Sustainability of the Cotton supply value chain
(Either all will survive or none will)

No individual segment of the textile supply chain, whether it is farming, ginning, spinning, and weaving, processing, or garmenting, can survive alone. Every segment is inter-dependent. We must learn to look at the bigger picture. History has taught us that the world remembers those great people who have “given” something to mankind and not taken from us. It is most important to have sustainable cotton supply value chain so has to benefit all the segments of the textiles industry.

**Cotton Fibre: A Truly Sustainable and Renewable Natural Resource**
- Cotton has been known to sustain for more than 5000 years of human history. Also, cotton will continue to grow for more 5000 years, which cannot be said for petroleum products like polyester.
- Every year, cotton plantation cycle renews the crop which is an unending process.
- Cotton is the most comfortable and breathable fibre compared to synthetic or blended fibres.
- Thus, cotton is an eco-friendly “Sustainable and Renewable Natural Resource”.

**What do you mean by Sustainability?**
Sustainability has become an important topic of discussion in the world, not only because it helps businesses give back to the society but also because it helps to conserve energy and remain competitive. Sustainability is no more a CSR initiative because it has its own business dimension. Protecting the environment & natural resources is a key element of sustainability.

Companies need to develop sustainable strategy that focuses on the entire supply chain starting from understanding the needs of their stakeholders, raw material procurement, product development, manufacturing, transportation, & handling finished products.

Sustainability = more efficiency, more saving, more profits.

**3 pillars of sustainability: People, Planet, Profit:**

![Diagram of Corporate Sustainability](image)

**PEOPLE:** The customer is the key to both quantifying and communicating the supply chain’s value.

Customer is king
PLANET: Sustainability is all about longevity, being able to plan ahead of the challenges of tomorrow. Protecting the environment and natural resources is a key thread of sustainability concept.

PROFIT: Consistency in sustainability will pay back rapidly in terms of financial as well as environmental growth. For example, a 50,000 sq meter “Green building” can save about USD 30,000 in electricity costs and at least USD 15000 in water costs.

Supply chain management:
Supply chain management is the backbone of an organization. It has an important role to play in moving goods more quickly to their destination. It has become the most critical business discipline in the world today. The supply chain encompasses all of the activities associated with moving goods from the raw-materials stage through to the end user like:
- Transportation
- Warehousing and inventory control
- Sourcing, procurement, and supply management
- Strategy, planning and execution of products and services

How to create a sustainable future for the textile industry

<table>
<thead>
<tr>
<th>SEGMENT</th>
<th>CHALLENGES</th>
<th>OPPORTUNITIES</th>
<th>FUTURE OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>FARMER</td>
<td>Currently cotton cultivation is unsustainable with marginalized profits</td>
<td>While the world is flooded with cotton, availability of high quality is extremely limited</td>
<td>More crop per drop. Profits will depend on amount of high quality cotton produced.</td>
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<tr>
<td>GINNER</td>
<td>Weak sourcing strategy and bale management</td>
<td>Spinning mills around the world demand high quality sustainably produced and processed cotton</td>
<td>Competition will shift to quality more than price</td>
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<tr>
<td>SPINNER</td>
<td>Inconsistency in supply of quality cotton</td>
<td>Establishing supply chain for sourcing quality cotton</td>
<td>Focus on sourcing cotton that meets consumer demand</td>
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<tr>
<td>WEAVER</td>
<td>More labour intensive and highly competitive</td>
<td>Working efficiency of machine as important as cost and utility</td>
<td>Profitability will be aligned with efficiency</td>
</tr>
<tr>
<td>PROCESSOR</td>
<td>High volume, high impact source of water pollution and consumption</td>
<td>Designing and processing products in terms of reducing environmental impacts and energy cum water consumption</td>
<td>More socially responsible and innovative</td>
</tr>
<tr>
<td>GARMENTOR</td>
<td>Supply chain transparency</td>
<td>Cotton apparel consumers demand higher quality goods</td>
<td>Sustainability and supply chain transparency will become vital for consumers</td>
</tr>
</tbody>
</table>
**GOVERNMENT** | Policy for sustainability of cotton supply value chain | Promote research and industry catering to value addition of supply chain by products | Growth of more industries for value addition
---|---|---|---
**RESEARCHER** | Poor yields, Scarcity of water, Utility of by-products | Increase productivity, reduce costs and wastages, conserve energy | Introduction of quality seeds and Eco friendly fertilizers, insecticides, pesticides, etc.

**Sustainable Apparel Supply Chain:**
REDUCE (Emission, Pollution, Water & Power consumption, input costs) – REUSE – RECYCLE (all possible bi-products & waste)

**Path to sustainability:**
1) Bi-Product Utilization (Eg. Cotton):
   - Delinting of ginned seeds
   - Protein Enrichment of Cottonseed Hull (outer covering)
   - Pre-treatment of seed for higher oil recovery
   - Use of Cotton stalks Raw Material for particle board making & briquettes

65% of Cotton ball is seeds. We can make multiple uses of seeds. Also, cotton stalk which is normally cut and thrown away or burnt, can be used as raw material for packaging & fuel.

2) Innovation and value addition to meet future consumer demand:
Futuristic consumer demand & functional requirements can be addressed by smart innovation such as Technical Textiles, use of e-textiles in medical & apparel industry, Intelligent or Smart Textiles, etc.

E-Commerce & nano technology are the future. Branding & Social media are vehicles of Success. Both the above paths of bi-product utilization & innovation will increase the value of the product compared to the cost. Also, it will help unlock the potential value of product or service.

Key to sustainability: increase consumption
Governments of both China & India are struggling to sell Cotton. Crops are expected to reduce but sale of cotton is a matter of concern for all governments. The practical solution is to increase the consumption of cotton apparel so that more cotton is consumed.

![Flowchart](image)

Everyone in the value-chain will be able to benefit if each bale of lint is tested for fibre attributes, bales are segregated based on their fibre properties with main emphasis on fineness & spun. The quality of yarn produced improves considerably, particularly for properties such as evenness, thick & thin places & neps. This in turn results in production of better quality fabric & garments.

**Future of Cotton supply chain management:**
- Cultivation of cotton by design, & not by accident.
- Meeting sustainability targets is a ‘Customer requirement’ & an ‘opportunity’ rather than a problem
- Sustainable factories will save substantially on energy & resource consumption

**Advantage for Asia:**
- Ever increasing number of consumers
- E-Commerce will lead to a significant increase in consumption
- There is an explosion of demand from the young & earning generation
COTTONGURU™’s suggestions to promote the use of sustainable cotton fibre:

- The use of tissue paper & plastic & paper bags is harmful for the environment
- Cotton handkerchiefs & cotton bags are the best & sustainable alternatives.

COTTONGURU™ has been invited in a number of Conferences in China, Vietnam & all over India as a “Distinguished Speaker” to share expert opinion on specialty subject of “Sustainability of the Cotton Supply Value Chain (Either All Will Survive Or None Will)” which is also the need of the hour.

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