



# India Impact Report

2014-2023





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# Introduction



# Better Cotton

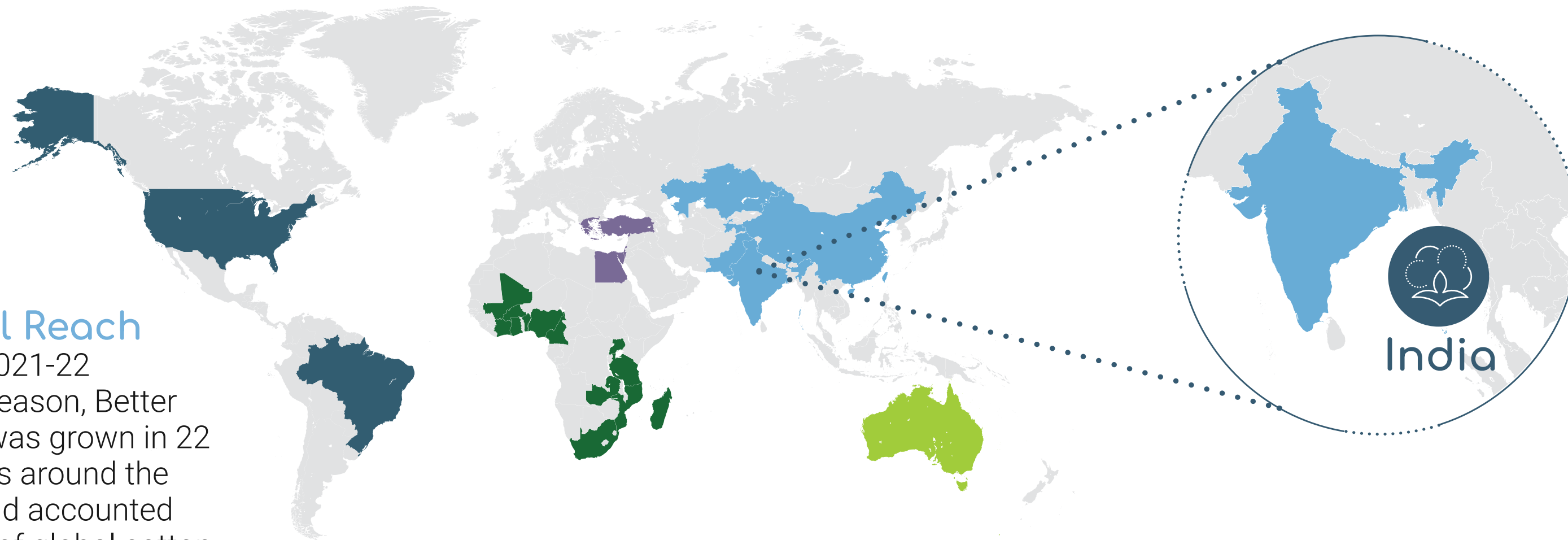
## A Global Programme with Local Impact

**Vision**  
A world where all cotton production is sustainable.

**Mission**  
To help cotton communities survive and thrive, while protecting and restoring the environment.

### Global Reach

In the 2021-22 cotton season, Better Cotton was grown in 22 countries around the world and accounted for 22% of global cotton production.



Licensed farmers\*\*

996,565

1.3 million

Hectares of land\*\*

Tonnes of Better Cotton\*\*

863,480

India

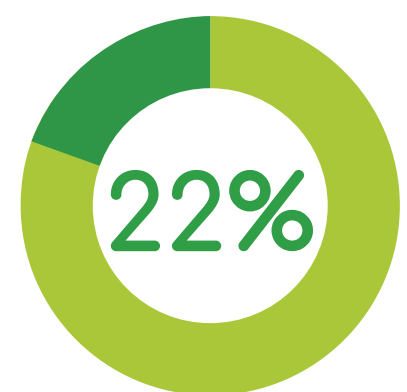
### Better Cotton in India

Since the first Better Cotton harvest in India in 2011, the country has been a pioneering force within the global Better Cotton Programme.

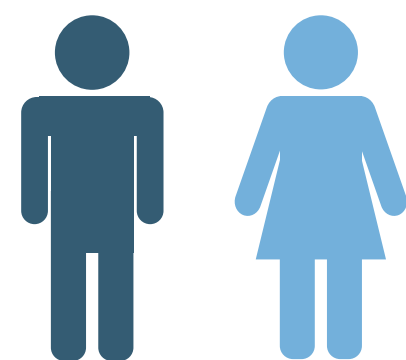
Starting with 22,314 participating farmers, the programme has expanded rapidly to nearly one million farmers as of the 2021-22 cotton season – the largest number from any Better Cotton growing country.

These farmers grow on almost 1.3 million hectares of land spread across seven states, with the crop serving as a core component of many local economies.

In the Better Cotton India Impact Report, we examine Results Indicator (RI) data from the 2014-15 to 2021-22 cotton seasons, as well as programmatic information up to 2023, to identify trends in the results of Better Cotton in India.



of the world's cotton was Better Cotton\*



2.2 million licensed Better Cotton farmers\*



5.4m metric tonnes of Better Cotton produced\*



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# Our India Programme

## Strengthening Capacity

Helping farmers survive and thrive is central to our mission at Better Cotton. Achieving that mission starts with strengthening the capacity of farmers on the ground to adopt more sustainable practices.

Our Capacity Strengthening Programme in India puts farmers and farm workers front and centre.



In the 2022-23 cotton season, Better Cotton Programme Partners provided around 2,000 trainings, replicated within smaller learning groups of participating farmers, that reached almost 1 million farmers on topics like Integrated Pest Management, child labour prevention and soil health.

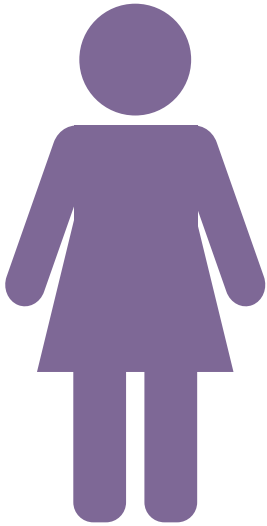
### Working with Partners

Our 13 current Programme Partners in India provide training to Better Cotton Farmers on more sustainable practices that help them reduce their input costs, increase their yields and fibre quality and safeguard their wellbeing.

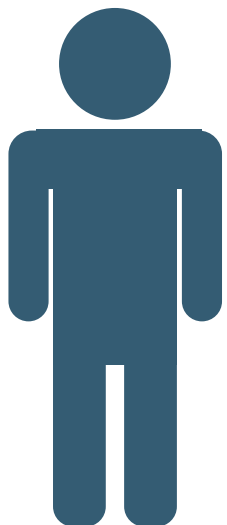
### Our Partners

- 🌱 Aga Khan Rural Support Programme India
- 🌱 Ambuja Cement Foundation
- 🌱 Arvind Ltd.
- 🌱 Action for Food Production (AFPRO)
- 🌱 Basil Commodities Pvt. Ltd. (Basil Group)
- 🌱 CottonConnect India
- 🌱 Deshpande Foundation
- 🌱 Development Support Centre
- 🌱 Lupin Human Welfare and Research Foundation
- 🌱 Vardhman Textiles
- 🌱 Spectrum International (SIPL)
- 🌱 Welspun Foundation for Health and Knowledge (WFHK)
- 🌱 WWF India

During the 2022-23 cotton season, around



190,000 female workers



200,000 male workers

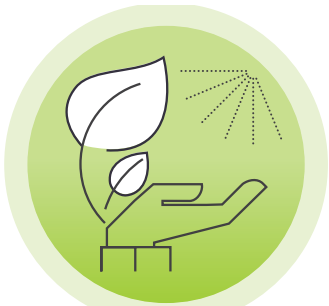
received training on topics like health and safety, decent work and more.



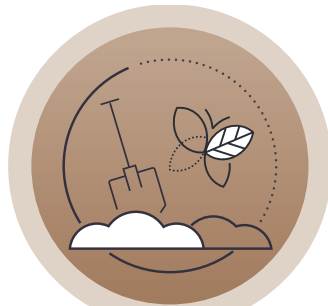
management



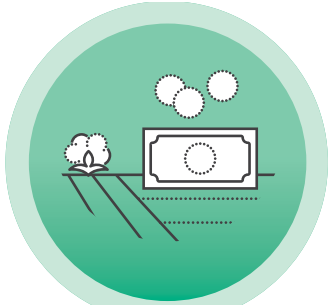
decent work



crop protection



natural resources



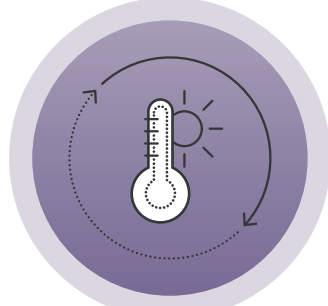
sustainable livelihoods



gender equality



fibre quality



climate change mitigation and adaptation

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# Impact in Action

## Bapu Rama Marathe, Dahyane village, Dhule, Maharashtra - Better Cotton Farmer since 2018

Bapu owns five acres of land, two of which are cotton cultivated. Over-fertilisation and indiscriminate sprays of pesticides have been traditionally used by farmers in his region to boost their yields in cotton, which had a negative impact on the crop and added to farming expenses. The region also suffers from the impacts of climate changes including uneven rainfall pattern, high temperatures and lack of ground water availability, which has an impact on soil and crop health.

Attending Better Cotton trainings has helped Bapu to apply innovative farming methods to overcome these challenges. He learnt how to make bio-preparations and actively applied it on his field over the season.

He now prepares different natural pesticides like Jivamrut, Amrutpani, Panchgavya and homemade amino acid and humic acid to apply in his fields. In the 2020-21 cotton season, Bapu did not use any chemical spray on his field and he performed soil testing on his farms to ensure correct treatment for his crop.

Bapu did not use any chemical spray on his field and he performed soil testing on his farms.



Photo Credit: Better Cotton/Lupin Foundation

“ Before joining Better Cotton, I didn't take soil testing seriously. After interacting with the Field Facilitator from Better Cotton, I learnt about soil testing and its practical benefits for a smallholder farmer like me.

Now, I apply fertiliser doses according to the soil requirement of my farm. This practice increases my production, improves soil fertility, enhances availability of nutrients in soil and decreases my cost of cultivation. ”

- Bapu Rama Marathe, Better Cotton Farmer

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# Investing In India Farming Communities

## Financing capacity strengthening

Positive change at the field-level cannot happen without the right funding and investments being available to Better Cotton Farmers and farming communities.

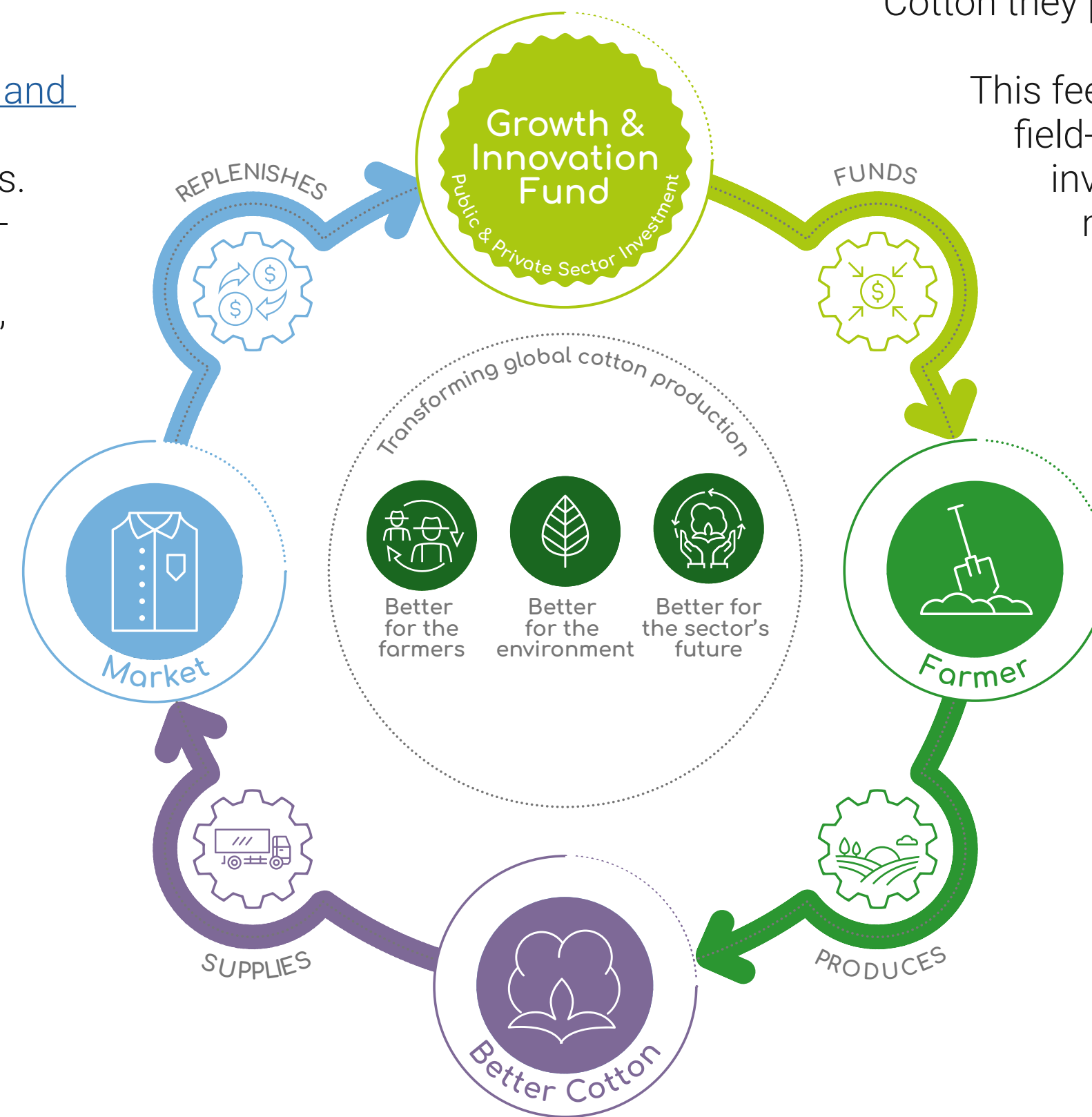
That's why we started the [Better Cotton Growth and Innovation Fund](#) in 2016 to drive investments to Better Cotton Farmers and farming communities. The fund identifies, supports and invests in field-level programmes and innovations, mobilising contributions from Retailer and Brand Members, Programme Partners and public and private donors.

In the 2021-22 Season:

**996,565**  
Participating farmers

**1,352,286**  
Hectares harvested

**863,480**  
Tonnes of Better Cotton



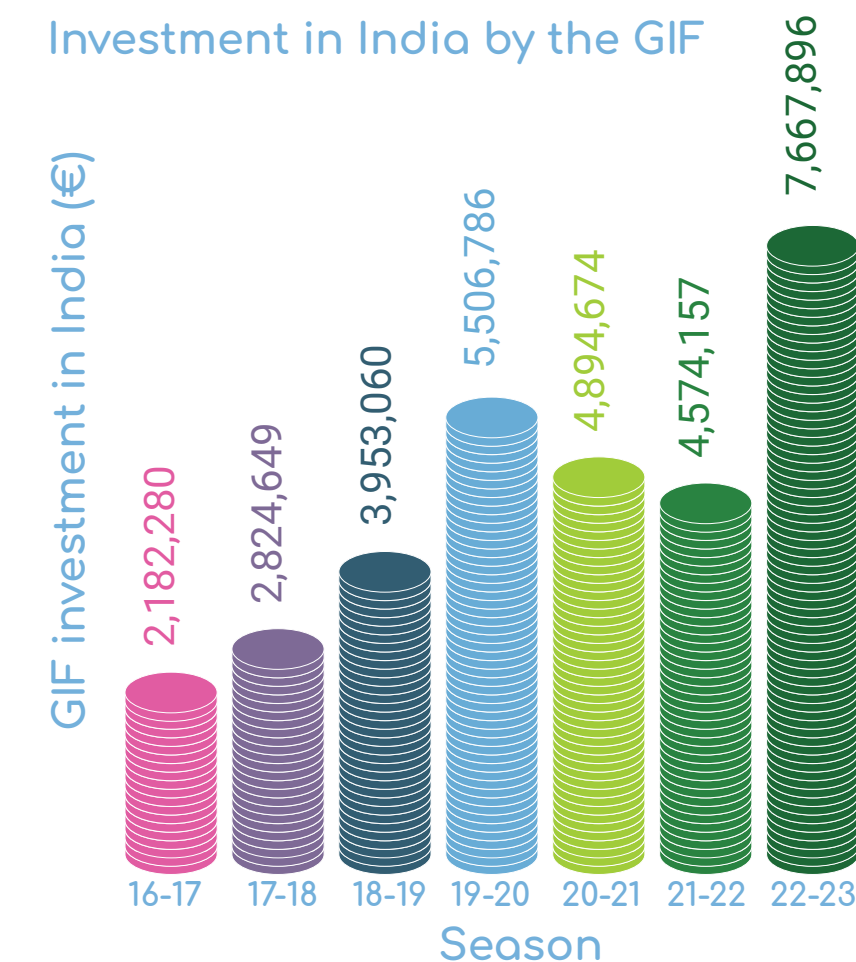
## How does the Fund work?

Better Cotton Retailer and Brand Members contribute to the Fund through a fee-based levy dependent on the volume of Better Cotton they procure and declare (Volume-Based Fee or VBF).

This fee enables brands to directly and efficiently support field-level programmes. Additionally, the Better Cotton GIF invites institutional donors and private foundations to match the fees contributed by the private sector.

The Better Cotton GIF also encourages programme partners to contribute to their own projects.

Investment in India by the GIF



Accumulated Total\*:  
**€31,585,502**

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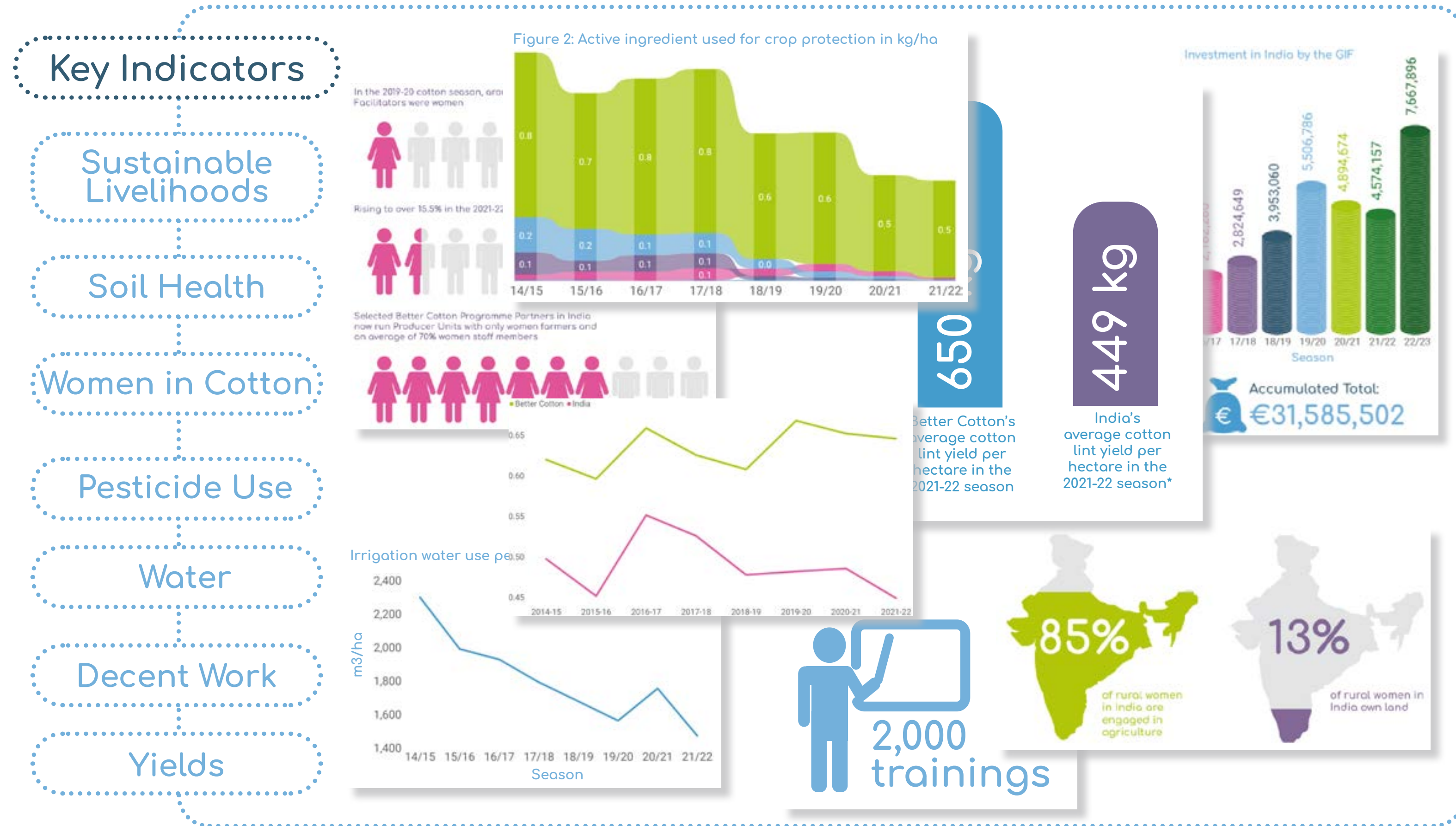
# Measuring Impact

This report represents a departure from Better Cotton's past results reporting in which we compared Better Cotton Farmers' average results to those of non-participating farmers growing cotton in the same areas during the same season.

Over the past 18 months, Better Cotton has overhauled its data management system to examine the performance of Better Cotton Farmers over a multi-year timeframe with enhanced contextual reporting.

This, combined with data from the past eight seasons, **enables us to share trends for Better Cotton Farmers.**

Due to the myriad natural and other external factors affecting agriculture and labour dynamics, we cannot say that all trends are happening because of Better Cotton. In many cases, however, we have evidence that the programme, in partnership with local expert organisations, is contributing to positive change.





# Trends

## Better Cotton Farmers in 2014-15

- High use of Highly Hazardous Pesticides, and higher use of permitted pesticides
- High yields in comparison to the Indian average
- Higher irrigation water use
- More input costs
- Less farmer profit
- Limited resources for civil society and farmers to support decent work

## Better Cotton Activities

- Trainings
- Investment
- Collaboration with Programme Partners
- Demonstration plots
- Working with knowledge partners
- Awareness campaigns
- Data analysis
- Feedback from assessments of field performance

Contributed to

## Better Cotton Farmers in 2021-22

- Greatly reduced usage of Highly Hazardous Pesticides
- Reduced use of permitted pesticides
- Even higher yields in comparison to Indian average
- Reduced irrigation water use
- Lower production expense
- Higher farmer profit
- Increased opportunity for civil society and farmers to support decent work

*“India is a crucial cotton-producing country and has been a priority for us for many years. So, we at Better Cotton are hugely encouraged by these impressive results from our India programme.”*

*From pesticides to yields, water to decent work, these results show the considerable impact that giving farmers and farm workers access to the necessary tools, training and support can have on the sustainability of the cotton sector.”*

*Jyoti Narain Kapoor,  
India Country Director, Better Cotton*



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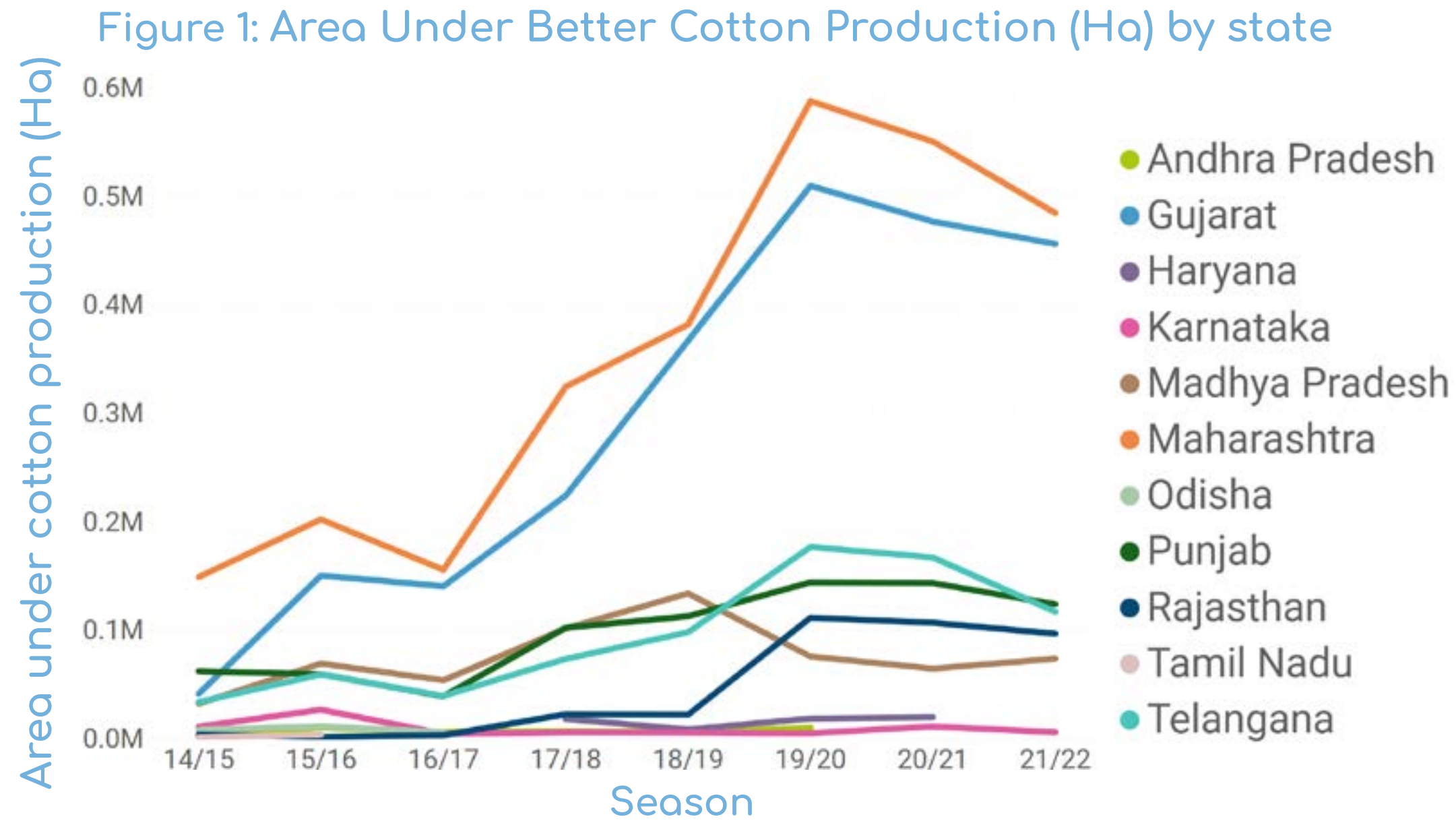
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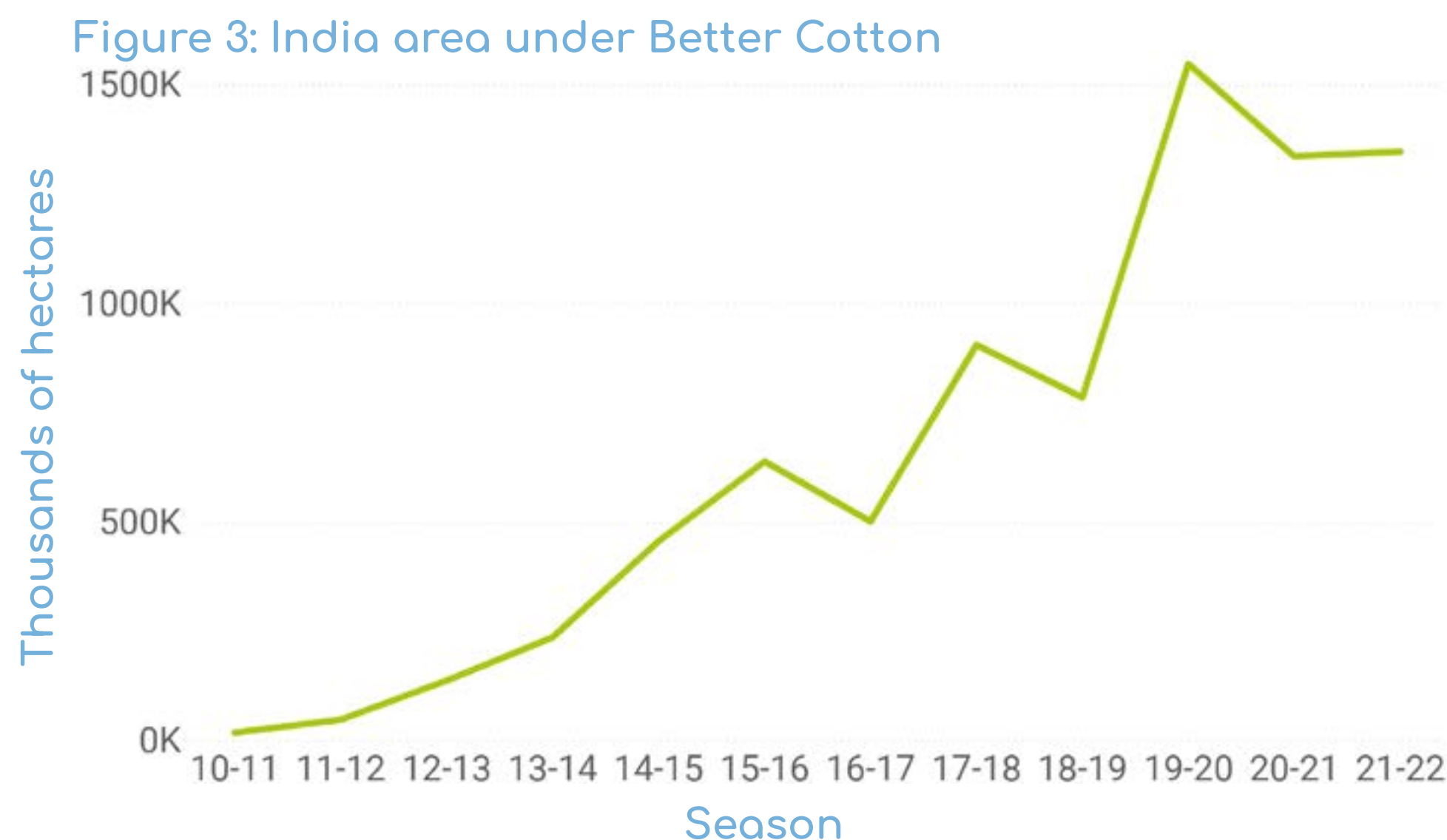
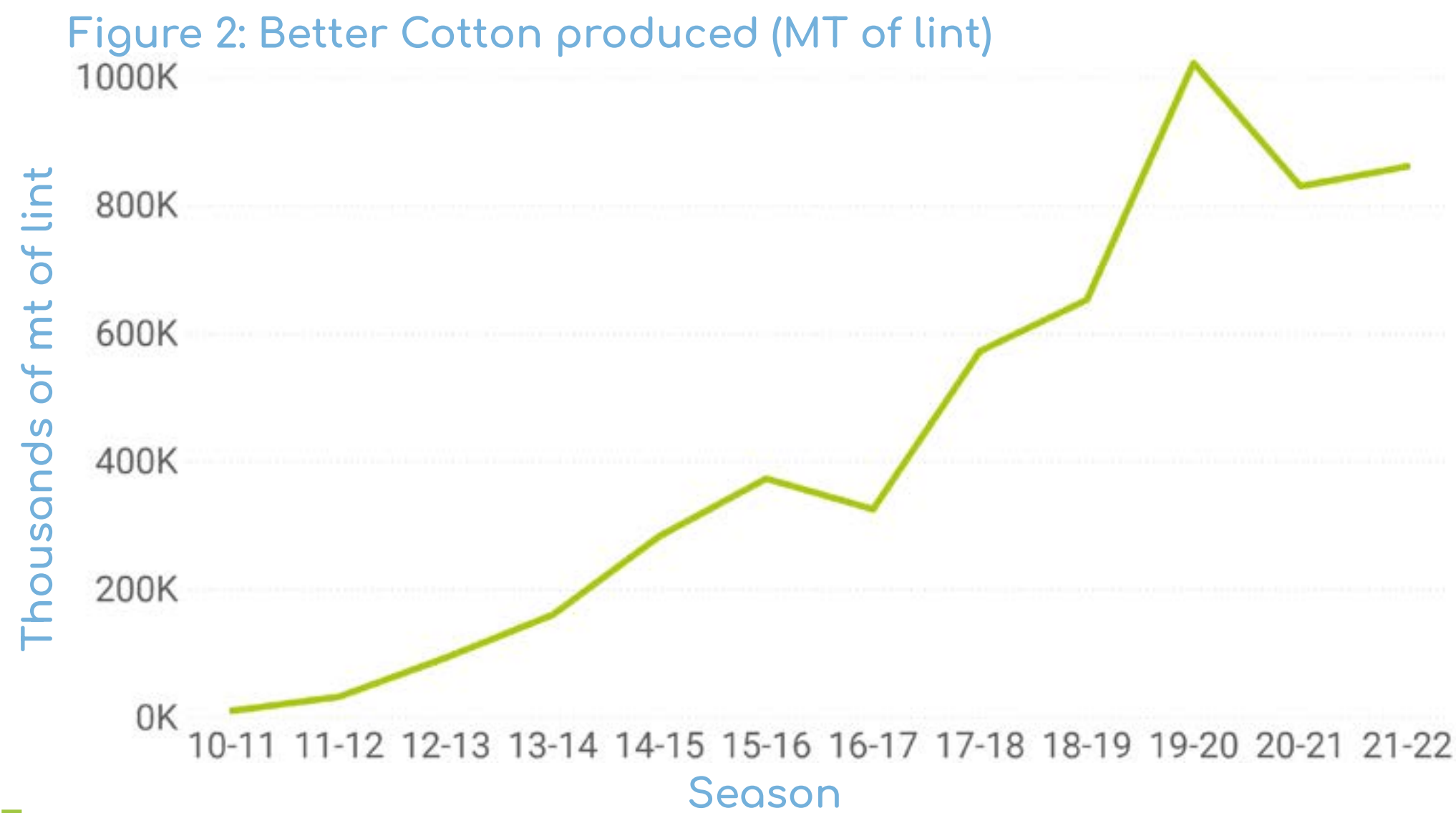
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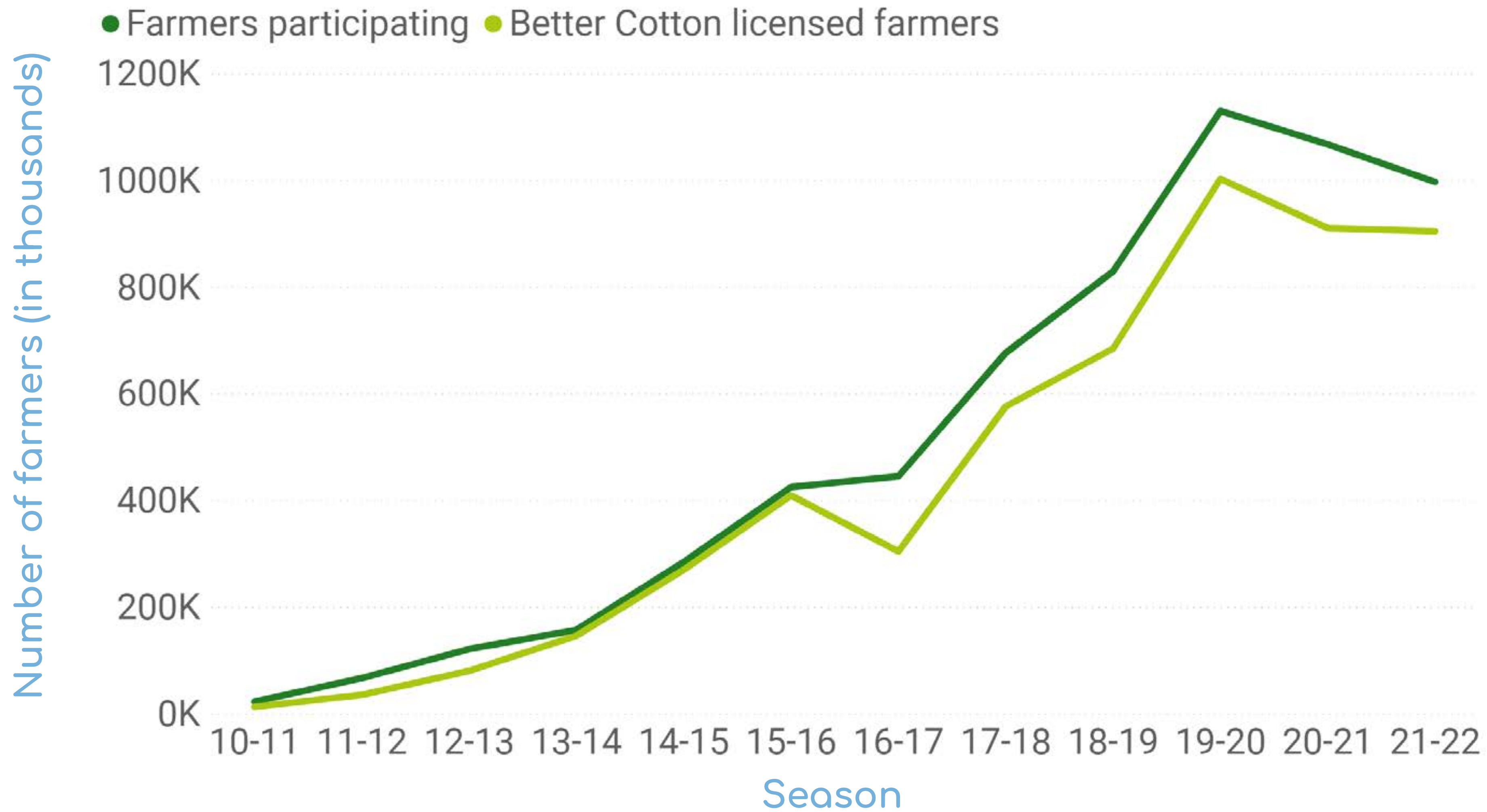
The decline in licensed farmers after the 2019-20 cotton season can be attributed to a combination of factors, including the challenges posed by the Covid-19 pandemic as well as the strategic decision — outlined in our 2030 Strategy — to prioritise generating deeper impact in the communities we are already reaching, rather than pursuing rapid scale-up.



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Figure 4: Number of Farmers







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# Yields



# Yields

## A Long-Term Indicator of Success

Yield is arguably the most important metric to cotton farmers around the world. Without good yields and a fair price, farmers struggle to make ends meet and provide for their families.

**That's why Better Cotton and our partners support farmers to adopt good agricultural practices that can help them not only boost their yields but also make them more resilient to fluctuations from changing weather patterns, pests and economic instability.**

Some of these practices are related to maintaining healthy soils that can retain water and provide the needed nutrients for cotton to thrive. Others include adapting planting practices to cope with climate change and making efficient use of inputs like fertiliser.

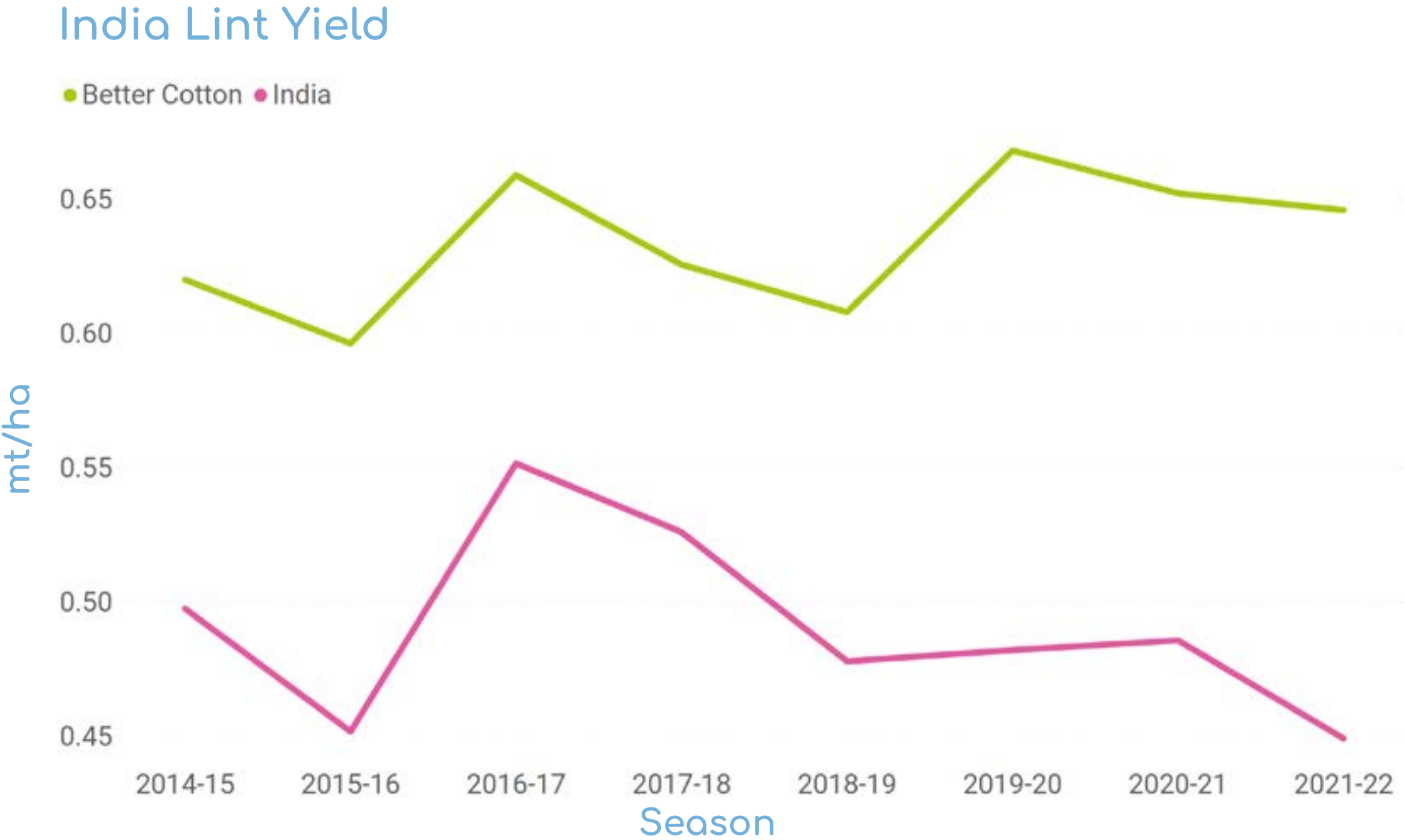
While analysing yields provides valuable insights, it's important to note that many years are needed to observe trends, as external factors like weather variability and pest pressure can influence results.



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# Better Cotton's Impact on Yields in India



In 2021, **Better Cotton lint yields in India rose to 650 kg per hectare, which is significantly higher than the national average of 449 kg per hectare.** These results are highly positive, and we will continue to monitor this important indicator for livelihoods and strength of the sector. We will continue to move forward and aim to bring yields in line with or beyond the global average of 764 kg per hectare, we are paying attention to variations in the number of Better Cotton Farmers by region, as well as other fluctuations like the proportion of irrigated farms in an area, which can influence results.

**449**  
kg per ha

**India's**  
average cotton  
lint yield per  
hectare in the  
2021-22 season

**650**  
kg per ha

**Better Cotton's**  
average cotton  
lint yield per  
hectare in the  
2021-22 season

Figure 1: India as the weighted average of India official regional averages weighted by the area proportion of Better Cotton. India national cotton lint average was calculated using the state average from official statistics from the Committee on Cotton Production and Consumption and where aggregated into a national figure considering Better Cotton's area size in each state.

Note that India's national cotton lint average was calculated using the state average from official statistics from the Committee on Cotton Production and Consumption and where aggregated into a national figure considering Better Cotton's area size in each state.



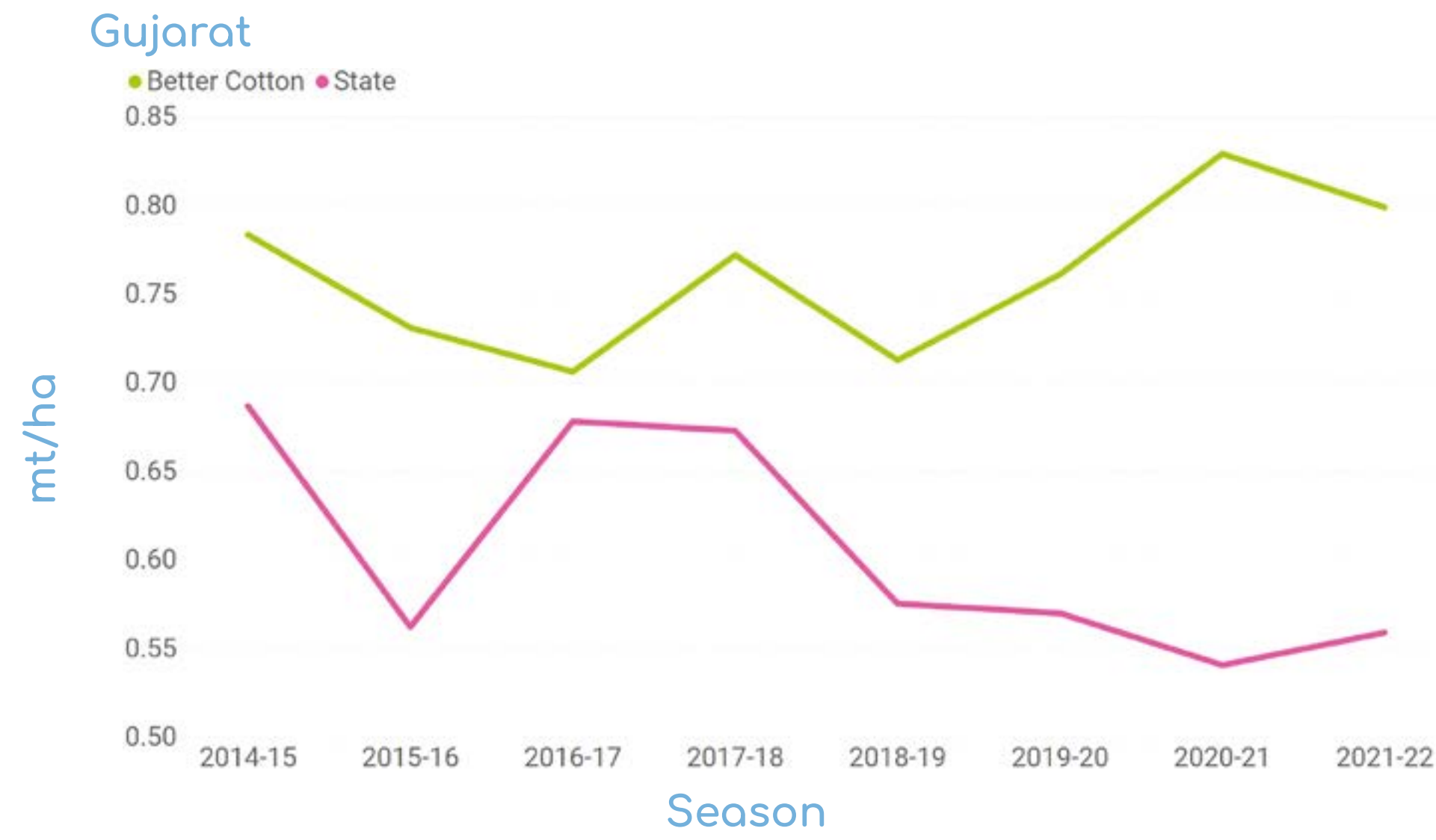
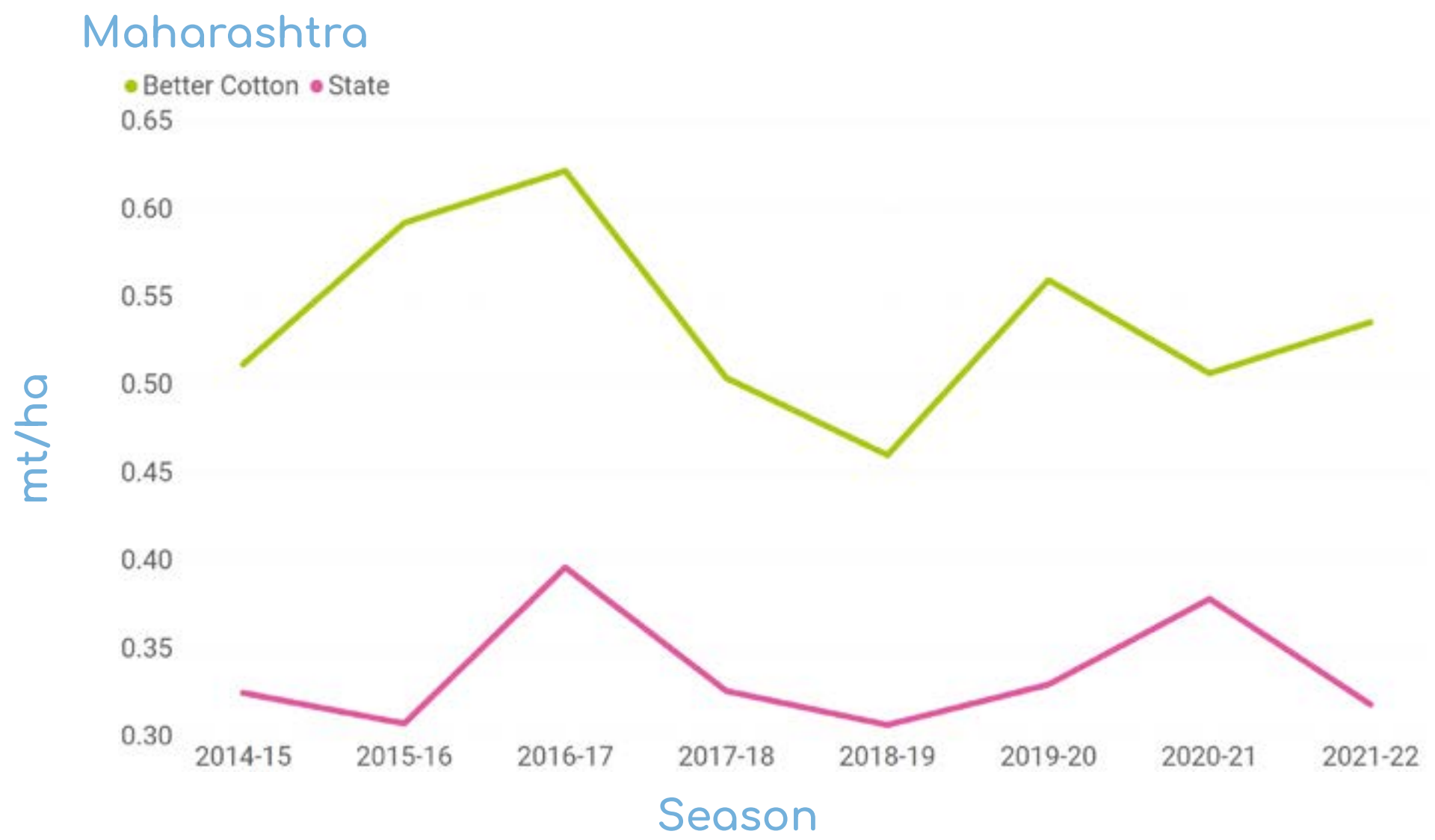
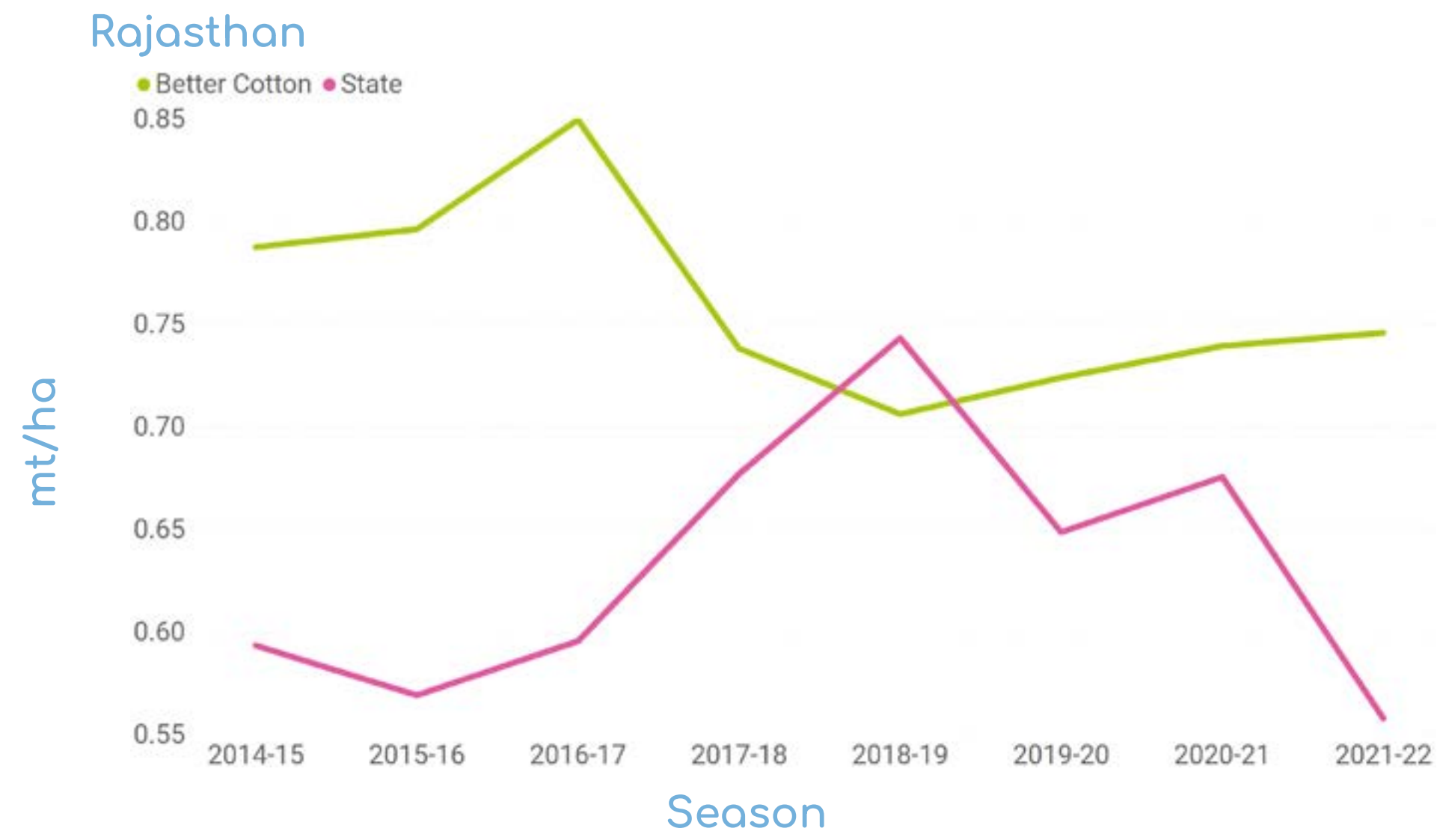
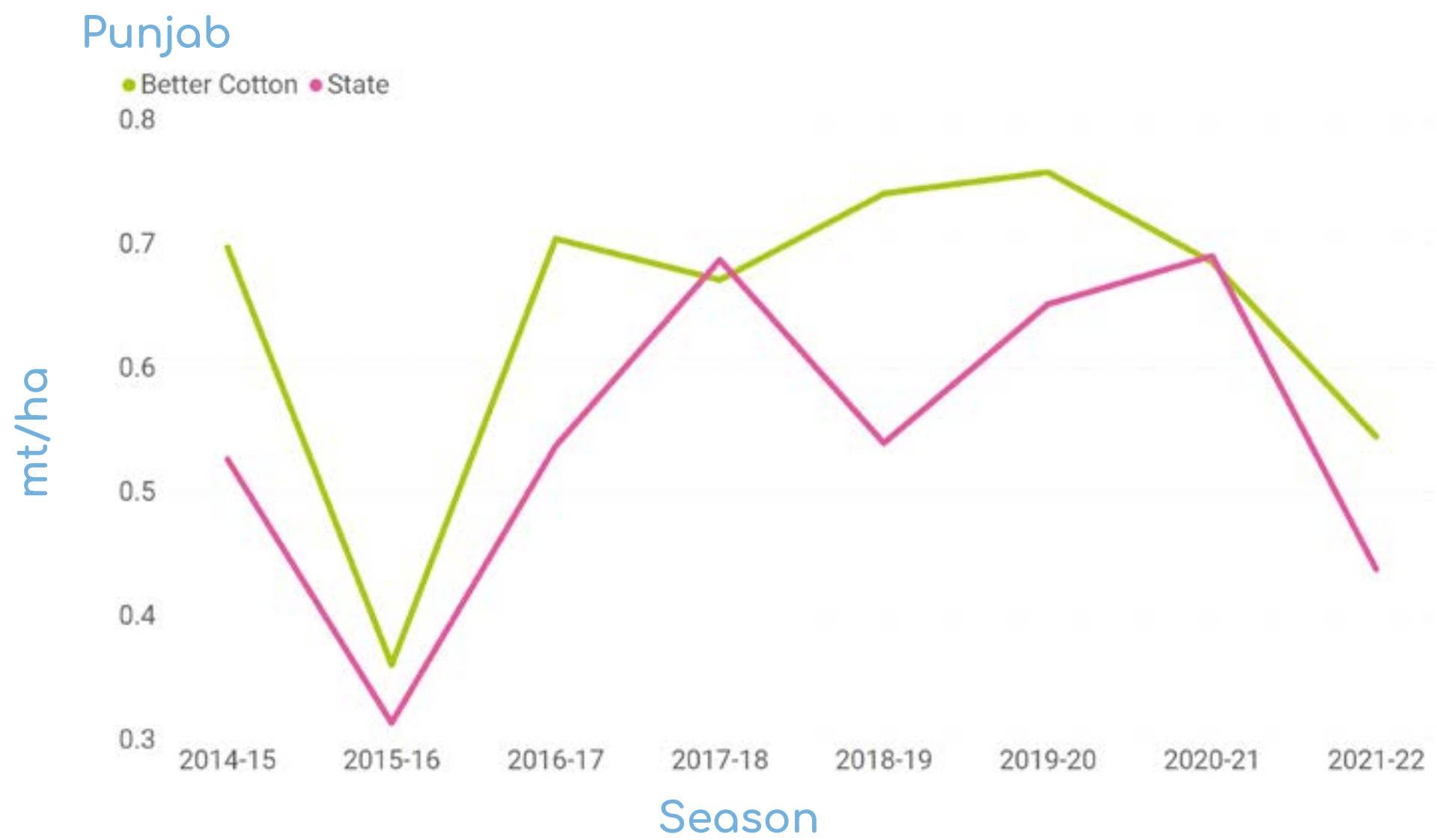


Figure 2: Lint yield for better cotton vs official average estimates for the state.

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(In the photograph - Vashram Dabhi, Field facilitator & son of a Better Cotton farmer, Wankaner, Morbi, Gujarat)

With a large proportion of Better Cotton Farms, Gujarat stands out with consistent increases in average yields over the past seven harvest seasons. Feedback from Better Cotton Farmers in the state echo this trend:

*“ I used to apply a large amount of pesticides, including Monocrotophos. As a farmer, I had no idea about HHPs. Now, I know better and have completely stopped using them and always use Personal Protective Equipment while spraying. In addition, by using farmyard manure and correct spacing between cotton plants, I have increased my yield. After joining the Better Cotton Programme, I also have better access to programmes from local agriculture departments and institutions. The programme has made me more aware of the latest technologies and concepts. ”*

Vashram Dabhi, Better Cotton Field Facilitator and son of a Better Cotton Farmer in Gujarat

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# Water



# Water

## Optimising Use for Farmers and Communities

Caring for our water resources — both locally and globally — is one of the biggest sustainability challenges of our time. While cotton has been labelled a ‘thirsty crop’, the reality is that it is [relatively drought tolerant](#) and entirely rainfed in many regions where it grows. However, “approximately half of Better Cotton farmers provide some sort of irrigation, and as freshwater becomes an increasingly scarce and precious resource, it is critical to ensure it is used responsibly.



The Better Cotton Principles and Criteria (P&C) provides farmers with a comprehensive framework for using water in a way that improves yields while conserving resources for them and their communities.

Better Cotton Programme Partners in India develop Water Stewardship Plans at Producer level that help Better Cotton Farmers map and understand their water resources, adopt efficient irrigation practices to optimise water productivity and more. Strategic local partnerships are another key component of our strategy to drive meaningful action on water use across the country.



Photo Credit: Better Cotton/Vibhor Yadav

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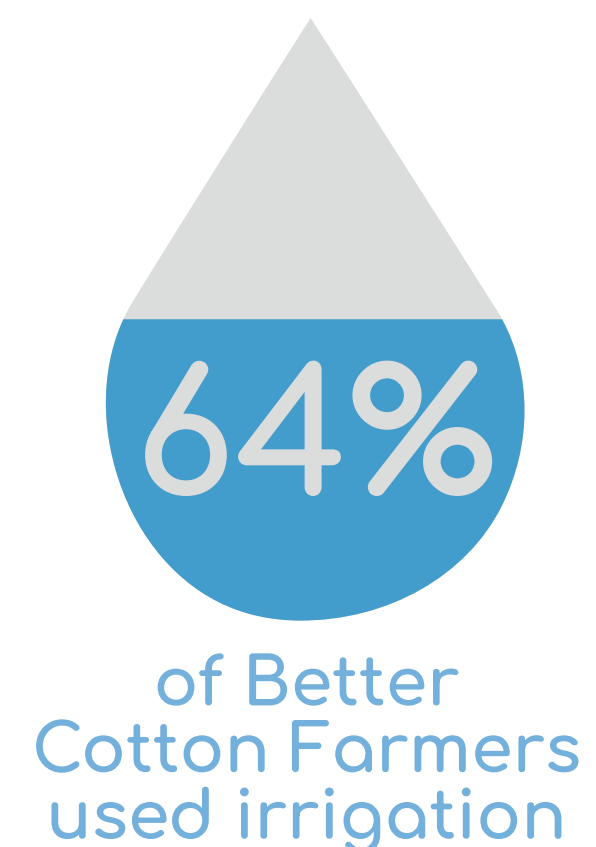
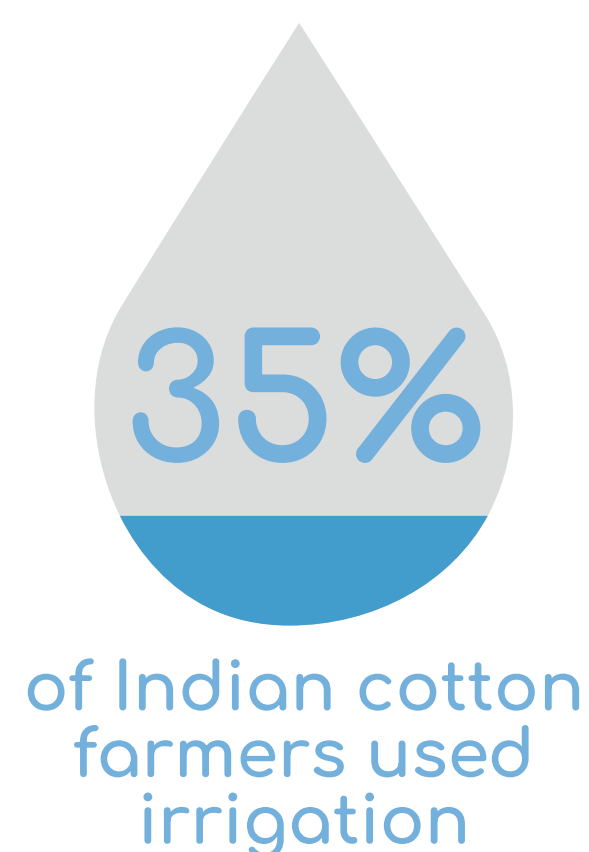


# Water in Indian Cotton Production & Partnering For More Sustainable Water Use

## Water in Indian Cotton Production

India has a mix of irrigated and rainfed cotton farms, with irrigated cotton farmers making up around **35% of the total**.<sup>5</sup> Among Better Cotton Farmers in the country, in the 2022-23 cotton season, **64% reported using some type of irrigation**. Major irrigation states include Punjab and Rajasthan, while Maharashtra and Telangana are home to more rainfed farms.

During the 2022-23 cotton season, the main method of irrigation used by Better Cotton Farmers was alternate furrow at 80%, while drip irrigation was reported by only 12% and 6% used sprinklers or both sprinklers and drip irrigation. While water sources vary from farm to farm, the most commonly used are open and tube wells.



## Partnering For More Sustainable Water Use

Better Cotton Programme Partners collaborate with local Civil Society Organisations, private companies and government bodies to find solutions to water challenges facing Indian cotton farmers. Together, they promote modern irrigation techniques like drip and sprinkler irrigation and have helped many farmers gain access to these technologies through various government schemes.

Some examples of this work include Cotton Connect's collaboration with local government agencies to construct Cattle-Proof Trenches and Continuous Contour Trenches in the Amravati and Buldhana districts of Maharashtra for water and

soil conservation. Another Better Cotton Programme Partner, the Ambuja Cement Foundation, has made a big impact over the last decade, constructing 394 check dams (small dams constructed across waterways to counteract erosion by reducing water flow velocity), 214 farm ponds and installing more than 5,000 hectares of drip irrigation.

In addition to these efforts, Better Cotton actively shares knowledge and insights with the Institute for Sustainable Communities to drive further progress in this area. This international non-profit provides training to Better Cotton Programme Partners on topics like water budgeting, well monitoring, drainage analysis and more.

Over the past decade:

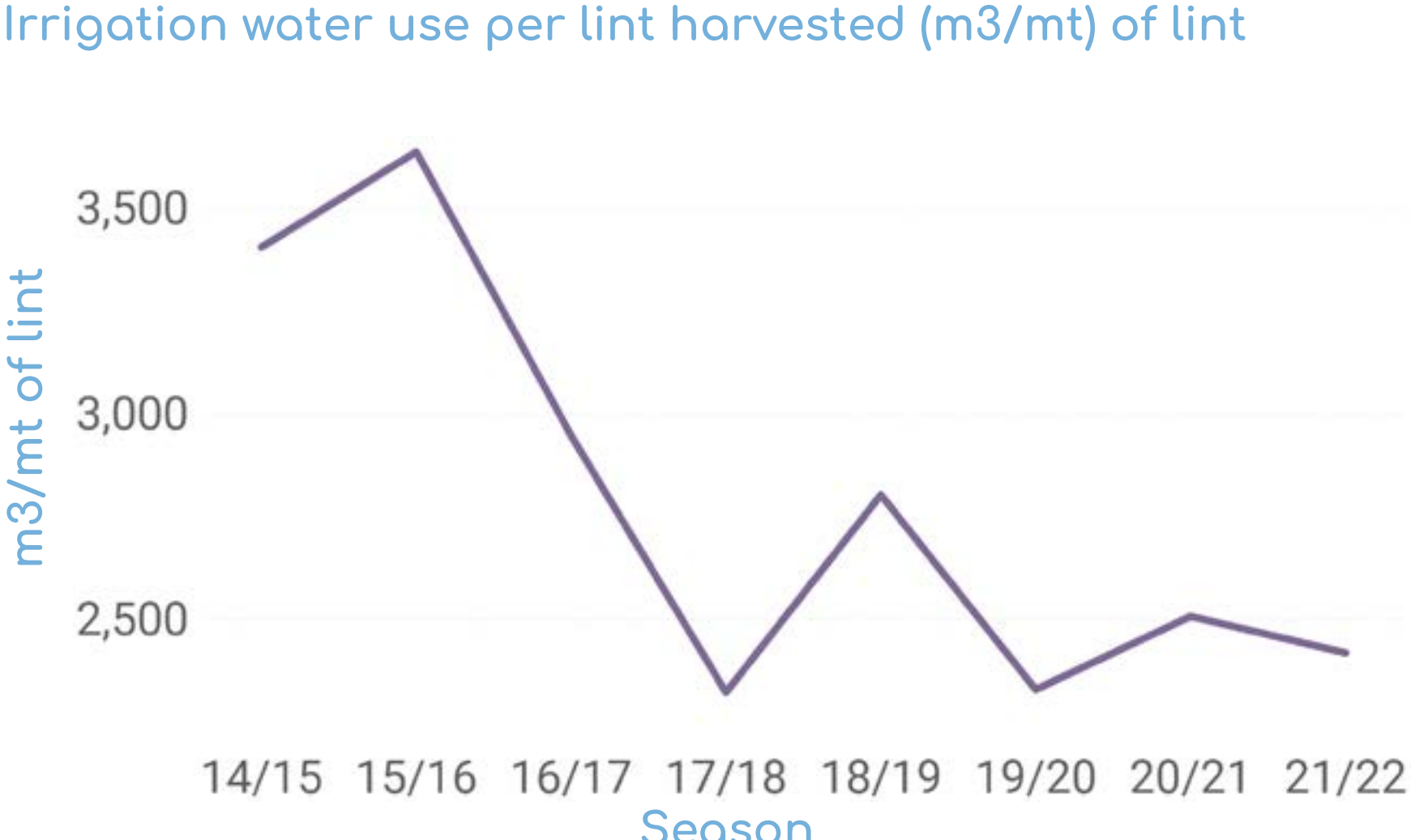
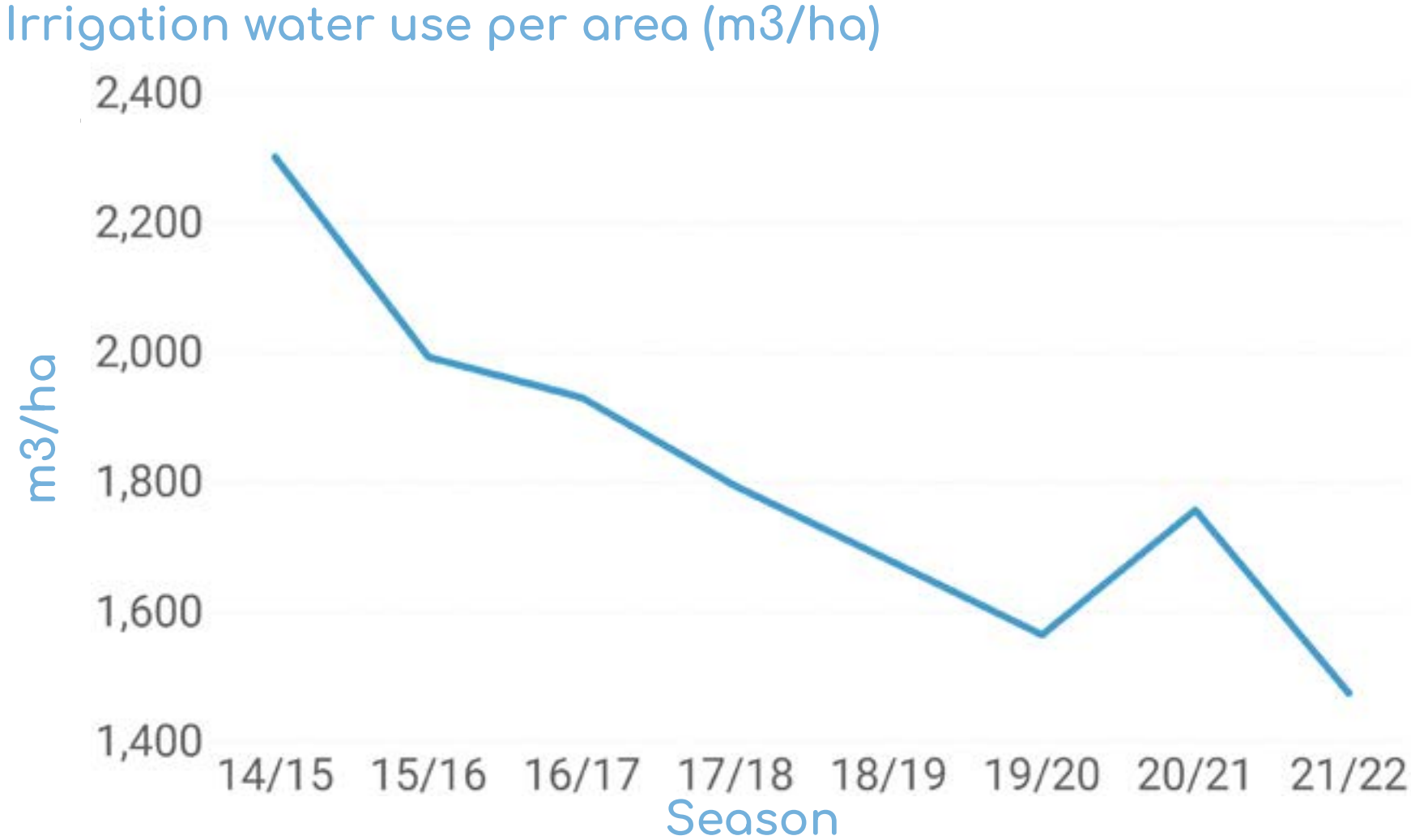
394  
check dams

214  
farm ponds

5,000  
hectares of drip irrigation



# Better Cotton's Impact on Water Use



Measuring water use is challenging due to different irrigation systems, the estimation methodologies needed to measure water flow and contextual information such as weather and type of irrigation used. While more time is needed to draw conclusions, early results are a vote of confidence in our efforts. Results indicator data shows that Better Cotton Farmers have decreased their water usage over time, both in the amount per hectare (indicating that farmers are using less water per area) and per metric ton of lint (indicating that farmers are using water more efficiently and harvesting more cotton with the same water). During the first few seasons, the size of the Better Cotton Programme in India was significantly smaller which also could account for some of the usage decrease we see over time.

As we move forward, we are encouraging the transition towards solar-powered drip and micro-irrigation methods and away from diesel-powered pumps. These will be more efficient for farmers while also helping meet our climate mitigation target outlined in our [2030 Strategy](#). In addition, by continuing to work with local organisations to promote better soil health and water stewardship practices, we anticipate greater efficiency in water use on Better Cotton Farms throughout India.

Figure 1: The graph on the left represents the evolution of water used in cubic metres/hectare, while the graph on the right represents the evolution of water used in cubic metres/metric tons of cotton lint.





Photo Credit: Better Cotton/Vibhor Yadav

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# Pesticides

## Helping Farmers Adopt a Holistic Approach

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Cotton farmers across India struggle with pests, particularly the pink bollworm which has plagued cotton-growing areas in recent years. Despite their best efforts, farmers often lack knowledge of effective management practices and access to high quality seed, leading to the widespread use of harmful, synthetic pesticides. Pesticide cocktails (made by mixing two or more chemicals) are prevalent as pesticide dealers aggressively market these to

smallholders. While farmers believe these mixtures will save them money and help them deal with multiple pests at the same time, they typically result in higher costs and often cause serious health issues for farmers, farm workers and their communities. They can also lead to the development of pesticide resistance, trapping farmers on a pesticide treadmill that causes further harm to soil, water, biodiversity and productivity.

In response to these challenges, our Programme Partners in India encourage cotton farmers to adopt an Integrated Pest Management (IPM) approach that helps reduce their reliance on synthetic pesticides. This holistic method of pest management aims to minimise synthetic pesticide use through a combination of techniques, including the use of natural pest enemies, crop rotation and biological control agents. We

also require farmers to phase out the use of HHPs and provide training on how to read and interpret the labels on pesticide containers. To further assess pesticide risks, Better Cotton Programme Partners use a Toxic Load Indicator score — a tool developed by Better Cotton and the Aid by Trade Foundation in 2015.

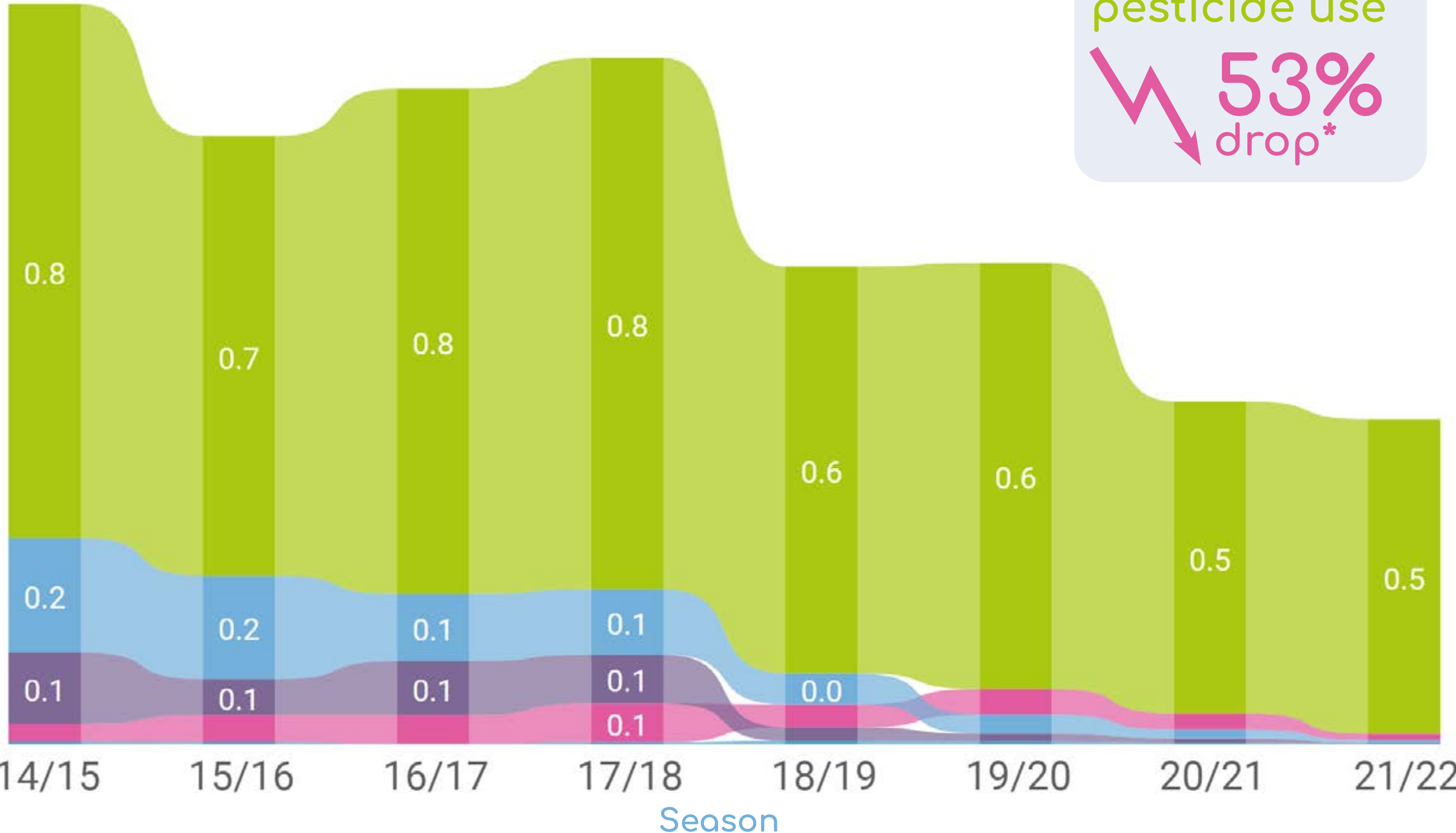


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# Better Cotton's Impact on Pesticides in India

Figure 1: Active ingredient used for crop protection in kg/ha



Total reported pesticide use  
 ↓ 53% drop\*

This work has contributed to remarkable outcomes. In the 2021-22 cotton season, Better Cotton Farmers lowered their pesticide use by an impressive 53% from the three-season average (2014-15, 2015-16 and 2016-17). **Reported HHP use dropped drastically as well – from 64% of farmers across the three-season average to only 10% in the 2021-22 season.**

- Permitted
- Carcinogen, mutagen, reprotoxic
- Highly toxic
- Extremely toxic
- Pending classification as PICs
- PICs, PoPs, Montreal

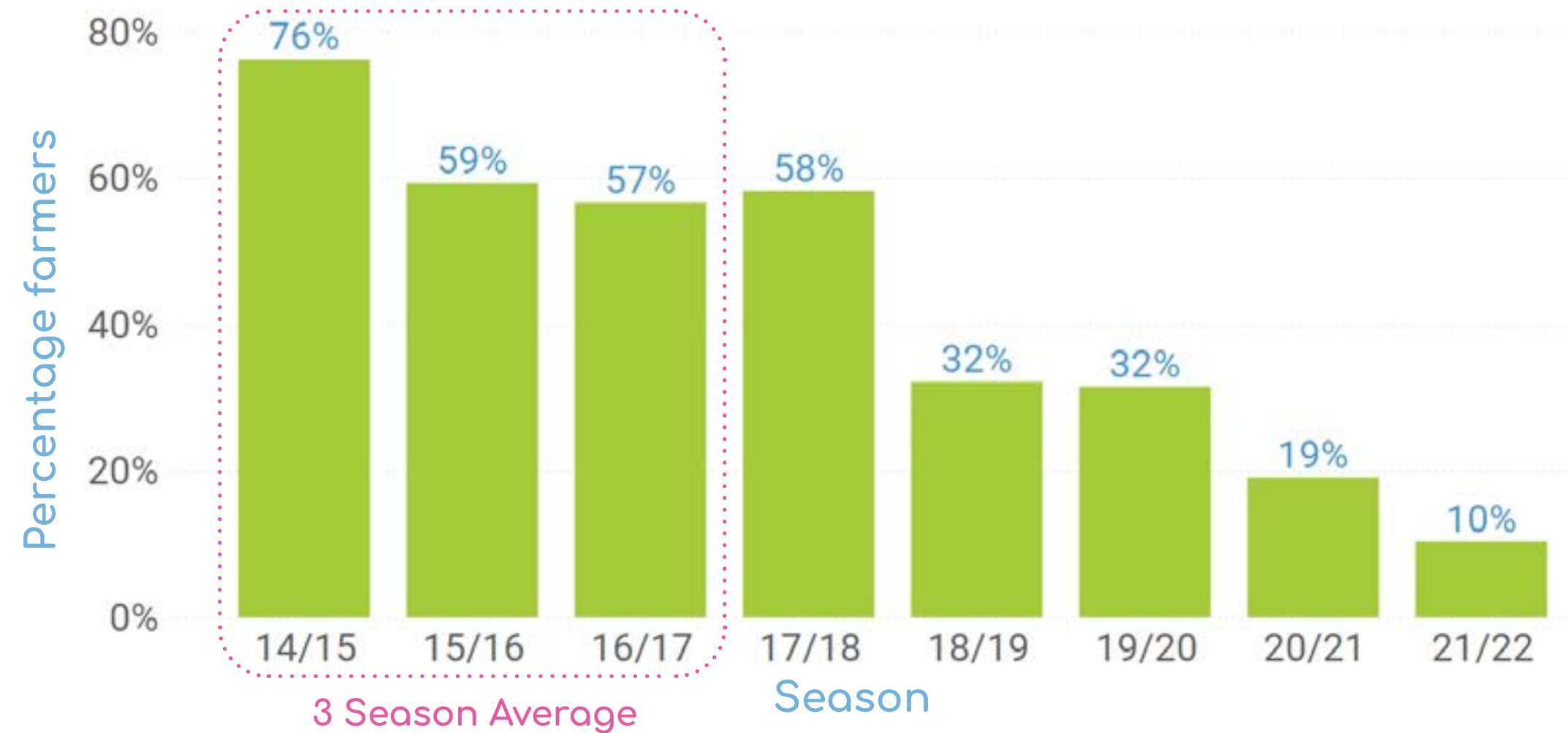
Figure 1: Pesticide active ingredient quantity per hectare (kg/ha) for Better Cotton Farmers in India.  
 \* In the 2021-22 cotton season, as compared to the three-season average (2014-15, 2015-16 and 2016-17)

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Figure 2: Percentage of farmers using HHPs



Percentage of farmers using Highly Hazardous Pesticides dropped  
 64%  
 to 10%\*

Figure 3: Variation from the three-season average 2014-2017 :



Figure 2: Percentage of farmers reporting HHP use.  
 Figure 3: 2021-22 cotton season pesticide active ingredients quantity per hectare variation from the three-season average (2014-15, 2015-16 and 2016-17).  
 \* In the 2021-22 cotton season, as compared to the three-season average (2014-15, 2015-16 and 2016-17)





Photo Credit: Better Cotton/Vibhor Yadav

These figures come alive when we witness the tangible impact they have on the lives of individual Better Cotton Farmers. Surekha is one such Better Cotton Farmer who embraced an IPM approach with impressive results. Today, she is a certified organic farmer growing organic vegetables, groundnut and fodder in addition to cotton.

*“ During our farmers’ training, we were trained on effective IPM practices. Keeping in mind practices that were taught in the training, I adopted single seed sowing and treated those seeds with biofertilisers which I prepared myself. I also grew cowpea and green gram as intercrops, marigold as a border crop to attract more beneficial insects and used pheromone and yellow sticky traps to monitor pests. For the first two sprays, I prepared and applied Dasparni Ark [a plant-based insect repellent] and did not need to spray any chemical pesticides as the pests I observed on field were below the economic threshold level (ETL<sup>6</sup>) . ”*

Another important point of progress is in regard to the adoption of Personal Protective Equipment (PPE) by Better Cotton Farmers. While affordability and availability still present challenges, consistent efforts from our Programme Partners in India – including PPE kit distribution, PPE training and more – have resulted in a higher adoption of minimum PPE over the years.

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## Partnering for Better Agricultural Practices

At Better Cotton, we believe in the power of collaboration to tackle shared challenges. That's why we work with a range of partners across India to improve the situation on the ground for farmers.

Here are a few of our key partnerships focused on reducing pesticide use:

- 🌱 **Cocktail eradication campaign:** In 2022, we launched a campaign to eradicate pesticide cocktails with our Programme Partners and key members of the scientific community in India, including the Central Institute for Cotton Research (CICR) and Krishi Vigyan Kendras (KVKs). The campaign involved an educational video that warned farmers about the hazards of cocktail spraying which was disseminated across farming communities.
- 🌱 **Alternative pest management research:** In 2021, we partnered with CICR, Pesticide Action Network (PAN) and the Centre for Agriculture and Bioscience International to train Better Cotton Programme Partners on efficient and environmentally friendly forms of pest management such as the use of biocontrol agents and food sprays and window-based spraying.
- 🌱 **Applying best practices beyond cotton:** We teamed up with KVKs, State Agricultural Universities and other agricultural research centres in 2021 to share knowledge on sustainable practices that can be useful beyond cotton production. Through remote training sessions hosted by Better Cotton on IPM and Integrated Nutrient and Weed Management, these partners have been able to apply new insights to the management of other crops like wheat, soybean and pulses.



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# Addressing the Use of Monocrotophos

Percentage of farmers using Monocrotophos dropped **41% to 2%\***



Over the years, Better Cotton has made a dedicated effort to eliminate the use of Monocrotophos, a pesticide classified as highly toxic by the World Health Organization and listed in Annex 3 of the Rotterdam Convention. This pesticide has been widely used by cotton farmers in India due to its relatively low cost, leading to poisoning incidents throughout the country's cotton-growing belt.<sup>7</sup>

To tackle this problem, Better Cotton Programme Partners have delivered intensive training on the hazards of and alternatives to Monocrotophos, led mass campaigns, organised rallies, distributed educational materials and increased our monitoring of usage. As a result, **Monocrotophos use has dropped significantly in Better Cotton project areas – from 41% of farmers reporting use across the three-season average (2014-15, 2015-16 and 2016-17) to only 2% in the 2021-22 season.**

Figure 4: Percentage of farmers using Monocrotophos

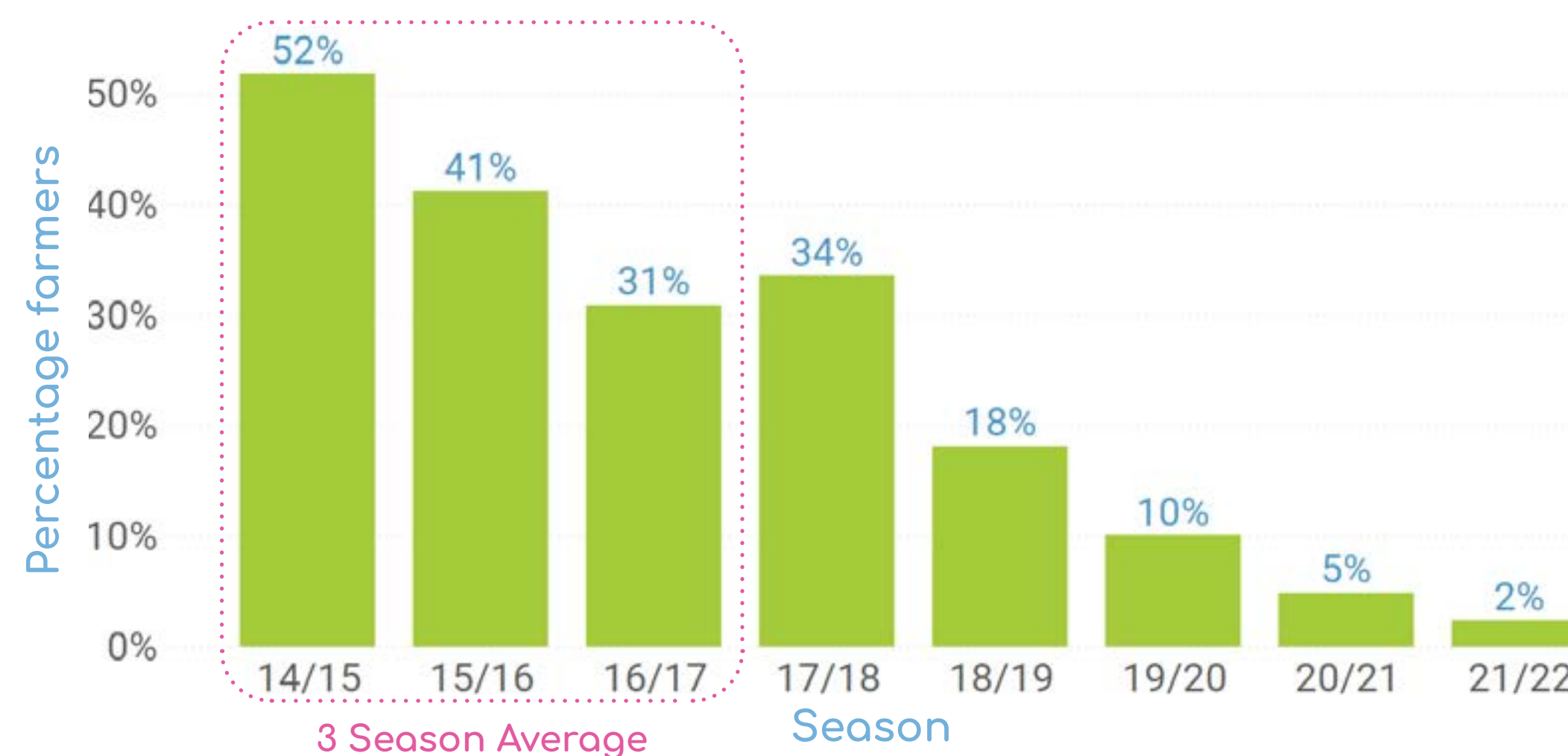


Figure 4: Percentage of farmers reporting monocrotophos use.

<sup>7</sup> Menon, Meena. 'Yavatmal Pesticide Poisoning: Lack of Accountability, Negligence and Abysmal Medical Facilities behind Farmers' Deaths'. Firstpost, 1 November 2018. <https://www.firstpost.com/india/yavatmal-pesticide-poisoning-lack-of-accountability-negligence-and-abysmal-medical-facilities-behind-farmers-deaths-5464981.html>.

\* In the 2021-22 cotton season, as compared to the three-season average (2014-15, 2015-16 and 2016-17)

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# Findings From Other Research

The positive results regarding pesticide use in India detailed above tally with other research. As part of ISEAL's Demonstrating and Improving Poverty Impacts (DIPI) Project, a [2019 impact evaluation](#) examined early impacts of the Better Cotton Programme on smallholder cotton producers over three years in the Kurnool District of Andhra Pradesh.

The study included a baseline assessment (July to September 2015), interim monitoring (August to November 2017) and a final evaluation (August to November 2018). The study methodology employed theory-based evaluation and a Randomised Control Trial approach.

Results showed a marked reduction in doses of all pesticides used (except Imidacloprid and Fipronil) by treatment farmers. What's more, treatment farmers reduced the doses of Monocrotophos significantly more than control farmers.

Additionally, the report concluded that "A significantly reduced proportion of treatment farmers are using cocktails of pesticides. **Only 8% of treatment farmers have reported using cocktails of pesticides compared with 51% who reported using cocktails of pesticides during the baseline. This reduction in the cocktail use of pesticides is also reported by control farmers – from 64% at baseline to 49% at final evaluation.** The reduction is much lower in proportion amongst control farmers compared with treatment farmers."



Photo Credit: Better Cotton/Vibhor Yadav

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# Our Future Approach

Looking forward, we will continue to encourage cotton farmers to adopt an IPM approach as a crucial step towards reducing pesticide use nationwide. To support farmers in this, Pesticides Action Network (PAN) UK – a Better Cotton Member - developed [the IPM Ladder](#), a practical tool that outlines step-by-step strategies for planning and implementing IPM practices. The ladder consists of various performance steps, each representing a different level of pest management intensity and complexity.

**At Better Cotton, we plan to provide training and support to cotton farmers on how to implement each step of the ladder in a locally relevant way.**

Farmers can use the ladder to assess their current pest management practices, identify areas for improvement and track progress over time. Through the adaptation and implementation of this tool, we strive to build a consistent methodology that enables farmers to transition to more sustainable and holistic pest management practices.

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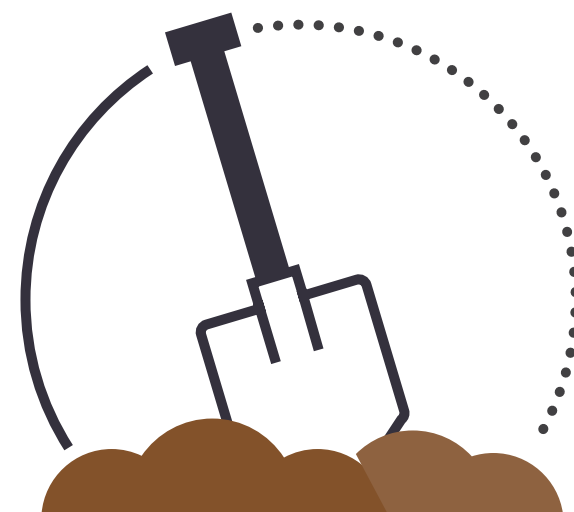
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# Soil Health



# Soil Health

## Cultivating Regenerative Practices for a More Resilient Future



Globally, one third of soils have degraded, and 90% of topsoil is at risk of erosion by 2050.<sup>8</sup> Excessive tillage and the overuse of nitrogen-based mineral fertilisers in conventional farming has taken its toll on soil health worldwide. Action is needed, and at Better Cotton, we believe that sustainable soil management is no longer enough: we need to look at regenerative approaches that will significantly improve soil health and have the potential to turn agricultural soil into a net carbon sink.

This especially rings true for India. As of 2019, around 98 million hectares of land had been degraded across the country, making up around 30% of the country's geographical area.<sup>9</sup>

### Better Cotton's Approach to Soil Health

In the 2023 revision of the Better Cotton P&C, we are going further to protect soil health by integrating key components of regenerative agriculture into our approach. Acknowledging the interrelatedness of soil health, biodiversity and water, the revised standard merges these three principles into one covering natural resources. The principle stipulates requirements around core regenerative practices such as maximising crop diversity and soil cover while minimising soil disturbance.

We have also outlined a soil health target in our 2030 Strategy that aims for 100% of Better Cotton Farms to improve their soil health by 2030. This will be monitored by different indicators such as the number of locally relevant regenerative soil

management practices adopted by Better Cotton Farmers and soil organic content.

### Promoting Soil Health in India

Across India, Better Cotton Programme Partners help farmers implement a range of practices to improve soil health. To start, Programme Partners are required to test soils and prepare soil health management plans for all Better Cotton Producer Units. They then train farmers on how to interpret soil test results so that they can manage their soil accordingly.



Additionally, farmers receive training on the production and use of compost, crop residue management, minimum tillage, cover crops and other practices to maintain soil structure and soil moisture. In the past few seasons, farmers were also trained on the use of biocontrol agents such as trichoderma against soil-based pathogens and the adoption of vermi-compost and green manure.

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<sup>8</sup> United Nations. 'FAO Warns 90 per Cent of Earth's Topsoil at Risk by 2050'. UN News, 27 July 2022. <https://news.un.org/en/story/2022/07/1123462#:~:text=A%20full%2090%20per%20cent%20of%20the%20Earth%E2%80%99s,soccer%20pitch%20of%20earth%20erodes%2C%20every%20five%20seconds.>

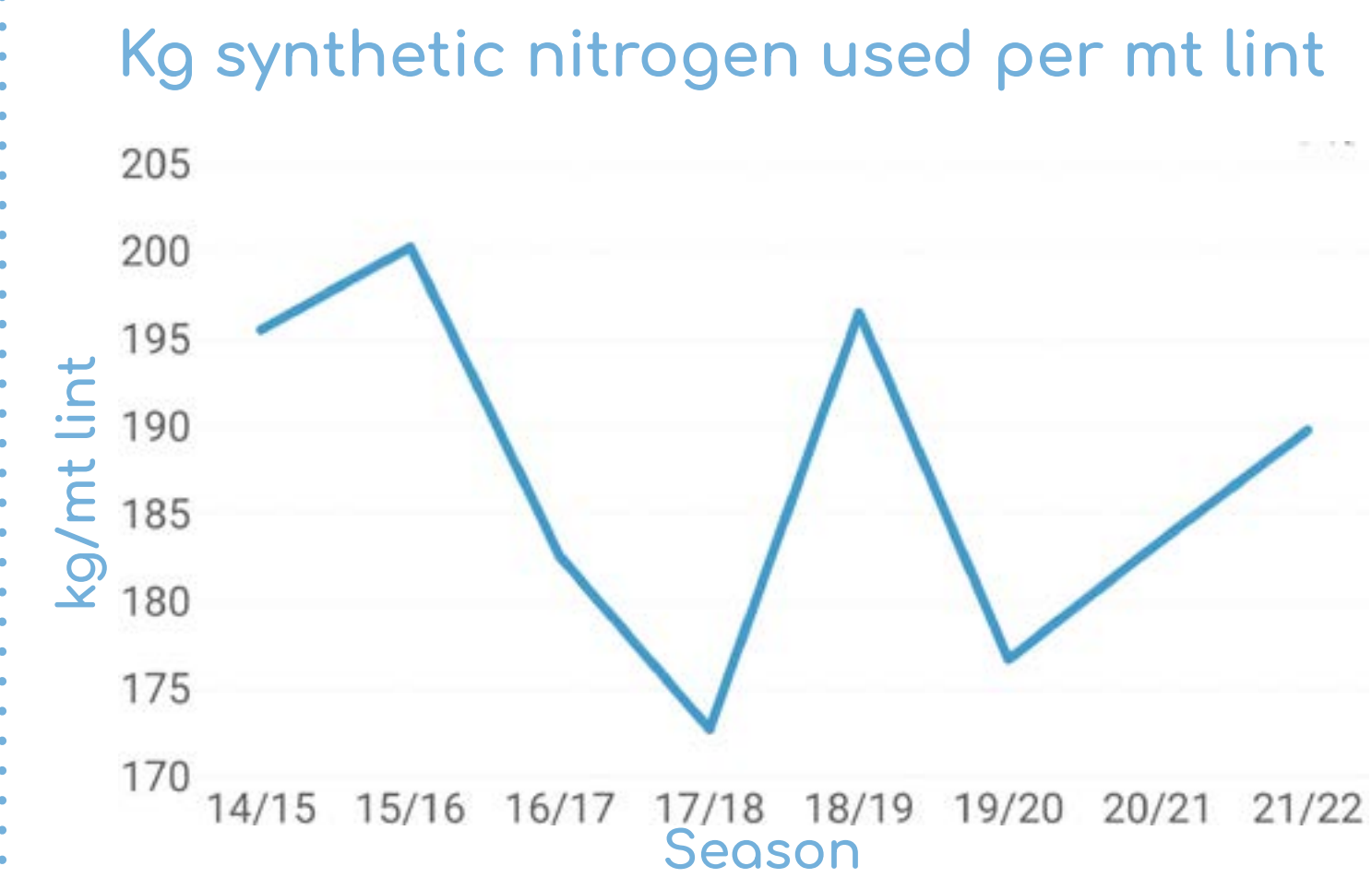
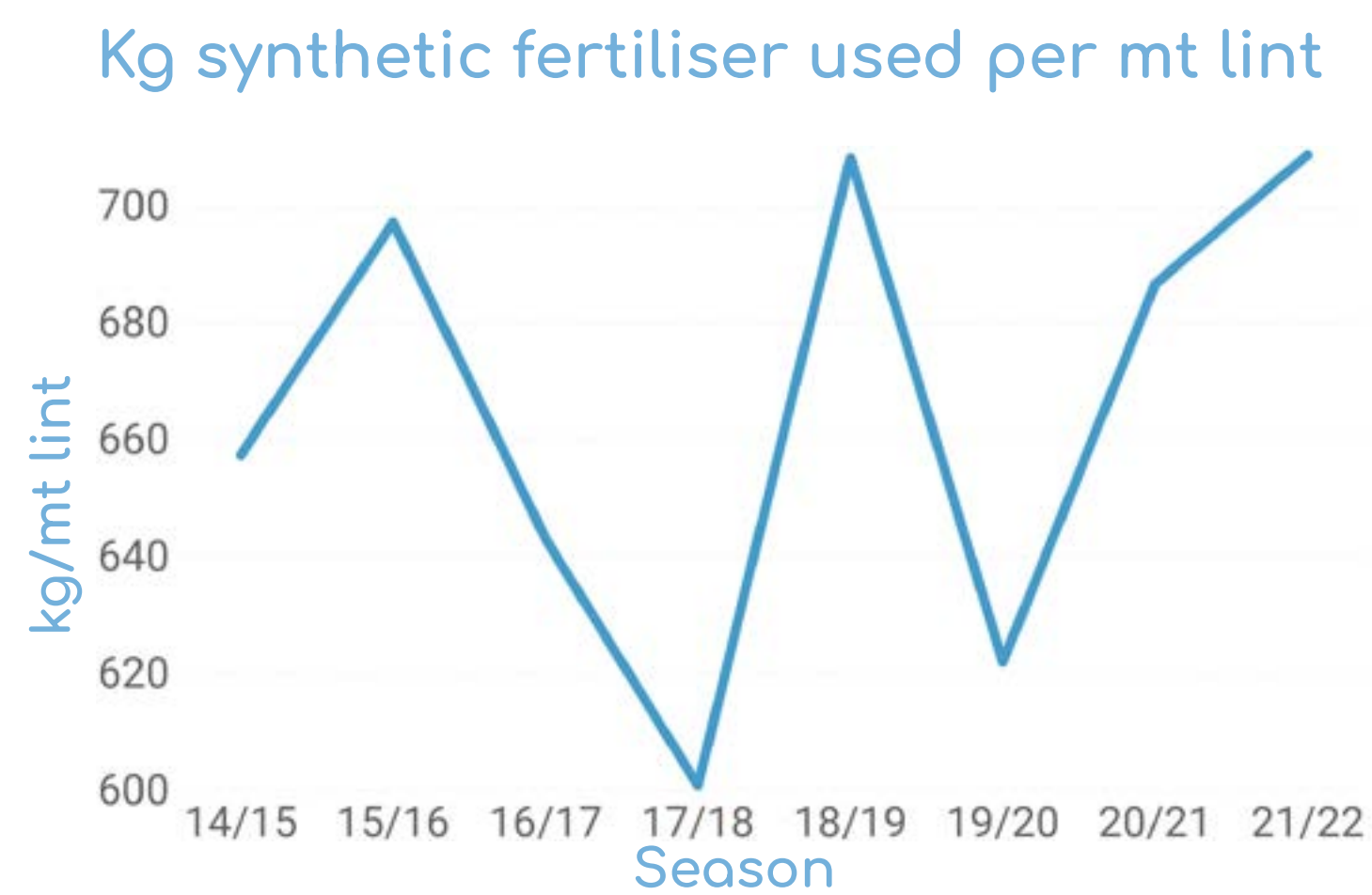
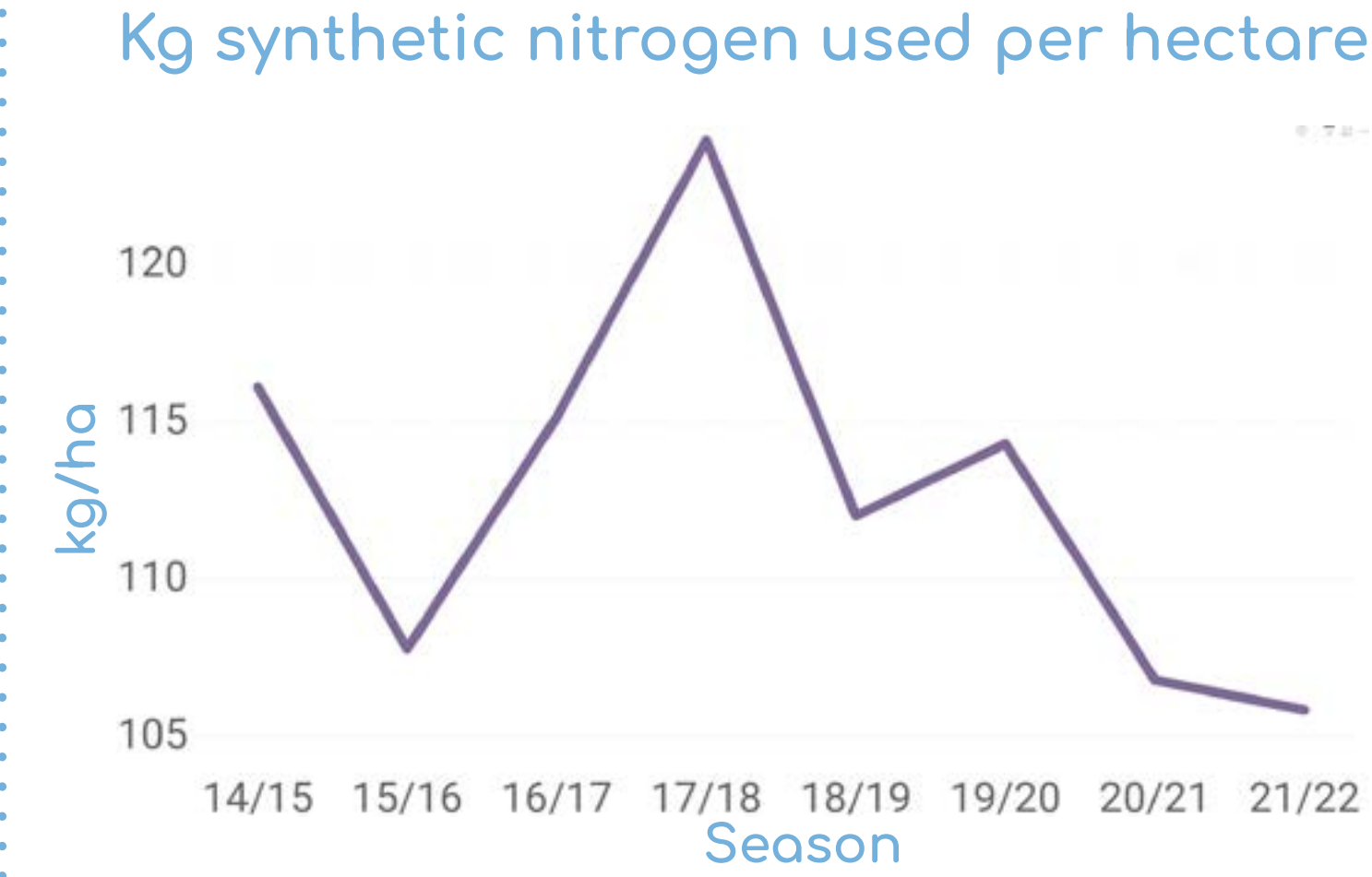
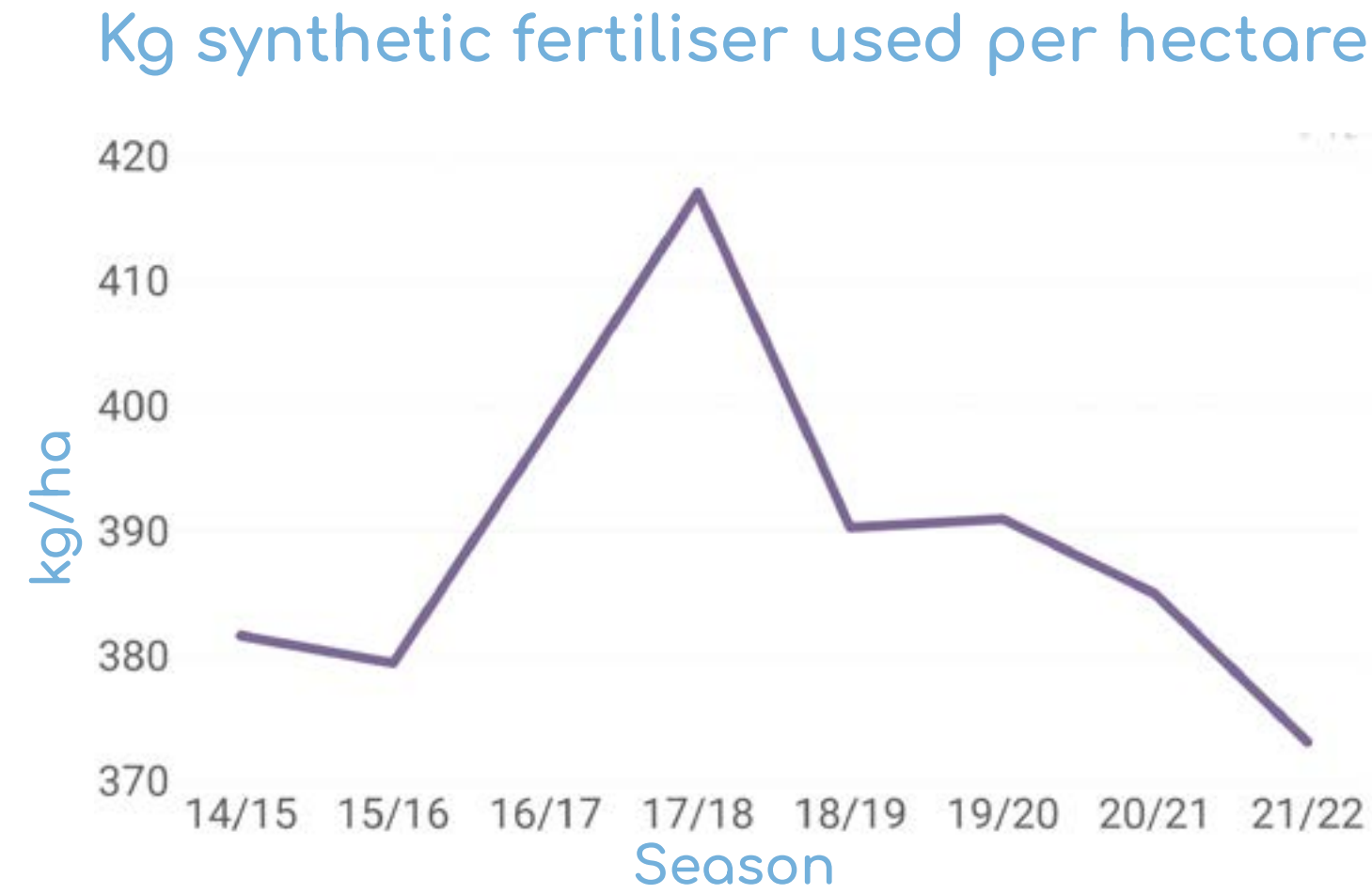
<sup>9</sup> Sengupta, Rajit. 'Land Degradation in India Hurts Farmers and Forest Dwellers the Most'. DownToEarth, 27 August 2021. [https://www.downtoearth.org.in/news/environment/land-degradation-in-india-hurts-farmers-and-forest-dwellers-the-most-78701.](https://www.downtoearth.org.in/news/environment/land-degradation-in-india-hurts-farmers-and-forest-dwellers-the-most-78701)



# Better Cotton's Impact on Soil Health in India

To monitor our progress, we track fertiliser use (synthetic and organic) and synthetic nitrogen use (as excessive use of nitrogen inputs can lead to soil degradation), analysing amount per hectare and amount per metric ton of cotton lint produced.

After its peak use in the 2017-18 season, results indicator data shows that Better Cotton Farmers have reduced synthetic fertiliser and nitrogen use per hectare. When looking at use per unit of production, we can see that while there have been a decreasing trend on the amount of nitrogen there seems to be an slight increasing trend in the total synthetic fertilisers that is being addressed to try to revert.



Note that evolution of amount fertiliser used per unit of area (hectare) and per unit of lint production (mt of lint) do not need to follow similar trends. (e.g. a farmer could use same amount of fertiliser per hectare having then a flat evolution of use per area, while the variations on yield and thus in amount of cotton harvested would determine the evolution of the graph of amount fertiliser used per mt of lint). Better Cotton and its partners aim for a decrease trend in both metrics.

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To fully understand the impact of Better Cotton's Programme on soil health in India, more time is needed as factors such as extreme weather events like drought and flooding can affect results. The quantity of synthetic fertiliser used is also challenging to measure since it comes in many different forms with varying nutrient content, which makes recording the detail of application difficult.

As more Better Cotton Farmers embrace and adopt the regenerative and sustainable soil health practices given new prominence in the latest version of the Better Cotton P&C, we hope to see a further reduction of synthetic fertiliser use and healthier soils over time.

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Photo Credit: Better Cotton/Florian Lang

# Sustainable Livelihoods

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# Sustainable Livelihoods

## Taking a More Targeted Approach

India is home to approximately six million cotton farmers who rely on cotton cultivation for their livelihoods.<sup>10</sup> Around one million of those are licensed Better Cotton Farmers who grow cotton on an average of only 1.6 hectares of land. For these farmers, establishing sustainable livelihoods can be challenging, and they can be left vulnerable when an unexpected event occurs that reduces their income or assets. As a result, they are more likely to resort to unfavourable means, like selling things they need, cutting back on food or even sending their children to work.

At Better Cotton, we are committed to improving the livelihoods of cotton communities. When we say 'sustainable livelihoods', we mean supporting cotton farmers, farm workers and farming communities to gain access to resources and use the resources available to them to improve

their wellbeing and economic situation without harming the environment or others, now and in the future.

### Better Cotton's Approach to Sustainable Livelihoods

In the Better Cotton 2030 Strategy, we set our aim of enhancing wellbeing and economic development of cotton farming communities. To achieve this, our new 'Sustainable Livelihoods Approach' puts forward a holistic framework that supports sustainable livelihood improvements. In addition, we have set a target of increasing net incomes and resilience for two million farmers and workers in cotton farming communities around the world by 2030. We view this as one step on the pathway to achieving living incomes. To realise this target, our approach focuses on supporting partner initiatives, improving access to both material and non-material resources for farmers and workers, developing

their skills, improving social dialogue and strengthening producer groups and organisations.

As part of this approach, we also added a new sustainable livelihoods principle in the 2023 Better Cotton P&C. Integrating sustainable livelihoods into the requirements of our standard system highlights our focus on identifying and addressing the main needs and challenges of cotton farming communities when it comes to making a decent living and leading a happy life. This is not only key to achieving better working and living conditions, while improving social

inclusion, but it's also a precondition to ensure a sustainable cotton value chain.

Our new approach goes beyond mainly tracking the profitability of the cotton crop (i.e., income from the crop minus variable production costs). With a new evidence framework under development, we aim to capture a wider range of livelihoods and wellbeing indicators, such as household resilience and participation in farming cooperatives, to evaluate the actual impact Better Cotton has on farmer livelihoods.



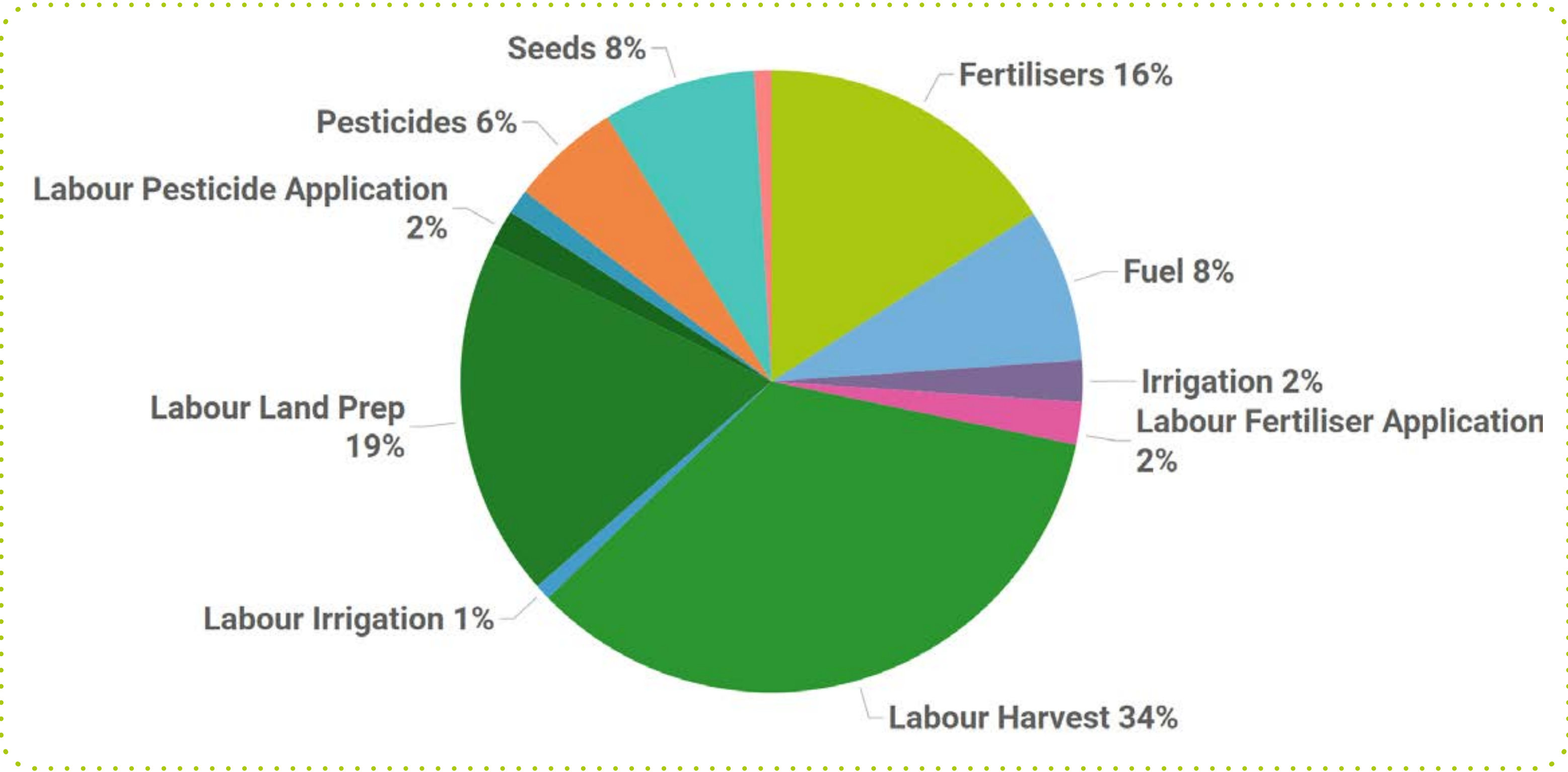
Photo Credit: Better Cotton/Florian Lang

<sup>10</sup> Ministry of Textiles Government of India. 'Annual Report 2022-23'. <https://texmin.nic.in/annual-report-2022-2023>.



# Better Cotton's Insights on Livelihoods in India

Results indicator data from the 2014-15 to 2021-22 cotton seasons reveals insights into the economic performance of Better Cotton Farmers. In the 2021-22 cotton season, approximately 50% of costs incurred by farmers were related to labour for harvest and land preparation. Fertilisers accounted for 16% of total costs, followed by fuel and seeds at approximately 8% each.<sup>11</sup> By supporting farmers to embrace better agricultural practices that reduce their reliance on synthetic fertiliser and other inputs, Better Cotton and our partners are actively working to reduce costs for farmers.

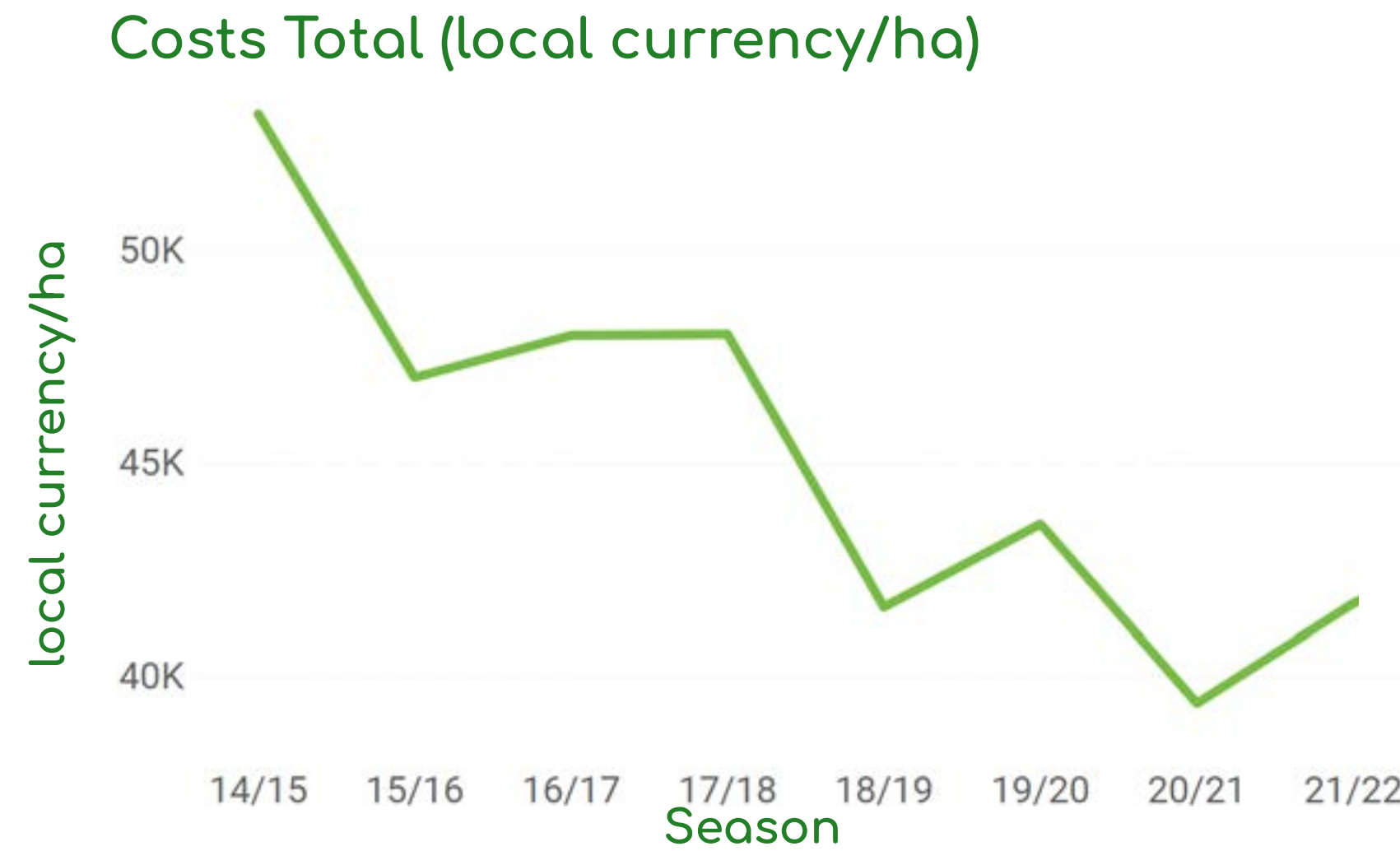


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Better Cotton Farmers have reported total costs per hectare (excluding land renting) decreasing by 15.6% in the 2021-22 cotton season as compared to the three-season average (2014-15, 2015-16 and 2016-17)<sup>11</sup>. This was mainly driven by reductions in labour expenses for land preparation and seed and fertiliser expenses. Meanwhile, profits per hectare remained stable or trended slightly higher until the 2021-22 cotton season when there was a huge jump (+56% increase from the previous season) as a result of higher international cotton prices. See Figure 1.



Total costs per hectare decreased  
**15.6%**  
 in the 2021-22 cotton season\*

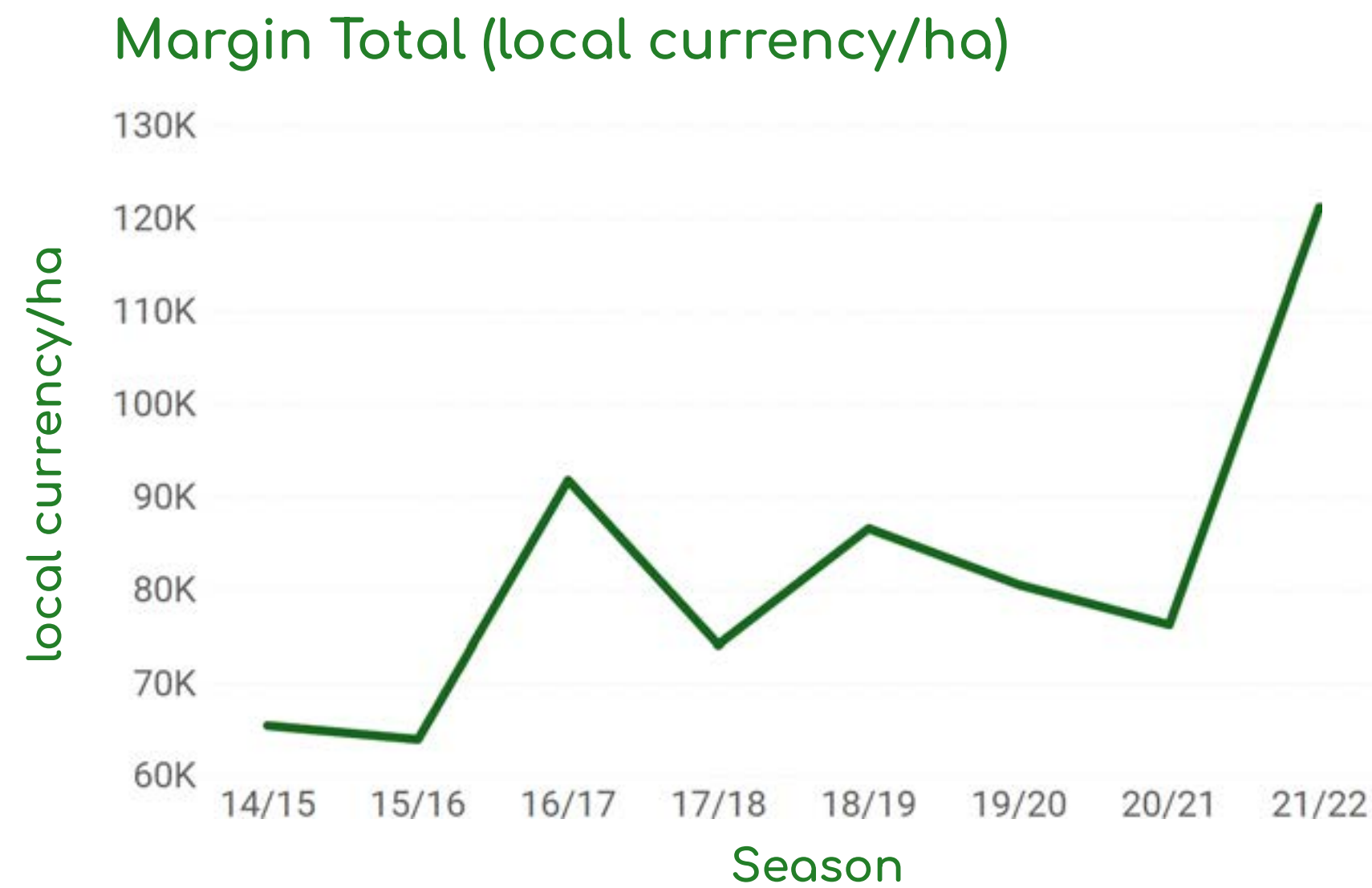
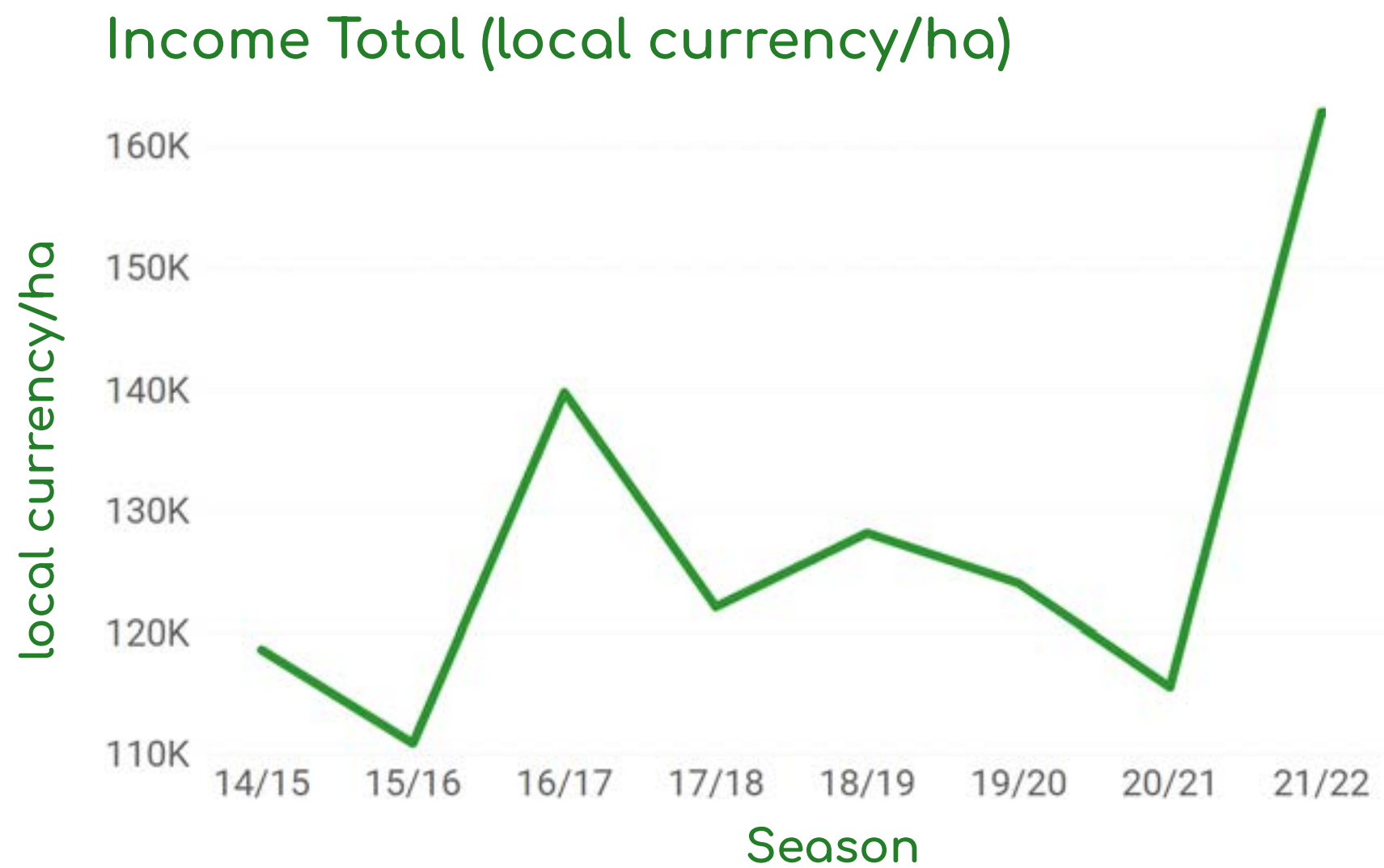


Figure 2: Aggregated costs for Better Cotton Farmers in India in the local currency per hectare. Note that costs, income and margins have been adjusted historically as per annualised inflation rates.

<sup>11</sup> Costs and income were adjusted by annualised inflation for interseason comparison.

\*As compared to the three-season average (2014-15, 2015-16 and 2016-17).



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## Partnering with Farmer Producer Organisations to Accelerate Change

A critical partner in our work to lower costs for farmers and boost their livelihoods are Farmer Producer Organisations (FPOs). These organisations support farmers with a range of services – from providing access to quality seeds, fertilisers, biopesticides and agricultural equipment at a lower cost to offering advisory services. For example, farmers from the Somnath Farmers Producer Company Limited – supported by Better Cotton Programme Partner Ambuja Cement Foundation – benefit from a 20-25% discount on bulk orders of the biocontrol agents, neem oil and beauveria bassiana. In some places, FPOs play a critical role in ensuring the availability of bio-inputs which are not readily available in the market, making it easier for farmers to adopt better agricultural practices.

FPOs also provide a platform for farmers to discuss issues, explore solutions, market their cotton and diversify their income through off-farm and non-farming livelihood alternatives. This includes selling inputs for livestock, cloth bags and various agricultural inputs like vermicompost. Better Cotton and our Programme Partners work to support FPOs throughout India, helping them leverage government funds and promoting their role throughout the cotton sector. Research to look into the capabilities of FPOs and the services that they provide, and how Better Cotton can support them to enable to increase income will be further analysed in the coming years.

By continuing to strengthen FPOs and prioritising livelihoods across the Better Cotton Programme, we are making strides to enhance the lives of cotton farmers throughout India.



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# Decent Work



# Decent Work

## Addressing the Root Causes of Challenges



India was identified as a priority country



Promoted a helpline and Migrant Resource Centre to more than

**27,000**

cotton farmers and workers



Enrolled

**21,800**

farmers and workers in government social security schemes

Better Cotton recognises the importance of improving the wellbeing of farmers, farm workers, and their communities to truly make cotton 'better'. Central to this goal is the concept of decent work, which encompasses fair pay, job security, equal opportunities and a safe working environment where individuals can express concerns and negotiate better conditions. However, the agricultural sector presents significant challenges in terms of labour rights, including informal and unskilled work, limited job and income security, vulnerability to unsafe working conditions and exploitation. This is especially true in India where rural agricultural labour accounts for 54% of the agricultural workforce.<sup>12</sup>

### Implementing our Decent Work Strategy

To tackle these multifaceted challenges, Better Cotton developed a global [Decent Work Strategy](#) that takes a risk-based, phased approach. In the initial phase, India was prioritised for investment after a global risk assessment exercise, given the extent of decent work challenges and scale of the programme in the country. A comprehensive study followed, involving stakeholder consultations, field visits and interviews with nearly 700 individuals.

This study provided valuable insights into the specific challenges faced in each Indian state where Better Cotton Programmes are implemented, enabling a more targeted effort to promote decent work outcomes for farming communities.

One significant issue that emerged from the study was the lack of clarity among producers regarding age-appropriate work, which highlighted the recurring problem of child labour. This conclusion was further corroborated through licensing assessment findings. To address this concern, Better Cotton developed practical guidance to further understand child labour risks and mitigation strategies among our partners, producers and verifiers, thus improving our collective ability to identify and address this challenge on Better Cotton Farms. This guidance built on our collaboration with the Centre for Child and the Law of the National Law School of India University Bangalore.

While identifying risks and issues is crucial, Better Cotton also acknowledges the need to address the root causes of decent work challenges, such as poverty, limited awareness of rights and lack of voice, particularly among vulnerable populations. The revised Better Cotton P&C (V3.0 – effective

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The positive results of the 17-month pilot project in Madhya Pradesh and Maharashtra, involving three Better Cotton Programme Partners, were evident, with over 28,600 cotton farmers and workers reached.

for licensing starting in the 2024/25 cotton season) now includes a principle on livelihoods, which requires Better Cotton Producers to proactively improve the livelihoods of farming communities beyond the implicit benefits of participating in the programme. Collaborations with expert organisations and knowledge partners at the national and sub-national levels help inform farming communities about their rights and facilitate access to social security schemes. On top of that, efforts are made to ensure that farmers and workers can raise their concerns through appropriate channels and have them effectively resolved.

### Piloting Labour Rights Strategies

To support these initiatives, Better Cotton is enhancing its country-level expertise in decent work and livelihoods through staff recruitment and upskilling. Stronger partnerships are also being fostered between Programme Partners and organisations specialising in labour rights promotion and protection, such as Jan Sahas. In collaboration with this community organisation, Better Cotton improved understanding of labour rights and facilitated access to their 24/7 hotline service, social security, and support systems for labour rights issues in Better Cotton growing areas. The positive results of the 17-month pilot project in Madhya

Pradesh and Maharashtra, involving three Better Cotton Programme Partners, were evident, with over 28,600 cotton farmers and workers reached. Notably, nine out of ten applicants received social security benefits, including individuals like Ms. Rachna, a farm worker who obtained crucial support during her pregnancy and access to social security and healthcare benefits for her entire family.

The partnership between Jan Sahas and Better Cotton will extend beyond the pilot phase, and efforts will be made to secure further funding to scale up impactful initiatives like these. Through thorough risk assessment, expert collaborations and a targeted strategy, Better Cotton and its Programme Partners are committed to addressing the complex challenges of decent work and bringing about meaningful change in cotton farming communities in India and beyond.

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# Traceability



# Traceability

## Introducing Physical Better Cotton

There is growing demand for traceable physical Better Cotton worldwide as stakeholders seek more clarity around the social and environmental challenges of cotton supply chains and policymakers require businesses to demonstrate greater transparency.

Understanding the route Better Cotton takes from field to market enables a clearer view of risks and where to prioritise efforts for continuous improvement. At Better Cotton, [our work to increase the traceability of Better Cotton](#) is intrinsically linked to our mission of centring the voices of farmers in international value chains and strengthening their capacity to adopt more sustainable practices. With an ever-changing sourcing landscape, we want to make sure traceability changes are good for both those who grow and those who source Better Cotton.

### Piloting traceability solutions in India

In 2022, Better Cotton tested new digital traceability platforms and a segregation Chain of Custody (CoC) model in India to accelerate our journey to delivering the capabilities for suppliers and members to source traceable, physical Better Cotton in addition to mass balance Better Cotton – a widely-used volume-tracking system. Our goals were to better understand the impact of implementing a segregation CoC model, digital traceability activities and additive tracer technologies (to physically mark and trace Better Cotton) within cotton supply chains throughout the country. India was selected as it is amongst the most complex supply chain contexts Better Cotton flows through – meaning if our approach is successful there, it will likely be in other places as well.

Five supply chains – starting in the states of Gujarat and Maharashtra and extending across India and Bangladesh – were selected to pilot an early version of the [new CoC Standard v1.0](#). Digital traceability tracking was provided by the traceability platform Retraced for two supply chains and Textile Genesis for the other three. In addition, additive tracer technologies Haelixa and Tailorlux were applied in two of these supply chains. The project is using these technologies to track physical Better Cotton as it moves throughout the supplier networks of participating brands and retailers.

First insights from the pilot are already informing our strategies for implementing traceability at scale in India and more widely. We are learning about when is the optimum time to engage and train suppliers to adopt traceability as well as the operational

challenges suppliers can anticipate and how to mitigate them. In addition, we are discovering how suppliers are responding to a new digital interface and requirements, such as uploading documentation to verify physical Better Cotton. All traceability changes have been implemented from the ginner onwards, so farmers have not experienced any changes within the scope of this pilot.

### From pilot to business-as-usual

By the end of 2023, our traceability pilot will transition into standard Better Cotton practice. The exact number of suppliers in India to begin implementing the CoC Standard v1.0 and sourcing traceable, physical Better Cotton will depend on conditions such as market demand, but we will soon start preparing the first cohort for the 2023 cotton harvest.

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# Wageningen Study

## Corroborating Results

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Independent impact research is an important part of Better Cotton's commitment to measuring sustainability improvements in communities where Better Cotton is grown and to evaluating the environmental, social and economic impact of the Better Cotton Standard System.

Better Cotton commissions independent studies to collect, analyse and compare data from samples of Better Cotton Farmers with non-Better Cotton Farmers (or a 'control group') in order to identify the extent to which our programmes contribute to socio-economic and environmental improvements in our areas of intervention. External research projects are also an opportunity for us to verify the accuracy of our internal monitoring data collected in the same areas, as well as to gather qualitative information directly from farmers, hearing in their own words how they feel Better Cotton is driving change.

### Towards More Sustainable Cotton Farming in India

One such study of the impact of the Better Cotton Programme in India, conducted by Wageningen University and Research

between 2019 and 2022, found significant benefits for Better Cotton Farmers in the region. The study, 'Towards more sustainable cotton farming in India', explored how cotton farmers who implemented Better Cotton recommended agricultural practices achieved improvements in profitability, reduced synthetic input use and overall improved sustainability in farming.

The study examined Better Cotton Farmers in the Indian regions of Maharashtra (Nagpur) and Telangana (Adilabad), comparing the results with farmers in the same areas who did not participate in the Better Cotton Programme. In these regions, Better Cotton Programme Partners provide training and guidance on a range of topics to enable farmers to adopt more sustainable practices – from how to better manage pesticides and fertilisers to how to optimise their water use.

The study found that Better Cotton Farmers reduced costs, improved overall profitability and safeguarded the environment more effectively than non-Better Cotton Farmers.

Photo Credit: Better Cotton/Vibhor Yadav

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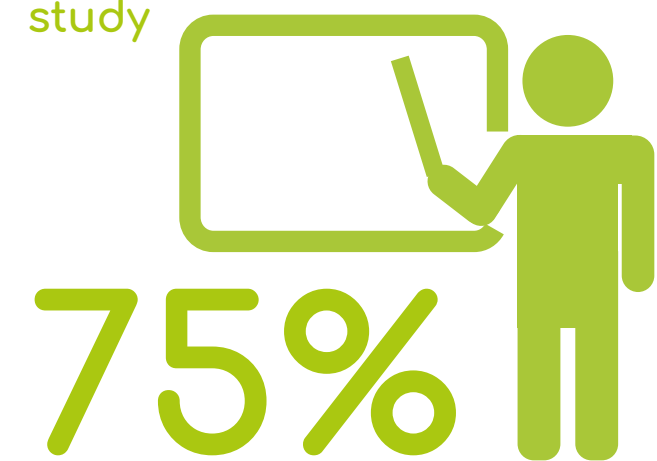
# Wageningen Study: Key Findings

[Download the study and/or summary to learn more.](#)

## Farmer Engagement

Early in the study, few farmers reported attending Better Cotton capacity-strengthening activities, but by the third season, **75% participated in the majority of Better Cotton capacity-strengthening activities.** According to our Programme Partners, this face-to-face interaction improved farmers' trust in the partners and their recommendations. Higher levels of engagement with the programme also enabled participating cotton farmers to learn and implement better farming and decent work practices

By the third season of the study



75% of farmers participated in the majority of Better Cotton capacity-strengthening activities

## Reducing Pesticides and Improving Environmental Impact

Overall, **Better Cotton Farmers decreased their costs for synthetic insecticides by almost 75%**, a notable decrease compared to non-Better Cotton Farmers. **On average, Better Cotton Farmers in Adilabad and Nagpur saved US \$44 per farmer during the season on synthetic insecticide and herbicide expenses**, significantly reducing their costs and environmental impact.



Better Cotton Farmers in Adilabad and Nagpur saved **\$44 per farmer** on synthetic insecticide and herbicides

Better Cotton Farmers decreased their costs for synthetic insecticides by almost



## Increasing Overall Profitability

**Better Cotton Farmers in Nagpur received around US \$0.135/kg more for their cotton than non-Better Cotton Farmers, the equivalent of a 13% price increase.** Overall, Better Cotton contributed to an **increase in farmers' seasonal profitability of US \$82 per acre, equivalent to about an additional US \$500 in income** for an average cotton farmer in Nagpur.



Better Cotton contributed to an increase in farmers' seasonal profitability of **\$82 per acre**

equivalent to about an additional **\$500 income** in for farmers in Nagpur



## Yields Are a Challenge

Despite cost savings and improvements in profitability, **yields decreased by an average of 14% compared to 2018-19 for all farmers.** This decrease in yields of 87 kg per acre (215 kg per hectare) was greater among Better Cotton Farmers than control group farmers in Nagpur. To explain these findings, the Programme Partner conducted further research and the main reasons noted by Better Cotton Farmers and Field Staff were heavy rainfall and pest disease. Further analysis is ongoing to understand the difference in rainfall intensity between the Better Cotton Farmers area and the control group area and its correlation with the yield reduction.

Yields decreased by an average of



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# Women's Empowerment

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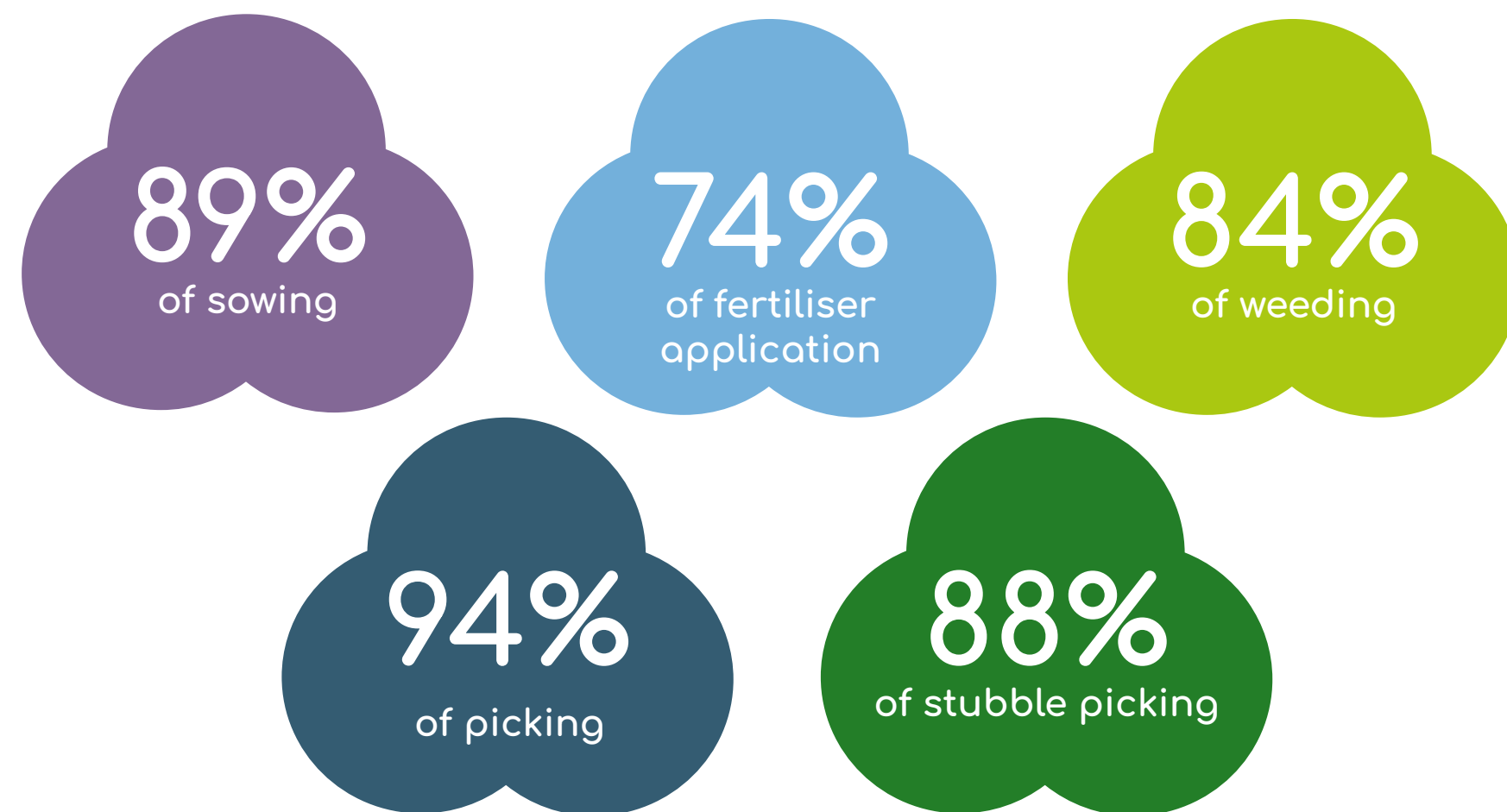
# Women's Empowerment

## Elevating the Role of Women in Cotton

Women make up the majority of the cotton farming workforce in India. While they take on essential and demanding roles, their contribution is often overlooked and undervalued. In Maharashtra, one of the main cotton-growing states of India, a 2018 study<sup>13</sup> found that 88% of stubble picking, 89% of sowing, 84% of weeding, 74% of fertiliser application and 94% of picking was done by women. Even so, there is a widely held perception that women do 'lighter' work.

Contributing to the problem is that women often lack land rights. According to our baseline gender assessment report, 85% of rural women in India are engaged in agriculture, yet only about 13% own land.<sup>14</sup> This prevents them from accessing essential government support and limits their decision-making power.

### Percentage of work done by women



### Better Cotton's Approach to Women's Empowerment

At Better Cotton, we know that women are essential to creating a more sustainable future. The UN's Food and Agriculture Organization estimates that women who have the same access to resources as men in a farming community can improve yields by 20-30%.<sup>15</sup> To bridge the current gap in cotton farming, we have made gender equality a cornerstone of Better Cotton. Our [Gender Strategy](#) outlines our plans to systematically mainstream gender concerns, needs and interests across our policies, partnerships and programmes.

Tying into this, we set the target of reaching one million women in cotton with programmes and resources that promote equal farm decision-making, build climate resilience or support improved livelihoods by 2030. We also want to ensure that by 2030 25% of Better Cotton Field Staff are women with the power to influence sustainable cotton production.



<sup>13</sup> Sattva, IDH. 'Business Case for Gender Mainstreaming in Cotton in Maharashtra'. (2019). <https://www.sattva.co.in/publication/research-gender-mainstreaming-in-cotton-in-maharashtra/>.

<sup>14</sup> Oxfam India. 'Move over "Sons of the Soil": Why You Need to Know the Female

Farmers that Are Revolutionizing Agriculture in India', 15 November 2018. <https://www.oxfamindia.org/women-empowerment-india-farmers>.

<sup>15</sup> Food and Agriculture Organization of the United Nations. 'The State of Food and Agriculture'. Women in Agriculture Closing the Gender Gap for Development Page 5, i2050e.pdf (fao.org).



## What Is Gender Equality?

Gender equality refers to the equal rights, responsibilities and opportunities of women and men and girls and boys. Equality does not mean that women and men will become the same but that women's and men's rights, responsibilities and opportunities will not depend on whether they are born male or female. Gender equality implies that the interests, needs and priorities of both women and men are taken into consideration, recognising the diversity of different groups of women and men.

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# Researching Women in Agriculture



Understanding the need to promote gender equality within our programme, Better Cotton partnered with Includovate in 2022 to conduct a study on women Better Cotton Field Staff in India, Pakistan and Mali. The study aimed to understand the needs, experiences and ideas of women working on Better Cotton projects. To start, we carried out a quantitative baseline assessment to better understand these women's level of empowerment using a modified version of the Delta Framework's women's empowerment indicator.

Several key findings came out of the study, including a definition of 'women's empowerment' from the surveyed Field Staff, their roles and responsibilities and barriers to empowerment, among other things. For most women participating in the study, 'empowerment' was defined as independence in decision-making and the ability to act on their decisions. They identified securing financial independence and education as critical elements to achieving this. Participants also noted the importance of 'self-esteem' and 'mentality' or mindset.

One Producer Unit Manager from Pakistan who participated in the study shared her experience:

**"I am working with 3,712 farmers. This indicates how empowered I am. I have resources, opportunities and equal benefits to men."**

The findings of this study are paving the way for more conscious efforts by Better Cotton and our partners to engage more women Field Staff, and as a result, more women in farming communities across India.

Photo Credit: Better Cotton/Florian Lang

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# Gender Pilots in Maharashtra

Following a 2018 gender analysis conducted by Sattva and IDH to measure women farmers' economic contribution to cotton cultivation<sup>16</sup>, in 2019, Sattva and Better Cotton built a model to project the return on investment from women farmers' inclusion in the Better Cotton Programme. In 2020, Better Cotton piloted a project with Sattva and the Lupin Human Welfare and Research Foundation in Maharashtra to test this model and improve women farmers' access to trainings and decision-making roles. 2,000 women from two Producer Units in Dhule received training on agricultural practices while men farmers in those Producer Units received gender sensitisation training.

Building on this work, Better Cotton conducted a gender mainstreaming project alongside the impact consulting firm Partnering4Change and with support from the German development agency GIZ in 2022 to transform gender perceptions

in farming in the state. The project trained a cohort of 31 Field Staff from two Programme Partners in Maharashtra to help them develop a stronger understanding of gender norms, patriarchy, privilege and power within the context of cotton farming. At the end of the project, trainers were provided with a 'Farmers Toolkit' to incorporate gender training within their existing plans and facilitate conversations around gender equality – a critical step to spreading this knowledge to the field-level and transforming social norms.

Upon completion of the Partnering4Change pilot, the number of participants disagreeing with the statement that 'women are most suited to childcare as they are born caregivers' doubled from seven to 14. This indicates that participants are questioning deep-rooted ideas about motherhood and deconstructing the notions about 'natural' qualities associated with women.



<sup>16</sup> Sattva, IDH. 'Business Case for Gender Mainstreaming in Cotton in Maharashtra'. (2019). <https://www.sattva.co.in/publication/research-gender-mainstreaming-in-cotton-in-maharashtra/>.

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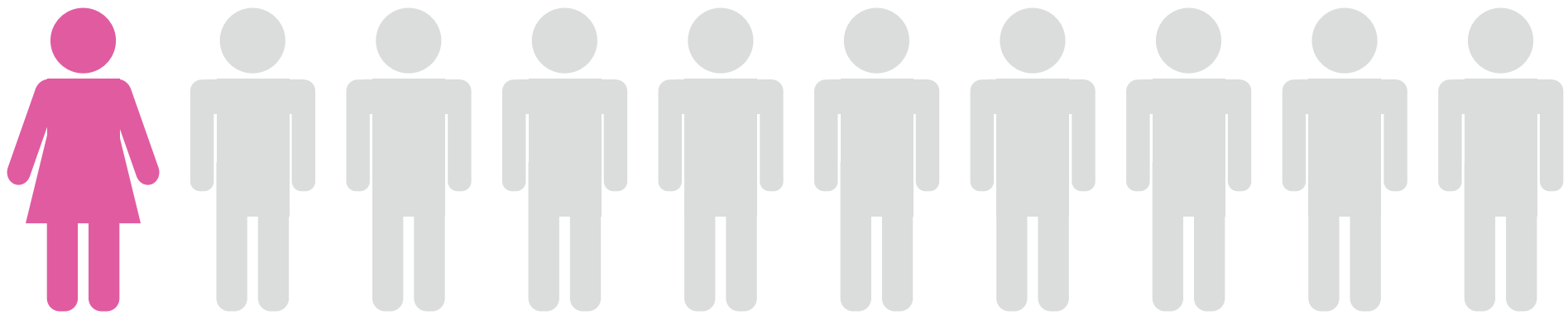


# Delivering Benefits for Women in Cotton

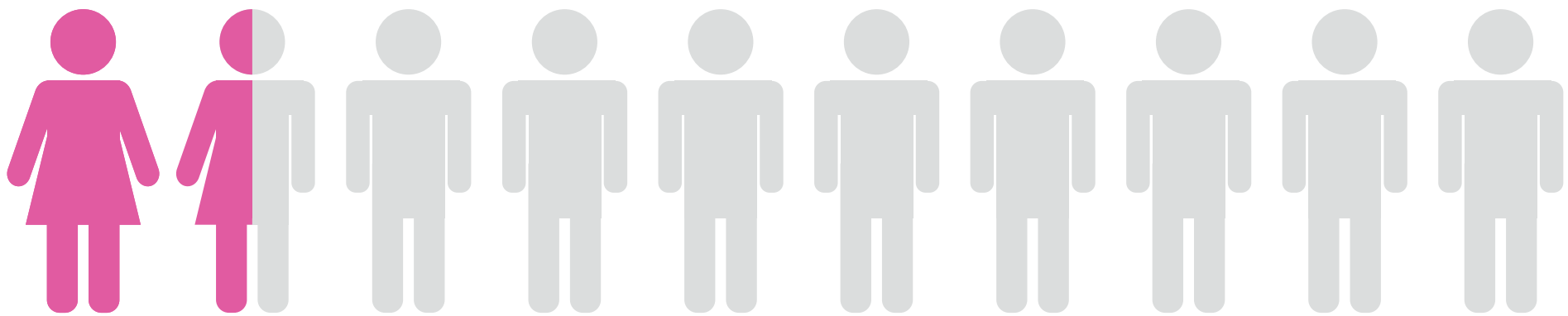
As we steadily ramp up our efforts to increase the inclusion of women in cotton farming communities, we are already seeing some early results. For example, selected Better Cotton Programme Partners in India have pioneered Producer Units with only women farmers and an average of 70% women staff members. Additionally, there has been an increase in the number of women Field Staff overall. In the 2019-20 cotton season, around 10% of Field Facilitators were women, rising to 15.5% in the 2021-22 cotton season. Another example is the women farmers who are now training their peers on production and use of biopesticides and are even selling these products within their communities.

At Better Cotton, we recognise that creating a more inclusive cotton sector is an ongoing journey, one that takes steady commitment to building awareness and changing long-held perceptions. As we move forward, partnerships with organisations on the ground will be key to achieving our vision of an industry where all genders and participants have equal standing and chances to thrive.

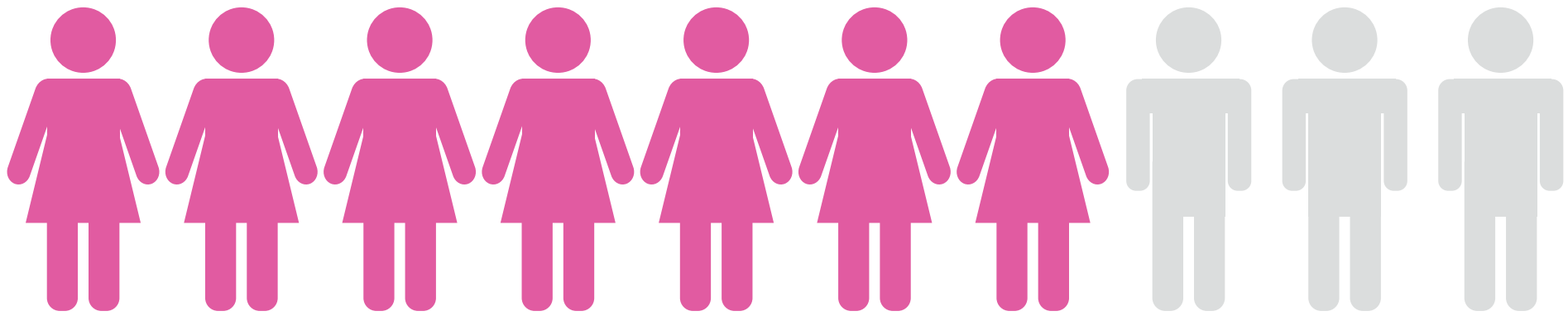
In the 2019-20 cotton season, around 10% of Field Facilitators were women



Rising to over 15.5% in the 2021-22 cotton season



Selected Better Cotton Programme Partners in India now run Producer Units with only women farmers and an average of 70% women staff members



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# Climate Change





# Climate Change

## A 360° Approach for Mitigation and Adaptation

Climate change is already impacting cotton production across India. Extreme weather variations, including prolonged dry spells, uneven rainfall and increased rainfall during harvests, are worsening pest and disease pressures, suppressing yields and deteriorating cotton quality across the country. In the 2021-22 cotton season, India's cotton production dropped by 2.33% as compared to the previous season<sup>17</sup>, with high intensity rainfall and pest attacks mainly to blame. At the farm level, climate change threatens everything from soil and water resources to food security and farmer wellbeing. To help India's cotton communities prepare for these unpredictable shocks and stresses, we are working with Better Cotton Programme Partners to build and strengthen farmer resilience.

<sup>17</sup> Crossley, Isabelle. 'Cotton Association of India Reduces Cotton Production Estimate by 2.33% for 2021- 2022 Season'. Fashion Network, 11 April 2022. <https://in.fashionnetwork.com/news/Cotton-association-of-india-reduces-cotton-production-estimate-by-2-33-for-2021-2022-season,1395783.html>.

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# Better Cotton's Approach to Climate Change

The climate crisis is one of the most urgent challenges facing our world today, and at Better Cotton, we are committed to doing our part to support those most affected by climate change while also making the cotton sector part of the climate solution. By 2030, our goal is to reduce greenhouse gas emissions by 50% per tonne of Better Cotton lint produced from the 2017 baseline. To achieve this, we are focusing our efforts around two key themes: promoting more sustainable agricultural practices that help farmers use inputs more efficiently while increasing crop quality and yields and strengthening the capacity of farmers to respond to the changes ahead.

More sustainable agricultural practices include replacing synthetic fertilisers with biofertilisers, introducing and expanding the adoption of intercropping, crop rotations, green manures, minimum tillage and other measures. Programme Partners have a critical role to play in guiding farmers to understand the ideal actions for their local context. Better Cotton Field Staff and Farmers receive training and support which includes on-farm and off-farm capacity strengthening programmes, resource materials and webinars with subject matter experts

Another critical part of helping farmers prepare for climate change is addressing water challenges. Programme Partners are working with the government, Civil Society Organisations and other community organisations to restore water bodies in Better Cotton growing areas, increase access to micro-irrigation systems and even create farm ponds and other water harvesting and recharging structures.

We see this at work in the districts of Bathinda and Mansa in the state of Punjab, where inconsistent rainfall and the overuse of groundwater resources have resulted in a rapid decline of water quality, making it unfit for agricultural use in some areas. To help farmers deal with these challenges, Better Cotton Programme Partner Ambuja Cement Foundation consulted with technical experts from India's Departments of Agriculture and Irrigation who suggested building farm ponds to increase the amount of water available for irrigation.

Gursewak Singh from the village of Deon in the Bathinda district was one of the Better Cotton Farmers who tried it out.

*“Initially, I was skeptical of building a farm pond as it was an expensive affair, but I am happy to have built it,” he said. “The farm pond has helped me enhance my water quality and reliably store water for future irrigation use. Using remedied water from the farm pond has also helped me improve my soil health and increase my yield. Now that I have enough water stored in the farm pond, I am planning to install drip irrigation in the coming season to further optimise my water use and improve productivity.”*

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# Innovating Future Mitigation and Adaptation Strategies

As we work to meet our 2030 climate mitigation target and help farmers adapt to a changing climate, we are piloting several tools and projects across India.

## Carbon Insetting

Scoping is underway to implement the pilot phase of a [carbon insetting](#) project aimed at reducing GHG emissions at the farm level in major Better Cotton growing areas in India.

## Adaptation Study and Analysis

We are conducting a Climate Action Inventory study in India's leading cotton-producing states of Gujarat and Maharashtra to map local risks and adaptation practices, explore possible roadblocks and evaluate the best short- and long-term actions farmers can take to boost their resilience. The study is expected to provide insights on capacity strengthening for Programme Partners and farmers and will inform the design of our upcoming Climate Risk Tool.

## Climate Risk Tool

We are currently exploring a tool that will help Better Cotton Programme Partners mainstream climate change adaptation into programme design and implementation. This tool will help partners define mitigation and adaptation measures to address current and future vulnerabilities.

By being proactive and exploring new climate solutions, we can help farmers stay ahead of challenges while delivering on our climate target and working towards a brighter future for all.



Photo Credit: Better Cotton/Florian Lang

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# Conclusion

The Better Cotton Programme in India has come far since its inception in 2011. With nearly one million farmers and counting, our goal for this next phase, in line with our 2030 Strategy, is on deepening impact.

As we work to do so, these results provide us with key insights that are helping us align our stakeholders and prioritise our areas of focus.

Though challenges remain, notable results for yields; reductions in pesticide use; advancements in water and soil health; and progress towards sustainable livelihoods and gender equality in the cotton farming communities where Better Cotton is active, show us that we are on the right track to a more equitable and sustainable future for the sector.

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# Future Focus

## Investing in Deepening Impact

Better Cotton is committed to providing higher levels of investment in strengthening programme delivery in India – and globally – to speed up progress.

On top of all the work we're already doing with our partners, some of the ways that we're looking to make this possible are through:

- 🌱 Building stronger, more effective and inclusive partnerships with existing and potential partners in the country, including Programme Partners, agricultural research centres (KVKs), individual agricultural experts, and civil society organisations (CSOs).
- 🌱 Building increased adaptive capacities to climate vulnerability among farmers and communities, such as through mapping farmer practices, developing and implementing pilot carbon projects; identify and implementing opportunities for Payment for Ecosystem Services for farmers.
- 🌱 Further development of social impact capacity in India, via collaboration with current and new civil society partners on labour rights, decent work and sustainable livelihoods projects, as well as developing and implementing pilots. This will also encompass identifying and implementing opportunities to directly engage workers in Occupational Safety and Health Trainings.

### Traceability

As part of our 2030 Strategy, Better Cotton is implementing a traceability solution at the end of 2023 to ensure that Better Cotton Farmers can continue to access increasingly regulated international markets.

Traceability has the potential to create huge value for Retailer and Brand Members of Better Cotton and those they source from – but we need to ensure that it also creates value for growers at the start of the chain – including the smallholders that make up the majority of cotton farmers in places like India.

### Towards an Impact Marketplace

Better Cotton is also committed to developing an Impact Marketplace, built on the foundations of our field-level presence, capacity strengthening, monitoring approach and upcoming physical traceability system.

The marketplace aims to:

- 🌱 **Improve farmer livelihoods:** through a combination of incentive payments and remuneration for sustainable outcomes and metrics.
- 🌱 **Accelerate sustainability progress:** leading to deeper impacts in areas such as regenerative agriculture, water reductions, and gender equality.
- 🌱 **Create new sources of verified outcome data for those that source Better Cotton:** enabling credible claims that align with organisational sustainability priorities and reporting requirements.



# Annex

This report presents the most reliable and up-to-date data available to us. Below is information on how Better Cotton collects, samples and analyses data as well as limitations to the data used in this report.

## The Data Collection Process

At the Producer Unit level, Programme Partners Field Facilitators collect data using Farmer Field Books distributed to farmers early in the season. The data is then reviewed and confirmed by Field Facilitators with farmers and checked by the Producer Unit Manager. Producer Unit Managers then send it to the Project or Programme Manager who shares it with Better Cotton.

Once we receive the data, we review it, requesting any necessary clarifications from Programme Partners and correcting or excluding data points with large quality concerns not explained by partners. We also request contextual information to evaluate the veracity of outliers and regular data. After that, the data is aggregated and analysed at different levels and for different purposes, such as internal learning or public reporting. We exclude any suspicious or incomplete data from the results of individual farmers and Producer Units.

Season	Number licensed farmers	Number sample farms included	Ratio of samples excluded due to quality concerns
2014-15	269,511	21,411	9%
2015-16	423,429	37,026	27%
2016-17	308,437	37,056	22%
2017-18	684,035	60,854	10%
2018-19	852,766	76,861	8%
2019-20	1,128,510	106,010	3%
2020-21	1,116,425	44,897	1%
2021-22	992,053	45,328	0%

## Sampling Methodology

Each season, 10% of Learning Groups inside a Producer Unit are randomly selected by Better Cotton for sampling and we sample around 10 farmers out of 30-40 in each Learning Group. (Note that before the Covid-19 pandemic, we collected data from all farmers in randomly selected Learning Groups). The basic assumption of this sampling methodology is that aggregated random samples in a Producer Unit are representative of the full population of farmers in that Producer Unit.

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## Analysis Methodology

A Producer Unit is the minimum unit of analysis. When analysing data by aggregated area or group (e.g., country, province or Programme Partner levels), average values from each Producer Unit are weighted by the total cotton area of those Producer Units. By doing this, each Producer Unit has a relative importance in the final values according to their size (in harvested cotton area).

When analysing the data, it's important to consider the varying number of participants from season to season in case the proportion of similar types of farmers (e.g., those from regions with higher yields) is not constant, as this can distort the results of the longitudinal (trends) analysis.

We adjust cost, income, and margins/profits to annualised inflation rates.<sup>18</sup>

## Limitations of the Analysis

Most of the results shown in this report are aggregated at the national or state level. Therefore, it is not possible to infer the specificities of each project developed by Better Cotton Programme Partners. Variables like weather, pest pressure, economic shocks and more can have a big impact on a local area, but they may not be visible from a national perspective.

For example, there have been a varying number of Better Cotton Farmers across different regions in India over the last several seasons. As a result, their relative weight in national aggregates could mask some of the aforementioned trends. With that said, the results of our Producer Unit or regional analyses do not indicate any contradictions with those stated in this report.

## Better Cotton's Approach to Measuring Results

At Better Cotton, we use complementary research and evaluation methods and work with independent organisations and researchers to assess field-level impacts. A diversity of approaches is required to effectively measure results and impact both at scale and in depth – as no single approach or methodology can meet all the needs for understanding the reach, efficiency, results, and ultimately, impact of a sustainability programme.

Regarding impact, we are not only interested in assessing and quantifying the changes that can be attributed to Better Cotton but also in assessing our contribution to these changes. When assessing attribution, we want to determine if our programme contributed to or caused the observed

outcomes and impact, acknowledging that there are many other factors at play. We try to quantify our impact through robust methodologies, including comparing the outcomes of Better Cotton Farmers to control groups which did not receive any training or intervention.

## Learn more about Better Cotton's approach to measuring results and impact.

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<sup>18</sup> Annualised inflation rates are obtained from the International Monetary Fund.



# Key Terms

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## PICs

The Rotterdam Convention on Prior Informed Consent (PIC) regulates the exchange of information in international trade on certain hazardous pesticides (active ingredients and formulations).

## PoPs

The Stockholm Convention aims at the global elimination of Persistent Organic Pollutants (POPs). POPs are toxic, bio-accumulative, highly persistent, and pose a global threat to living beings

## Alternate Furrow Method

This consists of selectively irrigating some furrows whilst purposely leaving others dry. Furrows are small, parallel channels, made to carry water in order to irrigate the crop. The crop is usually grown on the ridges between the furrows.

## Capacity strengthening

As used in this report, it refers to activities that aim to unlock, strengthen, create, adapt and maintain the knowledge, skills, abilities and attitudes of individuals involved in farm-level cotton production to contribute to positive social, economic and environmental impact.<sup>1</sup>

## Carcinogenic, mutagenic or reprotoxic (CMR) substances

Carcinogenic, mutagenic and reprotoxic (CMR) substances are those which cause specific types of harm to human health. Carcinogenic chemicals can cause or promote cancers. Mutagenic chemicals can cause genetic mutations. Reprotoxic chemicals can damage the reproductive process.

## Cattle-Proof Trenches

Cattle-proof trenches are agricultural structures designed to prevent cattle or

other large livestock from accessing specific areas. These trenches are typically dug in strategic locations to serve as barriers, restricting the movement of cattle and protecting certain zones from grazing or trampling.

## Check Dams

A check dam is a modest structure, sometimes temporary, built across a seasonal stream, drainage ditch, or waterway to mitigate erosion by slowing down the water flow. These dams are simple yet efficient, briefly impeding the water until it reaches the dam's height and spills over. As a result, water accumulates, recharging the ground water table and safeguarding against soil erosion.

## Continuous Contour Trenches

A soil and water conservation technique used in agriculture to manage water runoff and prevent soil erosion in hilly or sloping landscapes. The trenches are dug along the contours of the land. Contours connect points of the same elevation on a slope, forming horizontal lines across the landscape. By digging trenches along these contour lines, water is retained by the trench as it flows downhill, allowing it to slow down and spread out, reducing the potential for erosion.

## Decent work

Decent work refers to work which provides equal opportunities for everyone to work productively in conditions of freedom, equity, security and human dignity. This concept is understood to encompass respect for labour rights, expressed in the ILO core labour standards 19 and national labour legislation, alongside the promotion of safe and productive work, social protection and social dialogue.

## Drip Irrigation

An efficient method of watering plants and crops by applying water directly to the root zone of the plants. In this system, water is delivered slowly and directly to the

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base of each plant through a network of tubes, pipes, valves and emitters. Unlike traditional irrigation methods like flood or furrow, where water is distributed over a large area, drip irrigation targets specific plants or crop rows, reducing water waste and optimising water use.

### Farmers

The concept of farmers includes people of any gender, background and identity who share farming duties and decision-making responsibilities. Tenants and sharecroppers are also considered farmers if they share input costs and are primarily responsible for production practices.

### Farming communities

Farmers, workers, their household members and all the people directly involved, benefitting from or affected by cotton production within a cotton producing area

### Field Facilitator

Field Facilitators are part of the management structure for Better Cotton Producer Units. They are trained field-based staff who help organise farmers, collect farm level data and carry out capacity strengthening activities in farming communities. Field Facilitators are typically employed by either Programme Partners or their affiliated local partners.

### Field Staff

### Highly Hazardous Pesticides (HHPs)

Highly Hazardous Pesticides (HHPs), as defined by the HHP criteria agreed by the Food and Agriculture Organization of the United Nations/WHO Joint Meeting on Pesticide Management<sup>2</sup>, are pesticides that are acknowledged to present particularly high levels of acute or chronic hazards to health or environment

according to internationally accepted classification systems such as the World Health Organization (WHO) or the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) or their listing in relevant binding international agreements or conventions. In addition, pesticides that appear to cause severe or irreversible harm to health or the environment under conditions of use in a country may be considered and treated as highly hazardous.<sup>3</sup>

### Integrated Pest Management (IPM)

Integrated Pest Management is the careful consideration of all available pest control techniques and subsequent integration of appropriate measures that discourage the development of pest populations. It combines biological, chemical, physical and crop specific (cultural) management strategies and practices to grow healthy crops and minimise the use of pesticides. This reduces or minimises risks posed by pesticides to human health and the environment for sustainable pest management.<sup>4</sup>

### Open Wells

The oldest and most common type of well dug directly into the ground vertically to access groundwater.

### Permitted

Permitted formulations, as defined in this report, are those which are compliant with the terms of the Better Cotton Principles & Criteria.

### Personal Protective Equipment (PPE) – Appropriate

In the context of this report, appropriate Personal Protective Equipment (PPE) refers to specialised clothing, material or equipment to be used/worn in the application of pesticides as detailed in the pesticide label in order to avoid and/or mitigate exposure to hazardous substances in the form of dermal absorption, ingestion and

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inhalation. The materials should be impermeable to water, typically non-woven (to prevent passage of pesticides), chemical resistant and washable so that the toxic elements can be removed after each use. Such PPE should be suitable and comfortable for the tasks to be carried out and appropriate to the prevailing climatic conditions.

### Personal Protective Equipment (PPE) – Minimum

In the context of this report, minimum Personal Protective Equipment refers to the minimum expectation for farmers and workers to protect themselves when handling pesticides by wearing/using garments and equipment that protect the following specific body parts from dermal absorption, ingestion and inhalation:

- Face and airways (eyes, ear canal, nose and scalp);
- Limbs (arms, forearms, palms, legs and feet);
- Abdomen and genital area.

### Producer

Under the Better Cotton Standard System, the Producer defines the unit of licensing and can be either a Producer Unit for Smallholders (SH) or Medium Farms (MF) or an individual farm in the case of Large Farms (LF).

### Producer Unit (PU)

A Producer Unit (PU) is a group of Smallholders (SH) or Medium Farms (MF) who are organised together under a common management structure to participate in the Better Cotton Programme. Each PU is overseen by a dedicated PU Manager who is responsible for implementing an internal management system to support, train and monitor farmers across the PU. The size of a PU depends on local

circumstances, although the optimal size is between 3,500 to 4,000 farmers for a SH PU and around 100 farmers for a MF PU. Farmers in a SH PU are further divided into Learning Groups.

### Producer Unit Manager

The main individual responsible for implementation of the Better Cotton Principles and Criteria at the Producer Unit level.

### Programme Partner

Non-profit organisations, government bodies, private companies or private sector foundations with expertise in farming. Their role is to help farmers understand the core principles of the Better Cotton Standard in a way that's relevant to their own culture and customs. Through dedicated training and practical hands-on demonstrations, they help cotton farmers address specific sustainability challenges and continuously improve their performance. Programme Partners also monitor Better Cotton Farmers' progress, collecting the data that tells us whether Better Cotton is making a positive impact on the environment and the lives of farmers and farming communities.

### Rotterdam Convention

The Rotterdam Convention on the Prior Informed Consent Procedure (PIC) for Certain Hazardous Chemicals and Pesticides in International Trade is a legally binding international treaty that was adopted in 1998 and entered into force in 2004. It focuses on procedures related to the international trade of certain hazardous chemicals and pesticides. By ensuring shared responsibilities and that importing countries are fully informed of the potential risks before allowing their importation, it aims to protect human health and the environment from the risks posed by the use and trade of hazardous substances.

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The objectives of the Convention are:

- To promote shared responsibility and cooperative efforts among Parties in the international trade of certain hazardous chemicals;
- To contribute to the environmentally sound use of those hazardous chemicals by facilitating information exchange about their characteristics, providing for a national decision-making process on their import and export and by disseminating these decisions to the Parties.<sup>5</sup>

Annex III of the Convention lists the chemicals that are subject to the PIC procedure as laid out by the Convention. It includes pesticides that have been identified as hazardous and banned or severely restricted in at least two countries that are members (Parties) of the convention and that are subject to significant international trade.

### Social Inclusion

Better Cotton recognises that people's lives are shaped by their identities, relationships and social factors, which combined, create different forms of privilege and oppression, depending on a person's context and existing power structures (referred to as intersectionality).<sup>6</sup> Whenever farmers or workers are mentioned across the report, this includes all persons regardless of gender identity, sex characteristics, sexual orientation, age, nationality, ethnicity, language, race, class, caste, social origin, religion, belief, abilities and disabilities, health, political affiliation, political views, memberships in associations or organisations, marital or any other status. Better Cotton Producers are expected to particularly consider and pro-actively encourage participation and inclusion of all people in vulnerable situations and/or facing exclusion. Discrimination is not tolerated.

### Tube Well

A type of well constructed by drilling a narrow-diameter hole or tube into the ground to access underground water sources. It is a modern and more efficient method of obtaining water compared to traditional dug wells. The construction of a tube well involves the use of specialized drilling equipment, such as a drilling rig or a tube well machine.

### World Health Organization (WHO) Class 1 / Highly Toxic by WHO

World Health Organization (WHO) Class 1 refers to a classification system used for pesticides and other hazardous substances based on their toxicity to humans. WHO Class 1 substances are those that are highly hazardous and can cause 'severe acute' or chronic health effects in humans, even at low doses. These substances may cause death, cancer, mutations, birth defects or other serious health impacts. Class 1 is subdivided into Extremely Hazardous (Class 1a) and Highly Hazardous (Class 1b).

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