NEXT IAS

DAILY EDITORIAL ANALYSIS

TOPIC

THERMAL COST OF INDIA'S TEXTILE SURGE

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Context

- **India's textile industry** plays a crucial role in employment, exports, and rural development. However, it faces **emerging structural challenges** like particularly **climate-induced heat stress**, which threatens its long-term sustainability.

Overview of the India's Textile Industry

- The Indian textile industry is **diverse and vertically integrated**, spanning cotton cultivation, spinning, weaving, and processing, garment manufacturing and exports.
- It contributes significantly to **industrial production and GDP**, and accounts for a major share of **manufacturing employment**, especially informal labour.
- It dominates **rural and semi-urban economies**, linking agriculture with industry.

Economic Significance

- India's Textile and apparel industry contributes **about 2% to GDP,** accounts for about **11% of manufacturing GVA, and 8.63% to exports**, with an estimated size **of USD 179 billion**.
- **Export Basket:** India is the **6th largest global exporter**, with a share of **about 4% in world exports** in this segment.
  - In 2025, India's textile sector recorded export growth across 118 countries and export destinations.
  - Strong presence in global markets like the USA, EU, and Middle East.
- **Employment:** It is the **second largest employment generator, after agriculture,** with **over 45 million people** employed directly.
  - As per the **Economic Survey 2026-27**, textiles industry has a 9% share in employment across 8 major industry groups.
- **Future Projections:** Indian textile market currently **ranks fifth globally**, and the government is actively working to accelerate this growth to a rate of 15-20% over the next five years.

Structure of the Industry

- **Organised Sector:** Large mills, export-oriented units; capital-intensive and technology-driven
- **Unorganised Sector:** Handlooms, powerlooms, small garment units; labour-intensive, low productivity.
  - This dual structure creates **efficiency gaps and policy challenges**.

India in the Global Textile Value Chain

- India is gaining from **supply chain diversification (China+1 strategy)**, and shifting orders due to instability in competing countries.
  - However, global trade is characterised by **strict delivery deadlines**, and price pressures from multinational brands.
  - It creates vulnerability for Indian manufacturers with **limited bargaining power**.

Emerging Challenge in India's Textile Sector

- **Thermodynamic Constraint:**
  - **Worker-Level Impact:** At **40°C, productivity can fall by about 50%**, and workers lose wages due to absence of cooling breaks.
  - **Macro-Level Impact:** India lost **about 259 billion labour hours annually (2001–2020)**, and output declined by **almost 2% per 1°C rise**.
    - In **2024 alone**, losses reached **~247 billion hours**.
  - **Factory-Level Impact:** Production capacity drops up to **50% during extreme heat;** increased health risks (heatstroke, dehydration).
- **Future Projections:** By **2030**, India may lose **5.8% of daily working hours** due to heat.
  - Equivalent to **34 million full-time jobs lost**.

- **Economic Challenges:** Low value addition compared to global competitors, fragmented supply chain, and dependence on cotton.
  - **Labour issues** like informal employment, and lack of social security and workplace safety.
- **Supply Chain Trap:**
  - **Global Pressures:** Strict delivery deadlines, heavy penalties for delays, and price pressures from international brands.
  - **Local Constraints:** Workers cannot exceed physiological limits, limited bargaining power of MSMEs, and lack of climate-resilient infrastructure

Government Initiatives

- **Policy & Institutional Support:** Textile policies under **Ministry of Textiles,** export promotion schemes.
- **Infrastructure Development:** Textile parks and cluster development, and support for MSMEs.
- **Skill Development:** Training programs under skill missions, and focus on labour-intensive sectors.
- **Energy Efficiency:** Bureau of Energy Efficiency initiatives for textile units.

Way Forward: Climate-Smart Industrialisation

- **Policy Measures:** Recognise heat stress as a **supply chain risk**; and integrate climate projections into **trade and industrial policy.**
- **Workplace Reforms:** Mandatory **heat-action plans,** enforceable temperature thresholds, and cooling breaks and health monitoring.
- **Financial Interventions:** Climate-linked lending by banks, and subsidised credit for cooling technologies.
- **Labour Protection:** Legal provisions for **heat stress safeguards**, and access to water, shade, and rest areas
- **Innovation:** R&D in wearable cooling tech, heat-resilient cotton, and energy-efficient manufacturing.
- **Global Responsibility:** Fair pricing by international brands, and longer lead times to accommodate climate realities.

Conclusion

- The global textile industry has long assumed that production costs are fixed. However, it ignored a critical variable i.e. **human thermoregulation**.
- India has the potential to become a **global manufacturing hub**, supported by strong domestic resources and rising global demand. However, **climate change, particularly heat stress poses a structural threat**.
- The future of the sector depends on whether India can transition from a **low-cost labour model** to a **climate-resilient, worker-centric, and sustainable industrial system**.

Source: TH

Daily Mains Practice Question

[Q] Discuss how heat stress is emerging as a critical challenge for labour productivity and industrial competitiveness in India's textile sector. Suggest policy measures to build a climate-resilient and worker-centric textile industry.

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