



RECOMMENDATIONS TO  
ENHANCE THE IMPACT OF  
SUSTAINABILITY STANDARDS  
ON SMALLHOLDER COTTON  
FARMERS IN MAHARASHTRA



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**IKEA** IKEA is a global leader in household products, committed to creating a positive impact on people, society and the planet. WWF and IKEA have partnered since 2002 to protect some of the world's most precious natural resources. In 2005, WWF and IKEA set out to transform cotton production and secure a sustainable future for the industry by helping farmers earn a better living and improving working conditions, as well as reducing impacts from pesticide use and saving precious water resources. In India, the partnership promotes the use of sustainable cotton in various States, including Maharashtra. IKEA supported this study financially and also is the part of the Cotton Sustainability Standards Taskforce under the Maharashtra Water MSP and provided time to time Technical inputs and guidance in the formulation and execution of the study.

**2030 WRG** 2030 Water Resources Group ("2030 WRG") is a public-private-civil society platform, conceived in the World Economic Forum in 2008 and hosted by the World Bank Group's Water Global Practice since 2018. 2030 WRG helps countries achieve water security (UN SDG 6) by facilitating collective action between government, the private sector and the civil society (UN SDG 17 on Partnerships) with government firmly in the lead and offers technical support for the design and implementation of policies, programs, financial instruments and projects that improve water resilience, transform value chains and promote a circular water economy through innovative approaches. 2030 WRG's mandate is in line with the UN SDG 6, which aims to ensure safe water and sanitation for people, ecosystems and economies by 2030. 2030 WRG is active in 11 countries including India where it works in partnership with the state governments of Maharashtra, Karnataka, Uttar Pradesh and Madhya Pradesh, through Water Multi-Stakeholders Platforms (MSP).

**Cotton Sustainability Standards Taskforce under the Maharashtra Water MSP of 2030 WRG** The Sustainability Standards Taskforce under the Water and Livelihood Security Workstream (Chaired by the Principal Secretary, Department of Agriculture, Government of Maharashtra) of the Maharashtra Water MSP of 2030 WRG comprises representatives from the public sector, industry and civil society to deliver innovative solutions to improve water use efficiency and increase the income of the cotton farming communities; and supports partnerships with cotton supply chain actors for offtake arrangements and farm-level interventions. WWF India with financial support from IKEA has commissioned this Study as part of this Taskforce. Deloitte Touche Tohmatsu India LLP was appointed to carry out the Study.

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# ABBREVIATIONS

<b>APEDA</b>	Agricultural and Processed Food Products Export Development Authority
<b>ATMA</b>	Agricultural Technology Management Agency
<b>BCGIF</b>	Better Cotton Growth and Innovation Fund
<b>BCI</b>	Better Cotton Initiative
<b>CICR</b>	Central Institute of Cotton Research
<b>CAIM</b>	Convergence of Agricultural Interventions in Maharashtra
<b>CmiA</b>	Cotton made in Africa
<b>DAC&amp;FW</b>	Department of Agriculture, Cooperation & Farmers' Welfare
<b>GoM</b>	Government of Maharashtra
<b>ILO</b>	International Labour Organization
<b>KVK</b>	Krishi Vigyan Kendra
<b>MSP</b>	Minimum Support Price
<b>NBSSLP</b>	National Bureau of Soil Survey and Land-use Planning
<b>MANAGE</b>	National Institute of Agricultural Extension Management
<b>NMAET</b>	National Mission on Agricultural Extension & Technology
<b>NMSA</b>	National Mission on Sustainable Agriculture
<b>PKVY</b>	Paramparagat Krishi Vikas Yojana
<b>PGS</b>	Participatory Guarantee System
<b>PMKSY</b>	Pradhan Mantri Krishi Sinchayi Yojna
<b>PoCRA</b>	Project on Climate Resilient Agriculture
<b>RKVY- RAFTAAR</b>	Rashtriya Krishi Vikas Yojana – Remunerative Approaches for Agriculture and Allied Sectors Rejuvenation
<b>SDG</b>	Sustainability Development Goals
<b>SMAE</b>	Sub Mission on Agricultural Extension
<b>WWF India</b>	World Wide Fund for Nature India
<b>2030 WRG</b>	2030 Water Resources Group



# EXECUTIVE SUMMARY

Agriculture is an important economic activity in Maharashtra, with half of the State's population depending on it for livelihood. **The State is the second largest producer of cotton in the country**, producing over 20% of the country's cotton. Cotton commands the largest net sown area under a single crop. Vidarbha and Marathwada are the main cotton producing regions in the State. The State also accounts for one of the largest numbers of smallholder farmers with over 14.7 million operational holdings. Thus, a substantial number of smallholder farmers are involved in cotton production.

However, there are **concerns around environmental and social practices in the cotton value chain**. This includes low yields (due to predominantly rainfed nature of agriculture), and frequent pest infestation. Overuse of chemicals (as defence against pests, and fertilisers) has led to concerns over degradation of soil and water in the State, as well as increasing concerns regarding farmer health. In 2017, over 20 cotton farmers in the district of Yavatmal and over 40 farmers in the Vidarbha region died due to pesticides related poisoning. Further, reports highlight important areas such as labour practices, **value chain gaps such as market linkages, quality and contamination of cotton, market volatility**, as important areas of concern in the cotton value chain.

**Several initiatives have been taken over the past few years to enhance sustainable practices in cotton value chain.** The **Central and State governments** have launched various policies and programs in the agriculture sector to promote production and productivity with higher soil and water efficiency. Maharashtra has also taken forward-looking initiatives and has identified sustainable climate-resilient agriculture as an important paradigm for development. Some of the pertinent Central and State schemes include Soil Health Management under National Mission for Sustainable Agriculture, Paramparagat Krishi Vikas Yojana, Pradhan Mantri Krishi Sinchayi Yojana, Rainfed Area Development, National Initiative for Climate Resilient Agriculture, Integrated Watershed Management Program, Jalyukt Shivar Abhiyan, and Project on Climate Resilient Agriculture. Some of these schemes such as incentives for drip irrigation have seen fair bit of success in the State. The central government has also tabled a new Pesticide Management Bill 2020 in the cabinet to regulate heavy use of pesticides in agriculture. In addition to these policies and programs, **Voluntary Standards such as the Better Cotton Initiative promote the cultivation of sustainable cotton in the State.** The Standards ecosystem is also evolving. Most Standards focus on sustainable production, to enhance environmental outcomes and cost savins to farmers. Practices promulgated by these Standards work towards addressing social (especially labour/ decent work practices) and environmental aspects (soil conservation, water use efficiency, use of chemicals and pesticides) at the farm

MAHARASHTRA  
PRODUCES OVER

20%

OF THE COUNTRY'S  
COTTON

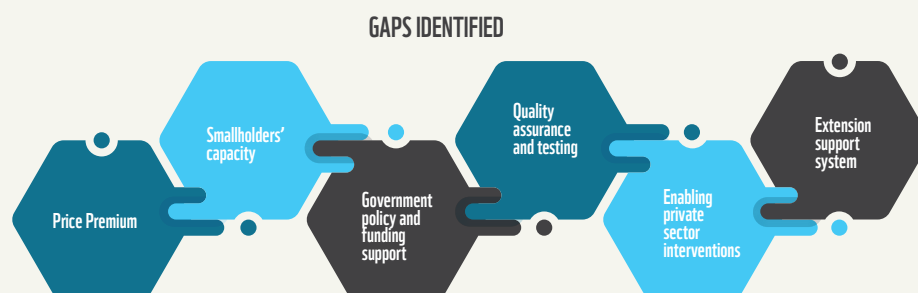
2<sup>nd</sup>

SECOND LARGEST  
PRODUCER OF  
COTTON IN THE  
COUNTRY

level. New Standards are also being experimented that expand the coverage to include animal welfare practices, traceability and supply chain issues, marketing linkages, etc. Further, other value chain issues beyond farm such as handling, processing, contamination and integrity of cotton also needs to be addressed.

**Since the objectives of Voluntary Standards are aligned with SDGs, globally it is accepted that they also contribute to countries' achievement of SDGs.** This also aligns with India's commitment to the United Nations Sustainable Development Goals (UN SDGs) and international treaties. For instance, the country launched Decent Work Country Programme (2018-22) in collaboration with the International Labor Organisation (ILO), which lays down a roadmap for improved working conditions at organised and unorganised employment, and calls for equal opportunities for men and women, among other things. The guidelines apply to all sectors of the economy, including services, manufacturing, and agriculture. Further NITI Aayog, India's think tank, maps India's goals to SDGs by focussing on 62 Priority Indicators, which include percentage of area under forest cover, change in extent of water bodies, groundwater withdrawal against availability, nitrogen fertiliser usage, etc.

**Present trends in the State show early successes in expansion of these Standards,** with almost 14% of the cultivated cotton area under BCI. The number of farmers converted to BCI tripled in the last five years to over 4.4 Lakh farmers (a CAGR of 26% over the last 5 years). Organic cotton is also produced, however, penetration seems to be low as most farmers grow Bt cotton (Organic cotton requires non-GMO seeds). **Challenges remain** in terms of market access, price premium for identity cotton, and capacities at local levels (smallholder farmers, public extension functionaries, implementation agencies), as also availability of certain inputs like better seeds. Quality assurance is also an important area to be addressed. Cotton from other countries such as Turkey, Africa, etc. seem to be more acceptable to private players and commands premium due to its consistent quality assurance, as compared to domestic cotton.



**Studies show that there are significant environmental benefits and economic gains that emanates out of adopting the practices promoted under the Standards.** This include improved yield, reduction in chemical fertilisers usage, reduction in application of toxic pesticides, reduction in GHG emissions, and resultant reduction in environmental risks. This is also corroborated by feedback from farmers practicing BCI and organic practices, who report improvement in soil quality, economic benefits (cost savings due to reduced use of chemicals- fertilizers and pesticides) and better health outcomes for them. It is therefore noted that substantial economic, environmental and health benefits could be achieved by the State (for farmers as well as environmental benefits), by scaling up these Standards State-wide.



**Government has an important role in supporting this ecosystem** for expansion and adoption of sustainable practices and spreading the benefits equitably. Government could therefore consider enabling State-wide adoption of these Standards by farmers. In addition, government can help scale up the market, and develop infrastructure for the future, to address the missing links. It is desirable to invest in certain areas like capacity building of farmers and public sector extension network, access to eco-friendly inputs (non-GMO seeds, approved chemicals) to reduce the use of chemicals (pesticides and fertilisers), upgrade testing and R&D infrastructure and mechanisms, and establishing the missing value chain linkages especially on the market and logistics aspects. Private sector is an important part of the ecosystem that could also be leveraged more effectively.

In this context, **there are various options that may be considered** (figure below). Each of these options have some pros and cons in terms of market responsiveness, ease of implementation, cost economics, monitoring mechanisms, and coordination efforts required from both government and industry. There are examples from other States and countries who have adopted similar strategies for the sector. Some of these include Government of Andhra Pradesh's ZBNF program, Australia's myBMP initiative, The Egyptian Cotton Project, Mozambique's mainstreaming of BCI, and US Cotton Trust Protocol. Government of Maharashtra could adopt either of these to further its vision of prospering farmers and a vibrant cotton sector. This would entail looking at the state of economy, level of investments, and project horizon. The government could consider channelizing funds through its ongoing schemes into the areas requiring strengthening and support.

**OPTION 1**  
Market led model,  
with government as  
enabler

- Incentives for expansion to remote farmers
- Share details regarding government scheme and subsidies, funds to be released on priority basis
- Support funding for farmer registration/ certification, and establishing of farmer entities (FPOs)
- Scale up the market by procuring sustainable cotton products
- Use of private sector benchmarks and inputs for policy decisions
- Strengthen testing infrastructure for quality assurance

**OPTION 2**  
Collaborative  
approach with  
government-private  
partnership

- Incentives for private sector players to implement/ expand standards coverage
- Training to government extension functionaries on Standards
- Undertake pilot projects with private standards
- Funding support for farmer training
- Funding for testing and quality assurance, to be implemented by private sector
- Enhance R&D investments
- Use of private sector benchmarks and inputs for policy decisions
- Enable digital interventions

**OPTION 3**  
Government driven  
dedicated program

- A dedicated program for farmer capacity building, testing and quality assurance, and marketing
- Pilot programs- organic districts, private certification
- Dovetailing public programs; involve non-government/ private sector partners
- Setting up procurement mechanism- farm gate to market/ Setting up dedicated mandis
- Branding strategy to manage perception on quality, and for better marketing
- Provide marketing support and enable digital interventions

As a way forward, government could have consultations with private sector and Standards organisations for collaboration on training and certification aspects. While Standards could bring in their experience and expertise for developing implementation partners, undertaking capacity building, demonstration plots and conducting trainings, project management, etc., government could undertake joint pilots and help plug the gaps in testing and market networks. Government could dovetail its programs to provide the necessary inputs, subsidies and leverage private sector expertise. As next steps, government could initiate focussed industry consultations, to arrive at a detailed strategy and time bound action plan.



# 1

## BACKGROUND AND STUDY CONTEXT

This chapter presents the background and context for the project and presents the structure of this report.

### 1.1 COTTON AN IMPORTANT CROP IN MAHARASHTRA'S AGRICULTURE LANDSCAPE

#### 1.1.1 About half of the State population is engaged in agriculture

Maharashtra is considered to be an economic growth engine. Even though agriculture sector's contribution to Maharashtra's economic performance is only 11%, about 50% of the State's population depends on agriculture sector, either directly or indirectly, for livelihoods. The State also accounts for one the **largest number of smallholder farmers** with over 14.7 million operational holdings.

#### 1.1.2 Cotton is an important crop for the State

Maharashtra is the **second largest producer of cotton in the country** and accounts for over 1/5<sup>th</sup> of the country's total cotton production. It is grown on about 41.19 Lakh ha area<sup>1</sup> accounting for 24% of net sown area, making it one of the largest area under a single crop in the State. Thus, around **30% of the State's farmers are engaged in cotton production**. Vidarbha and Marathwada are the main cotton producing regions in the State covering about 15 districts. Cotton production statistics for the last five years are given below.

Figure 1: Cotton (lint) production in Maharashtra ('000MT)



Source: Data from Cotton Advisory Board (given in lakh bales, wherein each bale weighs 170 kg) converted to '000 MT; 1 kg = 0.001 metric tonnes

<sup>1</sup> Cotton Advisory Board, 2018-19

## 1.2 VARIOUS ENVIRONMENTAL, SOCIAL CONCERNS AND VALUE CHAIN GAPS EXIST

### 1.2.1 Low productivity

Despite being a high producer of cotton, **Maharashtra has the lowest yields among all States in India**, as seen in Table 1. This could be attributed to the fact that in major cotton producing regions of Marathwada and Vidarbha, only a few districts are irrigated (Nagpur, Beed, Bhandara, Gondia) and cotton cultivation is being undertaken largely in rainfed conditions. (Gujarat with better irrigation technology is able to produce more cotton than Maharashtra despite having a lower area under cotton production). Various studies also attribute this low productivity to poor farm practices, in addition to a lack of adequate irrigation network and frequent dry-spells in some regions. Close to 70% of the State's geographical area lies in semi-arid region. Drought in the State has been prominently observed from 2011-12 onwards (except 2013 monsoon). During 2018-19, due to below average level rainfall received during the rainy season, drought was declared in 151 talukas<sup>2</sup>. **In this context as well, cotton as a traditional crop and one that can withstand drought conditions, becomes important.**

Table 1: Area, Production, and Yield of Cotton across select States

State	2016-17			2017-18 (P)			2018-19 (P)		
	Area ('000 ha)	Prod ('000 MT)	Yield (MT per ha)	Area ('000 ha)	Prod ('000 MT)	Yield (MT per ha)	Area ('000 ha)	Prod ('000 MT)	Yield (MT per ha)
Gujarat	2382	1615	0.68	2623	1768	0.67	2709	1564	0.58
<b>Maharashtra</b>	<b>3800</b>	<b>1504.5</b>	<b>0.40</b>	<b>4207</b>	<b>1445</b>	<b>0.34</b>	<b>4119</b>	<b>1377</b>	<b>0.33</b>
Telangana	1409	816	0.58	1897	935	0.49	1794	901	0.50
Haryana	570	348.5	0.61	669	382.5	0.57	665	459	0.69
Madhya Pradesh	599	348.5	0.58	603	348.5	0.58	697	408	0.59
Rajasthan	471	280.5	0.60	584	374	0.64	496	374	0.75
Andhra Pradesh	472	323	0.68	644	348.5	0.54	551	340	0.62
Karnataka	510	306	0.60	546	306	0.56	575	306	0.53
Punjab	285	153	0.54	291	195.5	0.67	284	195.5	0.69
Tamil Nadu	142	85	0.60	185	93.5	0.51	140	102	0.73
Orissa	136	51	0.38	145	59.5	0.41	158	76.5	0.48
Others	50	34	0.68	50	34	0.68	50	34	0.68
<b>Total</b>	<b>10826</b>	<b>5865</b>	<b>0.54</b>	<b>12444</b>	<b>6290</b>	<b>0.51</b>	<b>12238</b>	<b>6137</b>	<b>0.50</b>

Source: Data from Cotton Advisory Board (given in lakh bales, wherein each bale weighs 170 kg) converted to '000 MT; 1 kg = 0.001 metric tonnes

<sup>2</sup> Maharashtra Economic Survey 2019-20

## 1.2.2 Other than water unavailability (for irrigation), frequent pest infestation and resultant use of chemicals, soil and land degradation, and adverse impact on farmers' health are also causes of concern

Agriculture withdraws over 80% of State's water. 94% of the State's geographical area is prone to water-induced soil erosion<sup>3</sup>. 95% of Maharashtra's canal command area is saline (national average: 44%). Given that cotton is a water-intensive crop, and Maharashtra is typically a rainfed State, concerns have been raised over the judiciousness of water usage in the State.

Being prone to frequent pest attacks, cotton consumes almost half of the chemical pesticides used in agriculture production in the country<sup>4</sup>. According to non-profit Pesticide Action Network (PAN), Maharashtra consumed the most chemical pesticides in India in the past five years at 61,138 tonnes<sup>5</sup>, witnessing a 35.6% increase in pesticide consumption between 2014-15 and 2018-19. Overuse of chemicals has led to concerns over and soil degradation in the State, as well as increasing concerns regarding farmer health. The existence and use of spurious, misbranded or unregistered pesticides is also concerning. Between 2013-14 and 2017-18, over **272 farmers died due to pesticides related poisoning**<sup>6</sup>. Further, reports highlight important areas such as **labour practices, value chain gaps** such as input supply (particularly, organic or bio inputs), lack of adequate market linkages, quality and contamination of cotton, as important areas of concern in the cotton value chain. Thus there is a need to intensify efforts to regulate chemical usage and shift towards sustainable practices to improve farmers health and environment.

## 1.3 SUSTAINABLE AGRICULTURE HOLDS HIGH PRIORITY IN GOVERNMENT'S DEVELOPMENT PARADIGM

Several initiatives have been undertaken over the past few years to support the agriculture sector and promote sustainable practices in agriculture. The Central and State governments have launched various policies and programs in the agriculture sector.

### 1.3.1 Maharashtra government has identified sustainable climate-resilient agriculture as an important paradigm for development

To this end, various forward-looking initiatives are being undertaken in the State. The **Maharashtra State Water policy** and the **Jalyukt Shivar Abhiyan** seek to ensure sustainable use of water resources in the State. One of the recent initiatives, the **Project on Climate Resilient Agriculture (PoCRA)** of Government of Maharashtra (GoM), (supported by the World Bank, and initiated in 2018) aims to enhance climate-resilience and profitability of smallholder farming systems in 15 selected districts of Maharashtra. It seeks to achieve this through development of mini watersheds,

<sup>3</sup> National Bureau of Soil Survey and Land-use Planning (NBSSLP)

<sup>4</sup> World Wild Fund for Nature (WWF)

<sup>5</sup> Pesticide Action Network report, March 2020

<sup>6</sup> Union Ministry of Agriculture

adoption of crop diversification/alternate cropping systems, promotion of surface and groundwater management, and extensive capacity building of farmers, among other initiatives. **State of Maharashtra Agribusiness and Rural Transformation (SMART)** project aims to enhance enterprise formation, increasing access to markets, and promoting climate resilience and resource-use efficiency. Further, initiatives such as **Taskforce on Cotton Sustainability Standards of the Maharashtra Water MSP of 2030 WRG** aim at bringing together various stakeholders to enhance the livelihoods of cotton farmers, promote sustainable agricultural practices and water security, and leverage market resources through Public Private Partnership for Integrated Agricultural Development (PPP-IAD) framework.

### 1.3.2 The Government of India (GoI) on its part has also been promoting sustainable practices

Besides supporting the States with comprehensive agriculture and allied sector development programs such as **Rashtriya Krishi Vikas Yojana**, the GoI provides support under various schemes that can be leveraged for sustainable practices in agriculture. For instance, **Paramparagat Krishi Vikas Yojana** focusses on promoting organic cultivation in the country, while **National Mission for Sustainable Agriculture** aims at promoting location specific improved agronomic practices through soil health management, enhanced water use efficiency, judicious use of chemicals, crop diversification, etc. The recent introduction of **Pesticide Management Bill** in Rajya Sabha has shown government's intent to promote safe and environment friendly pesticides in the country.

## 1.4 VARIOUS VOLUNTARY STANDARDS ARE ALSO PROMOTING SUSTAINABLE PRACTICES IN COTTON IN MAHARASHTRA

Besides government initiatives, private players are an integral part of the ecosystem, involved in capacity building, improvement of farm practices, and market linkages. **Voluntary Standards such as the Better Cotton Initiative (BCI), Fairtrade, etc. promote the cultivation and adoption of sustainable practices in cotton globally.** These Standards work towards addressing environmental aspects (soil conservation, water use efficiency, use of chemicals and pesticides) and social aspects (especially labour/ decent work practices) at the farm level. Since these Standards are aligned with **United Nations Sustainable Development Goals (UN SDGs)**, globally it is accepted that they also contribute to countries' achievement of SDGs.

Maharashtra is one of the leading States in adoption of some of these Standards. BCI is the dominant Standard in the State, working with over four lakh smallholder farmers. Fairtrade also operates for a variety of crops in the State. **Organic cotton** is also produced in the State, though a large number of farmers operate without certification under National Programme for Organic production (NPOP) or Participatory Guarantee Scheme (PGS). However, data on the spread across number of farmers, across districts is limited. Initial pilots under new Standards such as **Regenerative Organic Certification (ROC)**, are also being undertaken.

It is believed that adoption of these Standards have benefitted the smallholder farmers and there exist opportunities to scale up the benefits State-wide. However, this would require collaborated actions from government and private sector.

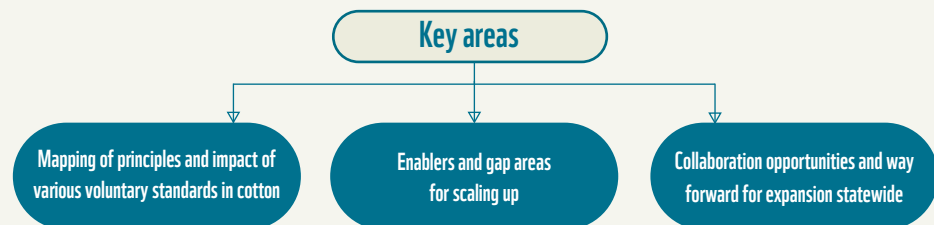
With this background, WWF and Ikea have sponsored this study under the aegis of Taskforce on Cotton Sustainability Standards of the Maharashtra Water MSP of 2030 WRG as a first step to understand the prevalence and benefits of the Standards in cotton segment, and to explore potential opportunities for scale up in the State.

## 1.5. ABOUT THIS STUDY

The study hypothesis is that farmers receive significant benefits on adopting sustainable practices/ adopting voluntary Standards, compared to their conventional counterparts, and collaboration/ alignment is possible in policies/ initiatives of the State and those of sustainability standards, to enable translating the positive impacts on the State’s social, economic and environmental landscape in general, and specifically on farmers and farming practices.

The study therefore seeks to explore the benefits of adoption of voluntary sustainability Standards prevalent in cotton in Maharashtra, understand the gaps, enablers and barriers in expanding sustainable practices in cotton, and help chart a way forward for partnership approaches between voluntary and public standards/ institutions.

Figure 2: Scope of the study

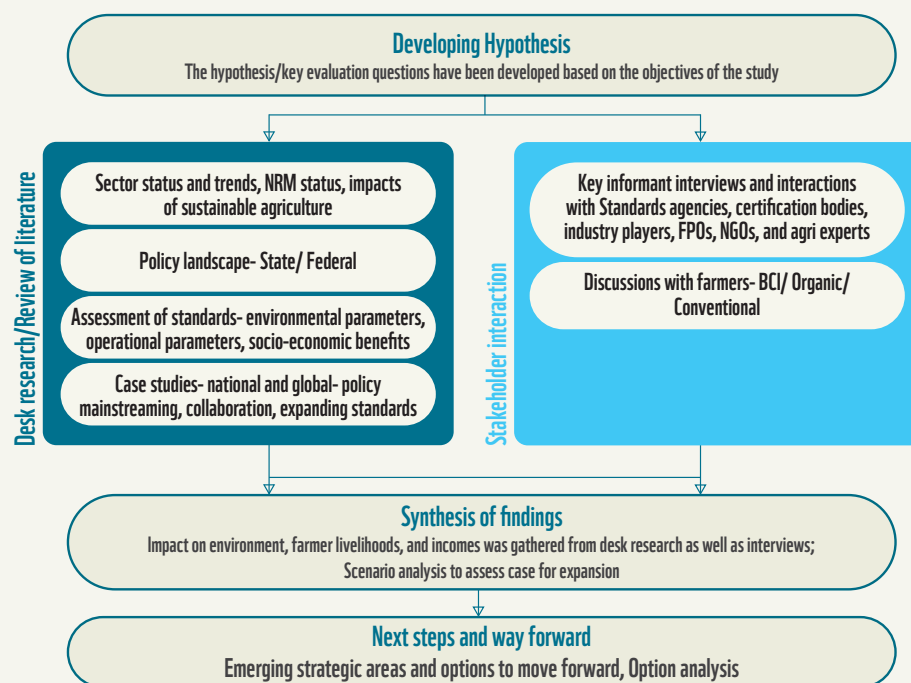


### Study hypothesis and questions

<p>Significant benefits are received by farmers using sustainable practices/ adopting voluntary Standards as compared to their conventional counterparts.</p> <p>Collaboration/ alignment is possible in State policies, PoPs, processes and those of sustainability standards, to enable translating the positive impacts on the State’s social, economic and environmental landscape in general, and specifically on farmers and farming practices</p>	<p>What are the key tenets of the standards, their prevalence in Maharashtra</p> <p>What are the environmental and socio-economic benefits to farmers- Environmental (soil, water), Price premium and access to preferential markets, Reduction in input costs, Economic benefits in terms of livelihood, health, savings, and so on</p> <p>What are the enablers and barriers to adoption of sustainability standards by cotton producers in Maharashtra</p> <p>What are possible alignments in State policies, PoPs, processes and those of sustainability standards</p>
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The framework of analysis for the study is illustrated below. The study team undertook secondary and primary research, assessed various sustainability Standards, and developed scenarios based on reported cost savings from adoption of Standards, emerging strategic areas and way forward.

**Figure 3: Framework of analysis for the study**



### Study Limitations

The study does not seek to verify the claims made by the Standards or conduct audit of any nature. It seeks to understand the potential benefits of practices promulgated under the various voluntary Standards, and way forward for translating benefits to farmers and environment. The study does not seek to carry out a detailed impact assessment exercise but relies on data and information from independent studies, and stakeholder inputs. The study was initiated and delivered during the COVID-19 lock down in the country, and relies on extensive secondary research and telephonic interviews of stakeholders. The study presents a picture of the current sustainable cotton landscape, and the gaps that exist, however it does not claim to be exhaustive.

## 1.6. SCOPE AND STRUCTURE OF THIS REPORT

This report presents the analysis and findings of the study including the assessment of various sustainability Standards, review of relevant policies, schemes, and programmes, the coverage of voluntary Standards in the State, the enablers and barriers for adoption, and the next steps for upscaling in the State. The report contains the following chapters:

<b>Background and study context</b>	<b>Chapter 1</b>
<b>Assessment of Cotton Standards</b>	<b>Chapter 2</b>
<b>Policy landscape, schemes, and initiatives</b>	<b>Chapter 3</b>
<b>Findings and Gap analysis</b>	<b>Chapter 4</b>
<b>Emerging strategies and Way forward</b>	<b>Chapter 5</b>



# 2

## ASSESSMENT OF VOLUNTARY STANDARDS IN COTTON

This chapter presents the overview of various Voluntary Sustainability Standards for cotton prevalent in India and Maharashtra. The assessment is undertaken on four broad categories: Environmental parameters, Social and Economic parameters, Operating model and Market linkages, and Operational parameters.

Conventional cotton cultivation is characterised by challenges across sustainability in environmental, social and economic domain. Given the concerns in natural resources management and farmers' health, shift to sustainable farming practices is an imperative for communities involved directly or indirectly with cotton. Voluntary Sustainability Standards uncover inherent benefits of sustainable production, and have been seen to improve socio-economic outcomes, human and environmental health.

### 2.1. VOLUNTARY STANDARDS PROMOTE SUSTAINABLE PRACTICES AND PROPAGATE RESPONSIBLE CULTIVATION

#### 2.1.1 Various voluntary Sustainability Standards operate in the cotton sector

Sustainability Standards aim to address a multitude of challenges regarding environment, production practices, socio-economic and decent work aspects, and have had an increasing role to play in improving farmer livelihoods locally. Mentioned below are some of the prominent Sustainability Standards operating in India, and covering cotton crop.



Better Cotton Initiative (BCI)



Fairtrade Cotton



Organic Cotton

Additionally, newer Standards such as Regenerative Organic Certified (ROC) cotton are also conducting pilots in the State. However, they are in initial stages with limited outreach.

Internationally, various countries adopt Standards such as CmiA in Africa, myBMP in Australia, and so on, which are also benchmarked with BCI principles and criteria, to coordinate sustainability efforts and uniformity in sustainable cotton for global market.

## 2.1.2 Since these standards are aligned with United Nations Sustainable Development Goals (UN SDGs), globally it is accepted that they also contribute to countries' achievement of SDGs

Standards propagate responsible consumption and production, promote decent work practices, work towards clean water and sanitation facilities, and make effort towards preserving climate change and life on land. The Standards align with the UN SDGs and the SDG goals tracked by the Standards also align with India's commitment to the SDGs and international treaties. For instance, the country launched Decent Work Country Programme (2018-22) in collaboration with the International Labor Organisation (ILO), which lays down a roadmap for improved working conditions at organised and unorganised employment, and calls for equal opportunities for men and women, among other things. The guidelines apply to all sectors of the economy, including services, manufacturing, and agriculture.

**Figure 4: Alignment of Standards with UN SDGs**



India as a nation is committed to sustainable development in the wake of the climate change crisis. Its National Development Goals also hence mirror the SDGs, and include poverty eradication, inclusive development, sustainable growth, gender equality, improved nutrition, and quality education, among others. While these goals target economic growth, infrastructure development and industrialisation at their core, they also focus on social inclusion and empowerment of the poor. The country is committed to increase percentage of area under forest cover, improve groundwater withdrawal

against availability, rationalise nitrogen fertiliser usage, and increase renewable share of installed power capacity, etc. Further, NITI Aayog, India's think tank, maps India's goals to SDGs by focussing on 62 Priority Indicators, such as, percentage of area under forest cover, change in extent of water bodies, groundwater withdrawal against availability, nitrogen fertiliser usage, renewable share of installed power capacity, etc.

### 2.1.3 Across the globe, major cotton producing countries have implemented Voluntary Standards for cotton cultivation

Production under major Sustainability Standards for cotton in various countries is shown below.

**Table 2: Production of sustainable cotton under major Standards across major cotton producing countries**

Country	Organic cotton (MT lint, 2014/15)	Fairtrade cotton (MT lint, 2014/15)	Better cotton (MT lint, 2015/16)
Australia	NA	NA	52,000
Brazil	22	NA	832,000
China	13,145	NA	415,000
<b>India</b>	<b>75,251</b>	<b>Undisclosed volume#</b>	<b>373,000</b>
Pakistan	○	NA	352,000
Turkey	7,304	NA	23,000
USA	2,432	NA	34,000

Source: WWF, PAN, Solidaridad, Sustainable Cotton Ranking 2017: Assessing Company Performance  
 # Undisclosed volume means that sustainable cotton of the relevant standard was produced in the relevant countries but that country level production data is not available

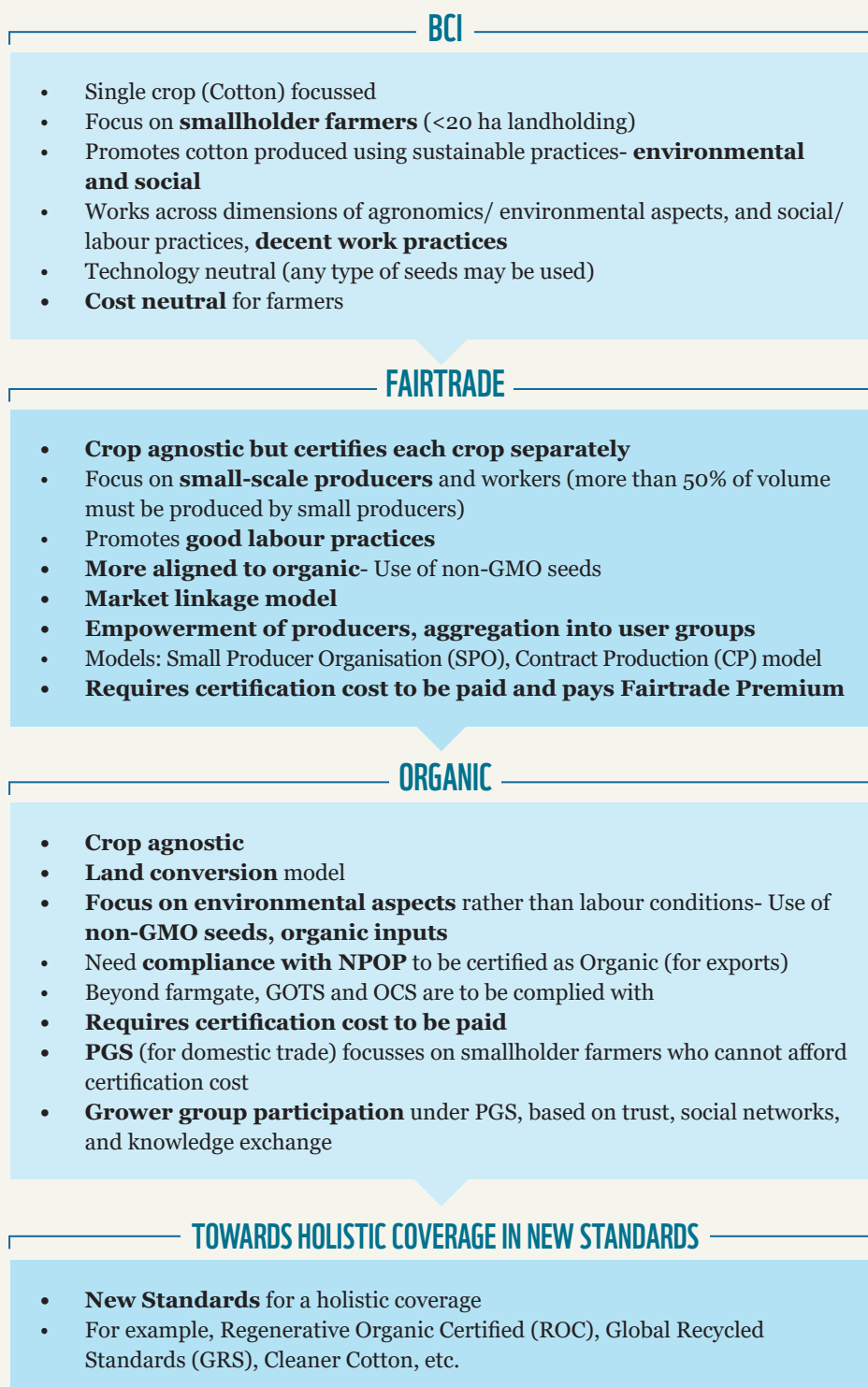
## 2.2. PREVALENT STANDARDS IN INDIAN COTTON LANDSCAPE

Of the various Sustainability Standards operating in the cotton segment in India, BCI seems to be the major Standard adopted in Maharashtra, and the most prominent. While organic cotton seems to be prevalent too, volumes are lower, as seen from the low volumes of non-GMO seed varieties used in the State (More than 90% of the cotton cultivated in Maharashtra is Bt cotton). Fair trade, has smaller volumes as well, and operates for multiple crops in Maharashtra.

Each of the Standards have different approaches, defined principles and criteria for compliance and certification. **BCI is singularly focused on cotton.** It promotes production using sustainable practices which are better for the agronomy, the environment, as well as for labour. **Fair trade is crop-agnostic** and has a wider range of products under its umbrella (cocoa, tea, banana, cotton, sugar, etc.) wherein each product needs to be certified separately. It operates on a market-linked model, and is more focused on empowering farmers through community development. It emphasizes aggregation of producers into user groups so as to enable a better market linkage and group negotiations. **Organic cultivation is crop-agnostic**, and operates on land conversion rather than focusing on a single crop, which implies that any crop

grown on organic certified land is considered organic. It further requires physical segregation of produce and products at all levels to ensure product integrity. **New Standards** such as Regenerative Organic (ROC) established in 2017, are in early pilot stages and bringing in animal welfare and worker fairness along with Organic and Fair trade, to move towards a holistic coverage.

Figure 5: The Standards continuum



## 2.2.1 Better Cotton Initiative<sup>7</sup>

BCI was conceived in 2005 in a WWF-hosted roundtable discussion. The Better Cotton Standard System (BCSS) covers the three pillars of sustainability: environmental, social and economic. The Better Cotton Standard is a demand-driven mechanism **aimed principally for capacity building at the initial production stage**. BCI monitors water and pesticide use at the local, field and farm level, governed by its global standards, known as the *Production Principles and Criteria*. These Principles and Criteria define standards for pesticide use, water management, decent work, etc. These include preserving and enhancing population of beneficial organisms/ insects, using nationally approved/ registered pesticides, mapping of water resources, enhancing soil structure, ensuring crop rotation, mapping biodiversity, minimising, trash and contamination in cotton, and practicing good labour conditions, among others. At the same time, farmers are encouraged to meet the improvement indicators through a continuous improvement plan.

Figure 6: Principles and Criteria of BCI



Source: Better Cotton Initiative, Annual Report 2017

In 2018-19, there were 21,00,000 licensed BCI farmers across 23 countries, producing 5.6 MT of Better Cotton, of this more than 30% of BCI farmers were from India<sup>8</sup>. As of 2019-20, there were 11,29,705 farmers participating in BCI programme, producing 899,307 MT Better Cotton in India<sup>9</sup>. Maharashtra accounted for 4,40,935 farmers covering about 14% of the total cultivated area under cotton in the State (6,11,695 ha), which has tripled over the last 5 years.

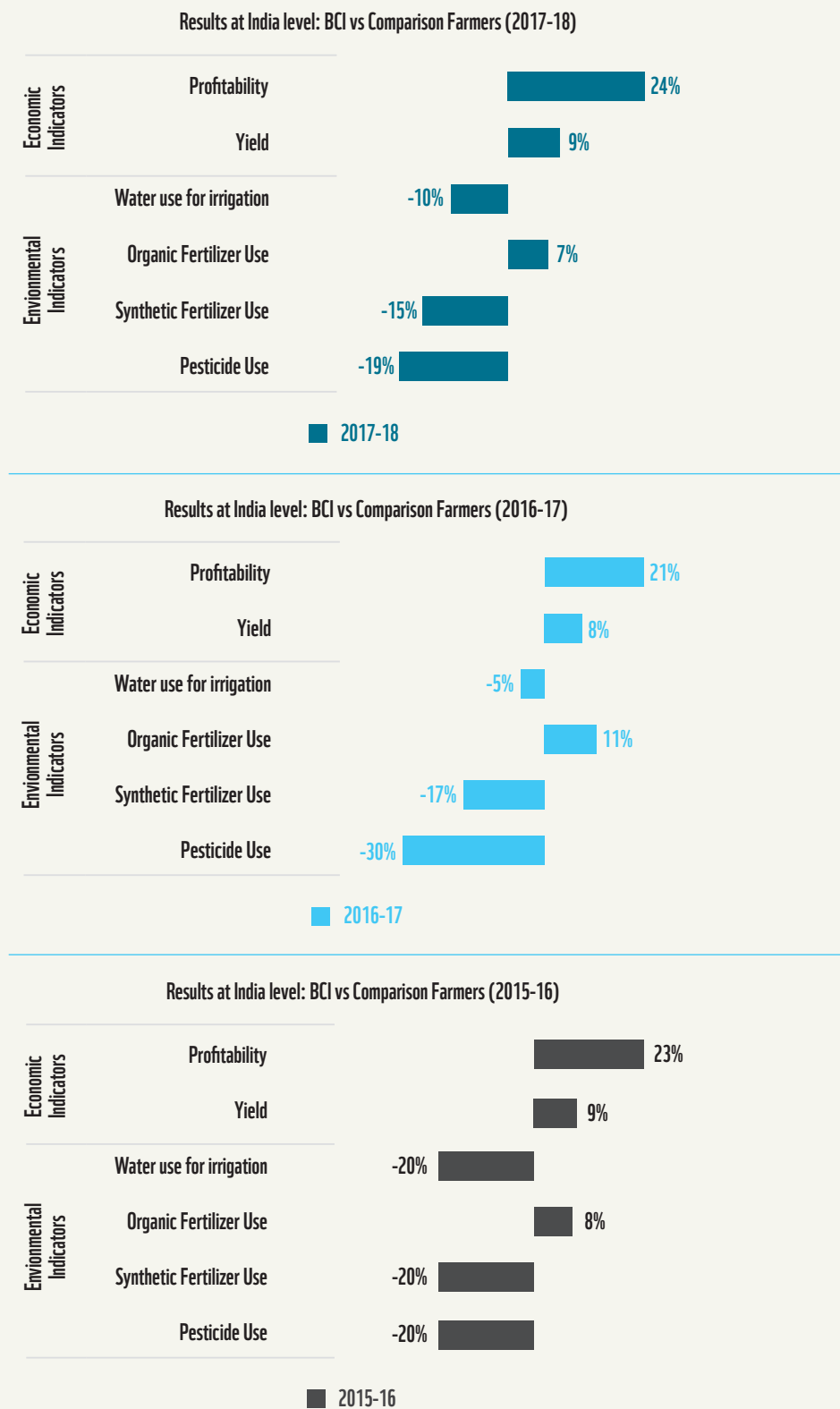
BCI publishes its Results Indicators based on farmers' self-reported data to demonstrate the situation of BCI Farmers compared to that of non-BCI comparison farmers in the same geographical area and during the same season. The results from last three seasons are as below.

<sup>7</sup> BCI Principles and Criteria Version 2.1, March 2018

<sup>8</sup> Better Cotton Initiative, 2019 Annual report

<sup>9</sup> BCI inputs

**Figure 7: Result at India level: BCI vs Comparison Farmers (2015 to 2018)**



Source: BCI Farmer Results 2015-16 season; BCI Farmer Results 2016-17 season; BCI Farmer Results 2017-18 season

## 2.2.2 Fairtrade<sup>10</sup>

Fairtrade International defines Fairtrade as “an alternative approach to conventional trade based on a partnership between producers and traders, businesses and consumers”. Fairtrade aims to **focus on small and marginal farmers** who may not be able to convert their crop to organic. The Fairtrade-certified cotton farmers receive a **minimum guaranteed price for their produce**, ensuring that they do not have to sell their produce below costs. Apart from fair price for their produce, farmers also receive a **Fairtrade Premium**, an additional sum of money, which goes into a communal fund for workers and farmers to use – as they see fit – to improve their social, economic and environmental conditions.

Fairtrade standards include a range of economic, environmental and social criteria that must be met by producers and traders in order to acquire or retain Fairtrade certification. World Fairtrade Organization (WFTO) Standard outlines **10 principles for growers as well as businesses** who claim to be Fairtrade. These principles are depicted below.

Figure 8: Fairtrade principles



Source: World Fairtrade Organisation website, retrieved from <https://wfto.com/who-we-are>, accessed on 17 April 2020

According to the 2017 Monitoring report<sup>11</sup> by Fairtrade International, globally, Fairtrade works with 45,153 farmers across eight countries. **around 74% of all Fairtrade cotton farmers reside in India**, and also a significant share of total Fairtrade premium (88%) for cotton goes to India. Per this report, Fairtrade in India has 54,000 ha area under cotton cultivation, and 33,452 farmers under its aegis. Fairtrade reported INR 8.2 crore as premium for India (Fairtrade Monitoring report 2017). However, Fairtrade does not have currently active cotton farmers in Maharashtra, though they have other certified crops.

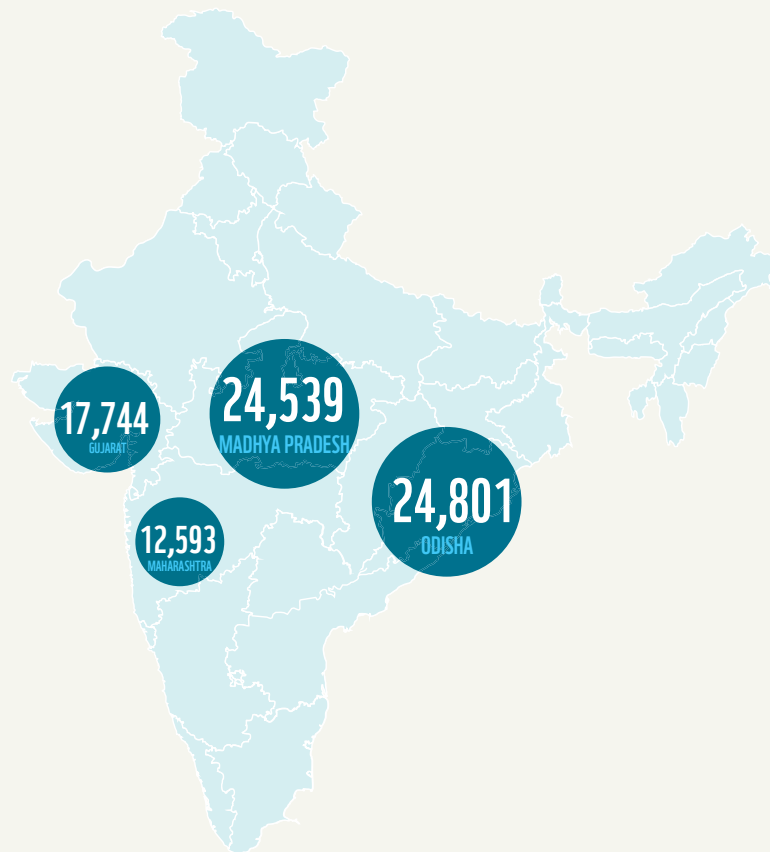
<sup>10</sup> Fairtrade Standard for Small-scale Producer Organisations, Version 2.2, April 2019

<sup>11</sup> Fairtrade International, Monitoring the scope and benefits of Fairtrade cotton, Monitoring report, 10<sup>th</sup> edition, 2017

### 2.2.3 Organic<sup>12</sup>

The focus of Organic production systems is on replenishing and maintaining soil fertility, and expansion of biologically diverse agriculture. Organic production **prohibit the use of synthetic toxic and persistent pesticides and fertilizers, as well as genetically engineered seed**. Any such products, if at all used must fall under non-restricted category by country specification standards. The methods and materials allowed in organic production must be verified by third-party certification organizations to ascertain that they meet required federal regulations. Globally, there were 182,876 Organic cotton farmers, producing 180,871 MT of cotton fibre (2017-18)<sup>13</sup>. Of this, 141,421 farmers were in India, producing 85,530 MT of cotton (under NPOP).

**Figure 9: Production of Organic cotton (fiber) in India (MT)**



Source: Textile Exchange market report 2019

Additionally, private sector is also conducting pilots under newer Standards such as **Regenerative Organic Certified (ROC)** in the State. The goal of ROC is to promote holistic agriculture practices in an all-encompassing certification that prioritizes soil health while simultaneously encompassing standards for animal welfare and worker fairness. However, these pilots are in initial stages.

<sup>12</sup> Department of Commerce, Government of India, National Programme for Organic Production, Seventh Edition, November 2014; Department of Commerce, Government of India, National Programme for Organic Production, Indian Standards for Organic Textiles, November 2014

<sup>13</sup> Textile Exchange market report 2019



## 2.3. CORE TENETS AND IMPLEMENTATION MODELS

The core tenets of Standards covered in this report- BCI, Fairtrade and Organic are presented in this section under four categories viz. Environmental and agronomic aspects, Social and Economic aspects, Operational aspects, and Operating model/ collaboration aspects. BCI has core and improvement indicators, wherein compliance with core parameters is considered necessary for BCI farmers, followed by a continuous improvement plan. Fairtrade also has core requirements, and development requirements. The Core requirements reflect Principles that must be complied with. The Development requirements reflect continuous improvements that certified organizations must make on average against a scoring system (also defining the minimum average thresholds) defined by the certification body.

### 2.3.1 Environmental and Agronomic parameters

The environmental/agronomic parameters covered in this section include Soil management, Water management, Habitat and Crop protection, Inputs (Seeds, fertilisers, chemicals and pesticides), and Waste management and Climate change.






- In terms of **soil management**, the Standards focus on monitoring soil health, and improvement of soil fertility through crop rotation/ inter cropping, composting, nutrient cycling, and prevention of soil erosion. As part of its approach, **BCI** core parameters require the development and implementation of a soil management plan, including soil type identification and analysis, and soil testing (including NPK and pH analysis), based on which nutrient cycling and tillage techniques, etc. are recommended for maintenance of soil fertility and soil structure. **Fairtrade** focuses on maintenance and enhancement of soil fertility and prevention of soil erosion, but does not specifically recommend soil mapping. The practices recommend farmers to identify land at risk of soil erosion so as to develop practical preventive measures that reduce soil erosion and/or restorative measures to convert degraded land to arable land. **Organic** emphasises on crop rotation, inter-cropping, use of composting and green manures and natural fertilisers and pesticides. It also limits the use of biodegradable material, and prohibits the use of heavy metals and other pollutants to ensure good soil health.
- Given that cotton is a water-intensive crop, Standards emphasise on using **water** judiciously and effectively. Accordingly, **BCI** promotes adoption of a Water Stewardship Plan to ensure efficient usage of water. The Plan includes use of irrigation technologies, water quality management, and protection of wetland areas. **Fairtrade** in addition recommends members to estimate water withdrawals in order to ensure that they are aware of the existing water situation, and are able to take informed decisions on utilisation. **Organic** practices emphasise more on

On its part, **the government** has also launched several schemes and programmes to encourage efficient water usage (micro irrigation/ drip irrigation), including subsidy on drip structures. The farmers interviewed mentioned that they were aware of these schemes. Initially they use their own funds or took loans for purchasing drips, as government subsidies are passed on later and availing subsidy is a long-drawn process.

ensuring that waste water is treated and does not give rise to pollution of ground or surface water.

- **Habitat protection** is an important aspect of sustainable development. Both BCI and Fairtrade thus promote High Conservation Values (HCVs) areas, i.e., areas which are of outstanding significance or critical importance due to their high biological, ecological, social or cultural values. **BCI** emphasises that HCVs should not be damaged by conversion of land from non-agricultural to agricultural land. It also recommends mapping of biodiversity and identification and restoration of degraded land, creation of buffer zones and protection of riparian areas. **Fairtrade** advises against deforestation and destruction of vegetation in protected areas. **Organic** suggests that a minimum percentage of land be set aside for biodiversity and nature conservation, by sparing land for pastures, orchards, hedges, installing waterways, pools, springs, etc. In addition, the Standards advise farmers on beneficial and harmful insects, thus helping maintain the habitat for beneficial organisms/insects.
- For **inputs** such as seeds, fertilisers, and pesticides- the Standards recommend the kind of inputs to be used. While **Organic and Fairtrade** require the farmers to use only non-GMO seeds, **BCI** takes a neutral stance with respect to the use of seeds to ensure a wider coverage among farmers, and endorses pest scouting to ascertain whether pest infestation has reached Economic Threshold Level (ETL) and then decide whether spraying pesticides is required. It also recommends use of only those chemicals that are registered for use on cotton, and prohibit spraying of pesticide mixtures (cocktail). BCI also subscribes to Integrated Pest Management (IPM) practices. **Fairtrade** encourages responsible pesticide management, implying that pesticides be used based on knowledge of pests and diseases. An important tenet of Fairtrade is safe handling of pesticide materials and use of protective equipment while application. Accordingly, it imparts training on storing, handling, application of pesticides and hazardous chemicals, as well as understanding the product label and other safety instructions made available by the manufacturer. In **organic** farming, inputs such as farmyard and poultry manure, slurry, cow urine, straw and other mulches, compost from farm materials, bio-fertilisers, plant preparations and botanical extracts, and neem preparations may be used. It also asserts that natural enemies of pests and diseases be encouraged through habitat management while maintaining an equilibrium in the pest-predator cycle.

Figure 10: Tenets of BCI, Fairtrade and Organic w.r.t. agronomic and environmental aspects

	 Soil management	 Water management	 Habitat & Crop protection	 Inputs	 Waste management & climate change
<b>BCI</b>	<ul style="list-style-type: none"> <li>• Soil identification and mapping</li> <li>• Soil moisture management</li> <li>• Nutrient cycling</li> <li>• Soil testing</li> <li>• Prevention of soil erosion</li> </ul>	<ul style="list-style-type: none"> <li>• Water mapping</li> <li>• Effective irrigation practices</li> <li>• Protection of wetland areas</li> <li>• Prevention of water pollution</li> </ul>	<ul style="list-style-type: none"> <li>• Biodiversity mapping</li> <li>• Preservation of High Conservation Value</li> <li>• Identification and restoration of degraded land</li> </ul>	<ul style="list-style-type: none"> <li>• Neutral stance wrt GMO seeds</li> <li>• Integrated Pest management</li> <li>• Safe chemical application and handling</li> </ul>	<ul style="list-style-type: none"> <li>• Collection and recycling of pesticide containers</li> <li>• Safe storage of chemicals</li> <li>• Sustainable land use</li> <li>• Reduction of GHG emissions</li> </ul>
<b>FAIRTRADE</b>	<ul style="list-style-type: none"> <li>• Prevention of soil erosion</li> <li>• Appropriate use of fertilisers</li> <li>• Maintenance and enhancement of soil fertility</li> </ul>	<ul style="list-style-type: none"> <li>• Water mapping</li> <li>• Maintenance of water distribution system</li> <li>• Recirculate, reuse, recycle water</li> </ul>	<ul style="list-style-type: none"> <li>• Biodiversity protection</li> <li>• Prevention of deforestation</li> <li>• Abide by national legislation on biodiversity</li> </ul>	<ul style="list-style-type: none"> <li>• Prohibition on use of GMO seeds</li> <li>• Appropriate use of pesticides</li> <li>• Safe handling and application</li> </ul>	<ul style="list-style-type: none"> <li>• Storage and disposal of waste</li> <li>• Re-using organic waste</li> <li>• Renewable energy use</li> </ul>
<b>ORGANIC</b>	<ul style="list-style-type: none"> <li>• Composting and green manure</li> <li>• Natural fertilisers and pesticides</li> <li>• Organic inputs only</li> <li>• Cap on use of biodegradable material of microbial, plant or animal origin onto the farm unit</li> </ul>	<ul style="list-style-type: none"> <li>• Inputs to not lead to water pollution</li> <li>• Sustainable water use</li> </ul>	<ul style="list-style-type: none"> <li>• Prohibition on clearing of primary forest</li> <li>• Minimum use of crop residue burning</li> </ul>	<ul style="list-style-type: none"> <li>• Prohibition on use of GMO seeds</li> <li>• Organic/ approved inputs such as green manure, cow urine, mulches</li> <li>• Cap on use of biodegradable material of microbial, plant or animal origin onto the farm unit</li> </ul>	<ul style="list-style-type: none"> <li>• Solid waste management plan (processing unit)</li> <li>• Effective environment management system with a written policy statement (processing unit)</li> <li>• Waste disposal programme</li> </ul>

Source: BCI Principles and Criteria Version 2.1, 1 March 2018; Fairtrade Standard for Small-scale Producer Organisations, Version 2.2, April 2019; National Programmes for Organic Production, Indian Standards for Organic Textiles (ISOT), November 2014; Deloitte analysis

- Sustainable production methods call for efficient **waste management**, hence Standards focus on appropriate disposal of chemical containers as well as proper treatment of any waste generated from processing units. **BCI** producers are prescribed to dispose off used pesticide containers safely, or through a collection and recycling programme. The principles also require using management practices to reduce GHG emissions and practicing climate smart agriculture. **Fairtrade** practices recommend efficient handling of waste water from processing facilities through a well-defined plan to monitor the water quality of the waste water discharged. **Organic** requires a solid waste management plan for its processing

units along with an appropriate written policy on environment management system. Monitoring air and water pollution through the waste generated is also important for a processing unit involved in Organic practices.

### 2.3.2 Social and Economic parameters

These include labour practices, support to minorities/disadvantaged groups, gender, cost saving, price premiums, etc.

- **BCI and Fairtrade** consider it essential that amidst the various production practices, the interests of the workers and cultivators are not be neglected. They hence focus on maintaining **decent labour conditions, and maintaining the interests of minorities**. Both these Standards follow International Labour Organisation (ILO) Conventions to ensure decent working conditions and practices. Accordingly, **BCI and Fairtrade** follow ILO conventions to ensure that there is no discrimination (ILO 111), allow trade unions and right to collective bargaining (ILO 98), and freedom of association (ILO 87). They also endorse equal pay for equal work (ILO 100), oppose compulsory or forced labour (ILO 19, ILO 105), applicable legal national minimum wage for workers, and discourages child labour (ILO 138). BCI emphasizes on access to rest areas, eating facilities and medical care to ensure that workers are given a healthy and safe environment at work.
- **Additionally, Fairtrade** focusses on worker safety through protection of employees against harassment, imparting training on accident prevention and response, and display of safety instructions at accessible places.
- **Organic farming** focusses on production practices rather than community or worker empowerment, hence it does not cover rights to local communities and working conditions. **ROC** is bringing focus on these practices as well in collaboration with Fair trade.
- **Cost and Economic benefits** are especially important to smallholder farmers. These include the benefits in the form of lowering input costs, better prices, better health, community development, etc. **BCI** focusses on lowering input costs through better soil and water management practices. Adoption of BCI is cost neutral for farmers, implying that the farmers do not bear the cost of training and license. Payment of premium is central in **Fairtrade**. The premium is utilised for community development, and the usage is decided by the Farmers group collectively. However, the costs of certification are borne by the farmers in this model. This cost is about INR 2-3 lakh per annum for a group of 200-500 farmers<sup>14</sup>, and an annual recurring cost. Each product is to be separately certified. Under **Organic** too, there are no guaranteed premiums and the certification costs are borne by farmers (ranges between INR 40,000 to INR 1,00,000, annually for farmer groups<sup>15</sup>. (A farmer group may range from 25 to 500 members). Some farmers also mentioned that those selling to a particular buyer regularly (ginner, IP- Implementation Partner of BCI) did receive 10-15% additional price per quintal, on their produce. Organic farmers witnessed savings of 50-70% owing to usage of homemade/natural inputs such as *Jeevamrut*, cow urine, neem-based preparations, etc., whereas BCI farmers do not get a premium on better cotton,

14 For 200 farmers: cost in 1<sup>st</sup> year (application fee+ certification fee)= EUR 2990 (INR 262,000), 2<sup>nd</sup> year onwards it is EUR 1925 (INR 171,000). For 500 farmers, it is EUR 3205 (INR 285,000) in 1<sup>st</sup> year and EUR 2120 (INR 188,000) <https://www.flocert.net/solutions/fairtrade/cost-calculator/>

15 <http://apeda.gov.in/apedawebsite/organic/price.htm>, accessed on 19 August 2020




they received better price for produce if the quality of cotton too improved. The cost saving for BCI farmers varied from INR 5,000 per acre to INR 15,000 per acre basis local conditions and past practices. **Aggregation** of farmers into units like FPOs/ Farmer groups helps increase negotiation power of farmers and access inputs at lower costs as well as approach buyers collectively.

### 2.3.3 Operating models, Collaboration, and Market linkages

- The **BCI** model works on funding from various sources, viz., Grants and donations from private and public funders; volume-based fees and funding from brands, and earned income for services delivered. These funds directly support training and skill development for farmers around the world. BCI has also forged partnerships with Retailers/Brands, Suppliers & Manufacturers, Producer Organisations, Civil societies, and Associate members. These members enable both backward and forward linkage for BCI. BCI in turn works on-ground with the help of Implementation Partners (IPs) which undertake trainings at village and taluka level where Producer Units (PUs) comprising about 400 farmers per PU and learning groups are formed. These are not registered entities. Further, at local level BCI's Implementation Partners on field collaborate with KVKs and State Agriculture Universities for development and delivery of training modules and Package of Practices (PoPs).
- **Fairtrade** aims to support small-scale producers and workers who are marginalized from the benefits of trade. Fairtrade's main objective is to enable all producers to attain secure, sustainable livelihoods. Fairtrade International sets standards, Fairtrade organisations and business that focus to develop markets, Producer Networks such as the Network of Asia and Pacific Producers (NAPP), and Flocert which is the certification agency. The Fairtrade model revolves around creating market linkages for producers. Fairtrade is 50% producer owned. Fairtrade works under two models: Small Producer Organisation (SPO), and Contract Production model (CP model). For the purpose of the report, the parameters herein focus on the SPO model. The Fairtrade model ensures that farming is sustainable, and that the farmers at least cover their cost of production through a guaranteed minimum support price. If the market price is higher, then farmers get the market price, if the market price crashes, the minimum support price is paid. A Fairtrade Premium is provided over and above the market price. The premium received is to be used by the Fairtrade members for community development or common gains, and the usage is collectively decided by the farmer group.
- Under **Organic** cultivation, a land is certified as Organic, and not crop/product. Any crop grown on certified Organic land is considered an Organic crop. In India, organic farming works on National Programme on Organic Production (NPOP) and PGS (Participatory Guarantee Scheme). Under NPOP, cotton growers and ginning mills that comply with the standards can be certified as organic. Beyond the ginning stage, GOTS and OCS come into play. Organic Content Standards (OCS) label implies that the product has at least 5% organic content, while Global Organic Textile Standard (GOTS) implies that apart from organic content, the product follows environmentally and socially responsible production from harvesting to labelling. Certification costs are borne by the farmers (for third-party certification). NPOP certification is mandatory for export of organic products. Under **NPOP**, grower groups are brought together to produce organic products. The grower groups are based on the Internal Control System (ICS). The producers

in the group must use similar production systems and the farms should be in geographical proximity. Farmer Producer Organisations (FPOs) are also formed. Under **PGS**, products may be traded only in domestic market. This is a trust-based certification wherein smallholder producers form a group and assess, inspect and verify the production practices of each other and take decision on organic certification. PGS certification is cost neutral for farmers.

**Figure 11: Tenets of BCI, Fair trade and Organic w.r.t Social and Economic parameters and Operating Models**

	 <b>Wages, labour conditions, gender and minorities</b>	 <b>Cost and Economic benefits</b>	 <b>Operating Model: Partnership &amp; Market Linkage</b>
<b>BCI</b>	<ul style="list-style-type: none"> <li>No discrimination on basis of gender, race, religion, etc. (ILO 111, ILO 100)</li> <li>Collective bargaining (ILO 98)</li> <li>Protection against harassment</li> <li>Safe workplace (ILO 184)</li> <li>Use of PPE</li> <li>Applicable legal minimum wage</li> <li>No forced/ compulsory labour; no child labour (ILO 29, ILO 105, ILO 138)</li> </ul>	<ul style="list-style-type: none"> <li>Water mapping</li> <li>Effective irrigation practices</li> <li>Protection of wetland areas</li> <li>Prevention of water pollution</li> </ul>	<ul style="list-style-type: none"> <li>Biodiversity mapping</li> <li>Preservation of High Conservation Value</li> <li>Identification and restoration of degraded land</li> </ul>
<b>FAIRTRADE</b>	<ul style="list-style-type: none"> <li>Training on hazardous work and accident prevention</li> <li>Development of gender policy</li> <li>Identification of disadvantaged/ minority groups</li> <li>Use of PPE</li> <li>No forced/ compulsory labour; no child labour (ILO 29, ILO 105, ILO 138)</li> </ul>	<ul style="list-style-type: none"> <li>Cost of certification borne by farmers</li> <li>Discount for licensees which sell 100% of product category carrying FairTrade Mark</li> <li>FairTrade Minimum price</li> <li>FairTrade Premium paid into a communal fund</li> </ul>	<ul style="list-style-type: none"> <li>Two models: SPO, CP</li> <li>Led by farmers</li> <li>Promotes market linkages</li> </ul>
<b>ORGANIC</b>	<ul style="list-style-type: none"> <li>Focus on agronomic practices and not labour conditions</li> </ul>	<ul style="list-style-type: none"> <li>Lowering of input cost through natural / non-chemical inputs</li> <li>No guaranteed premium</li> <li>Certification cost borne by individual/ group</li> </ul>	<ul style="list-style-type: none"> <li>Farmer groups/clusters</li> <li>PGS certification to ensure farmer/ FPO involvement</li> </ul>

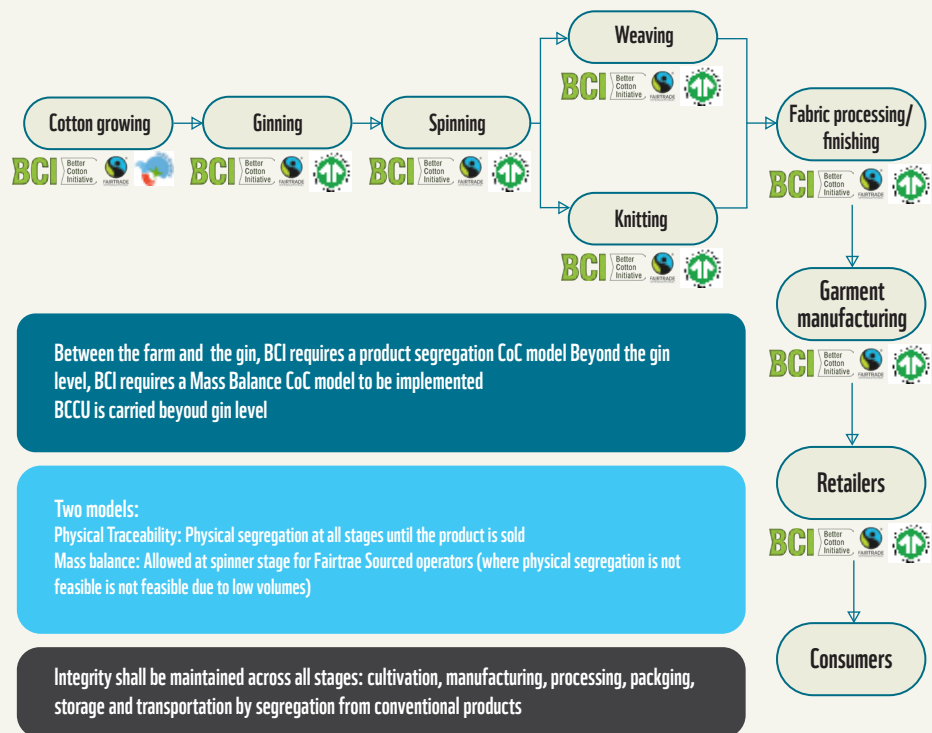
Source: BCI Principles and Criteria Version 2.1, 1 March 2018; Fairtrade Standard for Small-scale Producer Organisations, Version 2.2, April 2019; National Programmes for Organic Production, Indian Standards for Organic Textiles (ISOT), November 2014; Deloitte analysis

### 2.3.4 Operational parameters

This includes processes for certification and quality management, assurance, results reporting, and their means to undertake capacity building.

- The **Chain of Custody** under **BCI** works on product segregation model up to the gin level, followed by mass balancing of produce, wherein BCI and non-BCI cotton may be mixed, and volume of cotton supply chain actors is tracked through the Better Cotton Claims unit (BCCU; 1kg of Better Cotton = 1 BCCU). The transactions are monitored through the Better Cotton Tracer. In **Fair trade**, both physical segregation and mass balancing model exist. In regions where Fair trade Cotton quantity is fairly limited, the mass balancing model (no segregation) is allowed for all operators except Fair trade Sourced Cotton operators after spinner stage. In regions where Fair trade cotton is in bulk, cotton should be segregated. The chain of custody in **Organic** farming requires that product integrity be maintained during all stages, including, packaging, storage and transportation. Organic cotton must be kept separate from non-certified/non-organic cotton, and must be traceable from the farm to the finished product.
- To ensure traceability, all three agencies have platforms. **BCI** utilizes the Better Cotton Tracer to track purchases and sales. In **Fair trade**, products are traced through FairTrace, which allows for the verification of transactions within Fair trade supply chains. It enables actors to report and verify Fair trade volumes and Price and Premium payments. The traceability of **Organic** produce is done through Tracenet managed by APEDA.






Figure 12: Chain of Custody for BCI, Fairtrade and Organic



- **Assurance mechanism** is also put in place to ensure that all mandatory requirements are being met. This is typically done through audits, inspections, and revision of Standards to reflect changes in the operating environment. **BCI** provides a mechanism for inclusion of stakeholder feedback in revision of Standards. The validity duration for licensing is also defined to ensure that farmers comply with these requirements on a continual basis. In both **Fairtrade** and **Organic**, periodic internal audits as well as announced and unannounced inspections are undertaken by Third Party and certification bodies to ensure integrity of processes and documentation. FloCERT is the only certifying agency under Fairtrade while BCI has IPs and Organic has multiple certification bodies.
- **Capacity building for farmers** initiatives focus on cultivation practices, pest management, soil fertility improvements, and environmental sustainability. The capacity building is undertaken by Implementation Partners (IPs), NGOs, FPOs, and private players with interests in sourcing sustainable cotton. Since the success of the model depends largely on the capacities of the IPs, **BCI** conducts **capacity building of IPs** including the Management, trainers, field staff. The guidelines for agronomic aspects (soil health, pest management, water management) are designed by IPs depending on agro-climatic zones and soil type, while the recommendations provided by CICR or State Agriculture Universities are followed for technical aspects. BCI and Fairtrade also sensitise participants on decent working conditions. In **Fairtrade**, the trainings are conducted in a Learning Group model wherein farmers are grouped together and taught through a collaborative and cooperative approach. In this model, the training providers have some flexibility on modes of capacity building. Under Fairtrade, aggregation of farmers into entities helps them negotiate inputs as well as prices in the market. Under NPOP **Organic** Standards, grower groups are brought together in groups based on the Internal Control System (ICS). The ICS manager (who coordinates between field staff, approval staff and accredited certification bodies, and organises internal inspections) organizes regular trainings for farmers in the group. KVKs and FPOs also undertake trainings for the groups. Under PGS, the Regional Council (legal agency responsible for handholding, registering, approving, and addressing grievances of farmer groups) and Local Group (group of farmers that live in the same village or close by villages and interact regularly with each other) are responsible for organising trainings.



Figure 13: Tenets of BCI, Fairtrade, and Organic w.r.t. Operational parameters

	 Chain of custody	 Certification, Traceability and Quality management	 Impact quantification	 Capacity building	 Assurance
<b>BCI</b>	<ul style="list-style-type: none"> <li>• Mass balance model</li> </ul>	<ul style="list-style-type: none"> <li>• Individual and Group certification</li> <li>• Better Cotton Tracer tracks transactions</li> <li>• BCCU tracks volumes beyond ginning</li> </ul>	<ul style="list-style-type: none"> <li>• RIR data mapped from farmer Field Books and collated at producer level</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity building through IPs</li> <li>• Three-tier: Management, Field Staff, Farmers</li> </ul>	<ul style="list-style-type: none"> <li>• Mechanism of feedback and revision of Standards</li> <li>• Validity duration for licensing defined</li> </ul>
<b>FAIRTRADE</b>	<ul style="list-style-type: none"> <li>• Physical segregation</li> <li>• Mass balance model for Fairtrade Sourced Cotton model operators</li> </ul>	<ul style="list-style-type: none"> <li>• Group certification</li> <li>• FairTrace tracks transactions</li> </ul>	<ul style="list-style-type: none"> <li>• Data consolidation and consolidation framework absent</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity building through partners, digital means</li> </ul>	<ul style="list-style-type: none"> <li>• Announced and unannounced audits</li> </ul>
<b>ORGANIC</b>	<ul style="list-style-type: none"> <li>• Physical segregation</li> </ul>	<ul style="list-style-type: none"> <li>• Individual and Group certification</li> <li>• Tracenet tracks transactions</li> </ul>	<ul style="list-style-type: none"> <li>• Data on organic products traded internationally available on APEDA website</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity building through NGOs, private firms with interest in procurement</li> </ul>	<ul style="list-style-type: none"> <li>• Periodic audits: announced and unannounced</li> <li>• Witness audit of applicant body's inspector</li> </ul>

Source: Deloitte analysis

There seems to be a merit in expanding the good practices promoted by the Standards, and help their expansion for fast tracking results. If the Standards were to be adopted state-wide, it is important to assess the alignment with existing policies and initiatives. Developing a collaborative model will be feasible if there is some level of overlap between the two. An overview of various related government schemes and initiatives are provided in the next chapter.



# 3

## POLICY LANDSCAPE, SCHEMES AND INITIATIVES

This chapter captures the key policies from the central and State government that align with sustainable agriculture, and have a direct or indirect impact on the cotton sector. It also seeks to explore any opportunities that may arise for collaboration between Standard agencies, governments, and private players. The policies/ initiatives have also been mapped with the technical assessment categories in the previous chapter, including soil management, water management, inputs usage, labour practices, etc.

The **Central and State governments** have launched various policies and programs in the agriculture sector. Maharashtra has also taken forward-looking initiatives and has identified sustainable climate-resilient agriculture as an important paradigm for development. A list of policies, schemes, and initiatives discussed in the chapter is given below.

	Policies/Acts/Bills	Missions/Sub-Missions	Schemes	Other initiatives
<b>OVERARCHING SECTORAL POLICIES</b>	National Agriculture Policy 2000* Maharashtra Textile Policy (2018-23)	National Mission for Sustainable Agriculture (2014)*		
<b>SOIL MANAGEMENT</b>			Soil health management scheme (2015)* Paramparagat Krishi Vikas Yojana (2015)*	Rainfed Area Development Programme (2011)*
<b>WATER MANAGEMENT</b>	Maharashtra State Water Policy (2019)	Jalyukt Shivar Abhiyan (2014-19)	Pradhan Mantri Krishi Sinchayi Yojana (2015)*	Magel Tyala Shet-Tale (Farm Pond on demand) (2016)
<b>INPUTS</b>	Pesticide Management Bill (2020)* Fertiliser Control Order (1985)*	Sub-Mission on Seed and Planting Material (2014)*		
<b>WAGES, LABOUR CONDITIONS</b>	Equal Remuneration Act (1976)*		Gender budgeting in multiple schemes	Tribal Sub-Plan and Scheduled Casted Sub-Plan (1974, 1979)*
<b>CAPACITY BUILDING</b>		Sub-Mission on Agriculture Extension (2010)*		

Other than these, a few other policies/initiatives/programmes exist - such as the Biological Diversity Act 2002, and Solid Waste Management Rules. While currently they don't garner a major focus, as the sector matures, these will also gain prominence. Gender budgeting component is also provided in multiple central and state-level schemes like PMKSY, PKVY, MIDH (Mission for Integrated Development of Horticulture), wherein a fixed percentage of allocation is made for women farmers.

Standards can also help some of these areas gain prominence and align with SDGs. There are also State programs (such as PoCRA, SMART agriculture), and central schemes such as PPIAD (Public Private Partnership for Integrated Agriculture Development) under Rashtriya Krishi Vikas Yojana-RAFTAAR (RKVY-RAFTAAR), which would be important initiatives to dovetail with.

### 3.1 OVERARCHING SECTORAL POLICIES

The **National Agriculture Policy** was launched in 2000 with the objective of improving farmer lives and achieving economic growth. The policy aimed at achieving over 4% growth rate until 2020, by encouraging **private sector participation** (contract farming), **price protection for farmers**, and removal of restrictions on movement of agricultural commodities across the country, among others. The policy promoted **integrated farming system** as well as allied activities including horticulture, floriculture, plantation crops, animal husbandry, and dairying. However, the policy lacked any concrete measures to achieve some of the goals. For example, it proposed to put India's 79.5 million hectares of wasteland to use for agriculture and afforestation, but does not elaborate any strategy to do so. It also lacked sufficient focus on participatory management of irrigation, water, forest and common lands. Similarly, while the policy recognised **women's right to lands**, it lacked concrete measures to incentivise transfer of property to women farmers.

**Maharashtra Textile Policy 2018-23** was launched in July 2018 with an aim to generate employment of 10 lakh (1 million), attract an investment of INR 36,000 crore, and double the farmers' income by the year 2023. It also envisages a reduction in regional imbalance, with a greater amount of concessions to start-ups and industrialists investing in Vidarbha, Marathwada and North Maharashtra (which are major cotton producing regions of the State). The policy envisages creation of infrastructure and provision for reducing power tariffs for spinning mills, and disbursement of financial assistance to spinning mills in two instalments (earlier the assistance was given in multiple instalments). The policy is likely to help uplift the regions of Vidarbha, Marathwada, and North Maharashtra, which have witnessed a large number of farmer suicides. In addition, reduction in power tariffs shall help those units struggling with weak balance sheets due to decline in domestic as well as international demand. The policy focus on **infrastructure development and capacity building (in areas of supply chain management, skill enhancement, ISO certification, power savings, etc.)** is likely to enhance competitiveness for domestic as well as international trade.

## 3.2 SOIL MANAGEMENT INITIATIVES

The **Soil Health Management (SHM)** scheme was introduced in 2015 under National Mission for Sustainable Agriculture, with an aim to promote location as well as crop specific, sustainable soil health management practices. One major intervention under the scheme was the issuance of Soil Health cards (SHCs), which help in judicious use of fertilizers as per soil health and crop requirements, by providing information on nutrient status of soil to farmers. In terms of progress of SHC in Maharashtra, **over 130 lakh SHCs have been printed and dispatched during 2017-2018 and 2018-19** (against 1,175 lakh in India overall), meeting 100% of the target SHCs to be printed. Another two lakh SHCs were printed and dispatched under the Model Village Programme (2019-20). Under the scheme, **private agencies as well as local village entrepreneurs are eligible to set up soil testing infrastructure**. Currently, there are 3,887 soil testing labs in the country (587 in Maharashtra), and the cost of test has been fixed at INR 300/sample.

The Sustainability Standards (BCI, Fairtrade, and Organic) too focus on soil health management, hence the Standards can also ensure that all farmers under their ambit **regularly get the soil tested and have access to soil health cards**.

**Paramparagat Krishi Vikas Yojana (PKVY)** was launched in 2015 with a focus on the organic farming techniques across the country. In terms of progress of the scheme, **Maharashtra had third-highest number of PKVY clusters in 2015-18** (1,258 clusters), covering 25,160 ha of organic land<sup>16</sup>. Madhya Pradesh and (1,380 clusters) and Andhra Pradesh (1,300 clusters) are the leading States. An impact study of PKVY conducted by National Institute of Agricultural Extension Management (MANAGE), Hyderabad<sup>17</sup> showed that adoption of organic farming has been increasing year on year, and significant awareness has been created among farmers through ATMA functionaries. It indicated that **majority of the farmers practice organic as well as conventional farming**, with commercial crops like cotton being produced in conventional ways. PKVY promotes farmers to undertake PGS certification.

Discussions with farmers revealed that **farmers with access to assured market for organic products, and farmers with access to Standards agency personnel were more aware of the benefits of sustainable production**, and were inclined to adopt sustainable methods of production. The scheme also has market-linked interventions to enable better remuneration for farmers. Private agencies/organisations can also partake in model cluster demonstrations provided they fulfil certain conditions. Given that ATMA functionaries have been found to be effective in PKVY implementation, it is worthwhile to consider collaboration between ATMA and Standards to form a strong network. The agencies can work in areas it can access, while the ATMAs work in remote regions where it may not be economically feasible for the Standards agencies to operate in.

<sup>16</sup> Ministry of Agriculture & farmers Welfare, Lok Sabha Unstarred Question no. 1132, 24 July 2018

<sup>17</sup> National Institute of Agricultural Extension Management (MANAGE), Impact study of PKVY, 2017

**Rainfed Area Development programme (RAD)** under **National Mission for Sustainable Agriculture** adopts an area-based approach for development and conservation of natural resources along with farming systems. **Soil health card-based nutrient management practices, resource conservation and crop selection conducive to local agro climatic condition** are promoted under the programme. Activities like construction of ponds, wells, supply of pumps, micro-irrigation/ other water saving devices, seed and sapling support etc. Are converged/ supplemented to promote value addition through a sustainable farming system. RAD is focussed on conservation of natural resources and integrated farming systems, both of which are critical for a rainfed State like Maharashtra. Despite this, **the adoption of RAD in Maharashtra has been low** (9,082 beneficiaries)<sup>18</sup>, against 27,517 in Andhra Pradesh, 14,148 in Gujarat, and 61,159 in Tamil Nadu<sup>19</sup>.

In order to improve adoption in the State, the Standards agencies **may disseminate information around the programme during their capacity building initiatives**, and encourage farmers to avail support under the scheme, as Standards too focus on multi-cropping, inter-cropping, and water efficiency, all of which also align with RAD.

### 3.3 WATER MANAGEMENT

The **Maharashtra State water policy**, launched in 2019 focusses on mitigating droughts, encouraging groundwater recharge, and securing floodplains to tackle floods. To control the amount of water used in agriculture, the policy has encouraged bringing water-intensive crops under **micro-irrigation** and promoting a **cropping pattern** that requires less water. The policy has proposed infrastructure to promote micro irrigation and improvement in **canal system**, along with regular audit of water projects. The policy has suggested progressive measures such as mandate for all water user entities to publish annual accounts and audit reports with data pertaining to water quota, actual use, losses, leakages, unauthorised withdrawals, recycle and reuse of water, and per unit consumption. This would help the government check for wastages and analyse water usage patterns, and enable drafting policies to ensure good water management practices. It also mandates water users to adopt groundwater recharge measures to compensate for the water extracted by them.

The **Jalyukt Shivar Abhiyan** of the Government of Maharashtra aimed to make Maharashtra a drought-free State by 2019. It sought to initiate permanent measures to make the State drought-free and to harvest rainwater within the village boundaries, thereby increasing ground water levels. The Mission was successful in completing work in 70% of the villages undertaken, with 18 crore cubic meter silt excavated, increase in water storage capacity by 24.3 lakh TCM, and creation of 34.2 lakh ha protection irrigation capacity.

<sup>18</sup> Economic Survey of Maharashtra 2018-19

<sup>19</sup> National Mission for Sustainable Agriculture dashboard, <https://nmsa.gov.in>, accessed on 6<sup>th</sup> July 2020

In this programme, **Tata Trusts** signed a MoU with the State government to implement the Jalyukt Shivar Abhiyan initiative in three districts of Akola, Amravati and Yavatmal through the Trusts' Sukhi Baliraja Initiative. The Trust enabled construction of water harvesting structures such as farm ponds, and widening and deepening streams, built check dams, boribands, etc., using earth excavating machines<sup>20</sup>. The Trusts widened and deepened around 87.85km of streams, creating a potential water storage capacity of approximately 2.37 million cubic metres, benefitting 1,590 households across the Vidarbha region.

In addition, farm ponds that were dug up in Chandrapur and Yavatmal under this initiative were converted into inland fisheries. The Trusts directly supply fish seeds to the beneficiaries. Once the fish larvae grow into fingerlings, the farmers sell them in the market.

The **Pradhan Mantri Krishi Sinchayi Yojna** (PMKSY) was launched in 2015, integrating micro irrigation in the flagship scheme as an integral component of the scheme. The scheme aims to implement micro-irrigation technology in water consuming crops such as sugarcane, cotton, banana, etc. Overall the programme was able to achieve 87% of its overall targets from 2015-2019. Under this scheme, the Government **provides financial assistance @ 55% for small and marginal farmers for installation of Drip and Sprinkler Irrigation systems**. Some States provide additional incentives/higher subsidies for encouraging farmers.

Some farmers mentioned that under the scheme, upfront investments need to be made by farmers for purchasing drip structures, and reimbursements through the scheme often takes time. They had to purchase drip structures through borrowed money and were apprehensive. **Equipment companies also pitch in to provide partial credit to farmers** for the upfront investment. A more formalised financing mechanism may be put in place to address this.

Further, while water efficiency is one of the primary objectives of protective irrigation, the **government provides farmers with free or subsidised power to pump water**, which many times does not promote the judicious use of water. This is where the Standards agencies can pitch in and educate farmers on the fast depletion of groundwater as well as surface water, and empower them with resources on checking this depletion.

Given that a farm pond can capture rainwater, trap, filter and store tail water/surface run-offs from irrigation, the government of Maharashtra launched the **Magel Tyala Shet-Tale scheme (Farm Pond on Demand)** in 2016. The objective of the scheme is that every farmer in the State should have access to a permanent source of water. Under this scheme, the eligible farmer shall receive support of INR 50,000 directly in their bank accounts, or a subsidy of 70 to 75% of the cost of pond whichever is less, to construct a pond in their farm land. The scheme helped increase water level in

<sup>20</sup> Tata Trusts website, retrieved from <https://www.tatatrusts.org/our-work/livelihood/water-conservation-irrigation-management/jalyukt-shivar-abhiyan>, accessed on 8 July 2020

the well adjoining farm pond of 29% beneficiaries<sup>21</sup>. The increased water availability led to higher irrigation during droughts, and enabled some beneficiaries to generate additional income through vegetable, horticulture and fodder-based activities.

Given that Standards agencies also promote water mapping and use of micro irrigation, it may be beneficial for government and Standards agencies to **collaborate and work together on this front on the aspects of awareness generation, capacity building, infrastructure creation, operation and maintenance.**

### 3.4 INPUTS - SEEDS AND CHEMICALS

The **Sub-Mission on Seeds and Planting Material (SMSP)** was launched during the 12<sup>th</sup> Five Year Plan to develop and strengthen seed sector and to enhance production of high yielding certified/quality seeds of all agricultural crops at affordable price to the farmers.

With respect to cotton seed availability, a study conducted by Louis Bolk Institute and Textile Exchange revealed that **availability of non-GMO cotton is a major challenge in countries where Bt cotton is grown** (India, USA, Burkina Faso). As per this study, only 19% respondents found it easy to procure non-GMO cotton in their countries<sup>22</sup>. Given the criticality of availability of seeds, the government would have to put in place better mechanisms to enhance production and access to non-GMO seeds. Other non-governmental stakeholders could work with government on R&D as well as to widen the distribution network and access to the seeds.

The **Pesticide Management Bill** was introduced in Rajya Sabha in March 2020. It seeks to regulate the manufacture, import, sale, storage, distribution, use, and disposal of pesticides, in order to ensure the availability of safe pesticides and minimise the risk to humans, animals, and environment. The Bill also has provisions to promote pesticides that are biological. While the Bill is in the right direction, it **misses to address a few critical points**. For instance, **pesticides are sold over-the-counter and advertised in public domain despite the fact that they are harmful and poisonous** substances. Similarly, the strong network of representatives or dealers of pesticide companies tend to heavily influence farmers on their purchase decisions. Hence, pesticides tend to be over-used, or misused. The Bill also misses the focus on the need to strengthen the extension network (KVKs, ATMAS, agriculture universities, helpline numbers etc.) to disseminate information on the correct amount of pesticide use. Additionally, it has been noted through stakeholder discussions that **often there are delays in registering new pesticides** by the Central Insecticide Board and Registration Committee (CIBRC), hence the farmers end up using more toxic pesticides, which is not ideal.

21 Inter Ministerial Committee on Water Conservation Efforts of Maharashtra state on water conservation, Government of Maharashtra, 1 May 2019

22 Textile Exchange, Louis Bolk Institute, Seed availability for non-GM cotton production: An explorative study, 2015



The Standard agencies and concerned government institutions may both benefit from coming together and **promoting organic or natural pesticides** which are safer and cheaper. They can also handhold the farmers for using chemical pesticides (assessing their risks, advising on alternative products), as also **provide necessary trainings to KVKs** on approved chemicals.

The **Fertiliser Control Order** was promulgated to regulate, trade, price, quality and distribution of fertilizers in the country. Several amendments have been made to the Order since its enactment, the most recent one being in February 2019. It has been noted that in India, the **government has been inclined to give more urea-based subsidy** rather than nutrient-based subsidy, leading to over-use of urea (Nitrogen) and lower use of other nutrients, making the soil deficient in important minerals. There is a critical need to **rationalise urea subsidy, and promote balanced fertiliser programme.**

The Standards agencies working with farmers can promote the **use of fertilisers based on the nutritional deficiencies in soil rather than the cost of fertilisers.** The **soil health cards may also be leveraged** to recommend the type and dosage of fertilisers required.

### 3.5 WAGES, LABOUR CONDITIONS, GENDER AND MINORITIES

The **Equal Remuneration Act** provides for the payment of equal remuneration to men and women workers and for the prevention of discrimination, on the ground of sex, against women in the matter of employment and for matters connected therewith or incidental thereto. The Act covers all industries and sectors, public and private, organized and unorganized, and all employees doing permanent, temporary and casual work. While the Act does cover the unorganised sector, this sector does not get much benefit out of the existing labour laws. Particularly vulnerable groups among the unorganized sector are women, who are more often than not, paid less than their male counterparts.

The concept of **gender responsive budgeting** was introduced for the first time in India in the 2011 Union Budget. The objective was to address the gender inequality in the country. Some government schemes such as Pradhan Mantri Krishi Sinchai Yojana (PMKSY), Mission for Integrated Development of Horticulture (MIDH), Paramparagat Krishi Vikas Yojana (PKVY), etc. have allocated a fixed percentage of total allocation of the scheme (25-30%) to women farmers. However, if unutilised, this budget may be used for other persons willing to avail the scheme. However, while schemes do allocate a proportion of their total expenditure for women, they do not provide complimentary access to resources, such as encouragement for entrepreneurship, skill development, or targeted capacity building. Without these aspects, a mere allocation is not enough to empower women.





The **Tribal Sub-Plan and Scheduled Caste Sub-Plan** seek to ensure adequate flow of plan resources for the development of Scheduled Tribes and Scheduled Castes. Despite allocation of funds to these groups, there are still gaps that are yet to be addressed by the government in terms of upliftment of these groups.

### 3.6 CAPACITY BUILDING AND EXTENSION SUPPORT FOR FARMERS

The **Sub-Mission on Agriculture Extension (SMAE)** aims at strengthening the extension machinery. It focuses on awareness creation and enhanced use of appropriate technologies in agriculture & allied sectors. While the Sub-Mission has been meeting its financial targets, there are gaps in meeting physical targets- Except for number of demonstrations in 2016-17, and Kisan Mela/FSI/Field in 2018-19, all targets have been missed since 2016. While the Extension system is well-established at the State, district, as well as the Taluka level, our discussions with farmers revealed that the **KVKs visit the village occasionally**, as they have limited functionaries, which look after multiple villages. Data by NITI Aayog revealed that there was only **one KVK per 1,014 villages**<sup>23</sup>. In Maharashtra, there are 43,665 villages (Census 2011), and a total of 44 KVKs, which implies one KVK per 992 villages. Similar situation persists in other States as well. Hence, even though the KVKs have a wide reach, they have **limited capacity to regularly connect and train farmers**. Capacity building, however, calls for individualised attention, as well as regular training.

Standards are presently driven by private initiatives, which is limited by funding sources, market demand, and availability of on-ground implementation partners. It may thus be worthwhile to consider **capacity building through private functionaries, but with complementary resources from the government**, enabling a wide reach as well as sufficient resources.

While a number of government policies, programmes, and initiatives are in place, there are still a few gaps that exist that need to be plugged if a full-fledged implementation in the State is to be carried out.

<sup>23</sup> National Institute of Labour Economics Research and Development, NITI Aayog, 2017



# 4

## FINDINGS AND GAP ANALYSIS

This chapter summarises the key findings and gaps collated through desk research, and discussions with various stakeholders, including Standards agencies, implementation partners, NGOs, certification bodies, private players, and farmers.

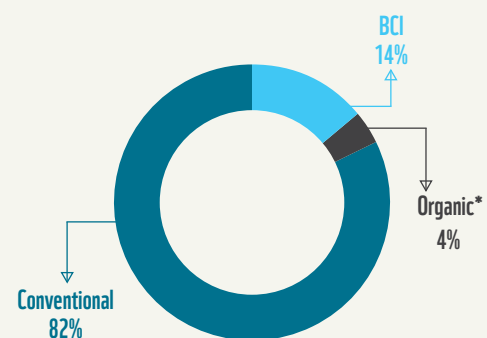
Adoption of Standards brings about positive changes for the farmers as well as the environment. Cost saving on inputs and higher yield are the most oft-cited reasons for adopting Standards, and its year-on-year growth. Most farmers also made efforts to conserve soil and water resources by using less or no chemical pesticides, and installing drip irrigation on their land. As per various reports, adoption of Standards also show positive externalities for the environment such as reduced GHG emissions. Despite these benefits, there are some bottlenecks that need to be addressed to ensure a smooth roll-out of these Standards.

### 4.1 COVERAGE OF STANDARDS IN THE STATE HAS BEEN INCREASING

#### 4.1.1 Present trends in the State show early successes in expansion of BCI

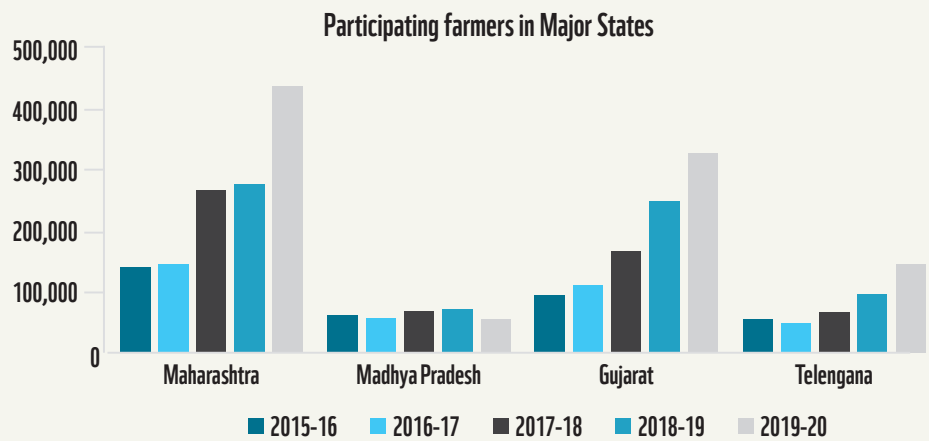
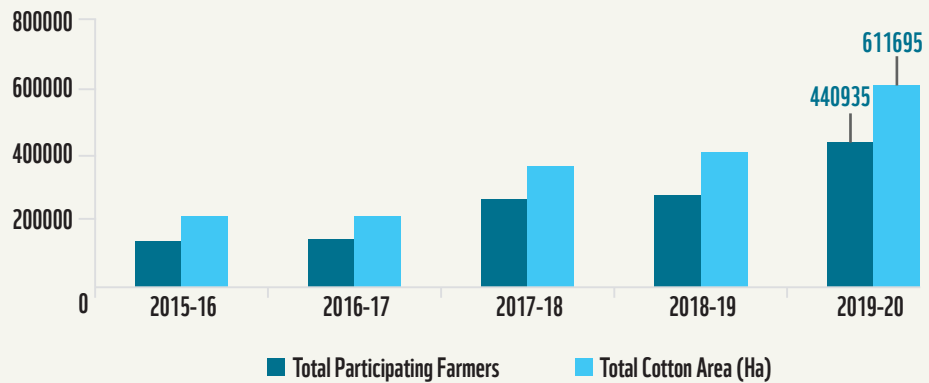
BCI have been in Maharashtra for a decade and covers almost 14% of the total cultivated area under cotton. After the groundwork has been done in initial years, the number of farmers under BCI tripled in the last five years to over 4.4 Lakh farmers in 2019-20 (a CAGR of 26% over the last 5 years). Cost neutrality to farmers seem to be an important plus in making BCI more popular and widely adopted, as also practices which do not require drastic shift such as land conversion, or loss in yield, like in the case of organic farming, and are duly supported with adequate training and handholding.

Figure 15: Coverage in Maharashtra



Source: Organic- including those not certified

**Figure 16: Expansion of BCI in India and Maharashtra**



Source: Organic- including those not certified

### 4.1.2 However, not all models seem to have picked up

Initiative undertaken for Fair trade in cotton in Maharashtra did not scale up, as the produce could not find international market, and hence business case could not be established. Similarly, while a lot of farmers practice Organic agriculture, a large proportion of these farmers are not certified and hence it is difficult to gauge the expansion of Organic cotton cultivation.

## 4.2 SIGNIFICANT ENVIRONMENTAL AND ECONOMIC BENEFITS NOTED

### 4.2.1 Studies show that there are significant environmental benefits such as soil and water conservation that emanate out of adopting the practices promoted under the Standards.

The Standards conduct annual studies and reviews to assess the result of their interventions on environment, farming and labour practices. According to BCI Results Indicators, which use farmers' self-reported data to illustrate the relative situation of

BCI Farmers and comparison farmers in the same geographical areas in a given harvest season, in 2017-18, yield for BCI farmers was 9% higher than non-BCI farmers, while water and synthetic fertiliser usage, was less by 10% and 15%, respectively.

Independent studies have also been carried out by research institutes to compare the impact of BCI, Organic and conventional practices in cotton production. Brands also conduct independent evaluation studies to assess the impact of procuring sustainable cotton. These studies show good environmental and economic outcomes which could build a case for pursuing more farmers and value chain players State-wide to adopt the Standards. For instance, a study commissioned by WWF recorded significant environmental outcomes as shown below. This included reduction in GHG emissions, reduction in application of harmful pesticides, and resultant reduction in environmental risks. However, more detailed impact assessment studies and research would be required to estimate such environmental impact in Maharashtra and whether the Standards are meeting their stated objectives fully in the Indian context.

**Table 3: Environmental outcomes of BCI, Organic and conventional cotton production in two districts of Maharashtra**

Outcomes for Akola and Yavatmal districts	Conventional	BCI	Organic
<b>GHG Emissions by Land Area (Kg CO<sub>2</sub> eq. per ha)</b>	1373.3	784.4 (-93%)	1290.1 (-89%)
<b>GHG Emissions by Production (Kg CO<sub>2</sub> eq. per ha)</b>	3790.8	1307.3 (-66%)	2150.2 (-43%)
<b>EIQ (Environmental Impact Quotient)*</b>			
- (Risk to) Worker	5.5	3.8	-
- (Risk to) Ecology	18.8	12.6	0.1
- (Risk to) Field-use	9.4	6.3	0.1
<b>Pesticides Application</b>			
- Organophosphate (acutely toxic pesticides)	829.3	663.5 (-20%)	-
- Nenicotinoid (harmful to bees)	334.6	353.5	-
- Pyrazole (Toxic insecticides)	415.3	18.1 (-96%)	-
- Botanical	-	5.4	-

Source: Centre for International Projects Trust, 2016

Figures in parenthesis refer to difference in comparison to Conventional

\*EIQs are representative of the intensity of application of pesticides on the farm. For comparison purposes, a lesser EIQ value indicates a relatively better farming approach in terms of pesticide selection and application

## 4.3 STRUCTURED APPROACH TO CAPACITY BUILDING HAS HELPED

### 4.3.1 Extension services are provided through government institutions as well as by private and non-governmental actors in the value chain

Typically, government provides extension support through **KVKs and ATMA** extension workers. There is a wide network of these government driven functionaries. Various operational models for KVKs have been worked out in the State to bring in efficiencies, such as KVKs managed by NGOs, and those housed in SAUs other than government run centres.

**Several NGOs, and association of NGOs in the State**, such as AFARM are working towards coordinating efforts of NGOs & Civil Society Organizations (CSOs) in their tasks of providing water and agricultural extension services to rural population in drought affected Maharashtra. Few for-profit companies like MAHA-FPC (which is consortium of farmer producer companies) also work in capacity building and training services for farmers in the State.

**Farmer-owned companies (FPOs and FPCs)** provide support to farmers in disseminating best practices, technology and innovations. The State has around 1700 FPCs operating across various crops<sup>24</sup>. Farmer-owned companies like Zameen Organic and Chetna Organic work with marginalized farming communities in rural Maharashtra to provide necessary upstream and downstream linkages and improve livelihoods.

**Textile companies** such as Arvind Mills, Welspun, etc. also provide capacity building support to the farmers associated with them, and some of them have dedicated foundations to do so.

**BCI implementation partners** include a wide range of actors such as NGOs, ginners, traders, foundations, which support in extensive capacity building of farmers through field level training and outreach, and collect the data at field level.

### 4.3.2 A structured approach to capacity building and demonstration of benefits on ground has helped

Standards take a structured approach to training of farmers ensuring periodic trainings relevant at the important milestones in the crop cycle (before sowing, during cultivation, harvest time, etc.). Benefits such as increase in yield are also demonstrated through ‘demonstration plots’ (a field that can be used to teach, experiment, and share ideas about agricultural practices) and interactions with farmers who adopted these practices. **Regular training, demonstration plots**, and regular follow-ups seemed to have benefitted the farmers.

<sup>24</sup> FPOs: Experience in Maharashtra (Presentation, Oct 2019) accessed through <https://events.development.asia/>



Another significant outcome of adopting these Standards is the **aggregation of farmers into groups/ entities** which could enable an easier access to markets as well as help them in better negotiation for procurement of inputs.

### 4.3.3 This is also corroborated by feedback from farmers practicing BCI and organic practices, who report improvement in soil quality, economic benefits (cost savings) and better health outcomes for them.

The study team consulted with about 30 farmers out of which 15 are BCI farmers, and the remaining are organic or conventional farmers. Almost all of BCI farmers and organic farmers have mentioned savings on cost of production as an important achievement. These savings are derived either from lower use of synthetic pesticides/ fertilisers, or from a higher use of organic pesticides/fertilisers. The expenditure on pesticides and fertilisers declined up to 50-70% for most farmers. **Organic farmers witnessed a higher cost savings** as the inputs (pesticides, fertilisers) tended to be produced at home or were inexpensive if brought from the market. Fair trade farmers were able to negotiate better prices on raw materials due to collective negotiations, hence saving on costs. The cost saving has been utilized for education, buying of land, or retained in the bank account. Basis the research, analysis, and discussions with farmers, it is being observed that the **yield of cotton increased** for most growers since the adoption of Standards, and hence better remuneration per acre.

All organic farmers specifically mentioned better soil health/ fertility and better health outcomes for them. BCI and organic farmers have also started **adopting drip irrigation**. Farmers associated with BCI implementation partners or NGOs were **aware of government schemes** as well. These farmers were also aware of **labour practices** and reported use of safety measures and that they do not have child labour in the farms.

A few farmers also mentioned that they were able to contact the implementation partners/ NGO personnel through phone whenever they had any questions. This has enabled a high level of personal interaction between the farmers and the agencies.

However, farmers also prefer that NGOs/ implementation partners manage the certification and paper trails and are not keen on receiving/ maintaining certification by themselves.

## 4.4 VARIOUS CHALLENGES NEED TO BE ADDRESSED TO CONTINUE THE MOMENTUM

### 4.4.1 There is no guaranteed price premium for farmers on sustainable cotton yet, though there is a latent willingness to pay for cotton with assured quality

Cotton market is volatile, and pricing is market-driven, with some Minimum Support Price (MSP) laid out by the government. Most farmers with whom the study team spoke said that they did not have any mechanism of price discovery, and get paid basis the price decided by ginners/ agents. Farmers who had access to market through IPs (Implementation Partners of BCI)/private companies/FPOs received premiums (INR 100-300/ quintal). However, those who did not have that access were selling cotton at market price or MSP. The local traders currently do not pay premium for Organic cotton. Neither do the large players differentiate in pricing, unless the quality is found to be superior.

BCI and Organic practices lower input costs by using sustainable methods, and hence they do not guarantee any price premium. While lowering of input costs has increased disposable income of farmers, they still expect a premium for the additional effort and risk of switching from traditional practices. Further, there is a known yield decline in Organic during transition which can be as high as 30%. Organic farmers thus expect a higher price as compensation for the decline in yield. Fairtrade members are benefitted through a fair price premium that is invested for community development.

### 4.4.2 Quality assurance is an important area of attention.

Quality assurance is seen as an issue while sourcing organic cotton. While speaking to larger players, it is seen that integrity of organic cotton sourced from India is a concern for them. They therefore do not differentiate in conventional, better and organic cotton and go strictly by quality testing parameters.

It was also seen that there is a **willingness to pay higher prices for organic cotton sourced from other countries** such as Turkey, Africa, which are perceived to offer better quality and whose testing mechanisms are considered better.

From market (buyers) perspective, contamination of cotton is a major challenge, especially in Organic cotton meant for exports. Global industry players who have significantly high sustainable procurement targets and high volumes, maintain and manage their own traceability platforms and quality assurance mechanisms. The government could take steps to ensure that the **existing testing infrastructure is utilised to its potential**. The government may also take efforts to **improve the perception of domestic cotton**.

### 4.4.3 Capacities at local levels continue to be a challenge.

- **Smallholder farmers have limited or no capacity for maintaining documentation, establishing entities, and accessing training resources on their own.** Cotton cultivation is dominated by smallholder farmers with limited resources and capacity to take on improved practices on their own. They

have limited access to technology and training resources, and depend upon IP personnel or KVK personnel to initiate procedures for licensing and certification. Models such as SPO model under Fairtrade requires entity registration and management, which would require significant handholding support for smallholder farmers. Assurance, audit processes, etc. also comes into play where smallholders need significant handholding support.

- **Significant efforts are required for generating awareness and enabling the change in farmer mindset.** Discussions with various implementation agencies (such as IPs under BCIs, NGOs working with farmers) highlighted that persuading farmers to switch from traditional practices to alternate practices requires dedicated effort. Many farmers are anxious about the decrease in yield or remunerative prices for the additional effort undertaken by them. This becomes even more difficult for Organic Cotton as there is no assured premium. Bringing in the desired change is a very involved process and requires a dedicated program and resources for continuous farmer outreach (trainings, demonstrations, etc.). Therefore, adoption is highly dependent on **effectiveness of implementation partners** in farmer outreach, training, etc. Significant awareness generation, capacity building, documentation and monitoring required at ground level, needs investments to build up the required implementation partners as well.
- **Government's extension support system has limited capacity.** While public sector extension support system is widespread (through KVKs, ATMA), it still has limited outreach (being crop-agnostic and requiring a wider coverage focussing on multiple government schemes, with limited manpower), in terms of dedicated personnel to approach/ provide training to cotton farmers. Further, various stakeholders mentioned that these functionaries also need to be trained about recently approved or banned chemicals and technologies, and equipped with information about the Standards. Farmers mentioned that KVKs visit infrequently (one or twice a year) in most places, while NGOs and private organisations engage with them on a continual basis. While technical institutions and agricultural universities develop necessary Packages of Practices, dissemination and addressing local challenges is better undertaken by local NGOs/ FPOs and implementation partners associated with Standards, which have limited coverage.

#### 4.4.4 Restriction on usage of certain inputs and availability also deters adoption to an extent

BCI and Fairtrade allow for only approved inputs for production, while Organic allows only those inputs that are organic in nature.

**Availability of inputs such as non-GMO seeds and organic inputs** in both Organic and Fairtrade requirements is another challenge. A study conducted by Louis Bolk Institute and Textile Exchange revealed that availability of non-GMO cotton is a major challenge in countries where Bt varieties are grown (India, USA, Barkina Faso). As per this study, only 19% respondents found it easy to procure non-GMO cotton in their countries<sup>25</sup>. While most farmers are currently able to access seeds by themselves or through IPs/buyers/FPOs, availability will need to be ensured if a higher proportion of farmers were to adopt non-GMO cotton cultivation. The government would have to play

<sup>25</sup> Source: Textile Exchange, Louis Bolk Institute, Seed availability for non-GM cotton production: An explorative study, 2015

a major role in encouraging organic production by establishing more seed villages for organic seeds, and funding research for development of new varieties of non-GMO seeds.

Currently, **most farmers purchase seeds, fertilisers, pesticides based on the recommendations of traders/suppliers**, who more often than not work on commission basis and hence tend to promote inputs that are financially beneficial to them (trader/supplier). The distribution and supply chain network of pesticides with harmful elements are often the strongest, and hence the harmful chemicals tend to be sold to the farmers more. This issue needs to be addressed on an urgent basis by strengthening the distribution and marketing of organic and environmental-friendly inputs.

#### 4.4.5 Certification cost and cost neutrality are also important factors of consideration for farmers

Cost neutrality in BCI seem to have worked to make it easier for farmers to switch. High certification costs in Fairtrade and Organic adversely impact the appeal of these Standards (even though costs can be aggregated over farmer groups). The PGS certification model has thus found favour among farmers as the certification doesn't entail large fees (except for a nominal fee for application, grant of certification to farmers, etc.). Yet, it was seen that PGS certified farmers also fail to receive much premium on their produce. Given the high certification cost in Fairtrade, the business case needs to be carefully assessed and fairly detailed out in order to adopt Fairtrade mode of implementation.

#### 4.4.6 Interventions are also required beyond farms- processing, marketing and market linkages

- **Processing** of cotton and the practices being followed therein is another important area to be addressed. Improper processing of cotton can neutralise any Standards that have been complied with during the production process. Benchmarks are therefore required to be developed and institutionalised for aggregation and processing.
- Discussions with the farmers also indicated that farmers sought strong **market linkages** so that they are assured of selling the produce at commensurate prices. The limited market linkages, particularly in Organic, and to an extent in BCI inhibits adoption. The Fair trade model, however, finds favour with the farmers due to easier access to market and collective negotiations.
- **Developing domestic market for sustainable/ organic cotton is also an important gap area.** Government could scale up the market by having a procurement policy and generating demand.

#### 4.4.7 At present, there are no focussed government programs/ policies to support or incentivise the adoption of these Standards

These are presently driven by private initiatives which is limited by funding sources, market demand, and availability of on-ground implementation partners. While PKVY does focus on organic farming, Standards provide additional rigour on water conservation, soil mapping, habitat protection, etc.

While several government policies, schemes, and programmes have also been introduced to enable better soil fertility and water usage, the **processes in availing benefits is perceived to be long and involves multiple bureaucratic layers, and thus less favoured by farmers.** For instance, financial assistance for installation of drip structures under Pradhan Mantri Krishi Vikas Yojana (PMKSY).

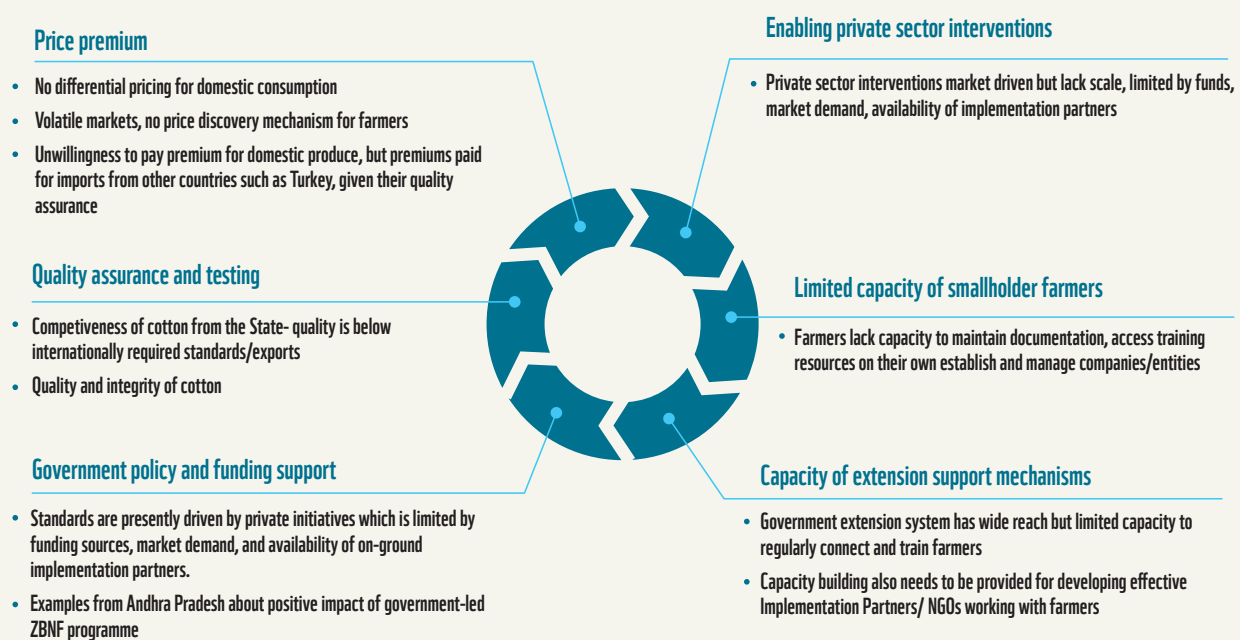
There are examples from countries like Mozambique, and other States within India such as Andhra Pradesh, where a structured approach is being taken by the government to promote Zero Budget Natural Farming (ZBNF). (ZBNF relies on chemical-free farming drawing from traditional Indian practices of using cow urine, green manure and other commonly available inputs such as neem and lemon.)

#### 4.4.8 Leveraging private sector partnerships would require focussed interventions by government

The State has a wide **network of NGOs and Farmer federations/ FPOs**, however, substantial investments in capacity building of these grass root organisations is required on sustainable practices (including labour practices, inputs and practices permitted under the Standards, documentation, operational modalities, traceability, etc.) for further capacity building and conversion of conventional farmers.

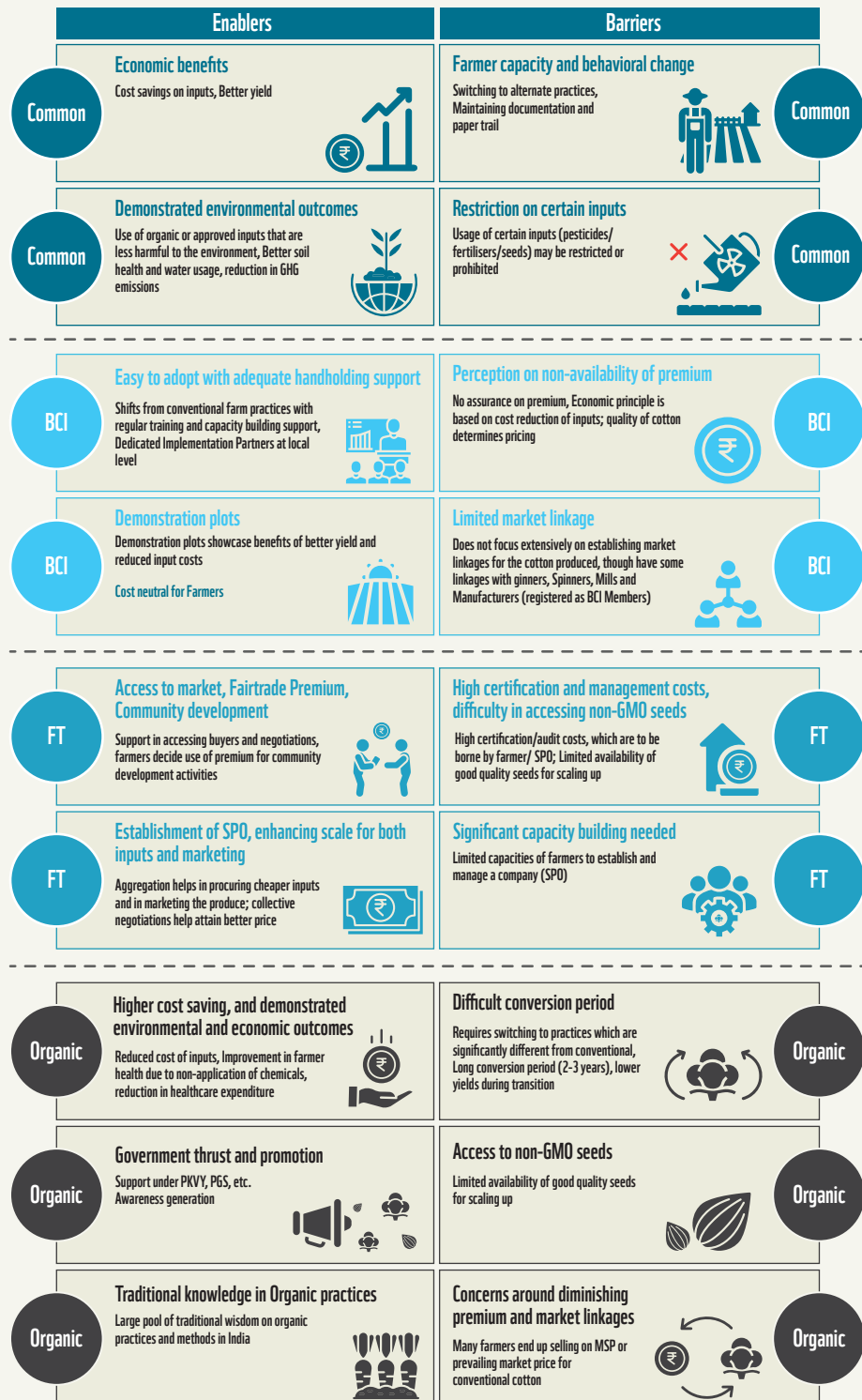
Further **large industry players** who have interest in sustainable cotton have been taking initiatives to secure their supply chain and in turn benefitting farmers. They have established their own foundations and are willing to contribute as implementation partners. However to expand this pool of partners and also incentivise them to help expansion in a structured way to cover all the farmers in the State, a targeted program needs to be developed by the government.

Figure 17: Challenges to be addressed for large-scale adoption



Following figure illustrates key enablers and barriers to adoption of Standards. It is pertinent to address the challenges and gap areas, leverage the enablers and help tackle the barriers for scaling up the positive impacts of the practices promulgated as part of the voluntary Standards.

**Figure 18: Enablers and Barriers to adoption of Standards**



## 4.5. POTENTIAL BENEFITS OF SCALING UP- SCENARIO ASSESSMENT

**Substantial economic, environmental and health benefits could be achieved for the State by scaling up the voluntary Standards State-wide.** Based on the results reported around socio-economic and environmental benefits achieved over the last decade, a high level assessment of potential benefits of scaling up the adoption of Standards in the State was undertaken. Environmental benefits like GHG emissions, and health benefits to farmers due to reduced use of chemicals have not been factored in the numerical assessments, yet there seems to be a case for conversion of conventional farmers to better practices.

For instance, total cost reduction of only INR 10,000- 14,000 per acre converted could translate to more than **INR 3800 crore additional savings** at an aggregate level if 70% of the cultivated area under cotton is converted over a period of 10 years in a phased manner. Further, an increase in yield by 9% (considered only for one year for the new converted land area, and sold on Minimum Support Price (MSP)<sup>26</sup>) would translate to **additional income of INR 1200 crores** in hands of farmers over a 10 year period. In case of further improvement in productivity and additional income due to inter-cropping, or price premium received on organic produce, these numbers could increase significantly.

Further, **reduced GHG emissions** by at least 40%, as noted in some studies, and reduced use of chemicals would also lead to **better environmental and health outcomes**. From government perspective, reduction in the use of fertilisers, would translate into **significant savings on fertiliser subsidies**. More specific impact assessment studies would be required to estimate such environmental impacts.

**Thus, there is a case for pursuing conversion to sustainability Standards in the State.**

<sup>26</sup> Ministry of Agriculture based on the recommendations of Advisory Board viz., Commission for Agricultural Costs and Prices (CACP) fixes the MSP . For year 2020-21, Minimum Support Price for medium and long staple was announced as INR 5,515 per quintal and INR 5,825 per quintal, respectively.

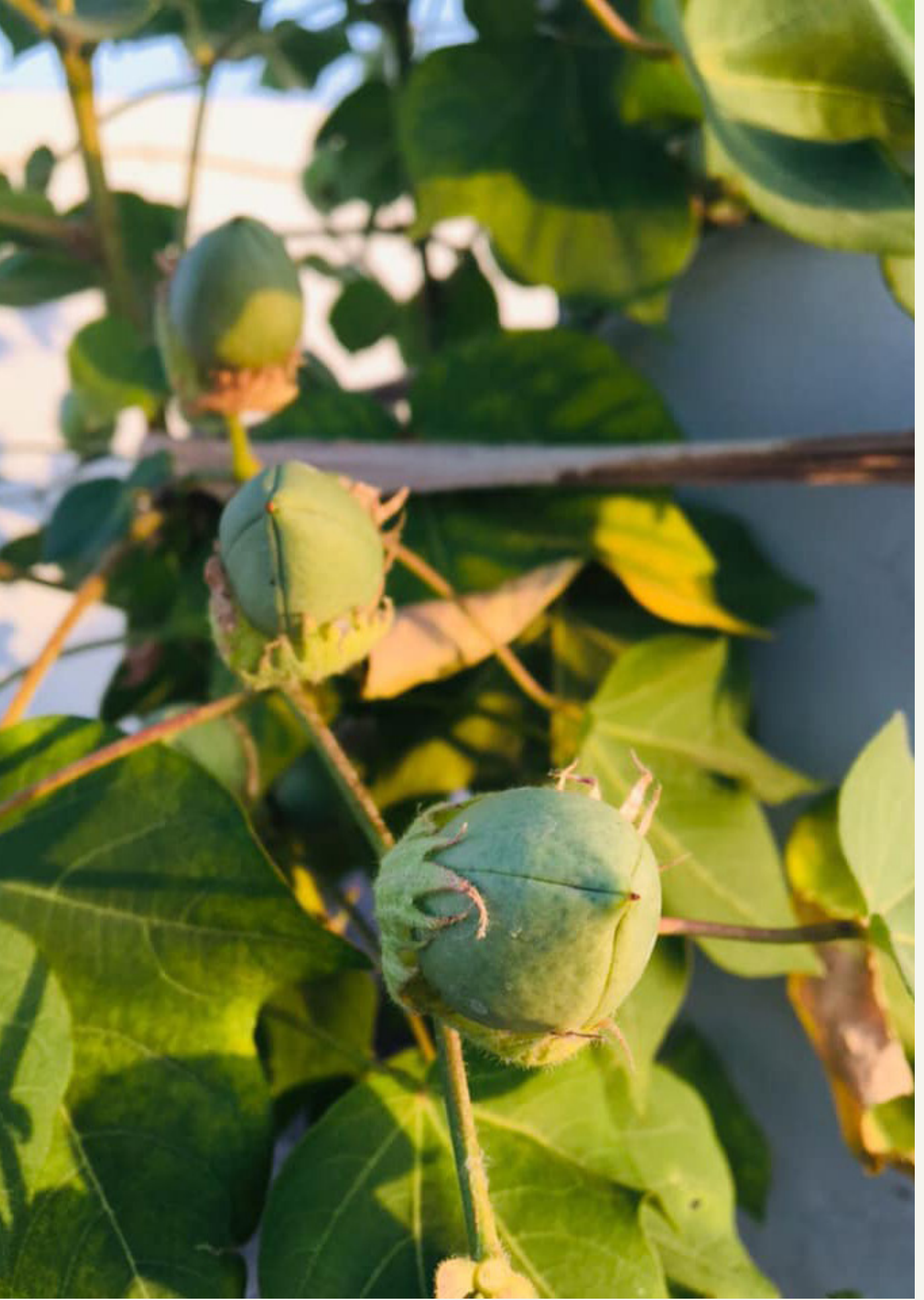
**Table 4: Scenario assessment- potential benefits**

Parameter	Unit	Assump- tions	Baseline	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	NPV
Total Area under Cotton Cultivation	000 acre		10420	10420	10420	10420	10420	10420	10420	10420	10420	10420	10420	
Irrigated	000 acre		28%	28%	28%	30%	30%	30%	30%	30%	30%	30%	30%	
Non-irrigated	000 acre		72%	72%	70%	70%	70%	70%	70%	70%	70%	70%	70%	
Coverage over 10 years- Volun- tary Standards	%	70%	14%	16%	20%	25%	30%	35%	45%	55%	60%	65%	70%	
Total Area under Voluntary Standards	000 acre		1511	1667	2084	2605	3126	3647	4689	5731	6252	6773	7294	
<b>Cost reduction benefit</b>	INR													
Irrigated	INR per acre	7000												
Non-irrigated	INR per acre	5000												
Total Cost reduction benefit	INR Crore		840	927	1159	1459	1751	2042	2626	3209	3501	3793	4085	
<b>Incremental benefit (Cost saving)- 1st year</b>	INR Crore			87	463	300	292	292	584	584	292	292	292	
<b>Incremental benefit (Cost saving)- 2nd year</b>	INR Crore				87	463	300	292	292	584	584	292	292	
<b>Incremental benefit (Cost saving)- Total</b>	INR Crore			87	550	764	592	584	875	1167	875	584	584	3848
Increase in income														
Expected increase in Yield- Voluntary Standards		9%												
Average Yield (Kapas)- Volun- tary Standards	quintal/ acre	7.0	7.0	7.0	7.0	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	
New area under increased yield each year	000 acre			156	417	521	521	521	521	521	1042	1042	521	
Additional yield benefit (in year 3)	000 quintal			98	263	328	328	328	328	328	656	656	328	
Price per quintal (MSP- Me- dium Staple)	INR per quintal		5250			6253	6628	7026	7447	7894	8368	8870	9402	
<b>Additional Price received due to increased yield</b>	INR Crore			-	-	62	174	231	244	259	549	582	309	1201



*Assumptions:*

- *Coverage under Standards (such as BCI) increases to 70% over a period of 10 years in a phased manner starting from a baseline of 14%*
- *Cost reduction of INR 5,000-7,000 per acre for rain fed and irrigated land respectively is achieved. This assumption is much lower than the reported achievement of 10-15,000 under BCI in some places and 15-20,000 under organic. But since the local site conditions would vary substantially, and there might also be some investments required which haven't been factored in, a lower net saving has been considered in this scenario for a period of 2 years only*
- *Only incremental savings have been considered for new land being brought in under the Standards every year. The savings are considered for 2 years, after which no incremental savings may occur, thus totaling to INR 10,000-14,000 per acre of land converted*
- *Additional income has been consider for one year, after 2 years of conversion, due to increase in yield by 9%*



# 5

## EMERGING STRATEGIES AND WAY FORWARD

This chapter presents emerging strategies and way forward for fast tracking the expansion and adoption of sustainability Standards in cotton.

As discussed in previous sections, **substantial economic, environmental and health benefits emanate** by adopting various practices promulgated under voluntary Standards. Therefore, the State could benefit substantially by scaling up the voluntary Standards State-wide. However, while the Standards and private sector are making efforts of expansion, government could help fast track the expansion and address gap areas which may not be otherwise feasible for private sector.

It is desirable to invest in certain areas like capacity building of farmers, implementation agencies, public sector extension network, upgrade testing and R&D infrastructure and mechanisms, etc. and establishing the missing value chain linkages especially on the inputs, market and logistics aspects. However, in the current state of economy, it is also desirable to look for options without massive investments. The government could therefore consider harnessing the low hanging fruits, and wherever needed, channelizing funds through its ongoing schemes. In this context, some of the strategic areas, and the implementation options are presented below.

### 5.1 EMERGING STRATEGIC AREAS AND OPTIONS FOR WAY FORWARD

#### 5.1.1 Strategic areas and action points

Based on the research and consultations undertaken during the course of the study, a few critical strategic areas are emerging, as below:

- **Expand outreach**, from a government perspective. There are established economic and health benefits for farmers as well as environmental benefits due to sustainable practices promulgated under the Standards. The government could help fast track the expansion of Standards active in the country, as well as pilot new Standards in the State, thus **expanding outreach of sustainable practices** (from current 14-15% to a larger coverage, say over 70% of the State). This would

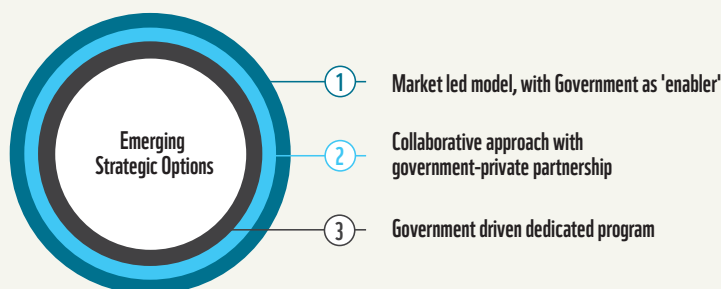
help scale up the desired benefits State-wide. For this, government would need to define a vision, and engage with the Standards and stakeholders with interest in the State, take actions for awareness generation and capacity building, and set up the required implementation and monitoring mechanisms.

- **Expand the market and market linkages**, from farmers perspective. An assured **market for more sustainable products** would encourage more farmers to adopt these practices. It has been seen that farmers with access to assured market were more likely to receive a premium (e.g. contract farming works on trust wherein the buyer trusts that the farmer will produce the goods sustainably, and the farmer trusts that he will receive a competitive price). Some of the ways to expand the market for produce could include **procurement by the State**, and creation of a branding strategy to expand the market for sustainably produced cotton. Farmers could be provided marketing and logistics support, and support for formation of FPOs/ groups and federations. Further, **enabling digital platforms** can also help improve market access and bring in large buyers.
- From market perspective, given that Indian produce is perceived to be of inferior quality and more prone to contamination, putting **appropriate mechanisms in place to ensure minimum contamination** will be quintessential. Suitable mechanisms to improve **testing facilities** and mechanisms for more assurance on quality, marketing campaigns, and generating more demand for sustainably produced cotton would help in better realisation for farmers.
- Further, **addressing the supply chain bottlenecks**, establishment of a robust distribution network (easier access to non-GMO seeds, approved chemicals, mulch material, compost, etc.) would help. This is particularly important for **non-GMO seeds**, which are comparatively harder to access. This would also require enhancing the R&D efforts as also training on approved inputs including fertilisers and pesticides. Further, **enabling digital agri supply chain platforms** can also help improve these linkages.
- **Incentivise private players** to participate as implementation partners, and supplement governmental efforts for farmer outreach and capacity building. Leverage private sector expertise in the State (including industry and non-governmental actors), undertake policy interventions for more sustainably produced products, while ensuring ease of business in the State.

In this context, there could be various options that may be considered for State-wide adoption, as presented below.

### 5.1.2 Strategic options for implementation

**Figure 19: Strategic options for State-wide adoption of Standards**



**Option I** would be to let the private sector lead and continue to drive efforts on capacity building, compliance and certification in response to the market demand. The government could support this model by channelizing investments from ongoing schemes in a more structured way into areas such as capacity building, organic certification, FPO formation, soil health management, micro-irrigation, awareness generation through KVKs, etc. In addition, government could look at upgrading the existing infrastructure such as testing labs and markets, and supplement private sector efforts. With this model, the State will only be able to **capture limited environmental and economic benefits, however, could provide some incentives to the private sector to reach remote areas which are otherwise not economically feasible for private sector.**

**Option II** would be to undertake a more collaborative approach with the private sector, leveraging both private and public funds for a common goal. Government would need to define a vision for the sector, and undertake consultations with the private sector on common areas of investments, and policy support needed. Government could also enter into MoUs with some of these agencies and undertake pilot projects in remote areas with the Standards active in the State, and with new Standards that are currently not established in the State. Incentives could be provided to private sector for expanding the initiatives to remote locations with public funding. Dedicated government programs on capacity building and testing support could be designed to leverage private efficiency and resources. Government programs such as PPPIAD, SMART, Organic Mission, and other State initiatives could be dovetailed to channelize funds. This approach would enable **larger coverage of the State and more equitable benefits to the farmers, but would also require significant efforts and funding commitment from the government.**

**Option III** would be to design and implement a dedicated government program covering the entire State and address capacity constraints and value chain aspects in a holistic manner. Such a program would **require significant investments from the government.**

The illustration below summarises the strategic options and their key features, and the details of each of the option, along with case studies are provided in subsequent sections.

**Figure 20: Emerging options- key features**

<p><b>OPTION 1</b> Market led model, with government as enabler</p>	<ul style="list-style-type: none"> <li>• Incentives for <b>expansion to remote</b> farmers</li> <li>• Share details regarding government scheme and <b>subsidies, funds to be released on priority</b> basis</li> <li>• <b>Support funding for farmer registration/ certification</b>, and establishing of farmer entities (FPOs)</li> <li>• <b>Scale up the market</b> by procuring sustainable cotton products</li> <li>• Use of private sector <b>benchmarks and inputs</b> for policy decisions</li> <li>• Strengthen <b>testing</b> infrastructure for quality assurance</li> </ul>
<p><b>OPTION 2</b> Collaborative approach with government-private partnership</p>	<ul style="list-style-type: none"> <li>• <b>Incentives for private sector</b> players to implement/ expand standards coverage</li> <li>• <b>Training to government extension functionaries</b> on Standards</li> <li>• Undertake <b>pilot projects</b> with private standards</li> <li>• Funding support for farmer training</li> <li>• <b>Funding for testing and quality assurance</b>, to be implemented by private sector</li> <li>• Enhance <b>R&amp;D investments</b></li> <li>• Use of private sector <b>benchmarks and inputs</b> for policy decisions</li> <li>• Enable <b>digital interventions</b></li> </ul>
<p><b>OPTION 3</b> Government driven dedicated program</p>	<ul style="list-style-type: none"> <li>• A dedicated program for <b>farmer capacity building, testing and quality assurance, and marketing</b></li> <li>• <b>Pilot programs</b>- organic districts, private certification</li> <li>• <b>Dovetailing public programs</b>; involve non-government/ private sector partners</li> <li>• Setting up procurement mechanism- farm gate to market/ Setting up dedicated mandis</li> <li>• <b>Branding</b> strategy to manage perception on quality, and for better marketing</li> <li>• Provide <b>marketing support</b> and <b>enable digital interventions</b></li> </ul>

### 5.2.3. Option I: Market led model with Government as ‘enabler’

This model will be predominantly private sector led, with government support to fill in the gaps. While in a business-as-usual scenario, private sector will continue to drive the market, and Standards will continue to expand based on their envisaged targets, the scale will also remain limited. If the government were to support such initiatives, these could expand to farmers in remote areas, bringing in more equity and environmental benefits. Government could consider supporting the private efforts with focussed government interventions such as support for farmer capacity building, making available public machinery such as KVKs for dissemination about Standards, enabling testing support, etc. The government would need to proactively engage with stakeholders (industry, brands, Standards, donors, etc.) and support their efforts through dovetailing of government programs and schemes. Some of the key initiatives would include:

- Share details regarding **government scheme** and subsidies, and also ensure that these are released on a priority basis to program farmers
- **Generate awareness and promote Standards** such as BCI through KVKs, and government functionaries, along with government schemes
- Provide support for supply chain links for enabling inputs permitted under the Standards to reach farmers (*through training of KVKs, support from SAUs*)
- Support funding for **farmer registration/certification**, and establishing of **farmer entities** (FPOs) (*such as under PKVY, SMART project*)

- **Support certification** of organic farmers in-transition or those practicing organic farming but not certified (*such as under the State's organic agriculture mission, PKVY*)
- Strengthening of **testing infrastructure for quality assurance**
- Provide **incentives for expansion** to remote farmers (*under State programs, PPIAD*)
- **Scale up domestic market by procurement of sustainable cotton** products for government facilities (*Replace a % of regular purchase with labelled product*), **provide marketing avenues** (*such as State emporiums*)
- **Support for access to market and logistics support** (*such as under SMART project*)
- Engage with private sector to use **private sector benchmarks and inputs for policy decisions**

By enabling fast tracking of conversion of conventional cotton producers to Standards through soft interventions, such a model will help government amplify the positive environmental and economic impacts.

Countries such as US have similar examples where private sector drives the sustainable cotton segment, while government provides the necessary support. (Refer box for more details)



## CASE STUDY: US COTTON TRUST PROTOCOL

US Cotton Trust Protocol is a pilot initiated by the National Cotton Council (June 2019) bringing together various private players including gins, merchants and marketing cooperatives, etc. to enable production of more sustainable cotton in the US and improvement in environmental parameters. The full implementation of the pilot programme has been scheduled for June 2020. The Protocol has been created to **enable U.S. cotton industry to demonstrate its commitment towards more sustainable cotton production**. Specific roles are assigned for each of the stakeholders to ensure seamless coordination. **Some major brands have also signed up for the program**, including World Wildlife Fund, the Environmental Defense Fund, Tesco, Levi Strauss and the Louis Dreyfus Company. The data generated (through data collection, and verification) will be used to **benchmark farmers' gains towards the industry goals**. The farmers through self-assessment can also see the environmental impact of their actions. NCC will play primary role for enrolment of producer members in the pilot phase, while **role of private players is as follows**:

- **Gins, merchants, and marketing cooperatives:** Recruitment of producer participants
- **Participating producers:** Self-assessment of farming operations on land use, soil carbon, water management, soil loss, greenhouse gas emissions and energy efficiency
- **Auditing agencies:** Second and third-party verification of information obtained through the Protocol
- **Technology providers:** Development of platform for entering metrics

## 5.2.4 Option II: A collaborative approach with discrete policy measures to incentivise Private sector players.

While following a pure play private or government approach has its own advantage, in terms of control, ownership and managing the pace of implementation, a collaborative approach could help leverage strengths of both government and private sector. One of the advantage of having government drive a program is the level of trust that gets created, and hence one of the biggest challenges of farmer mindset shift can get addressed much faster. Similarly, private sector knowledge of the market, efficiencies and innovation can help achieve the desired outcomes much faster. Collaboration can also help leverage both government and private financial resources and enable much larger outcomes for the State. Since Maharashtra is seen as a progressive State and is a business hub housing several corporate houses, the Government may be able to mobilise and leverage private sector strengths to the overall advantage of the sector.

This would entail having a discussion with private sector and Standards organisations for collaboration on training and certification aspects. While Standards could bring in their experience and expertise for developing implementation partners, training modules on agriculture practices, demonstration plots and conducting trainings, etc., government could provide funding support for pilot areas and help plug the gaps in testing and market networks. Government would be able to bring the desired scale for training farmers, promoting better practices, awareness generation, guidance/ regulations on inputs to be used for agriculture, etc.

- Undertake **pilot projects** with private Standards including those operating in the State and those who do not operate in Maharashtra yet or are at a very small scale in cotton segment (such as Regenerative Cotton, Fairtrade) (*such as under PPPIAD*)
- Provide KVK machinery with required **training on Standards** and promote dissemination
- Provide **incentives for private sector players** to implement/ expand Standards coverage. Standards could bring in their experience and expertise for developing implementation partners, undertaking capacity building, demonstration plots and conducting trainings, project management, etc. with funding support for **trainings to farmers**, awareness generation campaigns of the government, and information dissemination.
- Provide funding for **testing and quality assurance**, by strengthening existing lab infrastructure, and provide testing support
- One of the low hanging fruits would be to provide **certification support to organic farmers in-transition**, and those who have been practicing organic farming without certification. They can be converted to complete organic practices and provided help to advance to much better outcomes. (*under State Organic mission, PKVY*)
- Provide support for access to approved inputs and **supply chain links** for enabling inputs permitted under the Standards to reach farmers
- Support funding for **establishing of farmer entities** (FPOs) (*such as under PKVY, SMART project*)



- Enhance **R&D investments** with private sector support; strengthening SAUs/ CIRCOT centers (such as under PPPIAD)
- **Propagate government scheme** and subsidies through private network by sharing information and also ensuring that these are released on a priority basis to program farmers
- Use private sector **benchmarks** and inputs for policy decisions
- Dovetail funding from State government programs (*State Organic Mission, SMART, PoCRA*)
- Setting up procurement mechanism from farm gate connecting to markets
- Enable **digital interventions**, for example, for digital marketing/ logistics with start-ups (such as under SMART project)

### Broad cost estimates

While estimating cost of Option II also require more detailed analysis and clarity on steps agreed between government and private sector, **Option II as a way forward**, would entail more active involvement of government, in addition to the support suggested in Option I. This would include, providing incentives to the private sector and supporting their capacity building initiatives such that the outreach increases across all cotton producing districts. Investments will therefore be required in capacity building, campaigning to communicate the vision of the government through media, and through government extension support system, training of KVK functionaries on Standards and approved inputs, and strengthening of existing labs. In addition, processes for enhancing accessibility of approved inputs, regulations to push the private sector efforts in the envisioned direction, would be other key steps to be taken. While providing a financial estimate for such steps would need significant detailing and clarity on the actions to be taken, a broad cost estimate is about **INR 150 crores over a period of 10 years**, for select interventions such as capacity building, support for certification, conducting pilots along with new Standards. These are ballpark estimates and further studies would be required to develop a detailed action plan and program costing.

**Table 5: Broad cost estimates for Option II**

S.No	Component	INR Lakh
1	Capacity building of farmers	8,600
2	Training of KVKs	140
3	Awareness generation campaigns	50
4	Testing Infrastructure-Upgration, Maintenance	440
5	Support for certification-Organic	4,050
6	Pilots in new areas/new standards	80
7	R&D-Inputs (non-GMO seeds, other inputs)	180
8	Institutional, Marketing and Logistics support for farmers	910
9	Project Management costs @5%	720
	<b>Total</b>	<b>15,170</b>

### **Assumptions for broad cost estimates**

- **Capacity building of farmers** include cost of developing contents such as training modules and short films, cost of equipment such as pico projectors, cost of conducting trainings, etc. Unit cost is taken as INR 550 per farmer for over 15.6 lakh farmers
- Cost of **demonstration plots** have been built in @ INR 50,000 per acre; 3 plots per district every season/year for 15 districts
- **Training of KVKs** is considered at the rate of INR 15000 per day for 4 days for 5 years after which refresher training could be organized. For refresher training INR 1500 per day is considered for 8 days of training per year.
- A lump sum cost for **Awareness generation campaigns** has been built in @ INR 5 Lakhs per year
- **Certification support** for organic for smallholder farmers- INR 2000 per farmer has been considered for about 2 lakh farmers.
- Cost of four **Pilots** with new Standards @ INR 20 lakh per pilot
- **Institution building support** (for SHGs, FPOs, Federations), Marketing and Logistics support has been considered for about 3900 institutions @INR 22000
- **Marketing support** has been provided for 4 events per year for 10 years @ INR100,000 per event
- **For Testing infrastructure and support**, cost can vary significantly based on the kind of infrastructure and tests supported. INR 50 lakhs support per lab for 5 labs over 5 years has been considered with a operational support of 10% per year for 10 years, starting from Yr 2
- **Project Management cost** is considered @5%
- The table presents rounded off figures based on above calculations

### **Impact**

- For land converted to Standards- Farmers will benefit from cost savings due to reduced use of chemicals. Reduced use of chemicals will also lead to better environmental outcomes (Not estimated, further technical studies may be conducted for this aspect). Increase in yield on the converted land from Y3 onwards would lead to additional income for the farmers.
- For land converted to Organic- While there will be a decrease in yield during transition for 2 years, there will be substantial cost savings due to conversion to organic inputs. This will be followed by additional income to farmers due to price premium paid on organic cotton. Further, significant reduction in use of chemicals will lead to better environmental and health outcomes.

**Table 6: Cost and income benefit estimation for Option II**

Scenario- 60% Standards and 10% Organic														
Parameter	Unit	Assumption	Baseline	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	NPV
<b>Conversion to Voluntary Standards</b>														
Coverage over 10 years- Voluntary Standards	%	60%	14%	16%	20%	25%	30%	35%	40%	45%	50%	55%	60%	
Area under Voluntary Standards	000 acre		1511	1667	2084	2605	3126	3647	4168	4689	5210	5731	6252	
<b>Cost reduction benefit</b>														
Total benefit (with baseline)			840	927	1159	1459	1751	2042	2334	2626	2918	3209	3501	
Incremental benefit (Cost saving)- 1st year		5000- 7000	87	87	232	300	292	292	292	292	292	292	292	292
Incremental benefit (Cost saving)- 2nd year			87	319	532	592	584	584	584	584	584	584	584	2,882
<b>Price benefit</b>														
Expected increase in Yield- Voluntary Standards	%	9%												
Average Yield (Kapas)- Voluntary Standards	quintal/acre	7.0	7.0	7.0	7.0	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
New area under increased yield each year	000 acre			156	417	521	521	521	521	521	521	521	521	521
Additional yield benefit (in year 3)	000 quintal			98	263	328	328	328	328	328	328	328	328	328
Price per quintal (MSP- Medium Staple)	INR per quintal		5250			6253	6628	7026	7447	7894	8368	8870	9402	
Additional Price received due to increased yield	INR Crore		0	0	62	174	231	244	244	259	275	291	309	950
<b>Conversion to Organic</b>														
Coverage over 10 years- Organic	%	10%	0%	2%	4%	6%	7%	7%	8%	8%	9%	9%	10%	
Area under Organic	000 acre		0	208	417	625	729	729	834	834	938	938	1042	
<b>Cost reduction benefit</b>														
Total benefit (with baseline)			0	188	375	563	656	656	750	750	844	844	938	
Incremental benefit (Cost saving)- 1st year		9000	188	188	188	188	94	0	94	0	94	0	94	
Incremental benefit (Cost saving)- 2nd year			188	375	375	375	281	94	94	94	94	94	94	0
Incremental benefit (Cost saving)- Total			188	375	375	375	281	94	94	94	94	94	94	1,233
<b>Price Premium (Organic)</b>														
Average Yield (Kapas)	quintal/acre	7												
Reduction in Yield during transition (2 yrs)	%	30%												
Production- Organic	000 quintal		1459	1969	2480	3209	3939	4158	4887	5398	6127	6346	7075	
Price Premium per quintal- Organic	INR per quintal	150	150	150	150	150	150	160	160	160	160	160	160	
Price premium realised for %	%	20%												
Price Premium (Organic)	INR Crore		6	7	10	12	13	16	17	20	20	23	23	79
Total cost reduction benefit	INR Crore		274	694	907	873	677	677	677	677	677	677	677	4,115
Total price/income benefit	INR Crore		6	7	71	186	244	260	276	294	311	331	331	1,029

Australia myBMP is an example of a long partnership between industry and government. (Refer box below), as also steps taken under other programs such as US Cotton Trust Protocol (presented earlier in Option I), for benchmarking.



## CASE STUDY: AUSTRALIA'S MYBMP PROGRAMME

Australia is a **relatively small producer of cotton** by world standards (3% of total global production), producing 2 million bales (227 kg each) of cotton (2018-19). Cotton is grown mainly in New South Wales and Queensland. There are approximately **900 cotton farmers** in Australia<sup>27</sup> (cultivating cotton on 1,500 farms), spread across the cotton growing regions. The average landholding size in Australia is 4,331 ha<sup>28</sup>. However, myBMP programme of Australia has established itself in the global dialogues.

myBMP is Australia's voluntary cotton production certification standard. It provides **self-assessment mechanisms**, and **tools and auditing processes** to ensure that Australian cotton is produced according to best practice. Through myBMP, all Australian cotton growers have a resource bank to access the industry's best practice standards, which are backed by research, resources and technical support.

### Role of industry and government

Established in 1967, **Cotton Seed Distributors (CSD)** undertakes supply and distribution of cotton seed in Australia. CSD was formed through the vision of cotton growers in the country. It has a partnership with Commonwealth Scientific and Industrial Research Organisation (CSIRO), an Australian federal government agency responsible for scientific research, since 1971. CSD and CSIRO partner for engaging in cotton breeding programmes, utilising global gene pools to create hybrids with local cotton varieties.

The Australian government established the **Cotton Research and Development Corporation (CRDC)** in October 1990 under the Primary Industries (Excise) Research and Development Act 1989 (PIERD Act). CRDC is a partnership between the government and the industry, which aims to spearhead the research, development and extension (RD&E) initiatives for the cotton industry. CRDC's investment in RD&E is funded through an industry levy, with matching government contribution.

**Cotton Australia**, a non-profit organisation is an industry trade group representing cotton farmers and corporations in the country. It determines and drives the industry's strategic direction, with a focus on R&D, reporting on its environmental credibility, and implementing policy objectives in consultation with its stakeholders. Cotton Australia also plays an important role in providing grower feedback on research priorities, and advocating for greater funding for rural R&D.

Together, CRDC, CSD and Cotton Australia formed **CottonInfo** in 2012, to keep growers and industry stakeholders updated on research and information. CRDC and CottonInfo collaborate to publish the *Australia Cotton Production Manual*, and the *Cotton Pest Management Guide*, annually.

<sup>27</sup> CRDC and CottonInfo, Australia Cotton production Manual 202

<sup>28</sup> Australia Bureau of Statistics, Agricultural Census, 2015-16

### 5.2.5. Option III: Government driven dedicated program

Governments in other countries as well as State governments in India have designed and implemented large programs to bring the desired structural reforms and advancement of the sector. If the Government of Maharashtra chose this route, this would entail establishing a dedicated program with focus on important areas such as farmer capacity building, enabling testing infrastructure and mechanisms, and interventions to enable private players. This would also require setting up institutional and implementation structures to drive such a program.

In some other States in India such as Andhra Pradesh, a structured approach is being taken by the government to promote Zero Budget Natural Farming (ZBNF). Through this approach government is establishing mechanisms for capacity building of farmers State-wide, leveraging training resources, etc. (For more details, refer box below). Countries such as Egypt have also undertaken policy reforms to support the domestic cotton industry (For more details, refer box below). Other than these, Sikkim government's commitment to its Organic Mission has shown how a government-led action plan can yield transformational results.

The interventions required for this approach would be:

- A **dedicated program** for farmer capacity building, testing and quality assurance, and marketing
- **Piloting programs** such as organic districts with support funding provided under government schemes, pilots with private Standards/certifications
- Assess and fill gaps in supply chains
- Develop/ implement a certification mechanism, monitoring and audit mechanisms
- **Dovetail public programs** such as PoCRA, SMART, etc. and involve non-government/ private sector partners for implementation
- Provide incentives to private sector for procuring sustainable cotton
- Setting up procurement mechanism from **farm gate connecting to markets**
- Setting up infrastructure for the future- seed hubs, aggregation centres, R&D and testing, logistics hub, dedicated mandis to provide impetus to sustainably produced products
- Develop a **branding strategy** to manage perception on quality, and for better marketing
- Provide marketing support and **enable digital interventions**

**Cost benchmarks:** Cost of such a program will depend upon various decisions taken by government in terms of the coverage of beneficiaries, components of the program, extent of support to be provided, phasing of program, mode of implementation and so on. Government can look at potential benchmarks for cost estimate for this option. The AP ZBNF program is investing an amount of approx. **INR 24,500 per farmer family over a 5 years period**. This includes capacity building at all levels (farmers, village, clusters, districts, State) under a government driven program, certification and quality assurance, establishing livelihood funds, etc. Capacity building component alone is close to INR 18,300 per farmer family. The government in turn saves on significant fertiliser subsidies to the tune of INR 2100 crore annually<sup>29</sup>.

<sup>29</sup> Council on Energy, Environment and Water, Sustainable India Finance Facility (SIFF), Can Zero Budget Natural Farming save input costs and fertiliser subsidies: Evidence from Andhra Pradesh, January 2020



## CASE STUDY: ANDHRA PRADESH ZERO BUDGET NATURAL FARMING (ZBNF), INDIA

The Government of Andhra Pradesh (GoAP), Department of Agriculture (DoA) is implementing Andhra Pradesh Zero-Budget Natural Farming (APZBNF) Programme since 2015-16, through Rythu Sadhikara Samstha (RySS) (corporation for farmers' empowerment), a not-for-profit organization established by GoAP. The programme aims to reach all 6 million farmers in the State (8 million hectares of land) by 2024. Under this programme, extension support is led by farmers (including women) through a process of farmer-to-farmer learning. The programme is being undertaken by the State government, dovetailing the Rastriya Krishi Vikas Yojana (RKVY) and Paramparagat Krishi Vikas Yojana (PKVY) of the Centre, with the Azim Premji Philanthropic Initiatives extending technical support.

The programme invests in building the capacities of farmers through handholding. It entails on-ground implementation through **farmer-to-farmer knowledge dissemination**. This is done through Community Resource Persons (CRPs), and **Self Help Groups** at the district and sub-district level. Further, **State Level Implementation & Technical Support Unit, District Program Support Unit** and **cluster teams** work closely with **RySS** for execution of the programme. **NGOs** (after due screening) can also partake in the programme as resource organisations and implementation organisations. The programme also supports linkages between Farmer Producer Organizations, Women SHGs, and ZBNF entrepreneurs for processing, value addition, and selling marketable surplus beyond the clusters.

It is estimated that GoAP will require about INR 150 bn (INR 15,000 crore) over the next few years to achieve its goal. The program is funded through RKVY and PKVY till 2018-19, and going ahead the program is proposed to be scaled up leveraging other funding sources as well. This includes proposed funds from World Bank funded APIIATP (INR 261 crore), IFAD-funded APDMP (INR 104 crore), and KfW loan (INR 2,479 crore). In addition to these, Azim Premji Philanthropic Initiatives has committed INR 100 crores for 5 years. (Source: RySS, GoAP, Andhra Pradesh Zero-Budget Natural Farming Vision 2024: A System wide Transformation). The government's efforts are also garnering interest from several national and international organisations such as The UN Environment, international banking group BNP Paribas. The Food and Agriculture Organisation (FAO) of the UN is also contributing approximately INR 10 million for capacity building for the purpose of ZBNF.

An independent study by Council on Energy, Environment and Water (CEEW) stated **that savings on fertilizer subsidies could amount to INR 2100 crore annually** if ZBNF was scaled up to reach all 6 million farmers in the state by 2024.



## CASE STUDY: EGYPTIAN COTTON

The Egyptian cotton is known to be amongst the finest quality cotton globally. The Egyptian cotton has Long and Extra-Long staple (LS and ELS). Only 3% of the total world cotton production is ELS cotton. However, with fierce global competition, and the country's political scenario, exports were decreasing. In this context, since early 2017 the government of Egypt started taking measures to check cotton industry's further decline. In 2017, the government announced a new **19-step cotton policy** to revive the industry. Some of the measures included:

- Provision of high quality seeds to growers to increase yield and quality
- Development of local spinning and weaving industries
- Identification of areas suitable for particular cotton varieties
- Intensified promotion of Egyptian cotton in international markets
- Defining the role of the concerned authorities that work in planting, trading, and industries

United Nations Industrial Development Organization (UNIDO) and the Ministry of Trade and Industry (MoIT), the Ministry of Agriculture and Land Reclamation (MALR) signed a MoU to cooperate in the **Egyptian Cotton project**, and also leveraged private CSR initiatives. The project aims to promote organic and non-contaminated long and extra-long staple Egyptian cotton by improving the economic, social and environmental performance of cotton growers and processors and strengthening support institutions. In 2019, UNIDO **piloted Better Cotton Initiative under the framework of Egyptian Cotton Project**. The project aims to train farmers on BCI Criteria (through workshops, on field management, irrigation, IPM, etc.), field days, and dissemination of best practices. The BCI initiative is expected to further government's effort to make Egyptian cotton more sustainable.

As a result of the cotton policy and Egyptian Cotton project, the 2018-19 cotton season recorded a growth of 45% in exports<sup>30</sup>. Pilot areas also witnessed a 30% increase in cotton yields and a 25-30% decrease in water consumption.

<sup>30</sup> The Cotton Egypt Association (CEA)

## 5.2 OPTIONS ANALYSIS

Points to be considered for each of the emerging options are discussed below.

**Table 7: Pros and cons under emerging options**

Option I- Market led model, with government as enabler	
<p><b>Pros for govt:</b></p> <ul style="list-style-type: none"> <li>Market linked; demand-driven model, more likely to address market realities</li> <li>Funding from private sector through donor support, with limited investments from government coffer</li> </ul> <p><b>Pros for pvt:</b></p> <ul style="list-style-type: none"> <li>Control on quality and quantity of cotton, as per market demand, Supply chain assurance</li> <li>Able to leverage govt support to address issues around quality assurance through the required infrastructure and testing</li> <li>Govt support for capacity building and scale-up</li> <li>Easy access to farmers through govt machinery</li> </ul>	<p><b>Cons for govt:</b></p> <ul style="list-style-type: none"> <li>Scaling up will continue to remain a challenge (limited outreach, limited to market demand, and no incentive to go to remote areas or adopt State-wide)</li> <li>Costs in market linked models continue to be borne by farmers</li> </ul> <p><b>Cons for pvt:</b></p> <ul style="list-style-type: none"> <li>Business as usual with limited government support</li> <li>Subsidies and incentives may take time coming</li> <li>Expanding in remote areas may not be feasible</li> </ul>
Option II- A collaborative approach with discrete measures to incentivise Private sector players	
<p><b>Pros for govt:</b></p> <ul style="list-style-type: none"> <li>Larger availability of funds (leveraging both public and pvt)</li> <li>Combines technical resources/capacity of pvt players with financial resources of govt</li> <li>Enlargement of focus from asset creation (e.g. for R&amp;D/testing) to delivery of a service (capacity building, handholding, maintenance of the infrastructure asset)</li> <li>Strong distribution network (public + pvt)</li> <li>Larger capacity building opportunity</li> </ul> <p><b>Pros for pvt:</b></p> <ul style="list-style-type: none"> <li>Impact government policies through data</li> <li>Market responsive, appropriate risk allocation</li> <li>Economically feasible with public sector assistance in remote regions</li> </ul>	<p><b>Cons for govt:</b></p> <ul style="list-style-type: none"> <li>Need for better coordination between private and public, better monitoring mechanisms</li> </ul> <p><b>Cons for pvt:</b></p> <ul style="list-style-type: none"> <li>Need for better coordination, contractual uncertainties</li> <li>Effective mechanisms to address potential conflicts, and distribution of risk will need to be worked out</li> </ul>
Option III- Government driven dedicated program	
<p><b>Pros for govt:</b></p> <ul style="list-style-type: none"> <li>Complete control with govt</li> <li>Uniform practices all over the State, hence easier to implement</li> <li>A State-wide branding may be easier to achieve</li> <li>Cost neutral to farmers, other value chain players</li> <li>Dedicated focus on improving govt extn</li> </ul> <p><b>Pros for pvt:</b></p> <ul style="list-style-type: none"> <li>Substantial investment from government to enhance infrastructure and linkages, may reduce the investments being ploughed in by private sector</li> </ul>	<p><b>Cons for govt:</b></p> <ul style="list-style-type: none"> <li>Speed and timely achievement of targets given institutional capacity, procedural delays</li> <li>Dovetailing with pvt programs/ Standards may not happen</li> <li>More expensive for the exchequer</li> <li>Not market linked/ limited market linkages</li> <li>Cost of creating a brand would be high and establishing brand in market will also take significant time</li> </ul> <p><b>Cons for pvt:</b></p> <ul style="list-style-type: none"> <li>Limited role to play</li> <li>Competing government interventions may not add value</li> </ul>



## 5.3 WAY FORWARD

Each of the options discussed has some pros and cons in terms of market responsiveness, ease of implementation, cost economics, monitoring mechanisms, and coordination efforts required from both government and industry.

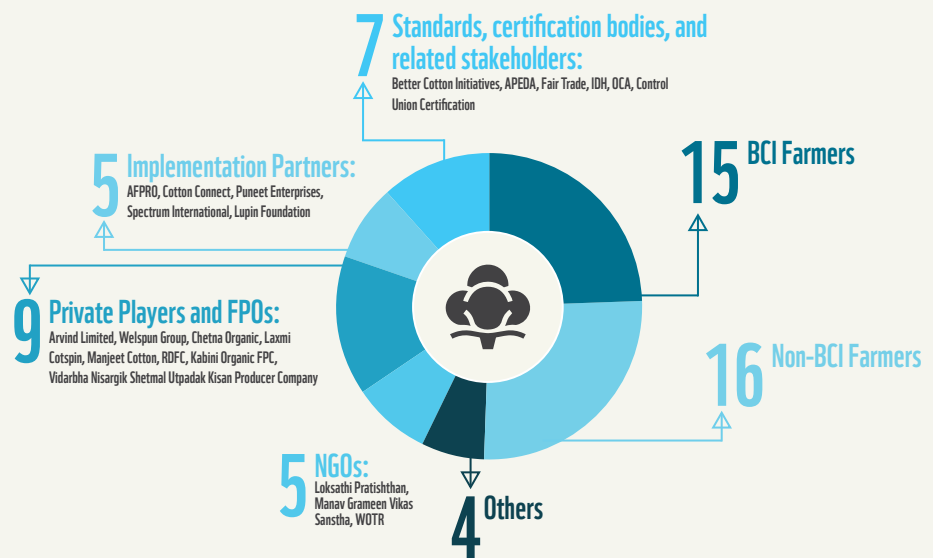
As next steps, government needs to take a decision on preferred way forward keeping in perspective the desired outcomes, funds available, project horizon, and implementation capacity. As seen from the study, it is required to invest in certain areas like capacity building of farmers and public sector extension network, upgrade testing and R&D infrastructure, and establishing the missing value chain linkages especially on the market and logistics aspects. The government could therefore consider channelizing funds through its ongoing schemes into the areas requiring strengthening and support.

To take this forward, Government could undertake consultations with Standard bodies such as BCI, Fairtrade, new upcoming Standards, other stakeholders such as OCA, members of the Taskforce on Cotton Sustainability Standards of the Maharashtra Water MSP of 2030 WRG, and industry members, to formulate strategies for collaboration to expand and scale up these Standards State-wide. Pilots could be taken up in the State in collaboration with these agencies. Government could have consultations with private sector and Standards organisations for collaboration on training and certification aspects. While Standards could bring in their experience and expertise for developing implementation partners, undertaking capacity building, demonstration plots and conducting trainings, project management, etc., government could provide funding support for pilot areas and help plug the gaps in testing and market networks. Government would need to formulate a program for expansion of the Standards, describing a vision and time frame for the outcomes, and developing protocols for production, post harvest and supply chain management, either together with private sector, or through public machinery. Government could dovetail its programs to provide the necessary inputs, subsidies and leverage private sector expertise.



# ANNEXURE: STAKEHOLDERS CONSULTED

## 1. CATEGORY OF STAKEHOLDERS CONSULTED



## 2. LIST OF STAKEHOLDERS CONSULTED

### Government of Maharashtra officials

Sl	Contact Person	Organization
1	Eknath Dawale, IAS	Secretary, Department of Agriculture
2	Vikas Rastogi, IAS	Principal Secretary and Project Director, Project on Climate Resilient Agriculture (PoCRA)
3	SK Goel, IAS (Retd.)	Former Additional Chief Secretary, Department of Agriculture
4	Ganesh Patil, IAS	Ex-Project Director PoCRA, Department of Agriculture, Government of Maharashtra
5	Vijay Kolekar, Agronomist	Project on Climate Resilient Agriculture (PoCRA)
6	Dr. Rajul Pant, Sociologist	Project on Climate Resilient Agriculture (PoCRA)
7	Nawin Sona, IAS	Ex-Managing Director of The Maharashtra State Co-Operative Cotton Growers Marketing Federation (MahaCot)
8	RH Shah	The Maharashtra State Co-Operative Cotton Growers Marketing Federation (MahaCot) from the Government of Maharashtra

### Other stakeholders

Sl	Contact Person	Organization
1	Saleena Pookunju/ Shantanu Gaikwad	Senior Programme Coordinator/ Implementation Coordinator, Better Cotton Initiative
2	Manish Gupta/ Padmini Raghav	Supply Chain coordinator/Senior Supply Chain Officer, Better Cotton Initiative (Supply chain)
3	Reeba Abraham	Assistant General Manager (Organic, Logistics), APEDA
4	Abhishek Jani	CEO, Fairtrade
5	Ruchira Joshi	Country Director, UK- IDH
6	Jaskiran Warrick	Director, South Asia, Organic Cotton Accelerator
7	Binay Choudhury	General Manager, Control Union Certification
8	SG Salunke	Regional Manager, AFPRO, (BCI IP)
9	Anil Patil	Puneet Enterprises (BCI IP, ginner)
10	Amit Shah	CEO, Spectrum International, (BCI IP, Organic, Fairtrade, ginner/trader)
11	Hardeep Desai/Helant Thakre	Senior Director, Farm Innovations/ CottonConnect, (BCI IP, REEL, Organic)
12	Sunil Saindane, Kush	Senior Human Resources Officer, Lupin Foundation, (BCI IP)
13	Abhishek Bansal	Head of Sustainability, Arvind Limited

Sl	Contact Person	Organization
14	Mahesh Ramakrishan	Senior Vice President, Welspun India
15	Arun Ambatipudi	Executive Director, Chetna Organics
16	Sailesh Patel	CEO, Rapar & Dhrangadhra Farmers Producer Co. (RDFC)
17	Shrimant Solunke	Laxmi Cotspin Limited
18	Rasdeep Singh Chawla	Manjeet Cotton Private Limited
19	Manoj Gaydhane	Director, Vidarbha Nisargik Shetmal Utpadak Kisan Producer Company (FPO)
20	Sanjeev Unhale	Managing Director, Dilasa Janvikas Pratishthan (NGO)
21	Kamlakar Raibole	Loksathi Pratishthan (NGO, Organic cotton)
22	Nitin Kolhe / Vinod Pandit	Executive Director, Manav Grameen Vikas Sansodhan Sanstha (NGO)
23	Harish Daware	Deputy General Manager, Watershed Organisation Trust (WOTR)
24	Umesh	Social Expert, Watershed Organisation Trust (WOTR)
25	Mauli Hase	Para Agronomist, Deshgavan
26	Kishor	Agronomist
27	Hajare Rameshwar	Wasundhara Sevak, Pimprakhed (WOTR)
28	Rukmini Jadhav	Wasundhara Sevika, Chinchkhed (WOTR)
29	Farmers- BCI – 15 No.	Deulgaon, Buldhana; Sadgaon, Dhule; Mohara, Aurangabad; Dhangar Pimpri, Jalna; Matrewadi, Jalna; Wazar Sarate, Jalna; Makharkhed, Buldhana; Shewagal, Jalna; Bazar Wahegaon, Jalna; Selgaon, Jalna; Kadegaon, Jalna; Jambul, Buldhana; Haldola, Jalna; Dhule, Dhule
30	Farmers- Organic/ Conventional- 14 No.	Takli Shahu, Aurangabad; Pishor, Aurangabad; Nadarpur, Aurangabad; Pimparkheda, Dhule; Gaurpimpri, Aurangabad; Paradh, Jalna; Kapadne, Dhule
31	Farmers- BCI + Organic- 2 No.	Takli Shahu, Aurangabad; Jatva, Aurangabad







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