

A close-up photograph of cotton plants with white, fluffy cotton bolls and brown, dried husks. The background is a soft-focus field of similar cotton plants under bright, natural light.

COTTON

Yearbook 2018



the sustainable
trade initiative



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Introduction

Cotton is the most widely used natural fiber in the world. More than 250 million people across the world depend on cotton cultivation and processing for their livelihoods including millions of smallholder farmers and their families. Owing to a large number of people employed in the cotton sector, it is one of the world's most important fibers and cash crops.

However, the crop is one of the most water intensive and accounts for a substantial portion of pesticide use. Growing cotton utilizes approximately 45% of the total pesticide use in India*, one of the world's largest cotton producers. The IDH Cotton Program is working towards identifying and implementing approaches to reduce cotton's negative environmental and socioeconomic impacts.

IDH invests in and supports the Better Cotton Initiative (BCI), an independent standard based on agronomic, environmental, and social criteria to create long-term change. IDH is a strategic partner to the Better Cotton Growth and Innovation Fund (Better Cotton GIF or the Fund), a global program designed to support the BCI in its goal of reaching five million farmers in key cotton-producing countries and have Better Cotton account for 30% of global cotton production by 2020. IDH plays multiple roles in the Better Cotton GIF as strategic partner and fund manager, funder, and partner for delivering innovations within the Fund. The Fund invests in farmer training and innovations for scaled supply creation.

The IDH cotton programs address vital sustainability issues such as pesticide use, water efficiency, and working conditions including child labor, gender inequities, and poverty in cotton farming, which align with the UN Agenda for Sustainable Development.

Smallholder farmers, accounting for approximately 99% of the world's cotton farmers, face several sustainability challenges. Changes in the seasonal weather patterns and other effects of climate changes are making smallholders increasingly vulnerable, impacting agricultural productivity and their health and well-being.

*Cotton Market and Sustainability in India, WWF-India, 2012. http://awsassets.wwfindia.org/downloads/cotton_market_and_sustainability_in_india.pdf



To this end, IDH has piloted climate resilience programs in Mozambique and Maharashtra, India. In the Mozambique Climate Resilience Program, IDH is working with four private sector partners to increase farmers' resilience against extreme conditions and poverty by employing a coordinated approach to provide farmers with diversified income, improved food intake, and training on sustainable agriculture production.

The Maharashtra Cotton Water Platform (MCWP) was formed in 2015 to support resiliency of smallholder cotton farmers in the state. Co-convened by IDH, under the guidance and leadership of the Department of Agriculture, the platform has brought together 40+ representatives from the public sector, global and local cotton supply-chain actors, financial institutions, and civil society to deliver innovative solutions to improve water use efficiency and increase the income of the cotton-farming communities in Maharashtra.

Gender discrimination remains one of the greatest challenges in the sector. Hence, within its exiting programs, IDH has strengthened its work on gender mainstreaming.

Women play crucial roles in the cotton sector but their contribution to the sector is not frequently acknowledged. Women farmers tend to be less integrated into the cotton value chains and are mostly involved in labor-intensive work in cotton producing and harvesting stages. They have less exposure to the technical knowledge of cotton cultivation. Despite their dominant role in farming, women have a disproportionately diminished role in land ownership and decision-making. Women therefore remain on the fringes of social and economic development and face difficulties in accessing the resources, credit, market, extension services, etc.

To raise awareness, IDH organized gender sensitization trainings for the field-level staff across its commodity programs in India to improve gender equality and empowerment within its program.



PROGRESS

2018-19 Season

In the 2018-19 cotton season, the GIF worked with 1.3 million* cotton farmers in India, Pakistan, China, Mozambique, Turkey, and Tajikistan, who received training and support from the Fund through regional Implementing Partners (IPs). The Better Cotton GIF directly invested €11 million* from BCI Retailer and Brand Members, public donors (DFAT), and IDH and mobilized an additional €3.4 million* in co-funding from IPs and supply chain partners (social enterprises, ginners, spinning mills, and garment manufacturers), creating a total portfolio value of €14.4 million.

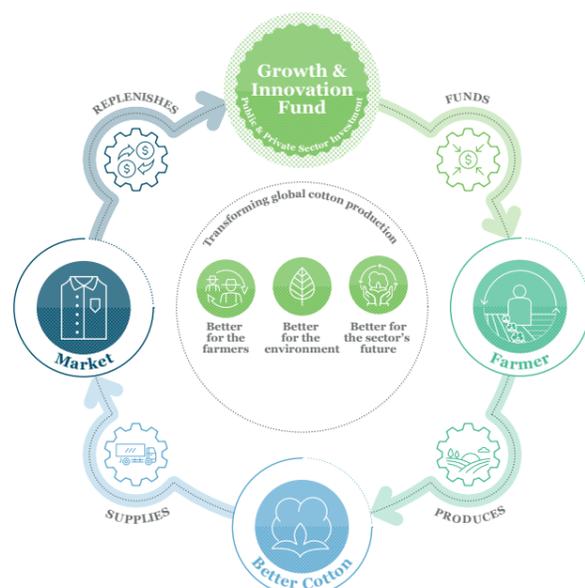
Better Cotton Growth and Innovation Fund



Introduction

IDH, The Sustainable Trade Initiative, partnered with the Better Cotton Initiative (BCI) to launch the Better Cotton Growth and Innovation Fund (Better Cotton GIF or the Fund) in 2016.

- The Fund provides a mechanism for BCI Retailer and Brand Members to make investments that can lead to tangible impact at the field level that cannot be achieved alone.
- The GIF works with Implementing Partners to fund farmer capacity building in six countries – China, India, Pakistan, Mozambique, Tajikistan and Turkey.



India

The Fund worked with 17 IPs on 23 projects in 2018-19.

Estimated Program Results 2018-19*

Fund Investment	Better Cotton Production
€4,300,290	899,307 MT
Participating Farmers	Area Covered
763,870	1,174,252 ha

Implementing Partners

AMBUJA CEMENT FOUNDATION | AFPRO | BASIL COMMODITIES | BHARAT COTTON FACTORY | CAIM | COTTONCONNECT | DESHPANDE FOUNDATION | KK FIBERS | LUPIN FOUNDATION | MYKAPS | PRATIBHA SYNTEX | PRDIS | PUNEET ENTERPRISES | SEWA | SPECTRUM | UDYANSH | WWF INDIA

Pakistan

The Fund worked with 7 IPs on 16 projects in 2018-19.

Estimated Program Results 2018-19*

Fund Investment	Better Cotton Production
€3,610,954	977,016 MT
Participating Farmers	Area Covered
385,506	1,117,511 ha

Implementing Partners

CABI | COTTONCONNECT | LOK SANJH | MRWO | REEDS SOCIETY | SWRDO | WWF PAKISTAN

Tajikistan

The Fund worked with 1 IP on 1 project in 2018-19.

Estimated Program Results 2018-19*

Fund Investment	Better Cotton Production
€12,000	13,267 MT
Participating Farmers	Area Covered
954	14,218 ha

Implementing Partners

SAROB

Mozambique

The Fund worked with 3 IPs on 6 projects in 2018-19.

Estimated Program Results 2018-19*

Fund Investment	Better Cotton Production
€86,155	31,396 MT
Participating Farmers	Area Covered
110,990	97,250 ha

Implementing Partners

OLAM | SANAM | SAN-JFS

Turkey

The Fund worked with 2 IPs on 2 projects in 2018-19.

Estimated Program Results 2018-19*

Fund Investment	Better Cotton Production
€184,090	79,550 MT
Participating Farmers	Area Covered
3,000	45,500 ha

Implementing Partners

IPUD | WWF TURKEY

China

The Fund worked with 4 IPs on 4 projects in 2018-19.

Estimated Program Results 2018-19*

Fund Investment	Better Cotton Production
€532,137	297,155 MT
Participating Farmers	Area Covered
97,801	174,633 ha

Implementing Partners

COTTONCONNECT | NONGXI COOPERATIVE | SONGZI AGRICULTURAL EXTENSION CENTER | ZHONG WANG COOPERATIVE

*The figures presented within the report are 2018-19 season estimates. BCI will publish final season figures in early 2020, once the 2018-19 cotton season is complete'

India

Implementing Partner: Basil Commodities

Basil Commodities is an IP associated with the Better Cotton Program since 2015. In the 2018-19 season, it worked in 175 villages with 45,520 farmers in the Amreli, Botad, Bhavnagar and Rajkot districts of Gujarat. This region in the state is dealing with several challenges including excessive use of chemical fertilizers and pesticides by the farmers, heavy pest attacks (e.g., pink bollworm), and uneven rainfall.

To meet some of these challenges, Basil Commodities is training cotton farmers in its project area on good agricultural practices, use of fertilizers and pesticides as per the requirement, use of non-chemical methods for pest control, drip irrigation, alternate furrow irrigation, and intercropping. In its four year of engagement with the farmers, the IP has successfully transitioned the farmers in the program towards responsible use of agrochemicals, cultivating border and trap crops, intercropping, lower spacing between crops, and alternate furrow irrigation.

Speaking about the association with the GIF, Vishal Patel – Managing Director, Basil Commodities – says, “With the support of GIF, we have been able to scale up the project and reach 45,500 farmers in four years. Operational support from the GIF team is also helping us in running this project successfully.”

Farmer Story

My name is Rameshbhai Popatbhai Shekh and I am a Better Cotton farmer from Botad, Gujarat for the last four years. I have been growing cotton for a long time. My cotton yield, over the past few years, was getting impacted due to heavy pest attacks and uneven rainfall. I increased the use of agrochemicals to get higher yield. While it did not have any impact on the yield, it resulted in higher cost of cultivation for me. When the Better Cotton project official came to our village for the first time and explained the project, I felt that joining would benefit me as cotton is our main crop.

Before joining the project, I was not aware of good cotton farming practices and used to follow other farmers and traditional practices. By adopting practices recommended in BCI training, my cost of cultivation has reduced. I have also been able to reduce my water usage through drip irrigation. I am also now doing low-spacing farming, which has led to an increase in production. Intercropping has also helped me in getting additional income and reducing weeding issues in the farm.

Reduced cost of cultivation and additional income has increased my profitability. I am now able to save more money and provide good education to my children for their better future.



China

Implementing Partner: Songzi

Songzi is an IP for Better Cotton GIF in China. It has been associated with the Better Cotton program since 2015 and is currently working with 45,908 cotton farmers in the Hubei province of China. The cotton growers in the region constantly deal with the higher cost of growing cotton for comparatively lower revenue. Mechanization at farm level and ability to fight diseases among the farmers' crop is low. The farmers are also using pesticides and fertilizers excessively, leading to soil contamination.

To meet these challenges, Songzi facilitates the sale of cotton to motivate farmers. They suggest fertilizers to the farmers based on soil testing and are promoting organic fertilizers and integrating pest management techniques. This has helped decrease the consumption of fertilizers and pesticides and reduce the input cost for the farmer.

Songzi demonstrates direct planting techniques to the farmers, which has increased the level of mechanization and simplified cotton production for the farmers. The area under direct planting of cotton is expanding each year. As of 2018, cotton planting had reached 10,000 acres under the project in total.

Farmer Story

My name is Yuanding Zha and I am a 46-year old Better Cotton farmer from Hubei province. I became associated with the Better Cotton program after the leader of our village commissioned hosting a meeting and explaining the program. I realized this would be beneficial for farmers and the environment and would also help improve my sale of cotton. So, I participated in the trainings given under the project on water management, environment protection, maintaining bio-diversity, and responsible use of agrochemicals.

Apart from trainings, we get informational materials to learn more about Better Cotton. The project staff also comes regularly to the village to help us in deciding the formulated fertilizers based on soil testing. We were also advised to stop burning cotton straw and to put it back in the soil.

On becoming a Better Cotton farmer, I have been able to reduce the consumption of pesticides and fertilizers at my field by 5-30%. While the revenue has been the same for me, the lower input cost has helped me improve my profit margins.



Towards Sustainable Transformation in Cotton

The Better Cotton GIF continues to adopt innovative approaches towards increasing field-level reach and impact to support BCI in achieving its 2020 goal.

Fund management

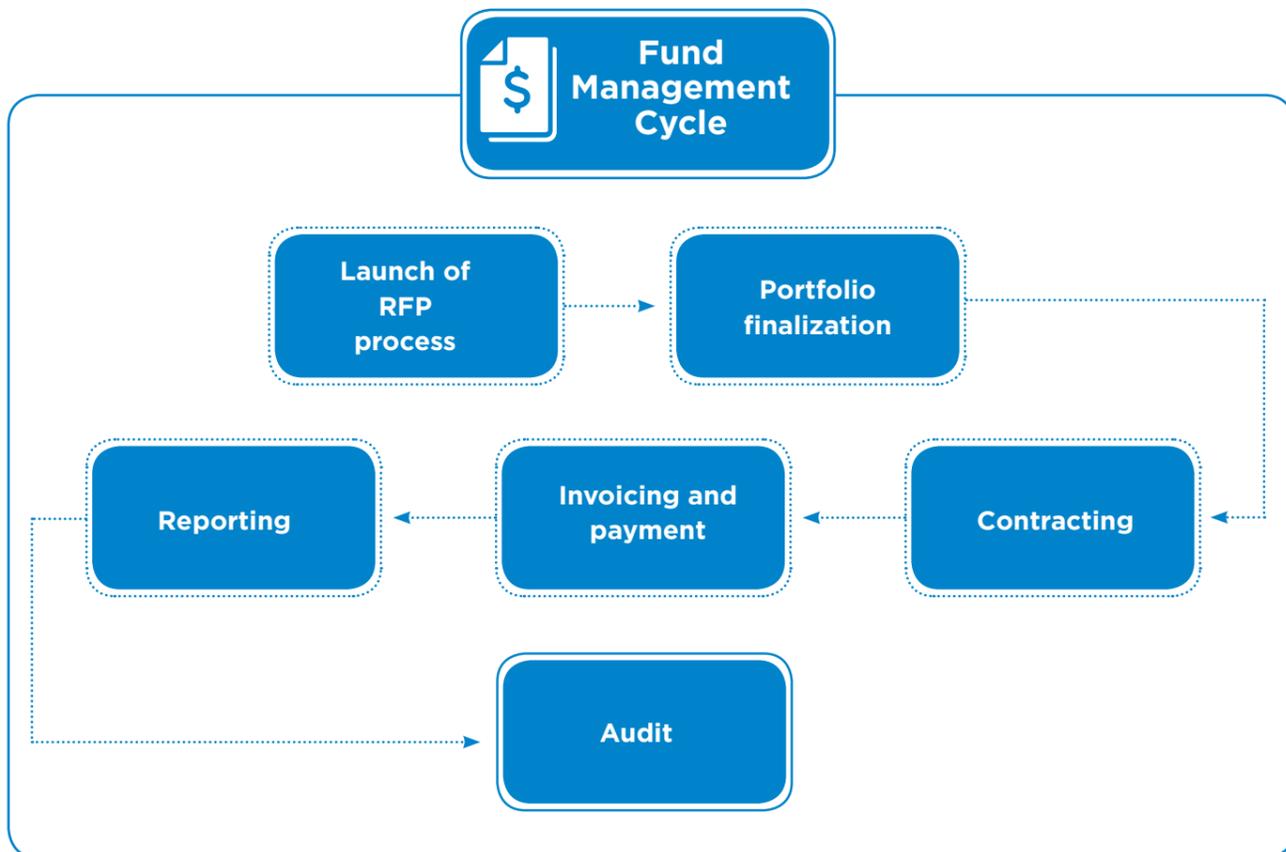
Annual Operating Plan (AOP)

IDH supports the preparation of an AOP for the Better Cotton GIF for the next season, which is shared with the Buyer and Investor Committee (BIC). The geographic scope for future investments is approved by the BCI Council as part of the 2016-2020 Better Cotton GIF Strategic Plan.

Annual Better Cotton GIF Request for Proposal (RFP) Strategy

The annual Better Cotton GIF RFP strategy is led by IDH in partnership with BCI to establish a strategic investment for the Fund prior to each season.

The strategy outlines country-specific targets and priorities and sets the selection criteria for the annual project application process to ensure that we invest in farmer capacity-building projects that will enable BCI to reach five million farmers in key cotton-producing countries and have Better Cotton account for 30% of global cotton production by 2020.



Driving Innovations

Notwithstanding the many successes, including an efficiently run public-private partnership, increased market uptake of Better Cotton, and over one million farmers trained in better farming practices, there are several challenges ahead.

To globally transform the cotton industry, greater demand for Better Cotton is needed throughout the cotton-using industry. For BCI to reach its 2020 goals, the Fund needs to deploy innovative solutions across its program countries. This includes a stronger focus on the principle of continuous improvement as well as enhanced value propositions and new models for engaging farmers, supply chain companies, and governments.

In 2017-18, IDH launched an Innovation Framework within the Fund to support the mainstreaming, impact, and scale of BCI globally as well as to serve to attract new contributors to the Better Cotton GIF.

The Framework provides a process to help BCI and IDH identify, select, and invest in innovative opportunities that support the longer-term BCI goals.

Skill Development for Field Facilitators in India

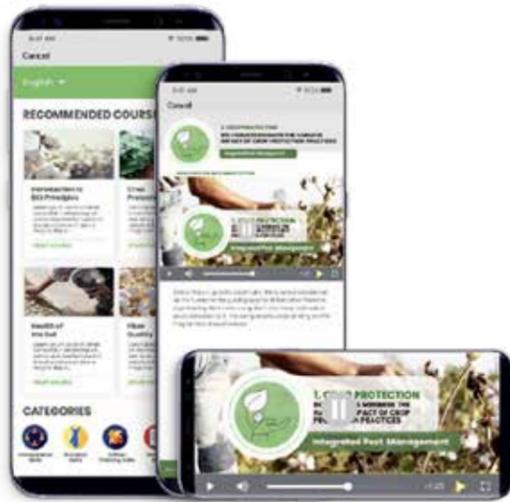
Project implementer: Kuza

Field Facilitators (FFs) are responsible for delivering training to BCI Farmers.

There is currently significant variation in the knowledge and capability of FFs in terms of agronomic knowledge, decent work and soft skills required for training and project management.

The Better Cotton GIF and social development enterprise Kuza, are piloting a Skill Development Project for FFs engaged with IPs funded by the Better Cotton GIF in Maharashtra and Gujarat in India. The project aims to ensure that FFs have a uniform skill set and the understanding required to support cotton farmers with the implementation of the Better Cotton Principles and Criteria.

Kuza conducted a day-long Discovery Workshop in November 2018 in New Delhi. Representatives from the five IPs participating in the pilot project (Ambuja Cement Foundation, AFPRO, Basil Commodities, Cotton Connect and Lupin Foundation) and representatives from IDH and BCI attended the workshop.



Workshop participants discussed the key activities conducted by the FFs and the challenges they face. They also identified and aligned on the main set of skills required for FFs. Based on the outcomes of this workshop, Kuza is developing an online tool for FFs (accessible from any digital device) that offers access to a wide selection of micro-learning videos on agronomy practices and soft skills. One of the key features of the tool is a standardized assessment tool that enables users to identify skills gaps and then suggest a personalized learning path. This innovative assessment and learning tool will enable IPs to deliver capacity building to FFs more efficiently and consistently across locations and to further manage the learning process (frequency, timing, curriculum) in an easy and organized manner. The assessment tool could potentially also be used to supplement IPs current FFs hiring process.

The Pilot is expected to roll out in May 2019 across 500 FFs from the five IPs in Maharashtra and Gujarat.



Mobile Application for Farmer Outreach in China

Project implementer: Binzhou Nongxi Cooperative (Nongxi)

The Fund is utilizing an existing mobile application (app) called Nongjibao, developed in 2014 by



China Telecom in partnership with the Ministry of Agriculture and China Cotton Research Institute to further support and embed BCI farmer training through a technology-driven engagement model and increase the adoption of BCI practices by deepening and widening our engagement with smallholder cotton farmers across China for greater scale and impact.

The Nongjibao app serves to provide farmers with access to information and knowledge on the latest agricultural science and technology. Additionally, it serves as a means to receive immediate on-demand agricultural support from connected agronomists and enables a community of online users to share best practices and lessons learned with one another.

First Pilot Year

In this first pilot year, the focus has been uploading all BCI training material and multimedia resources onto the app platform and working together with Nongxi Cooperative, based in Shandong, to train the first set of BCI users on essential digital literacy to access and navigate the app and share information.

There are currently 344 total registered users including IP management staff, PU managers, FFs, lead farmers, and farmers. Between January and March 2019, Nongxi is training an additional 9,000 farmers.

In the next phase of this pilot, Nongxi will begin integrating the app into BCI trainings to move towards standardizing and embedding the app into daily operations.

Project Outcome

- On-demand access to BCI training materials.
- Interactive learning through mixed-media.
- Sharing learnings and practices for continuous improvement.

Observations:

- Farmers are able to use this app to track daily farming activities.
- Some farmers are using the app to consult agricultural experts.

Challenges:

- Digital literacy of farmers to fully utilize the app.
- Most farmers are aged and require more time to get acquainted with the app.
- Currently, the reported use of smartphones and the internet by farmers is approximately 25%.
- At IP level, more training needs to be provided to demonstrate the added value of using the app as a supplement to the current farmer's capacity-building training model.

Innovation Challenge

In 2018, the Better Cotton GIF partnered with Dalberg to develop an Innovation Challenge set to pilot mid-2019. The Innovation Challenge will create an open pipeline of ideas that, with GIF seed funding, will be developed into new viable service delivery models to improve farmer livelihoods and achieve greater field-level impact. Through this Innovation Challenge, the GIF aims to drive an independent process for pioneering pipeline development and funding and utilize its vast network of partners and expertise to actively drive and enable innovation in the cotton sector, addressing the many challenges it faces today.

Scaling Impact

As strategic partner, IDH is identifying scaling opportunities for the program to support BCI's global 2020 goal.

India scale partner platform

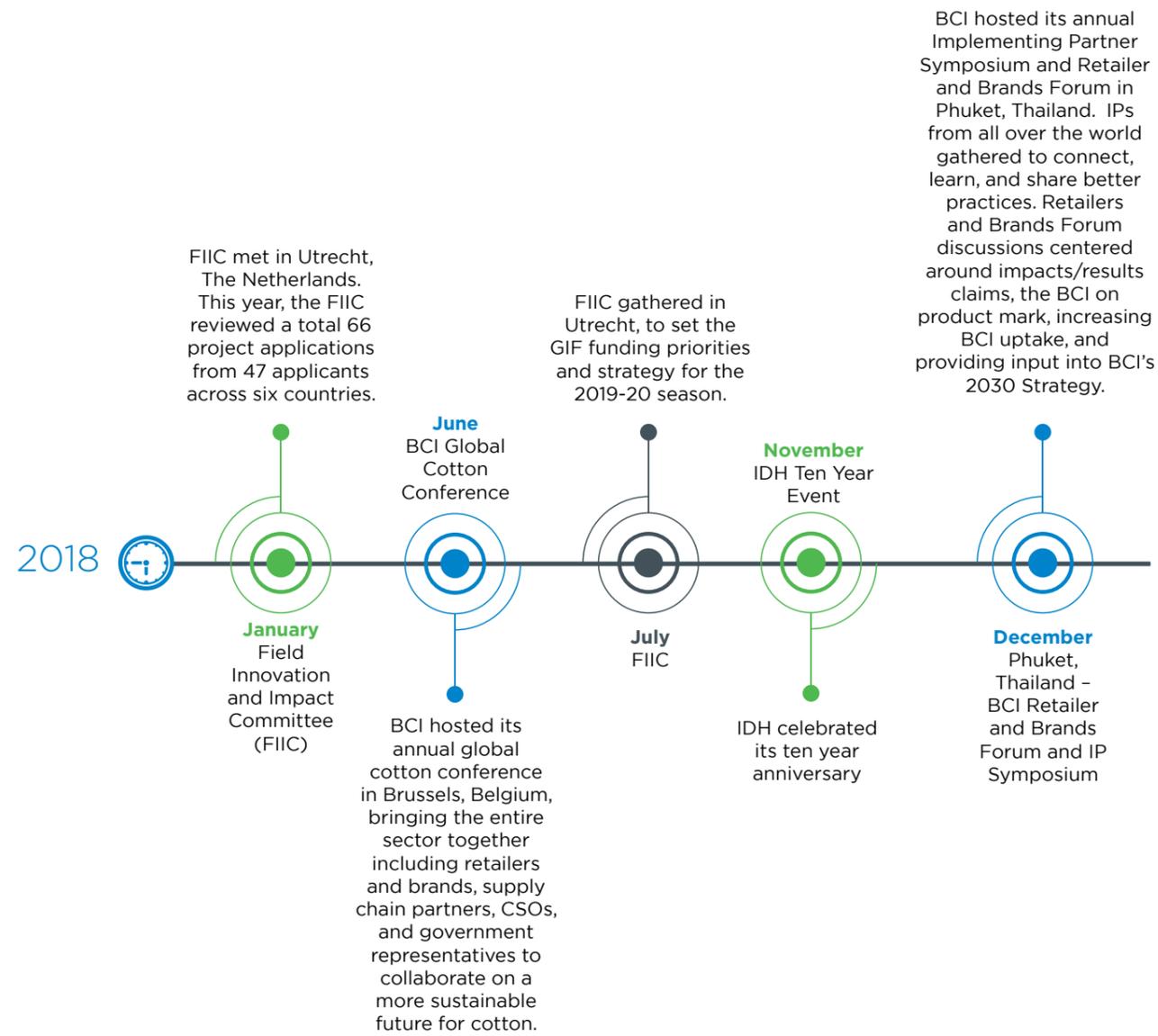
IDH has identified IPs engaged with the GIF who can work towards expanding their current reach to further scale the program and engaged with consulting firms - KPMG and TTC - to identify challenges and possible solutions to strengthen management capacity to deliver high quality implementation at scale.

Creating Strategic Collaborations

IDH is partnering with large-scale government-led programs in the country to increase its reach to cotton farmers within the program.

IDH India has signed a Memorandum of Understanding (MoU) with the Maharashtra government under the World Bank funded mega project to promote sustainable agriculture, State of Maharashtra Agribusiness and Rural Transformation (SMART). The MoU establishes a framework of cooperation between IDH India and the Government of Maharashtra with the goal of facilitating the connection of farmer groups in the state with Better Cotton Initiative and Sustainable Spices Initiative - India.

Key Meetings



Mozambique Climate Resilience Project



1. Introduction

The importance of climate resilience in Mozambique

Mozambique's agricultural sector accounts for 22% of the national Gross Domestic Product (GDP). Due to Mozambique's geographic position and predominant dependence upon rain-fed agriculture, smallholders are increasingly becoming more vulnerable to the effects of anthropogenic climate changes, especially as most of the country's agricultural production is subjected to large floods and droughts.

When scrutinizing average rainfall data beyond the annual and monthly averages, the effects of climate change is evident. There is a dramatic decrease in consistent rainfall with high proportion to the monthly rain occurring in single days.

Ensuring resiliency of smallholder farmers against volatile weather patterns is essential to secure the agricultural productivity and, in turn, health and well-being of Mozambique and its people. It requires mitigating the impact of climate change by de-risking farmer livelihoods by maximizing all possible and existing assets. This starts with developing the household and community as a reliable safety net and requiring a holistic livelihood approach for robust 'asset' development and risk mitigation.

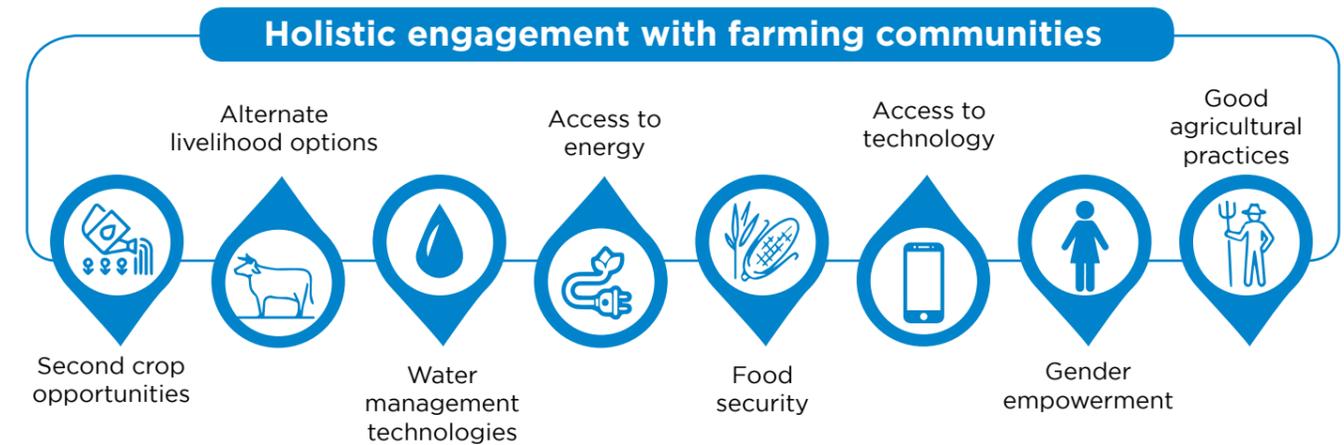


The Mozambique Climate Resilience Program

IDH has partnered with four private sector organizations: Olam, San JFS, Plexus, and SANAM, with additional technical support from Action for Food Production (AFPRO) to convene a program providing smallholder farmers in Mozambique with access to inputs, knowledge training on sustainable cotton cultivation, and technology and information for multiple food cropping and animal husbandry.

The program is designed to increase farmers' resilience against extreme conditions and poverty by employing a coordinated approach to provide farmers with diversified income, improved food intake, and training on sustainable agriculture production. Pilot projects are now running to support villages in the provinces of Niassa, Nampula, and Cabo Delgado.

Through the IDH cotton program and the existing collaborations between IDH and the public and private sectors with different sector-specific expertise, this program was developed as an alternative approach to development and inclusive growth.



Through a holistic solution, the Mozambique Climate Resilience Program promotes and builds on the need to empower farming communities with the ability to make informed decisions as entrepreneurs and community members. By promoting governance mechanisms and sensitizing communities on the power of a group, it offers a greater chance to institutionalize a system change and achieve long-lasting impact.

Program Model

Knowledge partners and suppliers (solar, ICT, poultry, 2nd crop input providers) provide inputs and capacity building for service providers

Cotton Concessionaire act as service providers to the farmers by offering the services, building the infrastructure, off-taking, etc.

Specialized service providers directly to farmers for specific services (e.g. animal husbandry)

Communities receive training, access to infrastructure, input, and potentially finance improve their performance, and ultimately their profitability and livelihoods.

Local ownership to ensure adoption and continuation.

2018 Summary

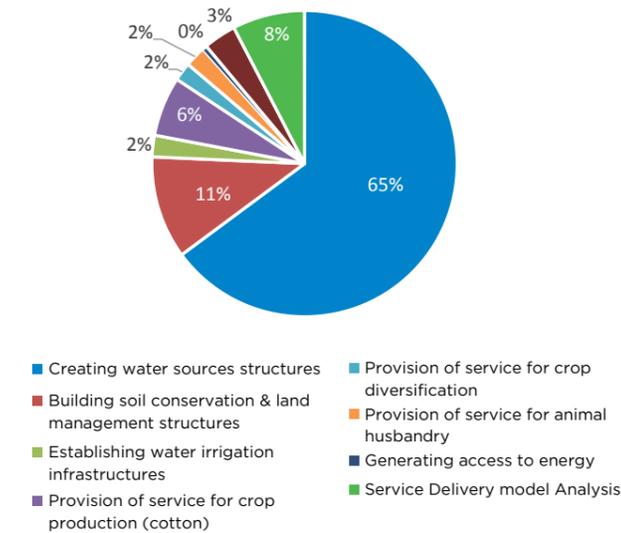
In an exciting first year, the Mozambique Climate Resilience Program delivered the implementation of four pilot projects in northern Mozambique. Olam, Plexus, and San JFS joined the project in 2017 as private partners and project implementers. The number of project sites expanded to include a fourth private sector partner - SANAM - at the end of 2018, who demonstrated an interest in joining the program. Capacity building support coming from AFPRO and IDH since 2017 has also expanded to ensure the needs of the program were met as a result of this expansion.

Working across four sites and with different partners has proven to be a very effective way of testing the program's theory of change and understanding the common denominators for maximizing the impact at the farmer and business levels. While the pillars of our work remain the same, the local conditions and organizational approach of each of our partners vary. These differences have enriched our experiences, yielding the best practices that can be shared with and applied by others.

Program Activities

The investment in the 2017-18 season reached a total of approximately €470,000, combining both public and private sector contributions.

Total investments in 2017-18 per project activities



Creating water sources structures: Beginning in 2017, a key priority has been to ensure supporting infrastructures were built across different project sites. In total, 38 different structures were built in four villages with a capacity of more than 55,000 m² of water. A wide range of structures (e.g.: community water harvesting, dug wells, and dams) was built for water conservation and water harvesting, soil conservation, and irrigation to gain a better understanding of the associated costs and benefits at the field level.

Diversification of crop production: Crop diversification provides farmers with both income diversity and food security to ensure resilience against external shocks. IDH hired a local agronomist to help plan and execute second cropping in all villages and to provide on-site training and demonstrations at each of the project sites. In addition, the program partners provided farmers with seeds, fertilizers, and pesticides. By

enabling farmers to grow secondary crops through the provision of agricultural inputs, fertilizers, pesticides, and farmer training in modern agricultural practices, farmers can grow additional crops for self-sustenance and added income.

Alternate livelihood options – Animal Husbandry: Diversification of income and dietary options is enabled further by providing animal husbandry services as an additional activity to second crop cultivation. Throughout the season, the program provided animals to 94 selected beneficiaries. 10 self-help groups have been formed and advised on governance structures, roles, and routines. Accountability mechanisms were provided to help carry out the management of animals in more cost-effective ways.

Increasing productivity in cotton: Cotton is a major agricultural crop in Mozambique, ranking sixth in total export value and a main source of income for more than 300,000 smallholder households in central and northern Mozambique. The Mozambique Climate Resilience Program builds on the existing work for the promotion of the Better Cotton Initiative (BCI) and Cotton made in Africa (CmiA) to train farmers on Good Agricultural Practices for sustainable cotton production. The latter is carried out by cotton concessionaires, who in turn provide training as per the BCI principles to the farmers. In addition to training good practices, cotton companies provide packages of inputs and credit to all smallholders at key stages of the production cycle.

Generating access to energy: Access to energy and information technologies is fundamental to building resilience. By harnessing low-cost technologies, the projects provide solar panels at the community level along with appropriate implementation schemes to ensure they can be credited and reimbursed through viable financial models. As a starting point for this intervention, 3 individuals received solar panels during the first year. Guidelines were also discussed with entrepreneurs for the maintenance of the solar kit and expansion of activities in the village.



Institutionalizing community-based cooperation: setting up Self Help Group

Defining our cooperation with the communities is vital for ensuring that implementation is delivered in an effective and inclusive way and builds the foundation for ownership by the communities.

To answer this need, the program takes a two-fold approach. Firstly, the program works with community members that are demonstrating an interest to join and to invest themselves in the opportunities offered through the program as they see their own benefit in driving results. Additionally, the program seeks to create self-governed models with communities in order to reduce dependencies and strengthen the potential through collaboration, risk sharing, and accountability mechanisms.

In Muape, Plexus helped establish a women's saving group including 13 women. The program advised them on setting various rules for collaboration such as meeting schedules, establishing roles and responsibilities, principles for saving, borrowing and repaying, security, accountability, etc. In one year, they were able to save a total of MZN 22,000 with each member contributing MZN 50 per week.

Program Funding

The funding structure for this program and the implementation of the field-level projects is based upon matched funded support between public

funders, the Dutch Embassy of Mozambique and IDH, and the private partners of the program. Due to such public-private partnerships, innovative approaches like these can be de-risked and tested. Additionally, to achieve impact at field level, IDH supports the program in its three roles of convening, piloting, and co-funding.

Convening

Successfully devising systematic solutions require a multi-stakeholder partnership of funders, government, Implementing Partners (IPs), and private organizations to come together to address the issues collectively.

IDH proposes to simultaneously engage with national and local stakeholders and pilot possible solutions that can be upscaled in a well-coordinated and efficient manner. Consequently, IDH has been convening a multi-stakeholder platform to engage with all relevant institutions (e.g., government organizations, international development institutions, CSOs, knowledge partners, and private sector businesses) since 2016. The objectives are to facilitate an overarching collaborative vision, a comprehensive coverage of the farming community, and an effective coordination while pilot projects are being deployed in five different regions. Deploying the pilot projects forms the starting point for platform discussions to help define their implementation, which is facilitated by IDH and implemented by local implementing agencies and private sector



partners. IDH wishes to tap into the potential of these existing relationships with farming communities and investigate current partnerships for establishing these pilots.

The platform effectively provides the space for discussing issues to be tackled; implementing results of new initiatives such as the pilot projects at the farm, community, and watershed levels; and identifying replication possibilities at the national level. Key outputs include:

- Connecting relevant and interested organizations that have or could have a role in addressing climate resilience measures in Mozambique
- Linking financiers with pilot projects to be established to catalyze required investments
- Evaluating results and best practices
- Assessing upscaling possibilities and drive the investment agenda for implementation

How to Join

The Program is looking for interested agencies that are currently doing business in Mozambique and who have the potential to make a difference within our interventions. If you are:

1. a private company that directly or indirectly is involved in commodity production (agri-commodity, livestock supply-chain company, farming business, input provider) and interested in outgrower schemes and production intensification;
2. an advisory, technical-assistance expert who can liaise with the program pillars interested in providing services (e.g., water, CSAs, animal husbandry, sustainable energy);
3. a public institution, donor agency, or funder interested in addressing climate adaptation, agriculture development, and food insecurity; and/or
4. a knowledge institution who wishes to contribute and learn

please do not hesitate to reach out to chanda@idhtrade.org



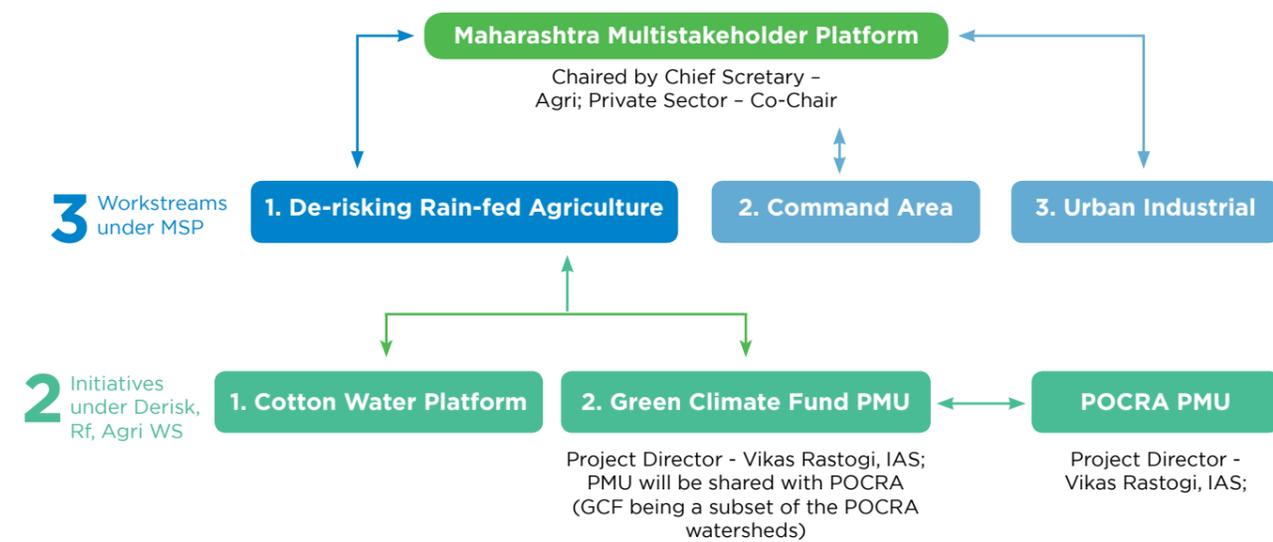
Maharashtra Cotton Water Platform

Introduction

Established under the broader Maharashtra Water Multi-Stakeholder Platform and sitting within the Water and Livelihood Security workstream, the Maharashtra Cotton Water Platform was formed in 2015 under the guidance and leadership of the Department of Agriculture, bringing together representatives from the public sector, global and local cotton supply chain actors, financial institutions, and civil society to deliver innovative solutions to improve water use efficiency, increase

the income of the cotton farming communities, and support partnerships with cotton supply chain actors for offtake arrangements and farm-level interventions.

IDH, in collaboration with 2030 Water Resource Group (2030WRG) under an MoU signed in April 2017, leads the development of the initiatives and working groups under the Maharashtra Cotton Water Platform.



Platform Meetings

Inaugural Meeting - March, 2018

At the inaugural platform meeting, the focus on proposed themes emerged through a moderated discussion which included:

- Sustainability Standards in Cotton
- Diversification of Cotton farmer incomes
- Gender in Agriculture
- Business Modeling for Farmer Services and Engagement



Second Platform Meeting, October 2018

This meeting provided platform members a space to share updates on interesting models including:

- Harmonization of Private Sustainability Standards and Policy
- A Water Entrepreneur Model
- Digitalisation of the cotton bale market.

Additionally, on behalf of the Government of Maharashtra, the Platform Chair introduced the 'State of Maharashtra's Agribusiness and Rural Transformation Project' (SMART Project), inviting participation from platform members.



Establishing the Business Case of Integrating Women Cultivators in Maharashtra

This study assesses the levels and barriers of empowering women engaged in agriculture by analyzing how to access targeted interventions for women farmers. Ultimately, this could lead to better adoption of practices, positive impact for women, as well as better environmental and agronomic outputs.

Executive Summary

Women play a critical role in cotton cultivation. According to the International Trade Center, women cotton cultivators account for 70% of the labor in sowing and 90% of the labor in cotton picking. While women do a majority of tasks involved in cotton cultivation, they have limited roles to play in decision making, limited control over profits, and high value roles. Women cultivators have reduced access to knowledge and skills that could help them strengthen the role they play on the farm, thus limiting their ability to maximize productivity on the farm and optimizing yield.

This study focused on building an understanding of gender roles and responsibilities in cotton cultivation, including the gendered division of access to resources, current farm practices, the labor burden, and access to support from the ecosystem via trainings, finance, extension services, and government schemes.

Key Insights from the Study

1. Women account for a majority of the tasks involved in cotton cultivation and play a critical role in stubble picking, sowing, de-weeding, and cotton picking and storage.
 - Women have increased participation in production and picking activities.
2. Tasks undertaken by women cultivators directly impact the quantity and quality of cotton produced.
 - Women account for 84% of weeding activities. Weeds can reduce lint yields between 10-40% depending on weed density .



- Women account for 74% of fertilizer application. Delayed application of fertilizers can reduce yield by 10-40%. While engaged in weeding activities, women are on the field during the early schedule of pest monitoring and can be trained to scout for pests to reduce incidents of pest attacks.
3. Women have limited access to productive resources and a limited say in decision making on the farm.
 - Only 16% of the women surveyed held land titles in their name.
 - 85% women surveyed had never accessed any government schemes, citing lack of knowledge as the main limiting factor.
 4. Knowledge of the best cultivation practices can significantly enhance the role women play in optimizing yield and profitability.
 - Currently, findings show that 63% untrained women cultivators do not follow any scientific method of training. This number reduces to 5.7% when women are trained as cultivators.

Establishing the Business Case of Investing in Smallholder Livelihoods

This study assesses a range of intervention strategies (decreased cost of cultivation, increase in yield, adhering to market requirements, moving beyond cotton, and livelihood diversification) that could potentially contribute to increasing cotton farmers' incomes, quantifying the economics of implementation, and the incremental value added.

India's cotton ecosystem has the potential for a radical change that can benefit all value chain players involved, especially the millions of small cotton farmers that form the backbone of India's cotton industry. Indian cotton farmers are however plagued by low yields and limited income over several years which have created a high incidence of unsustainable debt among farmers that has created additional financial and social pressures.

This report outlines a strategy towards doubling net household income of Indian farmers. Research is focused on the Indian state of Maharashtra (the largest cotton-growing state by area with the lowest

yields domestically) but results can be applied to farmers across India and even internationally to other developing cotton-growing nations.

Methodology

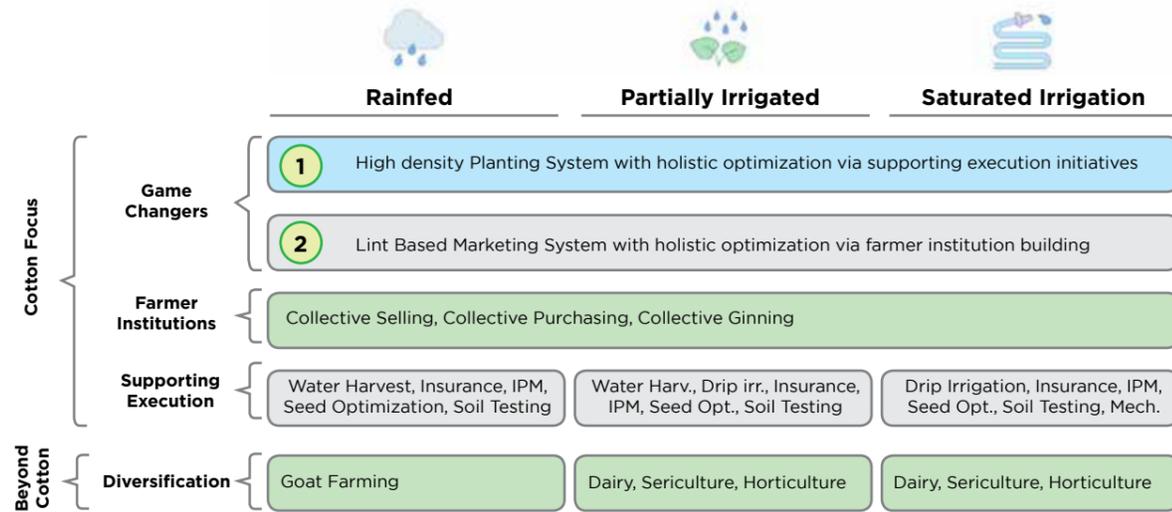
A large-scale farmer survey of 726 Maharashtra cotton farmers was conducted from November 2018 to January 2019. Farmer responses were collected from six districts in Maharashtra: Akola, Amravati, Jalna, Jalgaon, Parbhani, and Yavatmal.

Prioritized Interventions

A long list of interventions was collected through secondary research and expert interviews at the onset of this study. Filtering for impact reduced the long list of interventions from 56 total interventions to 20 high-impact interventions according to the approach laid out in the methodology section of this report. These 20 interventions were then scored on the basis of financial viability and adaptability.



The recommended income growth strategy focuses on two cotton game changers



The relative ranking of interventions yielded four distinct groups of shortlisted interventions: Game Changer, Farmer Institution, Supporting Execution, and Diversification. Lint Based Marketing (LBM) and High Density Planting (HDP) Systems were identified as game-changer interventions. All prioritized interventions are assessed for the context of implementation, supporting and

inhibiting factors, and their potential for impact on three key groups of farmers: Rainfed, Partially Irrigated (1-4 floods or sprinkle irrigations p.a./drip irrigation with 'some' water access), and Saturated Irrigation (five or more floods or sprinkle irrigations p.a./drip irrigation with 'full' water access).

PROJECTS

Securing Smallholder Livelihood in Rainfed Maharashtra

From 2016 onward, moving beyond implementation of BCI, IDH has been looking to make a stronger case across the cotton sector on platforms in India, Maharashtra (provincial level), and Mozambique (national level), to create a roadmap of interventions to address the vulnerability and resilience of smallholders in light of agro-climatic vagaries, access to water, poor yields, and ineffective public extension mechanisms. The overall objective of the intervention is to enhance and de-risk farmers' livelihood by delivering coordinated solutions to promote water security and integrated livelihood opportunities for cotton farmers in Maharashtra.

This project invokes a public - private - civil - partnership (PPCP), which aims to leverage complementary strengths of these key sectors: the government, private sector, non-governmental organizations (NGOs), and local communities. This would include: investment funds from the government (under MGNREGA and other schemes); operational funds from the private sector (Foundations, CSR Funds); mobilization, technological, and networking skills of NGOs (WOTR) and co-funding and technical support from IDH; and ownership, implementation, and government resources of the local communities (contributing funds and volunteering labor).

Through this project, IDH aims to establish increased access to water (through watershed development and NRM technologies) supplemented by improved crop water efficiency and better management of water as a resource (through community-based organizations and water budgeting at a community level), are key enabling factors for both improved cotton yields and securing smallholder livelihoods.

Increased access to water enables smallholders to improve crop productivity through timely irrigation, allows for adopting a second or third crop, and diversifying livelihoods as water is available for growing fodder to adopt livestock rearing, horticulture, kitchen gardens, and other agri-allied activities.

In a region characterized by recurrent droughts, variability in rainfall, and frequencies of pest attacks, crop and livelihood diversification is crucial not only to ensure additional incomes but moreover to ensure economic and climate resilience in the face of increasing socio-environmental shocks and stressors. Training on good agricultural practices (cotton and other crops) and agro-met advisories provide risk mitigation to climate variances. Additionally, the prevention of crop losses and diversified sources of income reinforces the smallholder farmers' ability to continue to cultivate cotton, preventing a shift to alternate crops or distress migration to urban centers, therein building resilience to the cotton value chain. Capacity development of villages' committees creates local accountability and the development and strengthening of local value chain linkages ensures the sustainability of the proposed climate-resilient community.

Additionally, this project will provide the opportunity for WOTR to prototype their agro-met advisory services at the village and farm level, a much more in-depth scale than the current government-approved technology for district/block level services, thus adding value to the larger crop advisory program that will eventually be scaled out nationally.

Key Project Details

Period Jan 2019- Dec 2020	Farmers 6,300	Villages 30
Location Jalna, Ambad Block (Maharashtra)	Main crops Cotton, horticulture, tur, sorghum	
Implementation Partner Watershed Organization Trust		



Interventions Planned

Water Management

- Watershed management structures (area treatment, check dams, desilting water structures, micro-irrigation devices)
- Community-based water budgeting

Better Production

- Hyperlocal agro-met advisory services
- Training on good agricultural practices
- Demonstration plots, exposure visits, soil testing

Market Access

- Capacity building of FPOs
- Engaging market players to build value-chain linkages

Current Status

- Para agronomists: 60 selected (30 male, 30 female)
- Soil testing: 1,200 soil samples collected and tested thus far
- Watershed work: construction work on two check dams and treatment work of 50 selected areas has begun
- Gender sensitization training of staff conducted, followed by gender analysis of project villages

State of Maharashtra Agribusiness and Rural Transformation (SMART) Project

IDH in India has signed a Memorandum of Understanding (MoU) with the Maharashtra government under World Bank funded mega project to promote sustainable agriculture – State of Maharashtra Agribusiness and Rural Transformation (SMART). The MoU establishes a framework of cooperation between IDH India and the Government of Maharashtra with the goal of facilitating the connection of farmer groups in the state with Better Cotton Initiative and the Sustainable Spices Initiative – India.

Maharashtra's Chief Minister, Devendra Fadnavis, launched the SMART project, followed by signing 50 MoUs between corporations, small and medium enterprises (SMEs), and farmers' producer groups. The corporate houses that have pledged support and signed MoUs include Amazon, Walmart, Mahindra Agri, Pepsico, Tata Rallis, Reliance Retail, Big Basket, Patanjali, Tata Chemical, Happy Roots, Mera Kisan, and Way Cool.

The SMART project aims to revamp agricultural value chains with special focus on marginal

farmers across 10,000 villages covering a quarter of the State by enhancing enterprise formation, increasing access to markets, and promoting climate resilience and resource-use efficiency. This will be done by creating and supporting value chains in post-harvest segments of agriculture, facilitating agribusiness investment, stimulating SMEs within the value chain, supporting resilient agriculture production systems, expanding access to new and organized markets for producers, and enhancing private sector participation in these agribusinesses.

IDH is engaging with the SMART Project Management Unit to provide connection with agri-value-chain players in the key commodity areas we work in and insight to help shape project planning and design. In the future, IDH will explore partnerships under the project in the horticulture sector to build a platform for facilitating sustainable production and procurement in the state in line with IDH's larger Maharashtra agenda to promote domestic responsible sourcing.

Gender Training in India



Addressing gender issues in the commodity sectors of developing economies is one of IDH's five impact themes for the 2016-2020 Strategic Plan and directly relates to the fifth Sustainable Development Goal: gender equality.

Gender equality can be a goal in itself but also a precondition to realize deeper impact through our ongoing interventions in other impact themes by applying a gender lens on smallholder livelihoods, improving working conditions and living wage, mitigating deforestation, and responsible agrochemical management.

Gender Roles in the Indian Agricultural Setting

In India, IDH works in several agricultural sectors where women play a key role and make a significant economic contribution. Despite the crucial role women play in agriculture in India, they are generally paid less than their male coworkers. Rural women, who work on smallholder farms, often provide substantial labor as 'unpaid' family labor or low-paid day labor.

Women regularly do some of the most arduous tasks with over-representation in manual labor such as picking and weeding. Moreover, they face a greater risk of harassment and are less likely to be considered for benefits and opportunities. They face significant difficulties in gaining access to credit and their views may be overlooked in decision making because of entrenched gender bias in farming families.

Gender Workshop

The challenges related to gender in the Indian agricultural setting present an opportunity for IDH to make a difference at the field level in promoting gender equality within its programs. Recognizing that integrating gender is a journey, IDH organized a gender awareness program for its Implementing Partners in India in the Better Cotton Growth and Innovation Fund, Sustainable Spices Initiative - India, and Sustainable Grapes Initiative programs.

IDH Gender Consultant, Sangita Shete,

conducted gender sensitization trainings with 19 IPs in 30 locations across India. The trainings focused on approximately 2,000 field-level workers who provide extension services to over one million cotton, spice, and grape farmers.

In the trainings, the field extension workers are made aware of mainstreaming gender equality in their work, labor division based on gender, access to resources, decision making, gender awareness in project activities, and project planning for gender inclusion.

View our video on the training here:

<https://www.idhsustainabletrade.com/news/increased-gender-awareness/>

Workshop Objectives

- To understand the concepts of gender, gender roles and relations, gender needs, and impacts for increased sensitivity towards women and men cotton farmers and workers.
- To understand and apply gender analysis and planning tools for mainstreaming gender in the IDH commodity programs.
- To initiate gender assessment and plan to integrate gender in field operations and management systems at the project level.



“ In cotton farming, male farmers are mostly involved in decision-making work such as selecting seeds, farm inputs, and market-related activities, while the women are doing more labor-intensive work such as weeding and cotton picking. We were earlier training the men and women farmers separately based on the work they do. After the gender sensitization training, we understood this gap and realized our role in promoting gender equality at the field level. We are now sensitizing all farmers about the benefits of empowering women farmers and are working towards providing equal access to resources to women farmers.”

Gurpreet Singh
Field Facilitator
WWF India

Session 1

The trainer started the session by walking the participants through the background and introducing the field facilitators (FFs) to the workshop scope.

Session 2

Unpacking gender concepts through reflection and awareness. The FFs were made aware of the concept of gender, the difference between sex and gender, and social construction of gender stereotypes through reflection exercises, discussions, and videos. This session enabled the participants to share and challenge their perceptions of gender and sex stereotypes.

Session 3

Gender roles and needs. Participants were alerted to how gender-based attitudes and behavior patterns define the roles and needs of women and men via brainstorming and other activities.

Session 4

Establishing the power and privilege dynamics. Practical examples were given to the participants to demonstrate how power and privilege define the experience of empowering/disempowering men and women.

Power Walk: This activity was conducted in two rounds. In the first round, some participants were given community roles and had to take positions based on the power held by that role. This was followed by deconstructing concepts of gender discrimination, gender needs, and division of labor based on gender.



In the second round, participants were given farming or farm-related roles. This helped make the participants conscious of gender challenges, such as the gap in access of men and women to various resources like land, credit, extension, technology, input, market, and decision making.

The exercises helped the participants identify levels of access, empowerment, privilege, and power between men and women and reasons that potentially limit women's equal participation in farming.



“ The sessions in the training were well-planned and the tools were used well to make the participants understand the gender issues in an easy manner. The participants were able to strengthen their understanding about gender, which would help them in identifying gender-related issues and exploring possible solutions. ”

Hardeep

Farm Innovations Director,
CottonConnect

Session 5

Integrating gender-based planning into implementation at the field-level. The trainer conducted small group tasks and assessments to make the participants understand the concept of gender analysis and practice some basic tools for use in the project area.

The tools for gender analysis and how to interpret the information included activity profile, daily activity clock, seasonal calendar, access and control profile, and decision making over benefits. They were guided on establishing roles of men and women farmers and farmworkers on the farm and at home.

The participants were able to collate gender disaggregated data across domestic and farm activities and understand the risk of excluding women from programs in relation to their active engagement in cotton production. They were sensitized to the double and triple work burdens of women.



“ IDH started work on gender mainstreaming as women have limited opportunities, access to resources, and decision making. It is important that there is an equal benefit of the projects that we are implementing – to men as well as women. In the Indian agricultural setting, women's contribution has limited recognition as they are mostly not considered farmers. An immediate impact of this training is that our field-level team is now sensitized towards these issues. Now, whenever they plan and monitor their programs, they will check if they are reaching out to both men and women within their projects. They will assess women's contribution in the projects and working towards their capacity building and empowerment. Now there is a transformation in the way they think. ”

Sangita Shete

IDH Gender Consultant

Session 6

Gender assessment and gender action planning. The participants conducted a gender assessment of their projects and initiated work on a basic gender action plan for implementation within their projects.

Through group discussions and worksheets, the participants conducted a gender assessment of their projects from the perspective of Gender Sensitive Policies, Gender Sensitive Systems, Structures and Facilities, and Gender Sensitive Beneficiary Processes and Services. Commonalities in plans by all groups were presented and summarized by highlighting the key steps in project planning that will allow a more natural and seamless integration of gender-based planning.

Through this exercise, the participants were made appreciative of their program principles that address gender issues, differences between 'gender sensitive' and 'gender transformative' approaches in planning, and their individual roles in implementing their gender action plans.

Next Steps

IDH will work across programs and projects to improve gender equality and empowerment in line with Sustainable Development Goal (SDG) 5. For this, the IDH India team has initiated the process of defining a programmatic roadmap based on understanding the concept of gender better, increasing sensitivity towards women and men farmers and workers in its interventions, and improving decision-making translating into better field-level impact.

The IDH roadmap on gender will:

- provide inputs for project design in terms of effective policies, strategies, and implementation programs that deliver impact and value to all crucial stakeholders;
- provide insight to further define the capacity building and training needs for our Implementing Partners; and
- allow IDH to draw out the commonalities in challenges and opportunities across our commodity programs, representing the broader gender dynamics in agriculture for convening and higher-level engagements.



“The activities in the gender training session demonstrated in a very practical manner the situation of women farmers and farm workers. This made the field facilitators realize the extent to which disparity exists and its impact on overall social development. My team of FFs and I will now take these learnings to the farmers to whom we are providing extension services to help them understand the value of women’s contributions and contribute towards their capacity building and empowerment.”

Manraj Brar

Producer Unit Manager
WWF India



“The activities in the gender training session demonstrated in a very practical manner the situation of women farmers and farm workers. This made the field facilitators realize the extent to which disparity exists and its impact on overall social development. My team of FFs and I will now take these learnings to the farmers to whom we are providing extension services to help them understand the value of women’s contributions and contribute towards their capacity building and empowerment.”

Sangitaben Dave

Producer Unit Coordinator,
CottonConnect

Annexure 1: Better Cotton GIF Summary 2018-19

	China	India	Mozambique	Pakistan	Tajikistan	Turkey
No. of Implementing partners	4	17	3	7	1	2
No. of Projects	4	23	6	16	1	2

Annexure 2: Better Cotton GIF Project-wide summary 2018-19

CHINA

Project Name	Farmers	Area in (Ha)	Projected BC (MT)
Cotton Connect-Xinjiang-Hebei-MF+SH	14,201	99,000	189,500
Zhong Wang Cooperative-Xinjiang-MF+SH	400	7,000	15,000
Nongxi Cotton Cooperative-Shandong-SH	35,200	57,300	77,355
Songzi Agriculture Exstention Center-Hubei-SH	48,000	11,333	15,300
TOTAL	97,801	174,633	297,155

INDIA

Project Name	Farmers	Area in (Ha)	Projected BC (MT)
PRDIS - Andhra Pradesh & Telangana	24,000	30,000	20,000
ACF - Gujarat	21,500	18,400	18,400
AFPRO - Gujarat	45,750	74,000	63,000
Basil Commodities - Gujarat	48,000	124,000	124,000
CottonConnect - Gujarat	43,597	68,636	55,089
Spectrum - Gujarat	16,100	43,172	37,776
SEWA - Gujarat	4,500	8,000	5,333
Bharat Cotton factory - Haryana & Punjab	10,792	24,000	19,500
MYKAPS - Karnataka	7,107	6,250	2,708
Pratibha - Madhya Pradesh	17,615	34,278	21,900
K.K. Fibres - Madhya Pradesh	25,000	32,000	19,520
Udyansh - Madhya Pradesh	11,514	11,314	4,594

Project Name	Farmers	Area in (Ha)	Projected BC (MT)
ACF - Maharashtra	50,000	106,000	74,200
AFPRO - Maharashtra	26,000	48,000	28,560
Spectrum - Maharashtra	13,974	34,254	26,238
CottonConnect - Maharashtra	22,421	26,248	15,158
Lupin Foundation - Maharashtra	40,000	35,000	17,000
CAIM-CottonConnect - Maharashtra	150,000	160,000	117,000
LD-Puneet - Maharashtra	10,000	20,000	13,200
ACF - Punjab	33,000	42,000	30,000
WWF India - Punjab, Maharashtra & Telangana	89,000	139,900	109,011
ACF - Rajasthan	14,000	28,000	22,400
Deshpande Foundation Telangana	40,000	60,800	54,720
TOTAL	763,870	1,174,252	899,307

MOZAMBIQUE

Project Name	Farmers	Area in (Ha)	Projected BC (MT)
OLAM - Nampula, Manica, Tete	31,990	33,600	6,720
SANAM - Nampula	48,000	35,750	17,875
San JFS - Niassa	31,000	27,900	6,801
TOTAL	110,990	97,250	31,396

PAKISTAN

Project Name	Farmers	Area in (Ha)	Projected BC (MT)
WWF PAK - Khanewal, Punjab (old Jhang)	38,528	97,383	90,977
WWF PAK - Rahimyar Khan, Punjab	24,540	65,000	70,000
WWF PAK - Bahawalpur, Punjab	38,730	140,000	105,000
WWF PAK - Multan, Punjab (old Mianwali)	14,340	31,000	25,800
WWF PAK - Muzaffargarh, Punjab	30,316	90,000	78,000
SWRDO - Rajanpur, Punjab	14,113	47,632	37,648
REED Society - Vehari, Punjab	24,000	97,127	73,600
REED Society - Rahim Yar Khan, Punjab	15,600	85,000	70,011
MRWO - Lodhran, Punjab	13,500	28,000	22,100

Project Name	Farmers	Area in (Ha)	Projected BC (MT)
Lok Sanjh - Bahawalnagar, Punjab	33,500	68,005	55,764
Lok Sanjh - Tobatek Singh, Punjab	31,761	36,689	30,305
Lok Sanjh - Layyah, Punjab	28,000	52,080	42,706
Cotton Connect - Nawabshah, Sindh	20,055	48,020	46,050
WWF PAK - Sukkur, Sindh	28,460	120,000	110,000
CABI - Matiari, Sindh	15,002	42,340	45,178
CABI - Mirpur Khas, Sindh	15,061	69,235	73,877
TOTAL	385,506	1,117,511	977,016

TAJIKISTAN

Project Name	Farmers	Area in (Ha)	Projected BC (MT)
SAROB - SOGD & KHATLON OBLAST	954	14,218	13,267
TOTAL	954	14,218	13,267

TURKEY

Project Name	Farmers	Area in (Ha)	Projected BC (MT)
IPUD - Istanbul	2,000	40,000	72,400
WWF	1,000	5,500	7,150
TOTAL	3,000	45,500	79,550

Annexure 3: Mozambique Climate Resilience Program KPIs

Output indicators	2017
Number of structures	38
Volume of water harvested – in Metric Cubes	55,700 M ³
Irrigated by additional sources of water – in Hectares	32 Ha
Number of individuals involved in building and maintenance of infrastructures	240
Number of farmers trained in food crop production (tomato, onion, cabbage)	10 Men 6 Women
Hectares where sustainable production/sustainable intensification interventions are implemented (Tomato, Onion, Cabbage)	1.5Ha
KG of sustainable production resulting from trainings (Tomato, Onion, Cabbage)	20.5 KG
Number of women groups formed in poultry farming	4
Number of women trained in animal husbandry	44
Number of male groups formed in sheep and goat farming	4
Number of men trained in animal husbandry	85
Number farmers trained in Better Cotton and Cotton made in Africa Standards	142 Male 26 Female
Hectares where sustainable production/sustainable intensification interventions are implemented (Better Cotton & Cotton made in Africa)—in Hectares	137 Ha
MT of sustainable production resulting from trainings (Cotton)	27 MT
Number of households that have been provide solar energy panels	3

