

# BETTER COTTON INITIATIVE 2015 MOZAMBIQUE HARVEST REPORT



Olam Gin, Mozambique  
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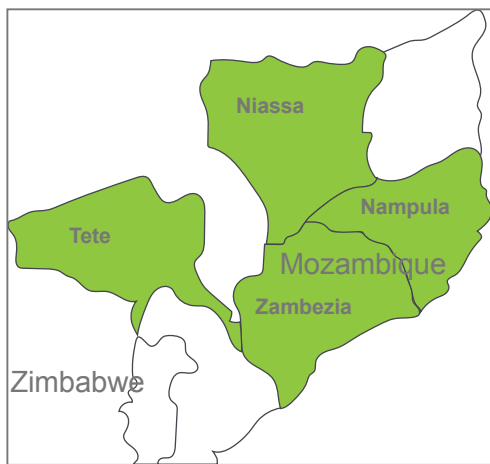
**BCI** Better  
Cotton  
Initiative

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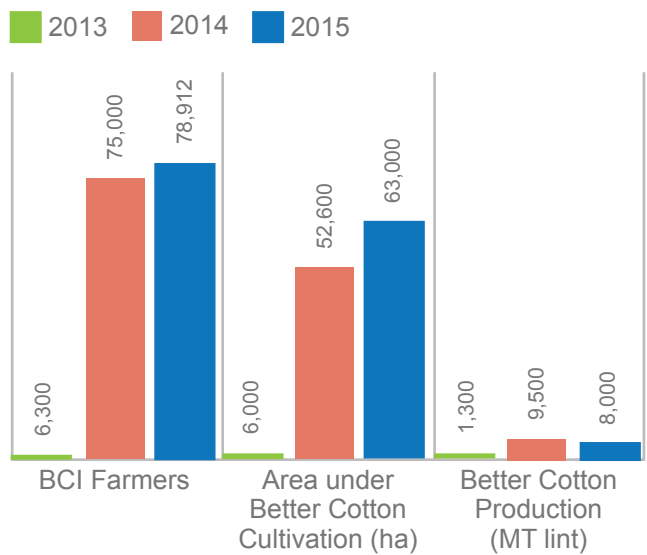
# MOZAMBIQUE 2015



## BETTER COTTON PROJECTS



## DATA OVERVIEW



## ORGANISATION



In Mozambique during 2015, **BCI's Implementing Partners** worked with **96,336 farmers** organised into 37 Producer Units.

**78,912 farmers** from 33 Producer Units earned a Better Cotton licence.

### IMPLEMENTING PARTNERS:



### STRATEGIC PARTNER:



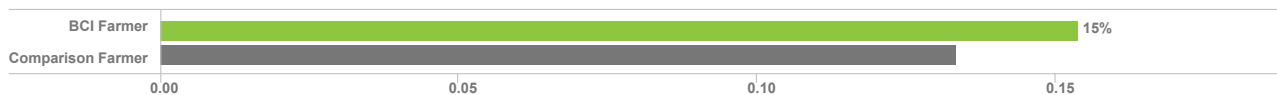
# MOZAMBIQUE: results

3rd HARVEST

During the 2015 season, flooding across the provinces of Niassa, Tete and Zambezia, and drought conditions in the province of Nampula resulted in significant crop losses for many cotton farmers. Approximately 20% of BCI Farmers lost their crop during the season. This means that several BCI Farmers have not experienced some of the benefits of BCI, such as gains in profitability that, on average, we expect to see.

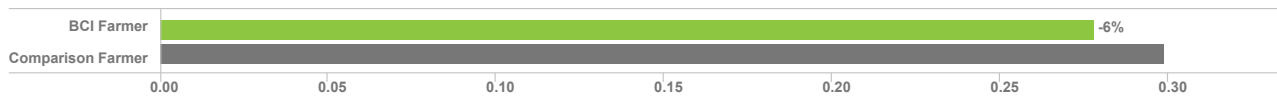
The results presented here were calculated based on data from 1,444 BCI Farmers and 595 Comparison Farmers within the province of Nampula. Due to the high proportion of BCI Farmers in Niassa, Tete and Zambezia, Comparison Farmer data was unavailable in these provinces (for a total of 25 Producer Units). Additionally, some farmers were excluded from the analysis due to crop failures caused by flooding and drought. Therefore, the results shown here are representative of 27.28% of BCI Farmers in Mozambique.

## Yield (Lint Cotton MT/ha)



BCI Farmers achieved a 15% higher yield, on average, than Comparison Farmers. The 2015 season was challenging for cotton farmers across the country due largely in part to unpredictable weather conditions. On the other hand, BCI Farmers received expert advice from the Implementing and Strategic Partners on integrated pest management and fertiliser application allowing them to better manage their crops, which contributed to a reduction in pest-related crop losses.

## Pesticide (kg/ha)



BCI Farmers applied, on average, 6% less pesticide active ingredient than Comparison Farmers. A low amount of pesticides are typically used in Mozambique, largely due to limited access. Moreover, pest pressure was limited during the 2015 season. There was, however, the presence of the cotton mealybug, among other pests. BCI Farmers benefited from expert advice from The Cotton Institute of Mozambique (IAM), BCI's Strategic Partner, who provided assistance with the development of Producer Units' plans on integrated pest management. Additionally, pest-scouting techniques were used by BCI Farmers to help them decide whether pesticide use was necessary. A combination of those factors is believed to have contributed to the decrease in pesticide use by BCI Farmers relative to the Comparison Farmers.

## Synthetic Fertiliser (kg/ha)



2015 was the first season for which BCI Farmers have reported using synthetic fertilizer in Mozambique, credited to the engagement of BCI's Implementing Partners with the Producer Units. In Nampula, 6% of BCI Farmers reported using synthetic fertilisers. The Implementing Partners facilitate better access to fertiliser inputs for BCI Farmers, when economically viable, and often use demonstration plots to show the benefits of judicious fertiliser use.

### Organic Fertiliser (kg/ha)

No organic fertiliser use was reported during the 2015 season. Cotton farmers in Mozambique typically do not raise livestock and therefore do not have access to manure inputs. The availability and cost of organic fertilisers continue to be barriers to adoption. On the other hand, intercropping and crop rotation techniques were adopted by BCI Farmers, all of which are part of a holistic approach to enhancing the health of the soil without relying solely on synthetic nutrients.

### Water (m3/ha)

In Mozambique, cotton production is rain-fed. No water was used for irrigation. However, the Implementing Partners promote various sustainable water management techniques adapted to local contexts. For example, mulching and contour farming are conservation techniques that are used both to retain soil moisture and prevent water loss. These approaches also help to prevent run-off from the fields, thereby helping to safeguard local water sources from pollution.

### Profit (per ha)



BCI Farmers reported 16% higher profits, on average, than Comparison Farmers. Prices for pesticides remained stable during the 2015 season, and fertiliser inputs were only used by BCI Farmers when they were determined to be economically viable. In general, attaining significantly higher yields, also combined with the use of fewer inputs than Comparison Farmers, contributed to higher profits for BCI Farmers.

### Awareness about Child Labour Issues

As mentioned in previous Harvest Reports, there is a lack of secondary schools in rural areas of Mozambique. It will take time, resources, and political will to address this structural challenge affecting families who derive their livelihoods from small-scale agriculture. BCI's Implementing Partners continue to raise awareness among participating cotton farmers across the cotton-growing regions about the importance of education as long as it is accessible. The Implementing Partners also share information on the limits to the help young people can provide on family farms, to ensure the health and well-being of those youth while they learn valuable farming knowledge and skills. BCI is working with its Implementing Partners to improve the measurement of farmer awareness of child labour issues and will provide an update on progress in upcoming reports.

## SUMMARY OF RESULTS FOR SMALLHOLDER AND MEDIUM FARMS IN MOZAMBIQUE. BCI FARMERS AGAINST COMPARISON FARMERS.

Yield	▲ 15%
Profit	▲ 16%
Pesticide Use	▼ 6%

# REPORTING ON RESULTS ACHIEVED ON BETTER COTTON FARMS

From the first Better Cotton harvest, we have emphasised the importance of monitoring results achieved by farmers participating in the Better Cotton System. As such, we have built annual reporting into the requirements of the Standard. The reason is twofold:

» Inviting every farmer participating in BCI projects to record data related to agricultural inputs, costs and income earned from cotton is part of building monitoring and learning capacity at farm and community levels.

» At BCI, we believe that producing cotton more responsibly will lead to improved environmental, economic and social outcomes. One step toward measuring some of these changes is collecting annual farm-level data.

The results presented in this Harvest Report compare country averages of key environmental, economic and social indicators achieved by BCI Farmers to comparable farmers in the same regions who operate outside of BCI projects. We refer to these latter farmers as the Comparison Farmers.

RESULTS INDICATORS	MEASUREMENT
<b>1. Pesticide use</b>	<b>% difference between BCI Farmers and Comparison Farmers in kilograms (kg) of active ingredient applied per hectare (ha)</b> Pesticides include insecticides, herbicides, acaricides, fungicides as well as all substances used as defoliant, desiccant or growth regulators. We collect the type and concentration of active ingredient applied because this enables calculation of the chemicals contained within pesticides that are used on cotton farms.
<b>2. Fertiliser use</b>	<b>% difference between BCI Farmers and Comparison Farmers in kilograms (kg) of synthetic and organic fertiliser applied per hectare (ha)</b> Farmers report on the category and exact composition of each fertiliser used. We store this information for use in future, more detailed studies. The long-term objective is to ensure an optimal application of nutrients that matches the needs of the crop, maintains long-term soil health and structure, makes economic sense, and minimises off-farm pollution (notably eutrophication through nutrient run-off or leaching) and GHG emission (notably through nitrous oxide emissions and industrial nitrogen fixation).
<b>3. Water use for irrigation</b>	<b>% difference between BCI Farmers and Comparison Farmers on cubic metres (m3) of water used for irrigation per hectare (ha)</b> Use of water for irrigation is only measured on farms that irrigate. A cotton crop is considered irrigated if it receives one or more irrigations in a season. Rain-fed farms are excluded from the analysis.
<b>4. Yield</b>	<b>% difference between BCI Farmers and Comparison Farmers on kilograms (kg) of cotton lint produced per hectare (ha)</b> Total production at farm level is expressed in kilograms of seed cotton. We convert the unit of measurement to lint by multiplying the amount of seed cotton in kilograms by the average gin turnout ratio (set separately for each country).
<b>5. Profitability</b>	<b>% difference between BCI Farmers and Comparison Farmers on net income earned from cotton per hectare (ha)</b> This is calculated as the gross income received from the sale of the cotton crop minus the total variable costs of growing the cotton crop.

RESULTS INDICATORS	MEASUREMENT
<b>6. Elimination of child labour A</b>	<p><b>Existence of partnerships established by or on behalf of the Producer Unit with credible local organisations to specifically address child labour</b></p> <p>Partnerships, in the context of this indicator, are defined as documented working arrangements with a third party with expertise in either child labour remediation, child rights or supporting access to formal schooling. The partnership must include regular contact and joint activities that relate directly to the achievement of BCI Decent Work Criteria on child labour. The existence of a partnership with local specialist organisations is measured at the level of the Producer Unit working with smallholders and medium farms.</p>
<b>7. Elimination of child labour B</b>	<p><b>% of BCI Farmers who can accurately differentiate between acceptable forms of children's work and hazardous child labour</b></p> <p>This indicator is measured using country-specific pictorial materials representing typical farm activities and making the distinction between those defined as hazardous labour under national law, compared to activities considered acceptable within the context of occasional light work performed within the family farming context.</p> <p>During collection of results, Field Facilitators conduct a test with each selected farmer. Each farmer is given a score based on his/her ability to make the distinction. The indicator is then calculated as the percentage of farmers who can accurately differentiate between child work and child labour.</p>

Indicators 1 to 4 are reported across all contexts, regardless of country, farm size or technology used on the farm. With regard to the improvement of livelihoods, however, we are primarily concerned with supporting and monitoring for smallholders and medium farms. The profitability indicator (a first step in understanding the economic situation) is therefore only collected from and communicated about smallholder and medium farms. Similarly, in regards to the indicators on the elimination of child labour, our greatest concern is monitoring and supporting progress in geographical areas typically dominated by family smallholding and medium farms. Therefore, these social indicators are not reported by large farms.

Due to differences in local conditions, we do not compare indicators between countries. Results are also only presented for one harvest year because within a country or a sub-area of a country annual results are affected by external factors that change year-on-year. Factors like rainfall, pest pressure and market price mean that comparing results across two to three years may not allow meaningful conclusions to be drawn. We are developing processes for longitudinal analysis of results in

countries that have been participating in Better Cotton for more than three years. With time, we will be able to move in this direction.

### FARMER-REPORTED RESULTS

The starting point for all data collection and reporting associated with the results presented here is the information recorded by all farmers during the season in their Farmer Field Book or equivalent record keeping system. We provide a Farmer Field Book template indicating the type of information that is to be recorded by farmers. In contexts where a majority of participants have limited literacy skills, Field Facilitators assist farmers in tracking and recording the relevant information. The Farmer Field Book can also be in the form of a computerised record keeping system in large, industrialised farms.

### SAMPLING APPROACH FOR DATA COLLECTION

During the harvest years between 2010 and 2012, BCI collected Results Indicator data from all farmers participating in the Better Cotton System. As Better Cotton expands—and the number of smallholders



rapidly increases—the costs and effort associated with collection and management of data from hundreds of thousands of farmers become increasingly complex.

Data from all medium and large farms is still collected. For smallholders, we developed a sampling methodology, which was reviewed and endorsed by researchers at Wageningen University in the Netherlands. The methodology includes the collection of data from a representative sample of Learning Groups that are randomly selected by BCI on a yearly basis at the end of the season. The Farmer Field Book is maintained by all farmers for learning purposes.

On occasion, data was excluded from the analysis because it was assessed to be incomplete or because no comparison data was available for a Producer Unit. These instances are noted in the Harvest Report for each country with a percentage that indicates how representative the data is with respect to the BCI Farmer population.

### COMPARISON DATA

Each Producer Unit and large farm we work with is responsible for collecting data from Comparison Farmers. These farmers can live in the same community as BCI Farmers, in neighbouring communities or in other nearby locations. Their key characteristics make them as similar to project farmers as possible. Comparison Farmers should present similar socio-economic characteristics as BCI Farmers. The characteristics of their farm should also be taken into account:

- » number and type of labourers
- » size
- » irrigation system
- » general soil fertility
- » crops grown
- » experience in growing cotton

### A NOTE ON DATA PREPARATION

The data reported from the farm level is compiled and goes through a multiple-step cleaning process. BCI uses country-specific expected ranges for each

indicator to check for outliers using data analysis software. Any figures that appear to be made in error are reviewed by BCI's Implementing Partners and either corrected or excluded.

Once the data is cleaned, the farm-level results are reported as weighted national averages, comparing the averages of BCI Farmers to those of Comparison Farmers. The weighting is a standard statistical analysis method, done so that the proportions of each sub-country region represented in Better Cotton projects are similar in both the BCI Farmer group and the Comparison Farmer group at the country level.

### OUTCOME EVALUATIONS AND IMPACT ASSESSMENTS

In addition to the data reported by farmers, BCI contracts researchers or consultants to conduct independent Outcome Evaluations. These studies allow for a deeper examination of results using additional qualitative assessments, focus group discussions, and other approaches. The findings of these evaluations allow us to corroborate—or not—the data we receive from farmers via our partners, and leads to a deeper understanding of how BCI's and its partners' interventions, coupled with the particular local context, lead to outcomes and results.

BCI encourages and supports long term, scientific impact assessment studies conducted by expert researchers on an independent basis. We are currently collaborating on two multi-year impact assessment projects. One study led and conducted by researchers from the Copenhagen Business School started in 2014 and will yield its first results in 2016. A second research study, commissioned by ISEAL, is conducted by a consortium of research organisations under the leadership of the Natural Resource Institute of the University of Greenwich. This study, which started in 2015, will extend to 2018. The baseline research has been conducted and the full report is available [here](#). For an explanation about the research design and methodology used, click [here](#).