

Round Table on COTTON

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The Indian Chamber of Food and Agriculture (ICFA) had the honor of hosting organized discussions on cotton global scenario on February 17, 2025 in New Delhi, chaired by Mr. Eric Trachtenberg, Executive Director, of the International Cotton Advisory Committee (ICAC), Washington DC. Mr. Trachtenberg in his opening remarks talked about the importance of cotton for farmer and the farm economy. He was highly appreciative of the National Cotton Mission, launched by the Government of India with an allocation of Rs. 500 crores to enhance productivity, sustainability, and global competitiveness in cotton production. The ED announced full support of the ICAC in realizing the objectives of the Mission. After the round table meet, he met the Agriculture Commissioner, Dr. PK Singh, along with the officials of ICFA, and conveyed the ICAC support to the Government of India.

The discussion brought together industry leaders, policymakers, and experts to explore emerging trends, market dynamics, trade policies, and technological advancements in the cotton sector. Special emphasis was placed on climate resilience, evolving trade frameworks, and policy interventions to enhance the sector's global competitiveness.

The session fostered strategic collaborations and reinforced the importance of research investments, capacity-building initiatives, and sustainable practices to ensure a resilient and progressive future for the global cotton industry.

The Cotton Economy

The global cotton economy is a significant sector, impacting millions of lives worldwide. Cotton is the leading natural fiber, with an estimated annual economic impact of \$600 billion. Major producers include India, China, and the United States. The industry supports over 250 million people globally, providing crucial income for rural communities. Technological advancements, such as genetically modified cotton and precision agriculture, have improved yields and efficiency. However, environmental sustainability remains a challenge, with efforts underway to promote sustainable practices and fair-trade initiatives. Cotton plays a vital role in many countries' agricultural and industrial economies.

India is the world's largest cotton producer, accounting for about 25% of global production. The cotton sector supports millions of livelihoods and contributes significantly to India's GDP and textile exports. Major producing states include Gujarat, Maharashtra, and Andhra Pradesh, with challenges including sustainability and yield variability.



Welcome and Opening Statements

Dr. MJ Khan, Chairman Emeritus, ICFA, welcomed all esteemed participants to the Round Table. He emphasized the significance of this platform in bringing together industry leaders, policymakers, and experts to deliberate on the evolving landscape of the cotton sector.

Dr. Khan highlighted that the Indian cotton industry stands at a crucial juncture, with immense opportunities for growth, innovation, and sustainability. The discussion aimed to address key trends, challenges, and policy interventions that could drive the sector forward.

Dr. Khan thanked Mr. Trachtenberg and ICAC for offering support to the Indian Government for the National Cotton Mission, reaffirming its role in enhancing productivity, quality, and sustainability through research, innovation, and global collaborations.

Session Proceedings

Dr. M. Prabhakar Rao, Chairman of NSL Group, highlighted key challenges in India's cotton sector. He said that while productivity has increased from 200 kg to 500 kg of lint per hectare, it has remained stagnant over the past decade. To overcome this, he emphasized the need for high-density planting and mechanized harvesting. However, scaling these practices among India's 8–9 million farmers remains a significant challenge despite government support.

Dr. Rao also pointed out India's low Ginning Outturn (GOT) ratio of 34–35%, compared to global benchmarks of 42% achieved by Egypt's Giza variety and the Barbadense species. He stressed the need for research and innovation to improve the GOT ratio while maintaining fibre quality.

Additionally, he underscored the importance of advancements in biotechnology, particularly in the Cotton Genome Initiative. Despite progress, a gap remains in phenotypic markers for critical traits like plant height, nodal length, and fibre strength. He noted the lack of published reports on these developments and emphasized the need to adopt global biotechnological advancements to enhance cotton varieties and boost India's competitiveness in the global market.



Dr. Satbir Singh Gosal, Vice Chancellor, Punjab Agricultural University, expressed his deep concern over the sharp decline in Punjab's cotton area from 7.5 lakh hectares to just 1 lakh hectare in recent years. This decline is primarily due to the rise of pink bollworm, prompting farmers to shift to rice cultivation, which offers higher yields, shorter crop cycles, better pest resistance, and more favourable pricing. Despite government subsidies on BT cotton seeds, challenges such as high seed costs and occasional disruptions in quality seed supply persist.

To address these issues, there is strong emphasis on improving soil health management to enhance cotton productivity and protect crops from pests and diseases. A collaborative effort between Punjab, Rajasthan, and the Central Institute for Cotton Research (CICR) focuses on advancing cotton farming practices along with soil health. Additionally, Mating Disruption Technologies are being promoted to manage the pink bollworm. Over the last 20 years, PAU has developed CLCV-resistant Hirsutum cotton, which is now being registered for use. Integrating this material into BT cotton hybrids is expected to combat the Cotton Leaf Curl Virus (CLCV) and strengthen crop resilience.

With government support and technological advancements, there is optimism for expanding cotton cultivation in Punjab. Improved yields in recent years indicate a positive trend, and ongoing collaborative initiatives are expected to further aid the revival and growth of cotton farming in the region.



Dr. Y.G. Prasad, Director of ICAR-Central Institute for Cotton Research, highlighted concerns over India's cotton productivity, which lags behind countries like Australia, Brazil, and China. He pointed out that rainfed cultivation and climate extremes have significantly impacted yields, while pink bollworm resistance remains a persistent challenge. India's cotton production has declined from 400 lakh bales in 2012-13 to an estimated 300 lakh bales this year, marking a 100 lakh bale deficit. Of this, 13 lakh bales are lost annually due to pink bollworm, causing a 3.6% national loss valued at Rs. 3,900 crore, while 87 lakh bales are lost due to climate change and soil health deterioration.

He noted that the Government of India is promoting new seed varieties, advanced agronomy, precision farming, and modernized ginning and pressing to ensure contamination-free cotton. Dr. Prasad also emphasized biochar and carbon credits as tools to improve soil health and generate additional revenue for farmers. He emphasized upon the need for an innovative platform that will connect stakeholders with modern cotton processing technologies, encouraging market expansion through technology-driven solutions. A sustainable validation system is essential to ensure farmers benefit from services while minimizing administrative costs. Aligning these efforts with National Cotton Mission will boost productivity, improve prices, and ensure long-term sustainability for farmers.

Mr. Eric B. Trachtenberg, Executive Director of ICAC, emphasized the organization's role as an intergovernmental body representing 24 member countries, including India and the US, and its focus on cotton production, trade, and investment. He highlighted cotton as a global public good that contributes significantly to poverty reduction, women's empowerment (where 43% of cotton farm workers are women) and industrial development. Environmentally, cotton has advantages over synthetic fibres due to its low land and water use, minimal pesticide and fertilizer requirements and biodegradability, reducing micro plastic pollution. Economically, it provides livelihoods to approximately 10 million people in India's cotton sector alone. Despite these benefits, cotton faces challenges such as the rise of fast fashion, misconceptions about its environmental footprint, and shifting regulations that threaten its sustainability. To address these issues, ICAC promotes sustainability, policy reforms, and textile innovation. Mr. Trachtenberg introduced a Payment for Ecosystem Services (PES) that incentivizes biochar application for soil health improvement and carbon credit generation, ensuring that most profits go directly to farmers.

Additionally, ICAC has launched an innovation platform to connect stakeholders with cutting-edge technologies, present solutions at textile events, and foster collaborations with brands to align cotton production with evolving industry demands. Emphasizing productivity, the initiative also highlights the importance of soil health alongside scientific advancements in varietal development and entomology. Mr. Trachtenberg stressed the importance of biotechnology in making cotton farming more sustainable. He shared a study indicating that sustainably produced cotton could earn a price premium of 10 to 20 cents per pound, offering an opportunity to elevate cotton beyond the low-price market by appealing to eco-conscious consumers.

On the policy front, he highlighted the growing importance of carbon markets, especially in the European Union, which could benefit sustainable cotton producers. While the US has yet to introduce major policies in this area, some American companies must still meet European carbon reduction requirements. He stressed the need to closely monitor regulatory changes, such as green claims and digital passports, as they will be key in shaping the future of sustainable cotton production.

Cotton: A Global Public Good & The ICAC Action Plan



Eric B. Trachtenberg

Executive Director International Cotton Advisory Committee (ICAC)



Mr. Raju Kapoor, Director, FMC, highlighted two key challenges: declining demand and supply constraints. On the demand side, cotton is losing market share to cheaper synthetic fibres, particularly in price-sensitive markets like New York, making competition difficult. On the supply side, climate risks threaten production, especially in unregulated farming regions like Punjab, where frequent disruptions strain financially vulnerable farmers.

To address these challenges, stakeholders can consider differentiated pricing and sustainability-linked incentives. Global trade is becoming more unpredictable due to changes in the European market and the uncertain US-China relationship. However, growing environmental concerns about synthetic fibres create an opportunity. By highlighting cotton's sustainability and health benefits, the industry can increase demand and build long-term resilience.

Mr. K.C. Ravi, Vice President of Syngenta, emphasized the importance of exploring international best practices in cotton cultivation. Understanding these approaches could provide valuable insights for India, helping to improve sustainability measures and strengthen the country's cotton sector.

Mr. Raghavan Sampathkumar, Executive Director of FSII, suggested that similar to the United Nation driven International Year of Millets (2023) and International Year of Pulses (2016), there can be a proposal by ICAC for an "International Year of Cotton" as cotton is a vital crop that sustains the livelihoods of millions of farmers, primarily smallholders, across the globe.

He emphasized the need to raise awareness about cotton's global importance. He also recommended driving innovation by encouraging investment in advanced seed technologies to improve yields and resilience. Supporting farmers by enhancing their access to essential resources such as credit and quality inputs was another key suggestion. Additionally, he stressed the importance of promoting sustainability through eco-friendly practices to ensure long-term productivity. Lastly, he highlighted the role of cotton in boosting the economy by creating employment opportunities and stabilizing cotton-producing regions, contributing to economic growth and rural development.



Mr. Mohan J. Saxena, Managing Director of Ayurvet Ltd., noted that cotton has evolved from a common fabric to a premium product. Despite this shift, it remains popular among middle-income consumers, with brands like FabIndia and emerging startups driving demand. Two important factors influencing India's cotton industry are cottonseed oil, which competes with soybean oil, and water usage. It is essential to optimize oil crops with minimal environmental impact, especially since imported palm oil is cheaper than local production. Cotton stands out by providing fibre, oil, and protein for animal feed, making it vital for India's dairy sector. Toxin-free cottonseed cake is especially important for livestock nutrition, helping farmers achieve sustainability through well-structured value chains. However, contamination in cotton processing has led to export rejections. A 360-degree sustainability strategy is essential to improving value creation and ensuring farmer support. Additionally, cotton cultivation must align with soil and climate suitability to prevent losses, as seen in Haryana, where thunderstorms at harvest pose risks.

Greater collaboration and innovation in detoxifying cottonseed for livestock feed are crucial. With rising protein demand, cotton's role as a source of both protein and oil strengthens its value across the supply chain, reinforcing its importance in agriculture.



Mr. Deepankar Pandey, Assistant Director, NSAI, emphasized a critical challenge in the cotton seed industry – government-controlled pricing under the Cotton Seed Price Control Order (CSPCO) 2002. While production costs have risen by 5–10% annually, seed prices have increased by just 1% per year, squeezing profitability and stifling R&D investment.

Despite significant research efforts, fixed pricing reduces profits, making it difficult to sustain innovation. Last year, the industry sought a price hike to 1,050 but received only a marginal increase—insufficient for long-term viability. This year, a minimum price of 1,150 is necessary to support technological advancement. For over a decade, no new technology has been introduced—not due to a lack of investment, but because pricing constraints make it unviable. Additionally, resistance from government agencies and international bodies further restricts industry growth.

In Northern India, seed companies face losses due to packaging and distribution challenges. A balanced pricing mechanism is essential to ensure industry survival, drive continued innovation, and secure long-term sustainability in India's cotton sector.

Concluding Remarks

Dr. Y.G. Prasad, Director of ICAR-Central Institute for Cotton Research highlighted key issues in India's cotton sector, including seed pricing, cultivation costs and mechanization. Farmers spend around

30,000 per acre on cultivation, with seed costs making up 5-7% of these expenses. To meet national demand, six crore packets of hybrid cotton seed must be produced fresh each year in farmers' fields, making their role essential.

India's seed efficiency is notable, requiring just 2.5 kg per hectare, compared to 13 – 30 kg elsewhere. However, labour costs make up 45% of total expenses, with 32% allocated to picking, emphasizing the need for mechanized planting and harvesting.

Dr. Prasad emphasized industry-supported clusters—involving ginneries, buyers, and value chain partners—to accelerate mechanization and cut labour costs. He also stressed sustainability efforts, including biochar production to enhance soil health.

Over the past two years, the Cotton Mission has received 40 crores annually, with 22 crores directly benefiting farmers through subsidies on seeds, growth regulators, and Integrated Pest Management (IPM). Successful high-density planting trials on 15,000 hectares area with 17,000 farmers have encouraged NABARD to raise cotton financing from 60,000–65,000 per hectare to 92,000 per hectare. This increase, along with improved storage to reduce contamination, will help tackle key challenges in the sector.

Recommendations - Global Cotton Scenario

1. Enhancing Cotton Productivity through Agronomic Advancements:

- To promote high-density planting, hybrid seed variety and mechanization of cotton harvesting to overcome stagnation in yield.
- \circ To strengthen farmer outreach programs to popularize new agronomic practices at scale.
- To encourage government and private sector collaboration to provide financial and technical support for mechanization and precision farming.

2. Improving Ginning Outturn Ratio (GOT) and Fiber Quality:

- To invest in research and innovation to increase the GOT ratio while maintaining fiber length.
- To introduce best practices to improve GOT from global leaders like Egypt's Giza variety and Barbadense species.

3. Strengthening Biotechnology and Cotton Genome Research:

- To accelerate efforts under the Cotton Genome Initiative to develop phenotypic markers for key traits.
- To encourage investment in biotechnology tools for pest resistance and yield improvement.
- To ensure transparency in research findings through published reports to enhance industrywide collaboration
- 4. Addressing Challenges in Cotton Cultivation:
 - To Implement integrated pest management (IPM) strategies to combat pink bollworm infestations.

• To encourage soil health management and promote Cotton Leaf Curl Virus (CLCV) resistant cotton for improved resilience.

5. Mitigating Climate Change and Enhancing Resilience:

- O To develop and promote climate-resilient cotton varieties.
- To introduce precision agriculture techniques to optimize water use and soil health.
- To increase financial support for farmers to cope with climate-related challenges and crop losses.

6. Strengthening India's Role in Global Cotton Trade:

- To leverage international partnerships to improve cotton farming practices and share expertise.
- To enhance cooperation between International Cotton Advisory Council (ICAC) and Indian government cotton mission to facilitate technical support, knowledge exchange and market expansion.

7. Encouraging Sustainable Cotton Cultivation and Market Expansion:

- σ $\,$ To promote the use of biochar and carbon credits as additional revenue sources for farmers.
- To establish an innovation platform connecting stakeholders with modern processing technologies.

8. Addressing Market Challenges and Synthetic Fiber Competition:

- To strengthen branding and awareness campaigns to highlight cotton's sustainability and environmental benefits.
- To advocate for policy support to enhance cotton's competitiveness against synthetic fibers.
- To introduce incentive mechanisms for sustainable cotton production to attract eco-conscious consumers.

9. Revamping Seed Pricing and Supply Chain Mechanisms:

- To revise the Cotton Seed Price Control Order to ensure fair pricing and investment in R&D.
- To encourage the development of new hybrid seed varieties to enhance yield and disease resistance.
- \circ To establish industry-supported clusters to promote farmer participation in seed production.

10. Advancing Mechanization and Value Chain Integration:

- To expand financial support for smallholder farmers to access advanced machinery for planting and harvesting.
- To encourage NABARD and other financial institutions to enhance credit availability for cotton farmers.
- To strengthen value chain linkages between ginneries, textile manufacturers, and cotton farmers to improve efficiency and reduce post-harvest losses.

11. Policy and Institutional Support for the Cotton Sector:

- To increase budgetary allocation for cotton research, development, and farmer support programs.
- To advocate for the establishment of an International Cotton Day to enhance global awareness and engagement in sustainable cotton production.







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