



# BCI

Better Cotton Initiative



## Section 2/D Supply Chain

[www.bettercotton.org](http://www.bettercotton.org)

### Orientation

This section details how BCI will create a 100% Better Cotton bale, and connect the supply of Better Cotton to demand, putting in place a supply chain system that facilitates the procurement of Better Cotton.

### Contents

Introduction	3
Overview of the Cotton Supply Chain	3
Supply chain for Better Cotton	6
Elements of the supply chain for Better Cotton	7
Traceability	9
Purchasing procedures	9
Gins	9



**Overview of the Better Cotton System**





## INTRODUCTION

The supply chain component of the Better Cotton System is designed to allow for the Better Cotton produced by a farmer to be available to interested retailers. It will also increase transparency and traceability by developing and implementing procedures and systems as it coordinates and documents the movement of cotton from the cotton field for the ginning and pressing of a bale that contains only Better Cotton (noting that there may be some residual 'non'-Better Cotton in a bale, as there will not be a requirement to clean down the gin before ginning Better Cotton). The system can be linked to traceability systems that extend through the entire supply chain in order to connect supply with demand. Such a system allows supply chain actors more options to support the production of Better Cotton and communicate this support, thus ensuring a credible and cost-efficient supply chain system that promotes the adoption and expansion of Better Cotton.

## Overview of the Cotton Supply Chain

The cotton supply chain is long and complex, with the complexity arising from a number of characteristics, including:

1. Cotton from different sources may be combined at various stages:

- For transport of the seed cotton (i.e. before ginning)
- At the gin
- At the spinning mill
- At the fabric mill (weaving/knitting).

2. The change in the form of the seed cotton as it is transformed, in a multitude of processes, from the raw material produced by the farmer to the products sold to consumers.

3. The potential for changes in custody or ownership at each stage of the supply chain.

Because of this complexity, the supply chain component of the Better Cotton System focuses on the farm to bale-formation segment of the supply chain ("seed cotton segment of the supply chain"). This seed cotton segment of the supply chain can also vary considerably depending on regional context, as described in more detail following Figure 1.



Figure 1. Steps of the cotton supply chain for fabric-based cotton products

BCI Better Cotton segment of the supply chain		Segment of the Better Cotton supply chain where Better Cotton can be traced using proprietary track-and-trace systems					
Step	Farming Growing and harvesting of seed cotton, seed delivery to cotton gin	Ginning and Pressing Removing of trash and cotton seeds, pressing into a bale of cotton lint	Spinning Making of cotton yarn from cotton lint	Weaving / Knitting Making fabric from yarn	Processing Dyeing, finishing, washing of raw fabric	Manufacturing Creating consumer products (e.g. shirts, jeans, towels, etc.)	Retailing Distributing and selling final product
Form of cotton produced	Raw cotton, seed cotton	Lint cotton	Cotton yarn	Raw cotton fabric (grey cloth)	Finished cotton fabric	Finished cotton products	Finished cotton products
Change in form of cotton?		Yes, seed cotton to cotton lint	Yes, cotton lint to yarn	Yes, yarn to fabric	To an extent: from grey fabric to finished fabric	Yes, fabric to consumer product	No
Custody of output	Farmer, ginner, trader, contract transport	Farmer, ginner, trader	Spinner, trader	Spinner, ("warper") weaver / knitter, trader, processor	Spinner, weaver / knitter, processor	Contractor, trader, brand, retailer	Carrier, distribution, brand, retailer
Potential blending of raw material?	Yes, for delivery to gin	Yes, at gin yard	Yes, cotton from different countries blended before spinning into yarn	Yes, yarn from different sources used to make fabric			
Other Comments			Lint cotton can be spun with other raw materials also (blended yarns)	Fabrics can be woven from different types of yarn, e.g. cotton yarn and polyester yarn			



## THE SEED COTTON SEGMENT OF THE SUPPLY CHAIN

BCI has identified three distinct variations of the seed cotton segment of the supply chain: 1) supply of segregated bales, 2) coordinated supply of seed cotton, and 3) aggregated supply of seed cotton.

### 1) Supply of Segregated Bales

In this variation, the farmer sells bales of lint cotton. The farmer has their seed cotton ginned, and they retain ownership of the bales of lint cotton that are produced. The farmer may either own a gin, or contract the ginning. As the farmer has not sold the seed cotton to the gin, the seed cotton delivered by the farmer to the gin is stored and ginned separately, and the bales of cotton can be readily traced to the farmer who produced the cotton. The volumes of cotton delivered by the farmer to the gin are large enough to allow for efficient ginning of the seed cotton in separate lots ('gin runs') according to ownership. This variation is typical in countries such as Australia, Brazil, and the US.

**Figure 2:** Depiction of the supply of segregated bales



### 2) Coordinated supply of seed cotton

In this variation, the farmer sells the seed cotton to a central entity that, as well as buying and ginning the seed cotton, will generally provide a range of services to the farmer, especially provision of crop inputs and credit, and transport of the seed cotton to the gin. The farmer does not retain any interest in the bales of ginned lint cotton. As this system is typically based on clear geographic boundaries with a single organisation interested in the custody of the cotton from the farm to the gin (the central entity may hold exclusive purchasing rights for cotton), it is possible to trace the source of the seed cotton at least to a specific region. However, as the volumes of seed cotton produced by an individual farmer will generally be small, seed

cotton will be grouped according to grade, and seed cotton from a number of farms needs to be combined to allow for efficient ginning (i.e. it is not feasible to gin the cotton separately based on individual farms). This variation can typically be found in West and Central Africa.

**Figure 3:** Depiction of the coordinated supply of seed cotton



### 3) Aggregated supply of seed cotton

As with the coordinated supply of seed cotton the farmer also sells seed cotton. However, in this variation there is no central entity managing the supply chain, and the farmer sells their seed cotton to one of many village merchants and/or at local markets. Seed cotton will be grouped together according to grade, and cotton from different farmers may be mixed prior to transport to the gin, at the market yards, or at the gin. Traceability is limited in the absence of dedicated effort. Nevertheless, this variation could allow for traceability through the close collaboration of key actors (e.g. buyer, market yards, and ginner). This variation is typically found in India and Pakistan.

**Figure 4:** Depiction of the aggregated supply of seed cotton





### Other general characteristics

In the supply of segregated bales, the seed cotton is weighed upon delivery to the gin, and the bales produced from that seed cotton are also weighed. Grading and assessment of the quality of the cotton is based on the lint cotton in the bale, and both visual grades and instrument values are recorded for the lint. In the coordinated and aggregated supply of seed cotton, the buyer will weigh the seed cotton in front of the farmer using calibrated scales and visually grade the seed cotton. This grading of the seed cotton is generally done on the basis of colour, trash and moisture content.

In some regions, farmers are paid cash upon the sale of their seed cotton but rarely receive receipts or otherwise document their sales. Conversely, in other regions, farmers are not paid upon delivery of seed cotton, but are instead given a receipt that they must take to a bank to collect payment. It is not uncommon for farmers to be paid 6 to 8 months later.

Seed cotton is usually transported to the gin by truck. At the gin, the truck will drive on to a weighing platform (weighbridge) where the cotton will be weighed. The seed cotton is then stored at the gin until it is ginned. In the final stage, a bale press compresses the ginned cotton (now lint) into bales that weigh — depending on the country of origin — between 170 and 227 kilograms (375 and 500 pounds) — each cotton growing country has its own specific target bale weight. The bales are wrapped with a protective cover (bale wrap), ready for delivery to the warehouse where they are sold to various buyers.

Cotton bales are always identified in some way. The form of identification can range from hand-stencilled codes on the bale wrap, identifying either or both the origin (ginner and or state/province) and quality of the cotton in the bale (e.g. in India and Pakistan) to tags with bar-codes, that can be read by a hand-held scanner (e.g. Brazil). While the bar code provides the bale's identification number and an indication of its general origin (e.g. the ginner), the information describing the quality of the cotton is linked to the bale identification number in a computerised database.

Cotton lint is classified on a range of properties, including: grade (leaf/trash content and colour), staple length, strength, elongation, length uniformity, short fibre content and micronaire.

## THE SUPPLY CHAIN FOR BETTER COTTON

### Introduction

The supply chain for Better Cotton will link Better Cotton to the market by segregating Better Cotton from non-Better Cotton (“other cotton”) in the seed cotton segment of the supply chain. Once a bale of Better Cotton is formed, it will be given a unique identification that can then be used to track that cotton through the remainder of the supply chain using third-party track-and-trace systems. Thus, the supply chain for Better Cotton will enable end buyers to substantiate any claims they may make regarding their use of Better Cotton.

It is important to note that the BCI is not developing a labelling system whereby products containing Better Cotton can be labelled as such.

The elements of the supply chain for Better Cotton are underpinned by a number of important considerations:

- **Minimising additional costs:** The supply chain needs to take the cotton produced by a farmer involved in the BCI and make it available to interested retailers in a way that is credible, yet minimises any additional cost burdens on the supply chain participants, from farmer to ginner to spinning mill and onwards.
- **Establishment of a common system, globally:** BCI will implement one general system, irrespective of where the cotton is grown, and the nature of the seed cotton segment of the supply chain (e.g. segregated supply of bales, coordinated supply of seed cotton etc.) in order to keep things as simple as possible, and therefore to also keep the costs as low as possible. However the need for some modifications to take account of regional differences is expected.



- **Regionally flexible:** One of the key elements of the supply chain for Better Cotton is the creation of 100% Better Cotton bales, meaning that Better Cotton will need to be segregated during storage and transport. As this will require additional work on the part of all those who handle, store and process the cotton, BCI will work to ensure that the supply chain for Better Cotton is flexible enough to take into account existing, regionally specific modes of operation regarding how cotton is stored, transported and ginned, so that existing commercial quantities or lots can be maintained when handling Better Cotton. Thus an appropriate focus for implementation in Pakistan may be the village, in parts of West & Central Africa it might be an entire gin catchment, and in Brazil an appropriate focus may well be a single large farm.
- **Scope:** The BCI supply chain component will only operate up to the gin. Responsibility for tracking the bale of Better Cotton from the gin to the end consumer product will be the responsibility of the organisation interested in sourcing Better Cotton. This brings in flexibility for different end-users of cotton who have different needs, and different requirements regarding the level of knowledge they want about the cotton in their supply chain. For example, it could range from the typical organic supply chain, whereby the source of the cotton in a specific product is known, to knowing that a specific product range contains some cotton of a particular quality (such as Better Cotton) to knowing only that the cotton has come from a particular region or country. Rather than BCI trying to design a system that caters for this wide range of needs, it is considered that it should be left to the end-user to set up a track-and-trace system that suits their individual needs - especially as the end-users are the people best placed to identify the best way to work with their existing supply chains to source bales of Better Cotton.

## Elements of the Supply Chain for Better Cotton

**1. 100% Better Cotton bales:** BCI considers that differentiated bales, containing 100% Better Cotton, are required to provide the greatest number of options to the supply chain, and thus allows the greatest ability to build demand for Better Cotton. 100% Better Cotton bales are considered the minimum requirement for satisfying market demand. There will be an allowance for non-Better Cotton gin runs - that is, there will not be a requirement that the gin be cleaned down between gin runs of Better Cotton, and other cotton. BCI believes that a requirement to clean down the gin between gin runs could result in additional costs and reduced flexibility regarding the timing of ginning of Better Cotton (e.g. it might encourage the ginner to gin all the Better Cotton at the end of the season so that the gin would only need to be cleaned down once). This in turn could result in delayed availability of Better Cotton and/or delayed payment to farmers.

**2. A Better Cotton Descriptor:** As well as the bale actually containing 100% Better Cotton, BCI will seek to have the bale identified as such, for example, by adding initials to the current descriptor / bale tag / stencil.

**3. Segregation of Better Cotton from field to the bale:** As 100% Better Cotton bales are required, the Better Cotton will need to be segregated from other cotton throughout the seed cotton segment of the supply chain, i.e. at all the stages up to ginning: storage, transport etc. BCI will oversee the creation of the 100% Better Cotton bales and ginners will be encouraged to designate a dedicated area for storage of Better Cotton.

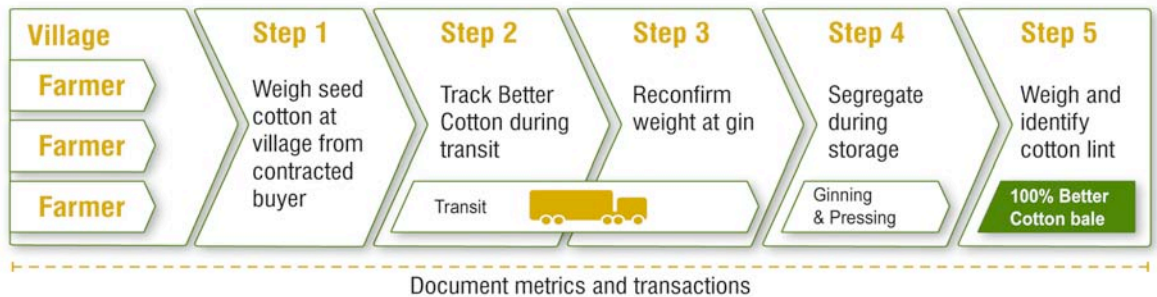
**4. Weighing of seed cotton and lint cotton:** The supply chain for Better Cotton will require that the weight of the seed cotton be recorded at the harvest stage (i.e. the cotton harvested by a farmer) and on delivery to the gin. The weight of the bales (cotton lint) produced from that seed cotton also needs to be recorded. Weighing the seed cotton at harvest stage is important to monitor yield while recording bale weights will allow for both cross-checking with the weights harvested (to ensure that the quantity of cotton



coming off farms matches the cotton being delivered to and baled by the ginner as Better Cotton), as well as information about the volume of Better Cotton being produced.

**5. Documented chain of custody:** A manifest system, such as a paper trail, or other appropriate system will be required, that documents the chain of custody of the Better Cotton, and the weights recorded at the various stages, from the farm to the gin. This chain-of-custody system needs to allow BCI and others to track cotton back to its origin in a way that can be audited by a third-party.

**Figure 5:** Depiction of the Better Cotton chain-of-custody process





### Traceability

There is increasing interest from the retail end of the cotton supply chain in better understanding the ultimate source of the raw materials used in consumer products, so that a better understanding of the entire environmental and social impact of producing these products can be developed. Such an understanding is critical to ensure that the retail end of the supply chain can develop appropriate strategies for minimising the impacts associated with selling these products. The BCI considers that the supply chain for Better Cotton will actively contribute towards this improved understanding of the source and therefore the environmental and social impacts of the cotton being used.

### Purchasing Procedures

The BCI will not play a role in market transactions — the purchase or sale of Better Cotton. Better Cotton will be sold and traded according to existing market mechanisms. Thus:

- Farmers are able to sell their Better Cotton to whomever wishes to buy it. If the Better Cotton is grown as part of a project funded by a member or partner of the BCI, while they may agree to buy the Better Cotton, there is no obligation on them to purchase all or any of the Better Cotton produced by farmers involved in the project.
- Organisations interested in purchasing Better Cotton post-ginning will need to use their own supply chain relationships. BCI will only provide information about the production and location of Better Cotton up to the ginning stage of the supply chain.

### Gins

BCI recognises that the cotton gin is a lynchpin for the supply chain for Better Cotton, and that BCI requires the support and collaboration of ginners for the supply chain for Better Cotton to work. One of the first steps in any region where the production of Better Cotton is being considered is to identify the ginners in the region, and to approach them to seek their support for the supply of Better Cotton.

The BCI considers that there are a number of potential benefits available to ginners that collaborate with the BCI and support the production of 100% Better Cotton bales. These include:

- Increased efficiency and improved quality of cotton to sell through access to seed cotton that will have been produced with attention to the issues of fibre quality, and trash and contamination management.
- Greater utilisation of ginning capacity through access to increased volumes of seed cotton, should farmers improve yields by growing Better Cotton.
- Improved market recognition through preferential purchasing of Better Cotton over conventional cotton by customers.