



Role of Policy in promoting a Circular and Inclusive Textile and Apparel Sector

Cluster level priorities & National discourse



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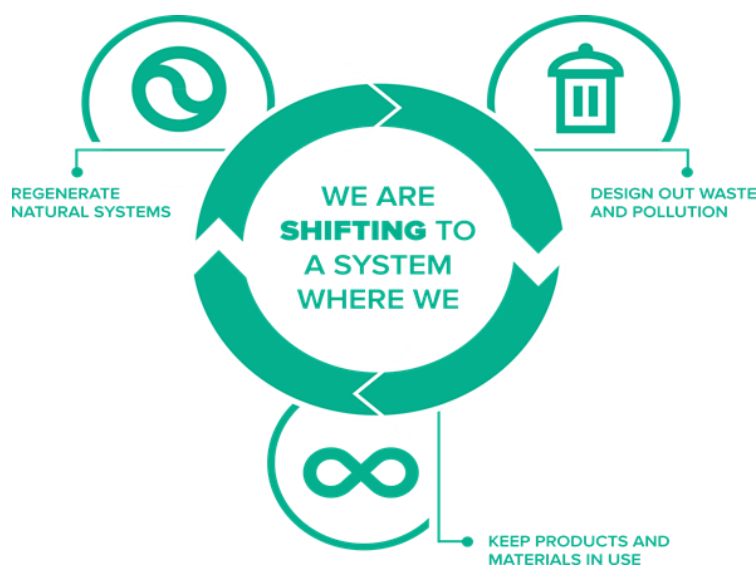
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Background

The apparel and textile (A&T) sector is one of the oldest industries in India contributing approximately 2% of the GDP valued at USD 140 billion (2018). India is the 4th largest apparel and textile exporter of the world with exports valuing at USD 35.969 billion or 4% of the total Global A&T market (CARE Ratings, 2019; WTO, 2019). The A&T industry in India plays a **major role in generating jobs and 'Make in India' campaign**. It **employs 45 million people directly and 60 million indirectly** (NIPFA, 2020).

While A&T plays a huge role in India's economic growth, the sector is also saddled with systemic problems such as pollution, energy inefficiencies and resource scarcity. The present economic model of 'take-make-dispose' relies on cheap, easily available materials and sources - is often subjected to supply chain risks and is extremely wasteful and unsustainable both environmentally and economically. The increasing supply chain risks, price volatility, and decreasing availability of natural resources is increasing the relevance of circular economic model. Circular economy is an economic system where materials and energy circulate in loops and stay within the value chain, as opposed to a linear system of take-make-dispose. In a circular economy the concept of *waste* is eliminated—material value is reused, recycled, and repurposed.



Circular Economy Vision (Ellen Macarthur Foundation)

The 7 Rs of circularity are: **Re-think; Reduce; Re-Use; Repair; Refurbish; Recover; Recycle**

A successful circular economic model forms a closed loop and is restorative and regenerative by design. It aims to keep products, material, and components at their highest value and utility. By incorporating circular business models, not only sustainability issues like resource efficiency, pollution can be solved but also issues like reduction in unemployment and better livelihoods of stakeholders can be dealt efficiently.

Centre for Responsible Business (CRB) along with its partners **Circular Apparel Innovation Factory (CAIF)** and **Fashion For Good (FFG)** has undertaken a project titled "*Circular Apparel*

*Policy Innovation Lab (CAPIL)*¹” to identify policy interventions that can accelerate circular economy transition in the Indian A&T sector (circular apparel). The purpose of the Lab is to contribute towards well-informed policies and implementation mechanics to support transition towards circular apparel in India. This would help gradually position Indian industry for taking advantage of the global movement towards circular apparel.

The project is supported by **Laudes Foundation**, an independent foundation working collaboratively to influence capital and transform industry, particularly the built environment and fashion industries, in order to tackle the dual crisis of climate change and inequality.

Overall, the project aimed to provide policy inputs from ground level interventions and create an alignment between state level and centre level interventions. As part of the project, cluster level workshops have been organised in Ahmedabad, Bangalore, Panipat and Tirupur to identify the circular apparel priorities specific to each cluster and the potential policy support that can facilitate this transition.

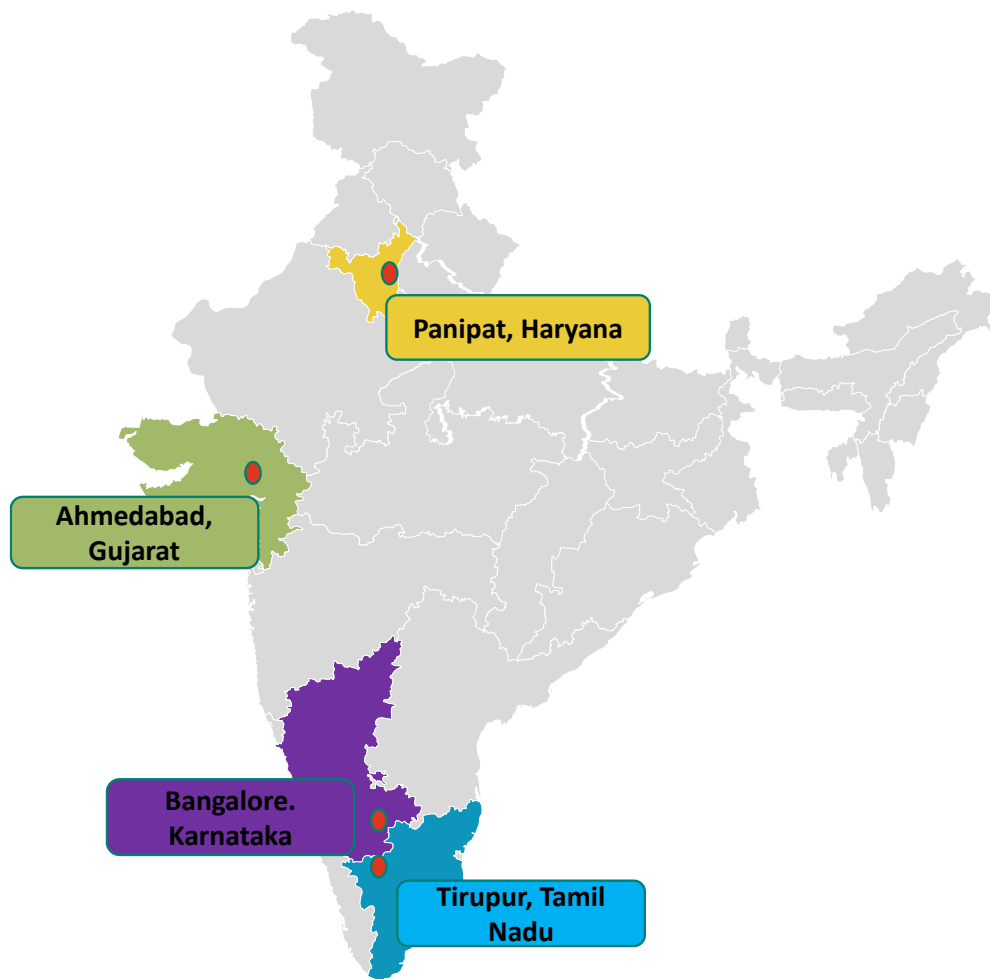
Selection of locations/clusters

The following criteria were used to shortlist locations for the project:

- **Greatest impact** – clusters/hubs/states that have the production (value/ volume), largest number of units, or most workers engaged, were given priority, as any intervention carried out would have largest impact in these states/locations. Policy decisions affecting these locations would have an impact on the overall sector/economy. Cluster Observatory provided information on the number of hubs in each state (<https://clusterobservatory.in/>).
- **Model conditions** – clusters/hubs/states that provided the best policies, infrastructure and incentives aimed at strengthening the three pillars of sustainability were considered along with those that featured innovations, as these would serve as case studies/references for developing policy briefs. These were decided through expert interviews and secondary research.
- **Hub specialization (if applicable)** – certain hubs specialize in specific components of textile industry supply chains. States/hubs chosen would together cover the majority of textile supply chain components, e.g. yarn making, dyeing, spinning, cotton cultivation, block printing, etc.
- **Industrial diversity** – the hubs would represent a mix of large-scale industries and SMEs (especially crafts-based units, as these had least automation and were likely to create more jobs).
- **Stakeholder interest** – hubs where the government, businesses, and private sector expressed interest in the process of policy dialogue in circular economy, were given more weightage.
- **Geographical location** – efforts were made to make sure that all major geographical regions were covered, and the project was not concentrated in one region, or locations that need more interventions were not left out.

¹ More details on the project can be found at www.c4rb.org/circularapparel

The map below shows the locations that were finally chosen.



Locations shortlisted for CAPIL

Key policy intervention ideas from the clusters/states

Gujarat

Gujarat has all the components of the textile value chain: from farm to fabric to apparel. The journey began in 1861, with the first cotton mill coming up in Ahmedabad. The Ahmedabad textile hub grew rapidly and rivalled the mills in Bombay. Today, Gujarat has more than 1500 small and medium textile units and contributes 12% to India's textile exports.² Thus, Gujarat is a key player in the Indian industry's landscape. Following are the key intervention areas and policy ideas as gathered from stakeholders in Gujarat:

- *Content law* (fibre content in fabrics/apparel) required to facilitate recycling and increase consumer awareness.
- *Incentivize local infrastructure* especially for ginning at farm-level to reduce wastage through baling & transportation.

² Vibrant Gujarat. Accessed at <http://vibrantgujarat.com/writereaddata/images/pdf/textile-sector.pdf> on 14 Dec 2019

- *Policy for renewable energy* - producers, DISCOMs, Gujarat state electricity board can collaborate to set up dedicated micro-grids for textile and apparel hubs
- *Advisory on Greener chemicals* and R&D on alternate fibres/ separation of fibres
- *Training/skilling* – higher-order skills should be imparted based on industry needs especially for circular business models relating to repair, refurbish, upcycling etc.
- *Reverse logistics* - explore tie-ups between municipalities and brands (through EPR) to collect and process post-consumer A&T waste
- Quality norms and informative labelling should be mandated to enable conscious consumer choice

Karnataka

Karnataka accounts for about 20% of India's garment production. The textile and apparel sector in Karnataka accounts for two-thirds of the state's industrial output, apart from being a major source of employment. Karnataka also produces nearly half of India's mulberry silk, 12% wool and 6% cotton.³ The government of Karnataka has announced the New Textile & Garment Policy 2019-2024, with a vision to create 5 lakh jobs, and attract investments worth Rs 10,000 crores. The government has earmarked Rs. 2283 Crores to implement various elements of the Policy. Development of clusters with common infrastructure like waste treatment and disposal facilities, etc. will be undertaken.⁴ Among the strategies that would be adopted to achieve this vision, *increasing resource efficiency* and *decreasing environmental impacts* are prominent. The Policy mentions "Zero Effects; Zero Defects", and "Increase manufacturing cost competitiveness" among the desired targets. Following recommendation were generated through conversations with stakeholders from Karnataka's textile industry.

- *Development of Industry led standard* – governing material use, end of life processes, chemical usage etc.
- *Tax incentives* for use of quality recycled materials
- Improve water use efficiency, incentivize reduction of freshwater use, Mandate use of recycling water in manufacturing, R&D in affordable technologies for wastewater treatment
- *Promote Zero Waste* in Industrial parks and municipalities to prevent landfilling of non-hazardous textile waste (both pre and post-consumer)
- Stable renewable energy policy and Sustainable/ Green financing options to be made available for Circular Apparel

Haryana

Haryana is one of the leading textile clusters in India owing to the easy availability of raw materials, strategic location and skilled labours. Sirsa, Fatehabad, Bhiwani, Hisar and Jind are the

³ Karnataka New Textile Policy 2019-2024.

http://www.karnatakadht.org/english/pdf/order_new_textile_and_garment_policy_2019-24.pdf

⁴ <https://www.thehindubusinessline.com/news/national/karnatakas-new-textile-garment-policy-2019-24-to-attract-10000-crore-investments/article29845545.ece>

main cotton producing districts of the state⁵. Textile and apparel clusters in Panipat, Gurugram, Faridabad, Hisar and Sonapat accounts for employment of about 1 million people and exports worth USD 3 billion¹. Cotton based products accounts for the major share of textile production in Haryana. Haryana's clusters might face trouble in future owing to pollution and groundwater depletion. The annual replenishable ground water resource, i.e., the dynamic reserves in the state averages at 3560 mcm per year compared to 9260 mcm withdrawn per year, indicating the dire need to conserve water in the state. Several areas also suffer from water and soil pollution linked to chemicals used in the processes and lack of adequate purification facilities. Following recommendations would help Haryana's clusters in striving towards long term sustainability and circularity.

- *Industrial R&D on recycling technology*; domestic collection mechanisms/ supply chains to be supported
- *Common infrastructure development* to enable Zero Liquid Discharge (ZLD)
- Amendment of existing technology upgradation schemes to include switch to technologies that enable reduction of water, chemicals etc,
- Stable long-term energy policy
- *Housing for migrant workers* to be supported as highlighted by the COVID situation and better labour laws to increase attractiveness for global buyers and brands

Tamil Nadu

Tamil Nadu, also known as the yarn bowl of India, contributes to 1/3rd of the total textile business in India. Tamil Nadu is the largest producer (40 %) and exporter of cotton yarn in India and the second largest producer of blended yarn.⁶ The state hosts the largest number of textile mills in the country. Tamil Nadu leads with 46% of the spinning capacity, 60% of the yarn export, 20% of the power loom capacity, 12% of handloom capacity and 70% of Cotton fabric knitting capacity in the country². Tamil Nadu New Integrated Textile Policy 2019 addresses most of the existing structural challenges faced by the industries of the state and the concepts of circular economy can be easily incorporated into the textile policy. But challenges like water crisis and environmental pollution still loom large on the clusters. Usage of coal and wood for boiler fuel is still rampant.⁷ Following policy intervention ideas were recorded from conversation with Tamil Nadu's textile sector stakeholders:

- *Incentivise/ encourage shift from cotton* – focus on other natural and man-made fibres; Facilitate technology upgradation to shift to alternate materials
- Discourage landfilling of textile waste – Target A&T sector to be a zero-waste sector
- Reduce consumption of fresh water – Make treated sewage water available; guidelines and Incentives to treat process water and release as potable water
- Encourage shift to natural dyes – Capacity building of farmers to grow crops for natural dye stuffs; Incentivise salt free dyeing

⁵ Department of Industries & Commerce Haryana. 2019. Haryana Textile Policy. Chandigarh: Department of Industries & Commerce Haryana. <https://investharyana.in/content/pdfs/Textile%20Policy%202019.pdf>.

⁶ Tamil Nadu Industrial Guidance & Export Promotion Bureau. 2020. <https://www.investingintamilnadu.com>. <https://www.investingintamilnadu.com/focus-sectors/textiles-and-apparels/>.

⁷ Personal Communications. Sectoral expert (Tamil Nadu's A&T sector)

- Develop industry-specific standard and capacity building and awareness programs to promote Circular Apparel.

Common themes

During the conversations with stakeholders in various clusters, and individual interactions, various cross-cutting issues and themes emerged. These are highlighted below:

- Develop industry specific standard for Circular Apparels & Textiles defining percentage of virgin/recycled material, use of chemicals, end of life use, energy consumption, etc.
- Intensive R&D for alternate fibres, recycling techniques, innovative dyeing techniques (including water dyeing), water treatment, greener chemicals, and facilitate adoption of the same
- Widening the ambit of government schemes such as Amended Technology Upgradation Fund scheme to include more energy efficient equipment, water conservation, reduction in chemicals etc. and enacting stable Renewable Energy policies
- Deploying capital/ Finance for Circular Economy Innovation Projects/ CE business models and support start-ups offering Circular Apparel business models/ solutions
- Stakeholder collaboration key to promoting Circular Apparel – Focus on Public Private Partnerships – e.g., collaboration with Municipal ETPs to supply water to A&T sector

Case Study Dossier

A case study dossier (aligned to the priorities identified in various clusters) has been created to highlight innovations and good practices (local and global) that can be replicated and scaled with adequate and progressive policy support. This dossier will be used to engage stakeholders both from the private sector as well as the public policy actors, so that they can collaborate and accelerate circular transition in the sector in India. Given below is a snapshot of a few innovations across various aspects of Circular Apparel that can have significant impact on moving the Indian A&T sector onto a more secular path. The table below provides a glimpse of the case studies and their intervention areas.

S no.	Organization	Intervention area and description
1	AltMat	Raw material – Agri-waste converted into usable fibre for textiles
2	Algalife	Raw material and chemicals – Fibre and dyes extracted from algae; goes back into environment without pollution at EOL
3	Descatuk	Raw material – processes grass-fibres for making fabric; can replace cotton to save water, reduce pesticide use
4	Dyecoo	Water conservation – CO ₂ -based dyeing technique (waterless)
5	Geetanjali Textiles	Waste – upcycles post-consumer waste apparel/textile; products from recycled yarn
6	Indra Water	Water treatment – modular, scalable water treatment system; can handle variable load of waste water
7	Infinichains	Ecosystem – traceability solutions; enables circular economy
8	Khaloom	Waste and Social inclusion – handwoven fabrics using recycled yarn
9	Microspin	Ecosystem – provides compact machinery at farm level to help farmers add value to their produce
10	Reverse Resources	Waste and Ecosystem – technological solution to assess waste quantum and enables exchange of waste between relevant parties

National Workshop

Following the various cluster level workshops, a national-level workshop was organized to share findings from the cluster-level engagements (Ahmedabad, Bengaluru, Panipat and Tirupur) with a wider set of national level industry actors. Specific objectives of the workshop were:

- To present the circular apparel and textile sector priorities as identified by stakeholders in regional clusters representing different segments of the value chain
- To highlight the role of policy/policy interventions in supporting circular economy transition in the Apparel and Textile sector (both at centre and state level)

The panel discussion saw participation from the government (Centre and state-level), as well as the private sector. Following were the **key points** that emerged from the discussion.

- Public policy is an enabler, not a panacea for bringing in a circular transition. Policy will take time to play out on the ground, but interventions are required urgently. Investing in R&D can help come up with solutions.
- Circular economy and sustainability are sometimes costly (in the short term). Reduction in costs is a must to make circular economy a widely adopted phenomenon. Mass-market availability and affordability are crucial.
- Priority areas:
 - Mask, gloves, etc. (Personal Protection Equipment) are being manufactured and used widely. Circularity in this area is crucial, as this might lead to a waste proliferation problem. Research on reusable sanitary napkins is required too, as disposable napkins have caused proliferation of waste, especially in rural areas that have inadequate waste management capabilities.
 - An integrated approach is required for water management, cutting across industrial sectors and geographies. Both the benefits and risks of transition in water management need to be shared among stakeholders.
 - Quality of take-back/recyclable material is important if the uptake for recycled products is to be improved.
 - Dispersed dyeing/direct dyeing are preferable, as reactive dyeing (current practice) use a high amounts of dye salts, water, etc.
 - Branding of recycled yarn from clusters like Tirupur and Panipat is needed. Recycled yarn is more sustainable than virgin yarn; branding of this yarn will add value to the product and will serve as an advertising mechanism.
- Government e-Marketplace (GeM) can boost circular apparel by providing clear norms and preferences about recycled content, apparel produced with low-impact materials, etc. for public procurement.
- Policy landscape in India is oriented towards financial incentives for businesses that adopt circular or sustainable practices. Adoption of sustainability is not mandatory by regulation; there has been a realization lately that mandatory adoption is necessary.
- Replicating proven solutions across cluster. E.g. municipal wastewater reuse in Gujarat. Treated sewage water from municipalities can be used as process water in textile industries. Surat and Ahmedabad clusters already follow this model.
- Creation of a benchmark for the A&T industry will drive circular economy. Right now, there is no uniform understanding on what is “sustainable” or “circular”. A benchmark would allow manufacturers take conscious decisions related to their processes, such as alternative materials.

Conclusion

It is imperative that the Indian A&T sector transitions to circular apparel to maintain its competitiveness and resilience. This transition requires a concerted effort and support for the A&T sector. The CAPIL project has played a crucial part in furthering the agenda of circular apparel and by linking ground level requirements with potential policy considerations. It is evident that the circular apparel discussion in India is poised for growth and that this discussion needs to be tailored to different locations and clusters to be most effective. There is immense scope to build on the work undertaken in the first phase of CAPIL and to deepen the engagement in the four clusters based on the priorities defined for each location. Further, there is also opportunity to replicate this intervention in other A&T clusters across the country. It is to be highlighted that the narrative on circular apparel cannot just focus on environmental sustainability aspects but needs to deeply integrate a fair and just transition to circularity. CRB and its project partners remain deeply committed to this agenda and will continue to build on the efforts of CAPIL.

Annex: Agenda for National Workshop (17 September 2020)

Time	Topic
1500 – 1540 hours	<p>Welcome – Rijit Sengupta, CEO, Centre for Responsible Business</p> <p>Opening Remarks – Anna Watt, Program Officer, Laudes Foundation</p> <p>Remarks by Project Partners –</p> <ul style="list-style-type: none"> • Priyanka Khanna, International Expansion Manager (South Asia), Fashion for Good, • Venkat Kotamaraju, Director, Circular Apparel Innovation Factory <p>Presentation “Circular Apparel priorities – A synthesis of cluster level findings” – Devyani Hari, Director, CRB</p>
1540 – 1650 hours	<p><i>Panel Discussion – “Role of Policy in promoting Circular and Inclusive Textile & Apparel sector in India”</i></p> <p><u>Moderator:</u> Shri BN Satpathy, Senior Consultant, Office of Principal Scientific Adviser to Government of India</p> <p><u>Panellists:</u></p> <p>Shri Bharat Jain, Member Secretary, Gujarat Cleaner Production Centre</p> <p>Dr. MS Parmar, Director (Labs), NITRA</p> <p>Shri Jaidev Joshi, Consultant, National Water Mission, Ministry of Jal Shakti, Department of Water Resources, RD & GR</p> <p>Dr. Naresh Tyagi, Chief Sustainability Officer, Aditya Birla Fashion and Retail Limited</p> <p>Mr. Srihari Balakrishnan, MD, KG Fabriks Limited</p>
1650 – 1700 hours	Closing Remarks – Rijit Sengupta