 2. Energy Consumption:** The industry is energy-intensive, and a large portion of the energy comes from non-renewable sources. Reducing energy consumption and transitioning to cleaner energy sources is a challenge.
- 3. Skill Development:** The industry faces a shortage of skilled workers, particularly in the areas of sustainable and eco-friendly manufacturing practices. Providing training and education is crucial.
- 4. Supply Chain Transparency:** Achieving transparency in the textile supply chain, especially for small and decentralized production units, can be challenging, making it difficult to trace the origin of materials and products.
- 5. Access to Finance:** Smaller textile businesses may struggle to access the necessary financing for investments in sustainable technologies and processes.
- 6. Innovation and Research:** Encouraging innovation in sustainable textiles and manufacturing processes requires investment in research and development, which may be lacking in some cases.
- 7. Global Competition:** Indian textile manufacturers face stiff competition from other countries, especially in the global export market, which can hinder their ability to invest in sustainable practices without compromising competitiveness.
- 8. Infrastructure Constraints:** Inadequate infrastructure, including transportation and logistics, can lead to inefficiencies and higher costs in the supply chain, making sustainability efforts more difficult.

Raising awareness and promoting sustainable consumer choices is a barrier. Collaborative efforts, technological innovation, and supportive policies can help the industry move toward greater sustainability while remaining economically viable.

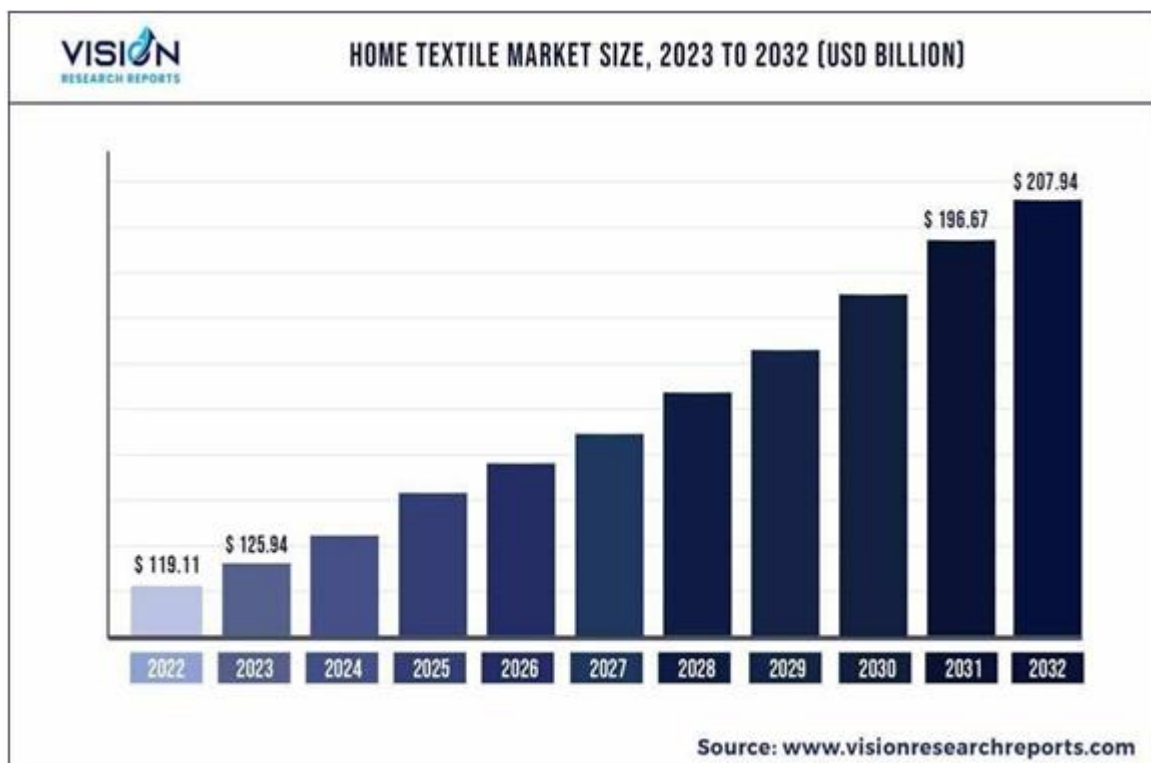
Future Outlook

The textile industry in India faces various challenges, it also holds significant potential for growth and innovation. Here are some key aspects of the future outlook for the Indian textile industry:

Sustainability and Eco-Friendly Practices: Sustainability will continue to be a major focus for the industry. Indian textile companies are expected to adopt

eco-friendly materials, processes, and technologies to reduce their environmental impact.

- 1. Technology Adoption:** The industry is expected to embrace advanced technologies like automation, artificial intelligence, and blockchain to improve efficiency, reduce production costs, and enhance supply chain transparency. Digitalization and e-commerce will play a significant role in shaping the future of textile retail.
- 2. Export Opportunities:** India is likely to continue being a major player in the global textile and apparel market. Efforts to diversify export destinations and cater to changing consumer preferences will be essential. The post-pandemic shift towards near shoring and regional supply chains may present opportunities for Indian textile manufacturers.
- 3. Government Initiatives:** Government policies and incentives aimed at promoting the textile sector, such as the National Textile Policy, are expected to provide a supportive environment for industry growth.



In summary, the future outlook for the Indian textile industry is promising but contingent on its ability to adapt to changing market dynamics and consumer expectations.

Conclusion

In conclusion, the Indian textile industry is a multifaceted sector with a rich history and significant potential for the future. It plays a pivotal role in India's economy by contributing to employment generation, export earnings, and industrial growth. However, the industry also faces several challenges, including environmental sustainability issues, global competition, and changing consumer preferences. To navigate these challenges and seize opportunities, the Indian textile industry must continue its journey toward sustainability, adopting eco-friendly practices, and embracing technological advancements. Collaboration among stakeholders, including government agencies, industry players, and consumers, is essential for achieving lasting change. The future of the Indian textile industry holds promise, driven by a commitment to sustainability, innovation in design and technology, and a focus on meeting the evolving demands of both domestic and global markets. As it adapts to new trends and embraces responsible practices, the industry is poised to remain a significant contributor to India's economic growth and a source of pride for the nation.

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