INTERNATIONAL JOURNAL OF RESEARCH IN SOCIAL SCIENCES & HUMANITIES

**An International Open-Access Peer Reviewed Referred Journal**

Impact Factor: 8.909 E-ISSN : 2249 – 4642 P-ISSN: 2454 - 4671

# An In-Depth Analysis of the Prospects of Enhancing the Promotion of Technical Textiles Industry in India

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DOI: http://doi.org/10.37648/ijrssh.v11i03.039

**Paper Received:**

25th July, 2021

**Paper Accepted:**

29th August, 2021

**Paper Received After Correction:**

17th September, 2021

**Paper Published:**

29th September, 2021


**How to cite the article:** Suhasini Singh, An In-Depth Analysis of the Prospects of Enhancing the Promotion of Technical Textiles Industry in India, July-September 2021 Vol 11, Issue 3; 678-690 DOI: http://doi.org/10.37648/ijrssh.v11i03.039

**INTRODUCTION**

Traditional textiles and natural fibers are considered India's strength globally. India is the second largest producer of polyester and viscose in the world after China. Technical textiles is an emerging market in India. This sector has been predicted to reach US$ 50 bn. market by 2025. India contributes to approximately 10% of global consumption in technical textile market. The current market is valued at US $ 17 billion . Technical textiles contribute nearly 13% to India's total textile and apparel market and 0.7 % to India's GDP.

The Technology Mission on Technical Textiles ( TMTT ) was initially launched in the year 2010-11 with two mini missions for a period of five years with a fund outlay of Rs 200 Cr. Technical textiles have been an emerging sector ever since. The mission was renamed as National Technical Textiles Mission (NTTM ) in 2020-21. The government laid a fund outlay of Rs 1480 Cr aiming to position India at the forefront among the global leaders in technical textiles. The implementation period of this mission has been kept 4 years till 2023-24.

The 12 sub-divisions under technical textiles and some of the products that come under have been mentioned below-

| | | | |
|---|---|---|---|
| Agrotech (Shade nets, crop covers, fishing nets, etc) | Geotech -Oekotech (Geo-grids, gabions, geo-bags, etc) | Hometech (Fibre fill, blinds fabrics, mosquito nets, furniture fabrics, etc) | Sportech (Sport composites, artificial turfs, parachute fabrics, sleeping bags, etc) |
| Buildtech (Scaffolding nets, awnings, canopies, wall coverings, etc) | Indutech (Scaffolding nets, awnings, canopies, wall coverings, etc) | Packtech ( Leno bags, soft luggage, jute hessian and sacks, shopping bags, etc) | Protech (Bullet proof jackets, fire retardant apparel, chemical protective clothing, etc) |
| Clothtech ( Coated laces, interlinings, zip | Meditech (Diapers, wipes, surgical sutures, | Mobiltech (Tyre cord, seat belt webbing, airbag, | Non- Woven ( Filter materials ) |

| | | | |
|---|---|---|---|
| fasteners, labels, etc ) | hernia mesh, artificial ligaments, etc) | insulation felts, seat covers, etc | |

**KEY POINTERS OF POLICIES AND SCHEMES EXISTING BEFORE 2020-21 IN TECHNICAL TEXTILES**

Government of India allowed up to 100% FDI under automatic route for the technical textiles segment.

Promotional schemes -

1. Technology Upgradation Fund Scheme (TUFS)
2. Scheme for Integrated Textile Parks (SITP)
3. Coverage of major machinery for technical textile manufacturing under concessional customs duty list of 5%
4. Certain technical textile products are covered under Focus Product Scheme, under which exports of such products carry duty credit scrip equivalent to 2% of FOB value of exports
5. Technology Mission on Technical Textiles (TMTT)
6. Focus Incubation Centres (FIC)
7. Scheme for promoting usage of Agro-textiles in India (excluding North East Region) Scheme for promoting usage of Agro-textiles in North East Region
8. Scheme for promoting usage of Geotechnical textiles in North East Region

Centres of excellence (as under Scheme for Growth and Development of Technical Textiles) were established to provide infrastructural support and technical support, as listed under -

1. BTRA (Geotech)
2. SASMIRA (Agrotech)
3. NITRA (Protech)
4. SITRA (Meditech)
5. DKTE Society's Textile and Engineering Institute (Nonwoven)
6. PSG College of Technology (Indutech)
7. AITRA- Ahmedabad Textile Industry's Research Association (Composites)
8. WRA- Wool Research Association ( Sportech)

TUFS

The Technology Upgradation Fund Scheme (TUFS) was originally launched in 1999

TUFS was modified and renamed as below -

- Modified Technology Upgradation Fund Scheme (MTUFS)

- Restructured Technology Upgradation Fund Scheme (RTUFS)
- Revised Restructured Technology Upgradation Fund Scheme (RRTUFS)

**GOVERNMENT SCHEMES UNDER THE NATIONAL TECHNICAL TEXTILES MISSION (NTTM 2020-21)**

The policies made and steps taken by the government under the National technical textiles mission (NTTM ) in various respects are as follows -

Research development and innovation

Outlay of Rs 1000 crs for application based research in geotextiles, agro-textiles, medical textiles, mobile textiles and sports textiles and development of biodegradable technical textiles.

Promotion and market development

The fundamental research activities will be based on 'pooled resource' method.

The institutes / organizations responsible for this are -

1. All Centre for Scientific & Industrial Research (CSIR) laboratories
2. Indian Institute of Technology (IIT)
3. Scientific/ industrial/ academic laboratories of repute.
4. Research Design & Standards Organisation (RDSO) of Indian Railways
5. Indian Council of Agricultural Research (ICAR)
6. Defence Research & Development Organisation (DRDO)
7. National Aeronautical Laboratory (NAL)
8. Indian Road Research Institute (IRRI) and other such reputed laboratories, as approved by the

*All other laboratories as approved by Mission Steering Group

Export promotion

1. Aim of average growth rate of 15-20% per annum taking the level of domestic market size to 40-50 Billion USD by the year 2024 has been made.
2. Market development and market promotion through international technical collaborations,investment promotions and 'Make in India' initiatives.

Education training and skill development

1. Promotion of technical education at higher engineering and technology levels related to technical textiles and its application areas.

2. Promotion of skill development
3. Pool of highly skilled manpower resources will be created for meeting the need of relatively sophisticated technical textiles manufacturing units.

A-TUFS (amended technology upgradation fund scheme )

**as on 22 SEP 2020*

1. Technical textiles are eligible under the ATUFS scheme.
2. Individual entity (not the unit) will be will be entitled for reimbursement of Capital Investment Subsidy (CIS) under this scheme.
3. Capital subsidy is provided for the modernization of their production equipment (plant and machinery) and techniques. ( textile machinery manufacturing )
4. The rates are as follows -

| S.No. | Case | Rate of capital subsidy |
|---|---|---|
| 1. | Technical Textiles | 15% subject to an upper limit of Rs 30 crores |
| 2. | Composite unit /Multiple Segments-<br>If the capital investment is more than 50% of the eligible project cost | 15% subject to an upper limit of Rs 30 crores |
| 3. | Composite unit/ Multiple Segments -<br>If the is less than 50% of the eligible project cost | 10% subject to an upper limit of Rs 20 crores |

**Ministry of textiles , PIB Delhi.*

PLI (production linked incentive) Scheme

1. The production link scheme aims to give companies incentives on incremental sales from products manufactured in domestic units. Example- production in 2019-20 was 1000 units and the production in 2020-21 was 1200. The government would give incentive on the additional 200 units manufactured
2. Incentives will be provided to manufacture and export specific textile products made of man-made fibres.
3. The government approved Rs. 10,683 crore (US$ 1.44 billion) for man-made fibre and technical textiles.

Other relevant features and outcome

1. 207 technical textiles items have been brought under separate head

in the Harmonised System of Nomenclature (HSN) code under the Foreign Trade Policy.

2. Bureau of Indian Standards (BIS) has developed standards for 348 technical textiles products.
3. The Centres of excellence , BTRA for Geotech, SITRA for Meditech, NITRA for Protech and SASMIRA for Agrotech, to be upgraded in terms of -
    - development of incubation centre (FICs)
    - support for development of prototypes

1. During the month of March, 2021, 130 UIDs have been issued with a project cost of Rs. 499.65 Crore and Subsidy requirement of Rs. 40.81 Crore under the Amended Technology Upgradation Fund Scheme (A-TUFS)

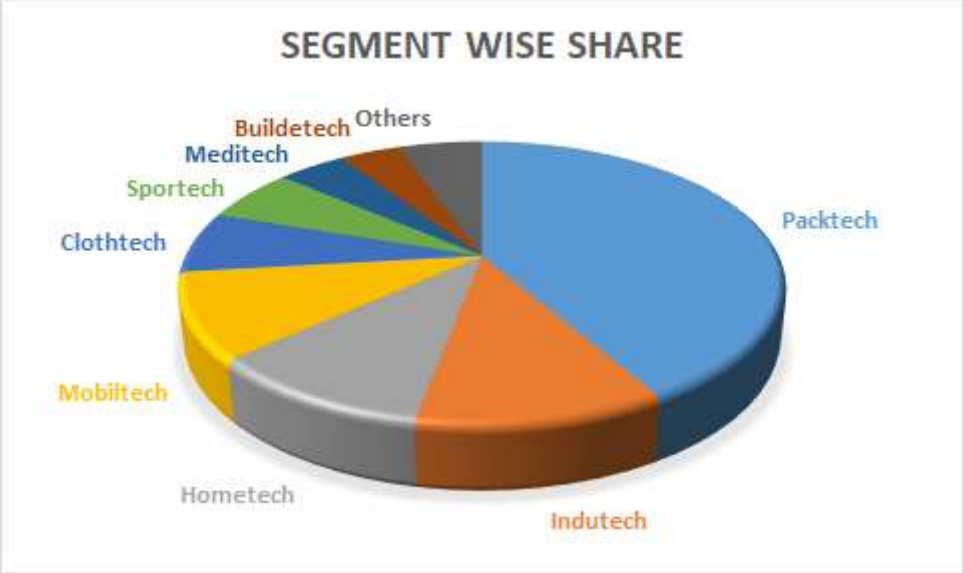
1. Under the Scheme for Promoting Usage of Agro textiles in North East Region, the usage of Agro textiles in the North East Region has led to average increase in farmers' income by 67% to 75%.

1. Under the Scheme for Promoting Usage of Geotechnical Textiles in North East Region, use of Geotextiles in infrastructure projects has led to-
    - improvement of serviceability of the infrastructure
    - increased maintenance intervals for infrastructure such as roads and hill slopes.

**DOMESTIC MARKET SCENARIO**

1. The per capita consumption of technical textiles in India is 1.7 kgs whereas it is 10 to 12 kgs developing countries. The reason for lower consumption in the Indian market is because India focuses on Packtech, a low-value low-technology product.
2. The domestic market of Technical textile industry in India is dependent on imports. Major raw materials for manufacturing of technical textiles and the machinery required to produce technical textiles are imported.
3. The projected CAGR regarding to share of technical textiles in Indian textile sector as per Make In India report will be 18 % from 2018 to 2025.
4. As per the last Baseline Survey of technical textile industry by Ministry of Textiles, Indian technical textile industry is estimated to grow at a CAGR of 20 per cent to USD 28.7 billion by

2020-21 from USD 16.6 billion in 2017-18.

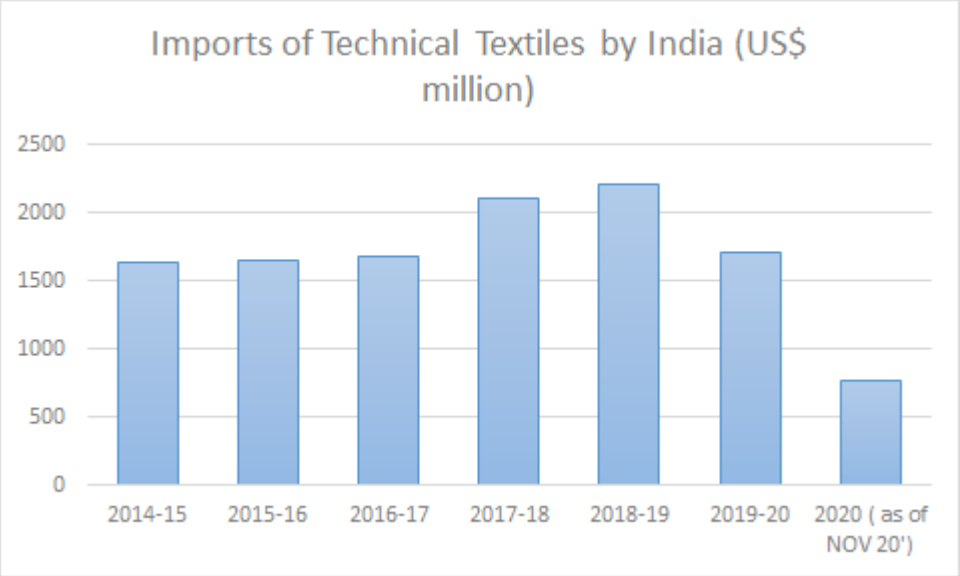



**Others include Protech, Agrotech, Geotech and Oekotech*

**Export and Import Analysis**


**Source - [http://dgciskol.gov.in/data_information.aspx](http://dgciskol.gov.in/data_information.aspx)*

The exports fell by 8.7 % and 9.1 % consecutively in the financial years 2016-17 and 2017-18. Thereafter there was a consistent increase in the following financial years till 2019-20 as can be seen from the above graph. The exports grew at 6.36 % CAGR till 2019-20. The exports for the year 2020-21 ( till November) has been US $ 1370 million.




*Source - http://dgciskol.gov.in/data_information.aspx

The imports consecutively rose by an average of 1% for both the financial year 2015-16 and 2016-17 . The grew at CAGR 6.2 % between the years 2014-15 to 2018-19. However the imports declined by 23 % from US $ 2209 million in 2018-19 to US $ 1703 million in 2019-20. The imports stand at US $ 769 million as of November 2020.

Latest Export Import information ( as per Ministry of commerce and Industry, department of commerce, EP-Textiles Coordination Division) -

- Exports from India increased by 17 per cent in Jan-June 2019 from Jan-June 2018 to USD1.02 billion.
- Imports to India increased by 6 per cent from Jan-June 2018 to USD1.09 billion n in Jan-June 2019.

**Major Growth factors for consumption and manufacture**

1. India's has valuable resources of raw materials such as natural fibres, synthetic fibres, chemicals for processing, etc.
2. The growth of various end-use sectors such as medical industry in the Indian market has resulted in higher demand for technical textile products specially since Covid-19.
3. Import-dependent technical textile products can be with indigenous production, resulting in economic development.
4. India has huge working age population, resulting in easy availability of affordable and skilled manpower. This has led to major technical textile multi-

nationals setting up their manufacturing base in India.

5. Changing regulations: Government is consistently working towards making use of certain technical textile products mandatory for certain specific applications/industries. These regulations would drive consumption of technical textile products.
6. Meditech- India became the second-largest manufacturer of Personal Protective Equipment (PPE) kits in the world.

**RECOMMENDATIONS**

**Vocational training**

1. Vocational training courses imparting the skills required for operating the level of technology that would be used in manufacturing of the technical textiles in the country. The courses to be updated as and when the technology is upgraded.
2. Awareness to be created about these courses, their employment related benefits to be told.
3. Leading market players in producing the raw material for technical textiles to be considered under this training.
4. All India council for technical education ( AICTE ) to launch this course in collaboration with Pradhan Mantri Kaushal Vikas Yojna ( PMKVY).
5. Currently there are six courses for technical textiles in its skill development programme called Samarth.-

| Course Name | Course Code |
|---|---|
| Surgical mask machine operator | TC TT 01 |
| Sanitary Napkin machine operator | TC TT 02 |
| Needle punch non-woven machine operator | TC TT 03 |
| Thermal bonded Non-woven machine operator | TC TT 04 |
| Chemical bonded Non- woven machine operator | TC TT 05 |
| Textile coating Machine Operator | TC TT 06 |

**RESEARCH AND DEVELOPMENT**

1. The time period of six months for establishment of focus incubation centres mentored by Centre of excellence for taking up innovation on commercial scale to be increased in the post pandemic period as the economy is in a slowdown.
2. The ongoing survey in IIT Delhi regarding baseline survey on technical textiles sector after the 12th five year plan to be updated as very crucial information (market summary of the 12 segments under technical textiles , new technical textile products , usage of institutional players , current profile of key players etc.) relating to the technical textile industry will be obtained from the same. These insights are very important for investors and entrepreneurs.
3. Research and development on production of segments other than packtech in India. India should focus to manufacture high value product segments such as Indutech, Mobiltech, Sportech, Meditech, Buildtech, which have low market penetration as per the current scenario.
4. Formulation of clear guidelines for the usage of technical textiles in specific application areas.

**QUALITY CONTROL AND STANDARDS**

1. The new published standards for technical textiles are -

| Committee number | Committee name | Published standards |
|---|---|---|
| TXD 14 | Textiles machinery and accessory | 5 |
| TXD 30 | Geosynthetics | 14 |
| TXD 32 | Textile protective clothing | 13 |
| TXD 33 | Industrial fabrics | 10 |
| TXD 34 | Technical textiles for buildtech applications | 1 |
| TXD 35 | Technical textiles for agrotech applications | 9 |
| TXD 36 | Technical textiles for medtech applications | 14 |

1. The products recognized by BIS under technical textiles are 377. BIS standards regarding Composite, non-woven, sport tech and build tech to reach the last stage of " printed and sent for notification".
1. The current proposal under BIS for technical textiles related to technical textiles for medtech applications (TXD 36) to be allocated in priority.

**Entrepreneurship**

1. The ministry of textiles should solidify and implement the undertook initiative to establish institutes under PPP to encourage private sector participation in the development of the industry.
2. Syndicate loans to be offered to the companies who undertake the production and manufacturing of products or raw material exclusively relating to technical textiles.
3. Separate loan scheme should be launched by government for companies undertaking the manufacture of technical textiles in the domestic market ( with regard to production of raw material, manufacture of final product and manufacture of machines required for production of technical textiles)
4. Companies such Theo Kölln Krawattenfabrik ,Rieter and Murata machinery ltd should be encouraged to set up their manufacturing units in India by giving concessions to manufacture machinery required for technical textiles. Due to cheap labour and the current boost to the technical textile mission production centres for machinery can be established.
5. Contract Research and Development through IITs/TRAs/Textile Institutes to be given importance as they will help in development of products for which R&D is important.
6. Government to exclusively promote designing courses on technical textiles with the help of National level design institutes as manufacturing of the technical textiles will include designing of the same.
7. Graduates not only from IITs but from design colleges should also be briefed about the details and facilities regarding the plug and play business model offered by the government with respect to technical textile industry.

**Attracting FDI**

1. Early finalization of Free trade agreement with EU would help the tariff disadvantage of the industry vis-à-vis competing countries to boost export and reduce imports.

2. Lending rates for foreing companies investing in India for research and development and other activities to be made more competitive for textile sector.
3. Creating India as an investment hub for encouraging companies from Association of Southeast Asian Nations (ASEAN).
4. Joint ventures with global technical textiles companies.

**Duties and taxes**

1. Removal of Anti-Dumping Duty on Purified Terephthalic acid on 2nd February, 2020, enables Man made fiber/ filament manufacturers to procure raw material at globally competitive prices. This also allows MMF manufacturers a lower cost in domestic sales.
2. In order to avoid an imbalance in supply and demand GST rebate can be given for buying of technical textile products.

**Boosting exports**

With reference to import-dependent technical textile products being replaced with indigenous production, one major implementation can be made with respect to dyeing of technical textiles. Due to the growing demand of eco-friendly textiles and conservation of heritage crafts and arts, the use of natural indigo can be revived. Several organizations and companies are using natural indigo as method of dyeing textiles such as Avani Society (a non-profit based in the region and working on instituting an indigo supply chain in the area).

India has a scope for export in non- woven textile market. The non- woven technical textiles is a potential target market for technical textiles as India has the potential to become the leading exporter of various nonwovens. Healthcare and infrastructure sectors are major drivers of the technical textile industry. The reasons stating the scope of technical textiles in non- woven textile industry due to the following reasons-

- India is one of the largest producers of natural and manmade fibres
- Population growth and increase in middle class disposable income
- Low cost skilled labour
- Ability to cater to the value chain
- Growing domestic retail market

**Textile Unions and associations**

1. The leading associations and unions for example the textile association and Indian technical textile association to create a separate section relating to latest information (the statistics, number of manufacturing units, government schemes, ongoing

proposals, budget allocation, latest surveys conducted by the Centre of excellence in the country, status of the focus incubation centres, segment wise report regarding technical textiles).

2. Awareness programs to be conducted by these associations regarding the potential of the technical textile industry in India through webinars.

**General recommendation* -

Ministry of Textiles works with Ministry of Health and family Welfare for supply of PPE Body Coveralls, N-95 Masks and other medical equipments (related to meditech) required for use of health professional in Government Hospitals. A further strong link or a coordinating body can be developed for easy facilitation of meditech requirements by MoHFW in the crisis of Covid-19.

Monthly update of production of technical textiles to be published on the MoT website for better monitoring as this is an emerging sector.

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