CURRENT STATUS AND FUTURE OUTLOOK OF THE INDIAN WOOL INDUSTRY: CHALLENGES AND STRATEGIES

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ABSTRACT

The Indian wool industry, although one of the largest producers in the world, faces numerous challenges that hinder its growth and efficiency. This article provides a comprehensive analysis of the current status and future outlook of the industry, focussing on the various obstacles it encounters, such as inadequate nutrition for sheep, environmental concerns, and socio-economic issues. It examines strategic measures designed to improve the quality of wool, increasing production efficiency, and ensuring sustainability. Key initiatives include the implementation of selective breeding programs, modern shearing techniques, efficient post-harvest management, and the integration of wool production with other agricultural activities. The role of government policies and subsidies, along with significant programs like the IWDP, is also examined. The study highlights the significance of community engagement, skill development, and capacity building in fostering a resilient and competitive wool sector. The findings underscore the need for continuous research and development to innovate and optimise the industry, ultimately positioning India as a leading manufacturer and supplier of high-quality woollen products.

KEYWORDS: Indian wool industry, selective breeding programs, modern shearing techniques, wool production.

INTRODUCTION

The global textile and clothing sector is increasingly orientated towards sustainability and circularity. Wool, as a biodegradable natural fibre, possesses distinct characteristics and versatile uses. Presently, wool represents 1.1% of the total global fibre production (Emma Doyle et al. Animal Frontiers, 2021).India had an estimated 74.26 million sheep, comprising approximately 4.09 million exoticor crossbred sheep and the remainder being indigenous or non-descript breeds. This positions India as the third-largest sheep population globally, experienced a growth rate of 2%. In contrast, Australia, the second largest, saw an increase of 2.8%. Meanwhile, China, the country with the largest sheep population, faced a decline at a rate of 0.7%. In the 2023–24 periods the overall wool output in the country is 33.69 million kg. Out of total produce, approximately 85% of this wool is carpet grade, 5% is apparel grade, and the remaining 10% is coarser grade wool. In India, the average annual wool yield per sheep is 0.9 kilogram, whereas the global average stands at 2.4 kilogram per sheep per year. Reflecting 0.22% increase in wool production in relation to the previous year. The top 5 wool producing states are Rajasthan (45.94%), J&K (25.24%), Gujarat (7.08%), Maharashtra (5.42%) and Himachal Pradesh (4.08%). They account for 87.76% of the country's total wool production. India has the opportunity to increase its market share due to changes in sourcing and its natural competitiveness. (BAHS,2024).

INDIAN WOOL INDUSTRY: GROWTH, CHALLENGES AND STRATEGIES

The Woollen industry in India is relatively small and geographically dispersed, however Woollen sector plays a crucial role in connecting the rural economy with the manufacturing industry, encompassing a range of small, medium, and large-scale enterprises. Currently, it employs approximately 1.2 million individuals within the organized wool sector, with another 2 million people involved in sheep farming and rearing

activities. Moreover, the carpet sector provides employment to about 300,000 weavers. As of the fiscal year 2020-21, the Indian Woollen industry is valued at around Rs. 12,444.45 crores. It stands as the seventh-largest globally and plays a vital role in India's rural economy (Indian Trade Portal 2020-21). This sector is broadly segmented and dispersed between the organized (Composite mills, combing units, Worsted and Non-Worsted spinning units, Knitwear and woven apparel factories, along with machine-made carpet production facilities.) and decentralized segments Hosiery and knitting, power-loom production, hand-knotted carpets, druggets, namadahs, standalone dyeing facilities, processing units, and the woollen handloom industry). The majority of woollen mills are concentrated in the states of Punjab, Haryana, Rajasthan, Uttar Pradesh, Maharashtra, and Gujarat. Notably, Punjab accounts for 40% of these units, followed by Haryana with 27%, and Rajasthan with 10%. The remaining 23% are dispersed across other states. India exports a wide variety of woollen goods, including worsted yarn, wool tops, woollen and shoddy yarns, fabrics, ready-made garments, blankets, knitwear, as well as handmade and machine-made carpets. In the 2020-21 fiscal year, the total export value for wool and woollen products reached Rs. 69.31 billion (US$ 935 million). Among these, woollen carpets and floor coverings represent the largest export segment India exports a variety of wool-based and textile items to numerous countries worldwide, with key markets for Indian carpets including the United States, Germany, Australia, the United Kingdom, the United Arab Emirates, Sweden, and the Netherlands. In the fiscal year 2020-21, the USA emerged as the largest importer, purchasing carpets valued at US$ 797 million from India. Despite this extensive export activity, the wool industry encounters numerous challenges including concerns with productivity, quality, and market access. Despite these issues, it holds significant potential to generate employment opportunities in various and remote regions.

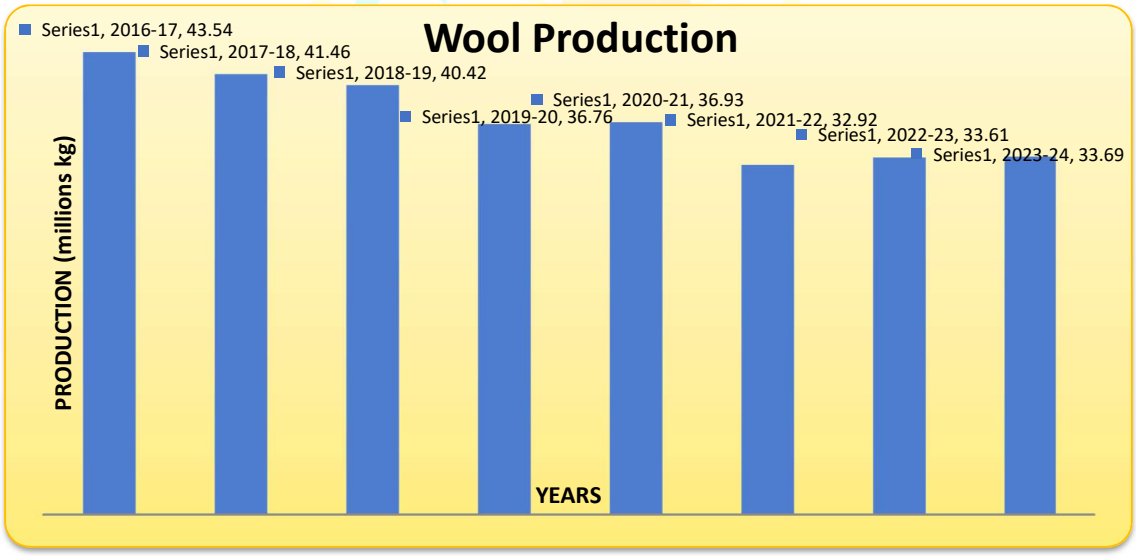

Fig. 1: Production of wool (all india) (source: bahs, 2023)

CHALLENGES TO INDIAN WOOL INDUSTRY

Low Productivity

The output of Indian sheep is considerably below global standards, with Indian sheep yielding less than one-third of the wool produced by their counterparts in major wool-producing nations. Over recent years, India's wool production has remained relatively stable but insufficient to meet the woollen industry's raw material demands. The majority India's wool output is coarse and predominantly utilized in the handmade carpet industry. Due to the limited domestic production of the high-quality wool specifically in apparel sector needed by organized mills and the decentralized hosiery sector. India depends significantly on imports to fulfil its needs. The major countries are the US, the UK, France, Germany, Russia, Canada, UAE, Saudi Arabia, Sweden, Belgium, Norway and Australia.

Wool Processing

The woollen industry faces significant challenges due to its insufficient and obsolete processing facilities. To achieve high-quality finished products, it is essential to modernize both pre-loom and post-loom equipment. Given the industry's broad scope and the specialized nature of the processing equipment needed, there is a heavy reliance on imported machinery, with only a limited amount of complementary equipment procured from local sources.

Challenges in Accessing Quality Wool Supply

Despite the presence of numerous Indian sheep breeds, only a limited number from the northern temperate region yield fine wool suitable for worsted wool fabrics, leading to a significant shortage of quality wool. Out of the 36.61million kg produced, only 1.56 million kg meets superior quality standards. The scarcity of high-quality raw materials poses a major challenge, jeopardizing India's status as the second-largest producer and exporter of carpets by volume.

Inefficiencies in Wool Marketing Practices

Current practices in wool marketing fail to deliver accurate price signals and appropriate incentives for quality wool production to producers. Typically, producers do not sell wool directly at the market; instead, village merchants and agents representing larger wool merchants purchase a significant portion of the wool at low prices per sheep or fleece, often in exchange for advance payments made to shepherds. Small-scale agents transport wool in limited quantities to the market (mandi), where it is sold through commission agents. The selling methods differ across various mandis; some utilize open auctions, while others rely on private negotiations conducted by brokers. Additionally, sorting practices to remove impurities and differentiate between fine and coarse wool, as well as between white and coloured wool, vary from market to market. Ultimately, the pricing is determined by the type of sheep and the provenance of the wool.

Impact of Synthetic Fibers on the Wool Industry

The textile wool sector has long been valued for its natural properties and durability. However, it now faces significant competition from cost-effective synthetic fibers like polyester and nylon, which appeal to manufacturers and consumers alike. This shift has reduced demand for natural wool, prompting producers to reassess their pricing and marketing strategies. Additionally, the lightweight, quick-drying, and wrinkle-resistant qualities of synthetic fibers cater to modern consumer preferences, further diminishing wool's market share. To address these competitive pressures, the wool industry must innovate and adapt.

Economic Challenges in Sheep Rearing

Many sheep rearers are facing unprofitable returns from wool production, largely due to persistently low domestic wool prices. This financial pressure has undermined the sustainability of sheep rearing as an agricultural practice, potentially leading to declines in wool quality. Additionally, this trend threatens the wool supply network, impacting not only the producers but also the industries that rely on wool for their products. To mitigate these challenges, it is essential for wool industry stakeholders to develop strategies that improve market prices and profitability. Such strategies may include enhancing marketing efforts, diversifying product lines, and adopting sustainable farming practices. These measures are critical for maintaining the viability of wool production and supporting the broader wool supply chain.

Shortage of Grazing Lands

The availability of grazing lands is diminishing due to urbanization and the expansion of agricultural activities. In India, sheep rearing is predominantly semi-intensive, with many farmers adopting migratory practices primarily for meat production, as the market returns for raw wool are not attractive

Inadequate Quality Assurance Measures

The wool industry faces challenges due to insufficient testing facilities and insufficient quality control measures. There is also a lack of effective technology transfer, established standards or benchmarks, and grading standards, all of which further diminish the motivation of wool growers.

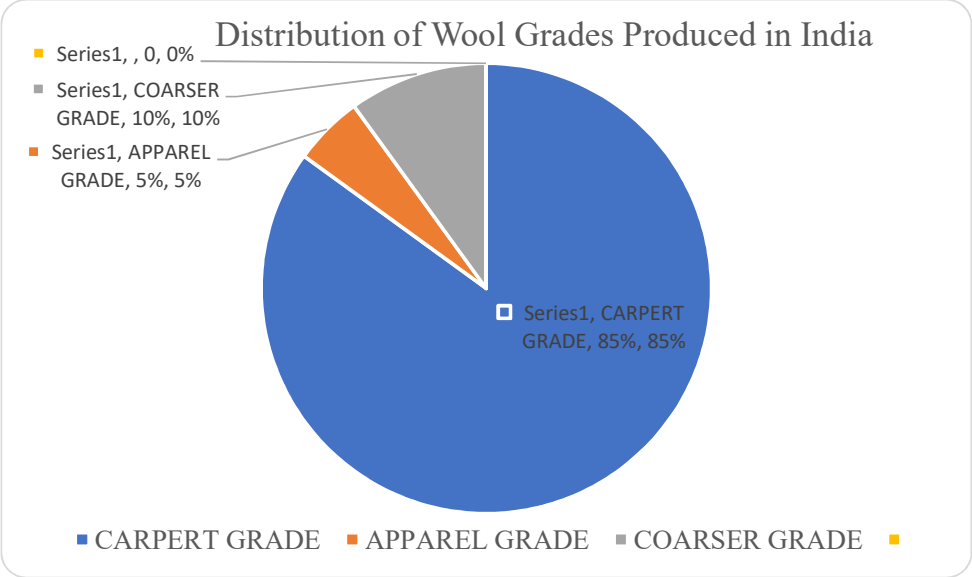

Fig. 2: Distribution of Wool Grades Produced in India

STRATEGIES

Breeding Programs

To enhance wool quality, it is essential to implement both short-term and long-term breeding programs, accompanied by supportive research and development effort have been implemented, aiming to produce breeds with superior characteristics like finer fibre, better crimp, and higher tensile strength. Government and private institutions have launched breeding projects focusing on native breeds such as the Chokla, Rampur Bushair, and Deccani sheep. The Central Sheep and Wool Research Institute (CSWRI) in Avikanagar is pivotal in this effort, conducting basic and applied research on sheep and rabbits production. The CSWRI has created new sheep breeds such as Avikalin for carpet wool and Bharat Merino for fine wool. They have also enhanced scientific approaches in raising, breeding, nutrition, reproductive health, and management to boost the performance of indigenous sheep breeds. Furthermore, the institute is working on the genetic improvement of the Chokla and Marwari breeds for carpet wool manufacturing through selective breeding techniques.

Modern Practices in Wool Shearing and Post-Harvest Management

Modern shearing techniques and equipment are employed to reduce fiber damage and contamination during wool harvesting. Training programs for shearers are essential to ensure their proficiency in using advanced tools, which helps preserve the quality of the wool. Additionally, effective post-harvest management practices, such as thorough cleaning, grading, and packaging of wool are critical to maintaining product quality. Establishing wool processing units near production sites significantly decreases transportation and storage time and costs, further enhancing the efficiency of the wool supply chain.

Enhancing Wool Production through Integrated Agricultural Practices and Pasture Development

Integrating wool production with other agricultural activities, such as crop farming and livestock rearing, can enhance resource utilization and create additional income streams for farmers. This comprehensive approach promotes sustainability and mitigates farmers' economic vulnerability. However, one significant challenge faced by the Wool Development Board is ensuring adequate nutrition for the country's 74.26 million sheep. To address this, some states corporation like Gujarat Sheep and Wool Development Corporation has initiated the development of grazing lands, allowing sheep rearers to utilize these areas for a fixed rental fee. Expanding pastureland facilities in major wool-producing states is essential and state-level sheep and wool development corporations can collaborate with social forestry and wasteland development programs to facilitate this initiative.

Promoting Sustainable Practices and Community Engagement:

Adopting sustainable farming practices, such as rotational grazing, organic farming, and water conservation techniques, is vital for maintaining soil health and minimizing the environmental impact of wool production. These practices contribute to the long-term viability of

the industry. Additionally, empowering local communities through training programs and cooperative societies enhances their involvement in wool production. Such initiatives prioritize skill development, capacity building, and improved access to credit and markets, thereby enhancing the socio-economic conditions of farmers and fostering a more resilient wool production system.

Policy Support and Subsidies

Government policies and subsidies aimed at supporting the wool industry play a crucial role in its development. Financial incentives, tax benefits, and research grants encourage innovation and investment in the sector.

GOVERNMENT INITIATIVES

In 2021-22, India announced a comprehensive development plan for the textile industry, allocating 2,752 crores (approximately US$ 348 million) to enhance various sectors, including handloom, textile handicrafts, wool, silk, power loom, and jute. The plan encompasses several initiatives focused on upgrading technology, establishing textile parks, developing research and development facilities, and promoting the textile sector in the North-Eastern region.

New wool sector schemes (FY 2021-22 to 2025-26)

To promote the comprehensive expansion of the wool industry the Ministry of Textiles has developed the Integrated Wool Development Programme (IWDP). This initiative is set for implementation during the Fifteenth Finance Commission period, spanning from FY 2021-22 to 2025-26, with a total financial allocation of Rs. 126 crores approved during the SFC meeting on June 15, 2021. with the aim and objectives of establishing India as a leading contender and high-quality manufacturer and supplier of woollen products by leveraging technological interventions and optimizing various segments of the wool industry through synchronize the wool supply chain, connect, Link Wool Industry and Producers, Support Small Manufacturers, Enhance Wool Quality, Upgrade Processing Facilities, Expand Testing and Production Capabilities, Utilize Coarse Wool Develop Skills and Capacity, Branding Initiatives and Advance Pashmina Sector.

Major Programs and Policy Initiatives since 2014

Since 2014, the Central Wool Development Board, part of the Ministry of Textiles, has been executing various initiatives like Integrated Wool Development Programme (IWDP) during FY 2017-18 to 2020-21to advance the wool sector in major wool-producing states. Notably, programs like 1.Implementation of Pashmina Wool Development Scheme 2. Implementation of Pashmina Promotion Programme (P-3) 3. Reconstruction Plan for the Union Territory of Jammu & Kashmir and Union Territory of Ladakh have been introduced to develop pashmina wool in the Ladakh region Ladakh region, specifically in the districts of Leh and Kargil. Each year, India produces about 50 tons of Pashmina wool, recognized globally for its superior quality. This exceptional wool is sourced from the Changthangi goat, which is well-adapted to the cold, arid environment of Ladakh at elevations of approximately 14,000 feet.

CONCLUSION

To tackle these obstacles, the wool industry must prioritize innovation and adaptability. One viable strategy involves work on breed improvement to increase production from the indigenous breed and enhancing the quality and performance characteristics of wool and textile products to position them as premium alternatives in the textile market. This could be achieved by developing new blends that combine fleece with alternative fibers to enhance functionality or by investing in research to create wool that aligns with changing consumer demands. Additionally, with effective marketing and branding efforts, are essential for reshaping perceptions of wool and woollen products. As consumers increasingly seek products that balance performance with environmental responsibility, the distinctive attributes of wool can significantly influence the future of fabric innovation production. Overall, the future prospects for the wool industry are bright, with potential for increased productivity, improved quality, and sustainable growth.

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