

DIRTY COTTON

A RESEARCH ON CHILD LABOUR, SLAVERY, TRAFFICKING AND
EXPLOITATION IN COTTON AND COTTON SEED FARMING IN INDIA



GLOBAL MARCH

Against Child Labour
Contra el Trabajo Infantil
Contre le Travail des Enfants

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The study entailed in this publication is based on data collected and surveys conducted for the period 2010-11.

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Global March Against Child Labour gratefully acknowledges the support of the Royal Netherlands Embassy in New Delhi, India in understanding the situation of child labourers in cotton and cotton seed production in India, the supply and value chain dynamics and implementing this study in the effort to end child labour in the agriculture sector in India.

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This study was initiated under the overall guidance of Kailash Satyarthi, Chairperson, Global March and Nick Grisewood, the erstwhile Executive Director of Global March. The study, led and managed by the International Secretariat based in New Delhi was commissioned to a research team from the Jawaharlal Nehru University (JNU). While Priyanka Ribhu, Policy Advocacy Coordinator, Global March conceptualised the initiative including the study, Rohit Sharma and Marco Dubbelt provided valuable contribution during the study and advise on the report. Purva Gupta brought this report to its present format. Vijay Singh managed the design and layout of the report.

Professors Bupinder Zutshi, Mondira Dutta and Sucharita Sen from the Jawaharlal Nehru University and their team prepared the research tools, supervised field data collection from different states selected for survey conducted for this study and undertook report writing.

Paulomee Mistry from DISHA (NGO), the Gujarat Agricultural Labour Union and her team provided support in the research conducted in Gujarat. Vithal Rao and his team supported in organising field surveys and data collection in the state of Andhra Pradesh and Karnataka.

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FOREWORD

Knowingly or unknowingly child labour is a part of our everyday lives. Many things that we use are made by tender aged children at the cost of their education, health and freedom.

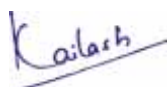
The introduction of genetically modified or BT Cotton in India with tall claims of high yield had increased the demand of cheap and docile labour in the sector. Farmers, especially those with small and marginal holdings who were initially lured to grow BT cotton are now facing rough weather. The BT technology is input intensive as opposed to the propaganda of Multinationals. Many cotton growers have ended up borrowing loans from different sources to meet their soaring expenses.

A deliberate and in-conspicuous near absence of public sector in the seeds market paves way for the seed companies and their agents to exploit farmers formidably. The situation further exacerbates due to low prices that the cotton seeds eventually fetch. With low profit margins children are preferred over adults as labourers. A large number of children are even trafficked from neighbouring regions to work on the farms under arduous conditions.

While farmers remain trapped in cotton and cotton seed cultivation under a vicious debt cycle, child labourers working in the farms suffer adverse effects on their health and remain deprived of their fundamental rights to education and recreation. The scenario is quite different for those in the upper tiers of the supply and value chains of cotton and cotton seed production. Seed companies, fertilizer companies, ginning & yarn mill owners and manufacturers of cotton textiles reap profits that are manifold in comparison to cotton & cotton seed growers and labourers.

Global March Against Child Labour's new study, "Dirty Cotton"- 'A research on child labour, slavery, trafficking and exploitation in cotton and cotton seed farming in India' examines the reasons that lead to the engagement of children in cotton and cotton seed cultivation. The study also delves deeper into the supply and value chain dynamics, working conditions of the labourers and proposes plausible recommendations for ending child labour in this industry with an endeavour to reduce the vulnerabilities of cotton growers.

The Global March besides other sectors is seriously engaged in ending child labour in the cotton industry, right from the farms till the sweatshops. This study shall therefore serve as a knowledge and advocacy tool for sensitisation and action needed to combat the issues involved at various levels.



Kailash Satyarthi
Chairperson

PREFACE

In the current times, we are seeing the spotlight on exploitation of vulnerable children in India by their engagement in cotton/ cotton seed cultivation and ginning mills and the burden faced by small and marginal growers of BT cotton/cotton seeds. Against this backdrop, this study ***“Dirty Cotton: A research on child labour, slavery, trafficking and exploitation in cotton and cotton seed farming in India”***, that looks at child labour in cotton/cotton seed cultivation in 4 prominent cotton/cotton seed growing states, will contribute to the current debate by strengthening and clarifying our understanding about the reasons for child labour in cotton.

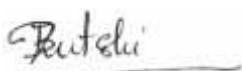
We wish to put on record our deep appreciation for Global March Against Child Labour for facilitating this research project. We are particularly grateful to Kailash Satyarthi, Chairperson and Priyanka Ribhu, Policy Advocacy for being the main source of inspiration for undertaking this significant research. They have extended constant academic support and valuable suggestions at each and every stage of the project with a patient hearing, despite their busy schedule.

Significant contributions and ideas of immense value have been flowing into the project from time to time, which enabled us to complete the task. We wish to express our sincere acknowledgment and gratitude especially to:

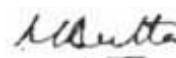
- Marco Dubbelt and Rohit Sharma from Global March Against Child Labour for important suggestions in the formative and report writing stages of the research report.
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- Vithal Rao, and his team - Murali Mohana Chary, Sudharshan, P. Visaya Rama Rao, Sai Ram and Hanuman Gandav has been a big support for organising field surveys and data collection in Andhra Pradesh and Karnataka.
- Ginning Mill Owners, Seed Companies for making us understand their perspective
- Respondents – farmers, labourers, parents of the children and children for providing us grassroots realities of the BT cotton farming situations, conditions and other important information.

Vithal Rao and Paulomee Mistry have been a great help in meeting stakeholders in the field and in talking to NGO partners – this has been a learning experience throughout the study. Such events were organised at the spur of the moment with ease. Their dedication and efforts often left us spell bound. They made us understand the ground realities showing us how ideas translated into reality.

We are thankful to all the stakeholders including government officials. This was extremely important to understand the government perspectives. Words fail us when we recall our meetings with the several trafficked children and their parents, who allowed us to intrude into their past and shared their experiences. It was extremely brave of them to talk to us in the first place.



Dr. Bupinder Zutshi



Dr. Mondira Dutta

EXECUTIVE SUMMARY

The employment of children in agricultural farms for cotton and cotton seed cultivation in India has been a common and widespread phenomenon. However, since the advent of BT cotton technology with promises of high yields and the resulting high demand for cotton and cotton seed cultivation coupled with the shift of production in the hands of companies, the scenario and conditions with regard to child labour in cotton have deteriorated, especially in Gujarat and Andhra Pradesh. In the cultivation season of 2009-10, it was found that around 3,81,500 children below the age of 18 years were engaged as labourers in the cotton seed farms.

Adding value to and filling in the missing links/gaps of the previous studies conducted by various organisations on the issue of child labour in cotton and cotton seed cultivation, this present study by Global March Against Child Labour looks at the drivers and causes that lead to the use of child labour in the cotton industry in India. It also identifies the supply and value chain dynamics of cotton and cotton seed, and proposes recommendations based on the overall analyses of these for the elimination of child labour in cotton industry and improving the conditions of cotton growers, especially small and marginal ones. The study covers 4 cotton and cotton seed growing states in India – Andhra Pradesh, Gujarat, Karnataka and Maharashtra and 1 state supplying trafficked children and migrant labour – Rajasthan. Based on primary and secondary data, the study covers a range of topics pertaining to child labour in cotton cultivation such as recruitment process of children, wage rates paid to child labourers, limited knowledge about child labour laws amongst families and farmers, etc.

The primary surveys conducted in the study threw

light on the many causes for child labour engagement in the cotton industry which are summarised below:

- Farmers have myths regarding child labour in cotton cultivation, i.e., children with “nimble fingers” can better perform the delicate task of cross pollination in BT cotton seed cultivation than adults.
- BT technology being input intensive leads to high production costs and low profit margins for farmers. Child labour costing less than adult labour is used to save costs.
- Most of the BT cotton and cotton seed farmers have small and marginal landholdings, and hiring children on such landholdings helps make cultivations viable for farmers, given that BT technology is more suitable for medium and large-sized farms.
- There is high degree of indebtedness among farmers who take loans to meet the production costs. About 33% of the farmers surveyed in the study had taken loans from different sources with an average loan amount outstanding per farmer was Rs. 15,890.
- There is difficulty in switching from BT cotton to other crops owing to the changed soil chemistry from cotton cultivation and the mono-culture of hybrids being promoted by private seed companies.
- Owing to pressures from civil society regarding use of child labour in cotton cultivation, BT cotton seed production has relocated to impoverished and inaccessible areas to make use of cheap tribal labour, migrant labour and trafficked children from adjacent areas.
- A diminished public sector and regulation in the seed market has led to seed companies inducing farmers to grow cotton seeds. These

private players are merely concerned with economic gains with little or no regard to the interests of farmers or labour practices followed by them such as using under-age labour.

- Seed organisers, who serve as middlemen between seed companies and farmers, dictate unfriendly and strict terms of contract to the farmers for seed cultivation.
- Farmers – both for cotton and cotton seeds have no control over the price of their produce. Farmers are left marginalised and to fend for themselves.
- Farmers, labourers and families of child labourers lack sufficient knowledge and awareness about child labour law, other labour laws, right to education law, etc. As a result of this ignorance, labourers in the cotton industry do not benefit from the existing laws, and cotton, cotton seed growers and seed companies using this ignorance to their advantage openly flout the law (such as allow child labour on farms and payment of below minimum wages, etc).
- The supply and value chain of cotton, cotton seed and textile is skewed. The value addition from producing raw cotton to transforming it into the final product - cotton designer fabric is 850%, while the child labour share/cost in the final product is only 0.8%. For cotton seed production, the value addition from using various inputs to sale of certified seeds is 550%, and the child labour share/cost in it is only 2.5%.

The study showed that conditions on the cotton and cotton seed farms are deplorable. The working hours for child labourers are rather long – 9 to 10 hours per day. Apart from farm work, children have to also perform a range of domestic chores such as cook food, etc. Children are exposed to pesticides, etc., and the farms generally lack safety measures

such as hand gloves and masks. They report health problems such as headaches, nausea, convulsions, joint aches, etc. The wages are also low - labourers in Andhra Pradesh, Gujarat and Karnataka were receiving wages less than the stipulated minimum wages. Where the wages paid were higher than the minimum wage rates, the “actual take home” wages were low on account of deductions for unsatisfactory work, provisions of food, stay, transport, medical aid, etc., by farmers.

The study recommends eliminating child labour in the cotton industry along with ensuring overall rural development – improving welfare of farmers, access to free and quality education in rural, etc. To the governments, the study suggests to ensure better enforcement of child labour and right to education laws, ratify ILO Conventions C138, C182 and C184, strengthen labour inspector mechanism for child labour elimination action and provide support and assistance to cotton farmers. To the gram panchayats (village councils), the study proposes taking action at the community level such as educating farmers, families of child labourers, and labourers about the ills of child labour and entitlements under the various labour laws. Corporations (seed, textile manufacturing companies, etc) are encouraged to adopt farmer friendly business practices, identify labour violations in all levels of the supply chain and ensure implementation of company codes of conduct/ethical norms throughout the chain. Farmer organisations and associations are advised to lobby with government for farmer friendly policies and to support small farmers in unionising and improving their bargaining power. Civil society and consumers are also encouraged to create pressures on government and businesses for a positive policy change in favour of child and education rights.

ABOUT GLOBAL MARCH AGAINST CHILD LABOUR

The Global March Against Child Labour is a worldwide network of trade unions, civil society and teachers' organisations working to build and strengthen global efforts to protect and promote the rights of all children, especially freedom from economic exploitation and from performing any work that is likely to be harmful to their physical, mental, spiritual, moral or social development, and the right to receive a free, meaningful and good quality education.

The Global March began its journey to raise awareness of the prevalence of child labour through a physical march launched in Manila, Philippines on 17 January 1998. The torch was taken up by organisations in over 100 countries in all continents and the march travelled 80,000 kilometres across the globe before arriving in Geneva, Switzerland, in June 1998. At that time, the annual conference of the International Labour Organisation (ILO) initiated discussions on what was to become the ILO Convention No. 182 on eliminating the Worst Forms of Child Labour as a priority for the international community.

The march marked a turning point in the fight against child labour, bringing together like-minded organisations, institutions and individuals in a worldwide network to sustain efforts in their countries to raise public awareness, support positive policy changes,

foster partnerships and enhance knowledge to help reduce the exploitation of children. Since 1998, the Global March and its partners have focused on promoting universal ratification and implementation of ILO Convention No. 138 and 182 on the Minimum Age of Employment and Worst Forms of Child Labour respectively, which sets the benchmark for the elimination of all forms of child labour, as well as the application of the United Nations Convention on the Rights of the Child (UNCRC), the UN Millennium Development Goals (MDGs) and other international instruments and commitments related to the protection of children and their rights.

A cornerstone of the Global March's work is advocating at all levels for policy changes and coherence between the elimination of child labour, education, social protection and poverty alleviation, including through promotion of decent work agenda. Global March was one of the civil society members of the Consultative Group for the 2010 Global Conference on Child Labour that drafted the “Roadmap for Achieving the Elimination of the Worst Forms of Child Labour by 2016” (Roadmap 2016), aimed to build on the knowledge and experience of all those involved in the fight against child labour and to provide strategic direction for the way forward.

Chapter 1 INTRODUCTION

Cotton & Cotton Cultivation

Cotton, the “white gold” as it is often called is one of the most important natural fibres discovered by man. It is an indispensable part of our daily lives from the time we dry our faces with a soft cotton towel every morning until we slide between fresh cotton sheets every night. It has umpteen number of uses ranging from blue jeans to shoe strings. Clothing and household items are the largest uses, but industrial products account for many thousands of bales.ⁱ For the complete range of uses of cotton, see the flowchart of cotton supply chain given at the end of this Chapter.

Cotton is grown in sub-tropical regions and is mainly produced in the United States of America (USA), Uzbekistan, China and India. Sowing takes place in pre-monsoons and water plays an important role in cotton cultivation as it can only grow where water is abundantly available.

Conventional method of growing cotton involves ploughing and listing of the firm seed-beds for planting. Depending on the arrival of monsoon, seeding is done just before it arrives and is followed by weed control. Two months from planting, flower buds called squares appear on cotton plant. Three weeks hence, the blossoms open. Their petals change from creamy white to yellow, then pink and finally, dark red. After three days, they wither and fall, leaving green pods, which are called cotton bolls. Inside the cotton bolls, moist fibres grow and push out from newly formed seeds. Eventually, the boll turns brown as it ripens and fibres continue expanding under the warm sun. Finally, the boll splits and cotton fibres come out. The cotton

bolls are then picked and sent for ginning. The process of cotton cultivation howsoever depends on the type of cotton seeds, viz., conventional or regular cotton, genetically modified or *Bacillus Thuringiensis* (BT) cotton and organic cotton.ⁱⁱ Further, depending upon the variety of the cotton seeds and the climate, the cotton plant needs 175 to 225 days from sowing to harvesting.

Cotton Industry in India

Cotton is an important fibre crop in India playing a dominant role in its agrarian and industrial economy. As per the estimates, out of 89.4 million farmer households in India, nearly 6.3 million farmers were cultivating cotton during 2008-09^{iii iv}. Apart from agriculture, cotton cultivation supports the livelihood of millions of Indians by way of support in labour activity, processing in ginning and spinning units, handloom units, textile manufacturing, apparel industry and other services associated with cotton textiles. Cotton is in fact the backbone of India's textile industry, accounting for 70% of total fibre consumption in textile sector and 38% of the country's exports^v.

With technological advances and market liberalisation in the beginning of the 21st century, India has emerged as a major player in the world cotton market. It is the third largest producer of cotton in the world after USA and China, accounting for 14% of world cotton production and has the largest area under cotton cultivation in the world constituting

1. BT is a soil-dwelling bacterium that has been used to control insect pests since 1920s. As a result of its specificity, these pesticides are regarded as environmentally friendly, with little or no effect on humans, wildlife, pollinators, and most other beneficial insects.

about 26% of the world area under cotton cultivation^{vi}. Post the introduction of BT¹ cotton seeds in 2002, India has become the largest producer of BT cotton beating China, producing about 20 million bales of BT cotton. The largest BT cotton producing states are Gujarat and Andhra Pradesh.

BT cotton, the genetically engineered form of natural cotton was developed by USA based M/s Monsanto Company and is resistant to bollworm pests which have commonly been found in case of conventional cotton. BT cotton not only promised protection from pests, but also higher yield. Due to its easy maintenance and expected high yield, BT cotton has gained a lot of popularity in the recent times, 45% of cotton producing land worldwide is engaged in producing BT cotton. However, BT cotton involves a process of cross pollination which has

to be done in the morning hours after the pods are grown. The process of cross pollination, because pollen grains being heavy and cannot transfer on its own, has to be done manually, which require taking pollen grain from the male boll and putting it to the female boll^{vii}.

Child Labour in Cotton Industry

Children working in cotton and cotton seed farms have always been a matter of concern in all cotton producing countries. However, as India became one the largest producers with the production of BT cotton seeds in 2002 and the production shifted into the hands of companies, the conditions deteriorated in the states of Gujarat and Andhra Pradesh. In the 2009-10 cultivation season, approximately 3,81,500 children below the age of 18 years were employed in the cotton seed farms (See Table 1 below).

Table 1 : Estimates of Total Number of Children Employed in Hybrid Cotton Seed Farms

	2003-04			2006-07			2009-10		
State	Total production area (acres)	Total children (below 14 years)	Total children (15-18 14 years)	Total production area (acres)	Total children (below 14 years)	Total children (15-18 14 years)	Total production area (acres)	Total children (below 14 years)	Total children (15-18 14 years)
Andhra Pradesh	14,000	82,875	NA	16,000	70,400	57,600	12,000	31,200	42,000
Gujarat	26,000	91,000	83,200	25,100	85,340	87,850	38,000	91,200	125,400
Karnataka	4,000	26,800	8,400	5,000	29,500	18,000	8,000	32,000	27,200
Tamil Nadu	NA	NA	NA	9,000	38,700	27,000	5,000	15,500	17,000
Total	44,000	200,675		55,400	226,100	190,450	63,000	169,900	211,600

(Source: Signs of Hope: Adult and Child Labour in Cottonseed Production in India, 2010)

The requirement of children in cotton seed farms arises due to several reasons. Most evident amongst which is the cheap labour cost. Children may cost nothing at all or half or lesser than an adult labour. Also, the female child is paid lesser. At low cost, these children are believed to provide “nimble fingers” which are considered better for delicate tasks such as cross pollination of cotton seeds. Not only this, children are considered to be far more efficient and suitable for long work hours than the adult labour. Children are believed to easily carry on the intensive work and are believed to be easier to control. The children employed are often in a state of debt bondage and work at least nine hours a day.



Employment of children in cotton and cotton seed cultivation has an adverse impact on the health and literacy levels of children. Pesticides used during cotton production have caused headaches, convulsions, respiratory and other health problems in children working on the farms^{viii}. Children working in the farms are generally in the age group of 7-14 years, a stage that is crucial in their education and overall development. Working in the cotton farms deprives them of their rights as children, i.e., studying (in violation of the fundamental right

to an education in India) and playing. Many a time, children working in the cotton seed fields have dropped-out of schools. Sometimes, they attend school for only 2-3 months in a year when there is no work in the cotton fields^{ix}.

Several organisations have carried out studies to map the extent of the problem of child labour in these cotton seed farms. Child rights' commissions, labour unions, civil society organisations, etc. have surveyed various cotton farms and have interviewed labourers, children, families, public officials, farmers and seed companies to analyse the depth of the problem.

Brief on Some Studies Conducted on Issue of Child Labour in Cotton and Cotton Seed Cultivation

1. Signs of Hope: Adult and Child Labour in Cottonseed Production in India (2010) by Davuluri Venkateswarlu

This study examines trends in the employment of children in hybrid cotton seed farms by analysing recent developments that have taken place in the cotton seed industry that have a bearing on the incidence of child labour in cotton seed farming. The study covers 4 states, viz., Andhra Pradesh, Tamil Nadu, Karnataka and Maharashtra. Among other things, it discusses the labour types (hired/family/local/migrant), caste, gender and age composition of labour, their wages and the working conditions. It places emphasis on major seed companies to take initiative in collaboration with other stakeholders to address the issue of child labour and labour exploitation.

2. Child Labour in Cotton Seed Production (2008) by Ashok Khandelwal

It gives details of the labour conditions in selected cotton fields in Gujarat. The study also gives a list of various laws present and compares failure of regulation and presence of illegal activities. It also talks about impact of the labour practice that results into bondage, inter- generation transfer of misery and impact on health of workers.

3. Children Migrating for Work from Dungarpur District, Rajasthan to Gujarat : A Report (2008) by Neera Burra

This study was conducted at Dungarpur, the host district that provides labour for cotton seed fields in Gujarat. The report talks about the role of middlemen, stories from labourers on method of recruitment and living conditions, and mental and sexual harassment of children on the field. It also provides estimates of child labour on fields and also discusses presence of child labour in other industries.

4. Enquiry Visit to Gadwal (Mahabubnagar) and Kurnool, Andhra Pradesh, 24-26th September 2007

This report highlights key issues involved in child labour in Andhra Pradesh. It informs the presence of extensive child labour, especially girls in cotton seed farms and explains the lack of awareness of relevant legislation. It provides details of company's responsibilities on involvement on child labour and use of harmful chemicals on farms. It also explains the missing concept of laws related to work hours, wages, living condition and hazardous conditions on the field. The report talks of failure of different government departments set to work on child education, social welfare, women and child development and police which due to their lack of interaction and coordination fail to address the real issue.

These studies have been extremely useful. Not only have they discussed various aspects of the issue of child labour in cotton industry in different states of India, they have also been able to draw public attention to the problem of child labour. These studies, however, have the limitations of being descriptive in nature. They focus only on the nature and the extent of child labour in the cotton and cotton seed farms and means of its remediation, with little or no acknowledgement to the conditions behind it and the key factors responsible for the situation. In other words, all the possible conditions and drivers behind the use of child labour in this industry have not been examined and they also have not been examined in detail.

Objectives of the Study & Methodology

The present study building on the prior exploration - “Beginners Guide to Child Labour in Cotton Seed Farms” by Global March Against Child Labour attempts to examine the drivers and reasons leading to child labour in the cotton industry in India, identifies the supply and value chain dynamics and proposes recommendations based on the overall analyses of these.

The study is based on analysis of secondary data and primary data sources. Secondary data sources including books, research studies, magazine articles, newspaper analysis and websites projecting information on cotton were surveyed to obtain information on BT cotton seed cultivation process, pricing mechanisms, labour practices and recruitment process, acreage, production and yield of cotton, etc.

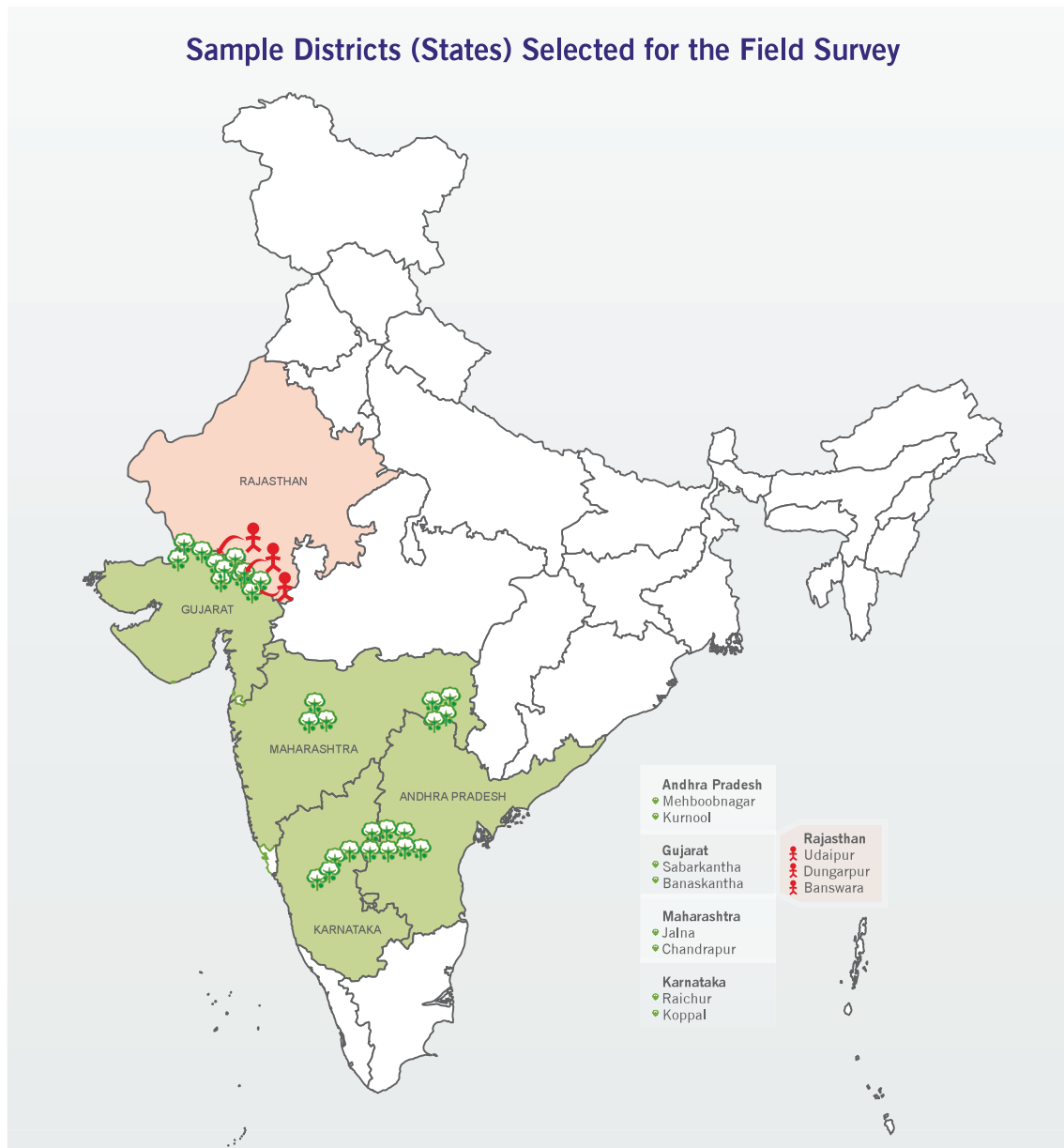
Primary data² was collected through field survey/visits to 421 sample cotton, BT cotton and BT cotton seed farms in 42 villages in 4 states namely Andhra Pradesh, Gujarat, Karnataka and Maharashtra. These 4 states were selected for the survey on account of their high acreage of cotton, BT cotton and BT cotton seeds cultivation. Two districts per state were included in the survey, namely, Mehboobnagar and Kurnool in Andhra Pradesh, Sabarkantha and Banaskantha in Gujarat, Jalna and Chandrapur in Maharashtra and Raichur and Koppal in Karnataka. In addition to these districts, 3 districts from Rajasthan (Udaipur, Dungarpur and Banswara) that supply migrant labour especially trafficked children for work in the BT cotton seed farms in Sabarkantha and Banaskantha districts of Gujarat were also included in the survey. On account of the difficulty in surveying child labour engaged in BT cotton seed cultivation due to resistance and fear by the farming community to admit presence of child labour in their farms which was caused by growing reaction against child labour by NGOs, civil society and government agencies, Rajasthan was included in the survey. Rajasthan is a supplier of trafficked children for forced labour in cotton seed farms in Gujarat and out of the 56 households supplying children for work in BT cotton seed farms, children of 21 households in Rajasthan were working in Gujarat (Refer Table 2 below). Out of these 21 households, the survey reported 28 children (15 boys and 13 girls) aged from 6-17 years who

2. Due to lack of availability of authentic official data on acreage, production and yield of hybrid and BT cotton seed and cotton cultivation in India, primary data had to be gathered. This was done through a field survey in selected states and villages to identify spatial distribution pattern of acreage, production and yield of cotton, BT cotton, and BT cotton seed cultivation undertaken.

had worked in the BT cotton seed farms of Banaskantha and Sabarkantha of Gujarat during April-October 2010. Thus, information about these child labourers was obtained by conducting the survey in their homes in Rajasthan. This helped in understanding the socio-economic conditions of the families and the nature of activities undertaken by the

children in the destination farms. The survey also covered a total of 137 labourers employed in cotton, BT cotton and BT cotton seed farms. Out of these 137 labourers, approximately 30% (i.e. around 40) were children below 15 years of age engaged in cotton and cotton seed cultivation.

Sample Districts (States) Selected for the Field Survey



The villages were selected through a consultative process with civil society organisations, farmer unions, and academic community so as to have a sample pool that is representative of cotton, BT cotton and BT cotton seed farming. Further, efforts were made to select the villages having multi-holding size farms, and cotton seed farms contracted by multiple seed distributor companies. Thirty-five farming households each growing cotton, BT cotton and BT cotton seeds were initially selected for the survey from each state, but non-availability of households growing cotton in the selected villages of Andhra Pradesh and Maharashtra resulted in selecting cotton

growing farms only from Gujarat and Karnataka. Accordingly, the sample farmer households covered for the survey were modified and a stratified random sample of farms was selected from the villages. The criteria for the selection were two-fold, viz., farmers with varying landholding size growing cotton, BT cotton, and BT cotton seed; and farmers who had entered into contract with local or multinational cotton seed companies. All the details of the sample coverage including the number of adult labour, child labour, cotton seed distributors, and ginning mills surveyed for cotton, BT cotton and BT cotton seeds farms as given in Table 2 below.

Table 2 : Sample Coverage

Survey Details (Number)	Andhra Pradesh	Gujarat	Karnataka	Maharashtra	Rajasthan	Total
Districts covered	2	2	2	2	3	11
Blocks covered	4	13	3	4	4	28
Villages covered	8	16	6	12	4	46 (includes 4 from Rajasthan)
Cotton Farmers surveyed	-	71	10	-	-	81
BT Cotton Farmers surveyed	35	70	35	35	-	175
BT Cotton Seed Farmers surveyed	30	70	30	35	-	165
Labourers (Adult + Child) working in Cotton/BT Cotton and BT Cotton Seed Farms surveyed	25	70	27	15	-	137
Child Labourers (Below 15 years) working in Cotton/BT Cotton and BT Cotton Seed Farms surveyed (% of total Labourers)	32	31	28	30	-	-
Households with children working in BT Cotton Seed Farms covered	10	-	-	25	21	56
Cotton Seed Company Distributors Surveyed	2	3	2	2	-	9
Ginning Mills Surveyed	1	2	1	1	-	5

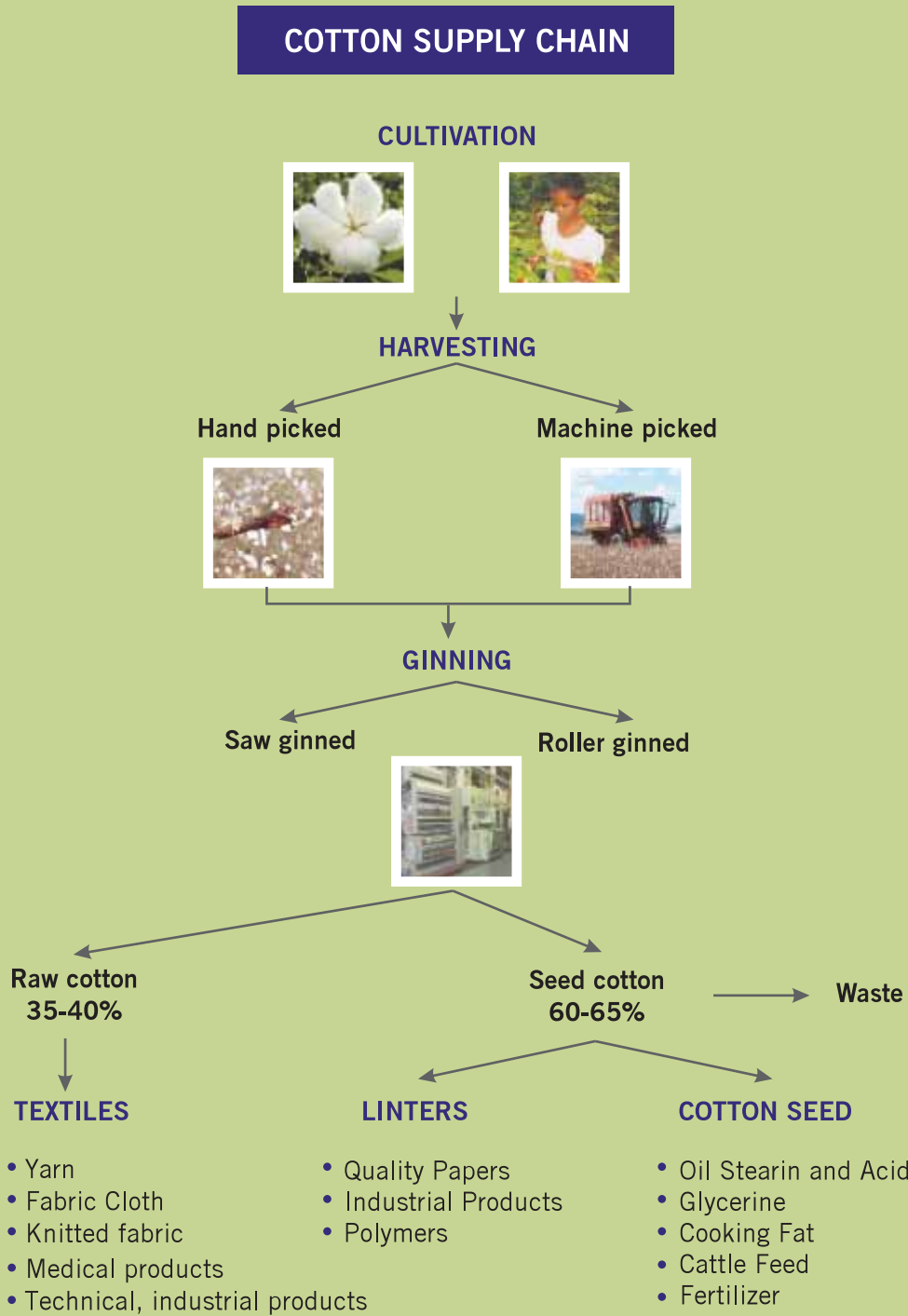
The field survey for this study was conducted from November 2010 to February 2011. Validation of the collected information, qualitative survey and focused group discussions were simultaneously undertaken. The methods for the field survey included filling of structured questionnaires, focused group discussions and personal observations in the farms and discussions with local community members in the farms. During the survey,

detailed discussions were held with labourers (adult and child), parents of child labourers, farmers, cotton seed distributors and their agents, distributors of pesticides, chemicals and fertilizers, ginning mill owners, yarn and cotton textile workers and owners and traders, academic scholars, agricultural scientists and other stakeholders. Details about the evaluation design and the methodology are covered in Appendix 1.

Field Survey in Progress



This study is done essentially in three parts. Firstly, the various conditions and drivers behind the use of child labour in cotton industry are analysed in detail. Secondly, the difficult and deplorable working and living conditions in which children (and labourers) have to work in on cotton farms are discussed. Finally, the study concludes with recommendations and way forward.



CONDITIONS & DRIVERS BEHIND CHILD LABOUR IN COTTON INDUSTRY: AN ANALYSIS

“Cause first, cure second.” – Anonymous

This Chapter attempts to analyse in detail all the possible conditions and drivers that have directly or indirectly caused and contributed to the use of child labour in cotton industry in India. It is believed that a total removal of children from cotton industry can only be possible after all the causes of child labour in cotton industry are identified, understood and accordingly addressed. However, before undertaking a discussion on these causes, it is worthwhile at the outset to know about child labour in brief, i.e., the definitions of child labour, the international and the national legal framework with regard to child labour.

Know Child Labour: Definitions & Legal Framework

Where child is considered a person below 18 years of age, the term “child labour” is defined by the International Labour Organisation (ILO) as work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental development. It refers to work that is mentally, physically, socially or morally dangerous and harmful to children; and interferes with their schooling by depriving them of the opportunity to attend school; obliging them to leave school prematurely; or requiring them to attempt to combine school attendance with excessively long and heavy work. As per ILO 2010 Report – Accelerating Action against Child Labour, there

are about 215 million child labourers across the globe, and out of which 115 children are engaged in work that is hazardous in nature. In terms of distribution by economic activity, 60% of child labourers are engaged in agriculture, 7% in industry, 25.6% in services and 7.5% in others*.

The international legal framework to combat and eliminate child labour consists of conventions/ instruments that seek to protect children from exploitation and abuse, and ensure their access to fundamental rights, including education. The three main international instruments that underpin national efforts to prevent and eliminate child labour are as follows:

- ILO Convention 138 on Minimum Age for Employment requires that ratifying countries agree to pursue a national policy designed to ensure the effective abolition of child labour and progressively raise the minimum age for admission to work to a level consistent with the fullest physical and mental development of young persons.
- ILO Convention 182 on Worst Forms of Child Labour requires ratifying countries to quickly take immediate and effective measures to outlaw and eliminate the worst forms of child labour as a matter of urgency. It applies to all children under the age of 18 years.
- United Nations Convention on the Rights of

the Child sets out the all basic rights of children - civil, cultural, economic, political and social rights. With regard to the right of protection of children from exploitation, the relevant articles are Article 32 and Article 35 containing provisions for child labour and trafficking of children respectively.

Apart from the above, there are various national legal provisions relating to the prohibition of child labour and safeguarding the rights of children in India. This includes the Child Labour (Prohibition and Regulation) Act 1986; the Juvenile Justice (Care and Protection) of Children Act 2000; Bonded Labour System (Abolition) Act 1976 and the Right of Children to Free and Compulsory Education Act 2009. A brief about these Acts is given later in this Chapter.

Causes of Child Labour in Cotton Industry

There are a host of reasons and causes behind child labour and why children are employed for work. These include poverty, lack of access to free and good quality education, absence of social welfare and protection schemes, acceptance of child labour as a way of life, low cost of child labour vis-a-vis adult labour, poor enforcement of existing legislations, etc. While these are also applicable to child labour in cotton and cotton seed cultivation, a detailed discussion on the specific causes and drivers for child labour in the cotton industry now follows based on the primary survey findings.

Myths about Child Labour in Cotton Cultivation

Farmers have their own notions for employing children in cotton cultivation. The cross

pollination in BT cotton seed cultivation is not only very labour intensive but also delicate. Thus, farmers believe that children (especially girls) with their “nimble fingers” can better handle this work than adults can. Farmers also prefer young girls as they believe that using the services of older girls who have reached puberty is inauspicious, harmful for the crop and might even result in crop failure^{xi}. This has especially been the case for Andhra Pradesh.

Higher Production Cost & Low Profit Margins in BT Cotton

A major concern that many farmers face with regard to BT cotton is high input/production costs in terms of seeds, irrigation, pesticides, fertilizers, labour, etc. Many farmers during the field survey complained of high use of pesticides for BT cotton cultivation³ contrary to their expectations and an increase in their usage in the recent years. Farmers cited use of spurious/ uncertified seeds prevalent in the market in view of the weak regulatory mechanism as one of the reasons for this change.

BT cotton requires high dosage of water and without this returns from BT cotton cultivation cannot be guaranteed. Thus, irrigation accounts for a key input cost in BT cotton cultivation. It was found that nearly 78% of BT cotton farms across the four selected states in this study were irrigated and the major source of irrigation was tube well i.e., both electric as well as diesel (Refer Table 3 in Appendix 2). Farmers need to invest huge sums for this type of irrigation, i.e., initial and regular operational cost and after

3. As per a study by Greenpeace - Picking Cotton : The choice between organic and genetically-engineered cotton for farmers in South India, BT cotton farmers apply about 3 different types of pesticides to their cotton crops, in various applications and spend as high as Rs 1,000 per acre on pesticides.

depletion of water from successive use, the cost of relocating the tube wells to newer water abundant areas. Understandably, to meet these costs, farmers, especially small and marginal farmers take loans from different sources.

The labour costs are significant in cotton farming given that labour requirement is high. In cotton seed production, the labour costs account for about 50% of total cultivation costs^{vii}. Also, labour costs have increased substantially both due to high inflationary rates and due to high demand for labour during specific seasons in view of mono-culture cropping pattern (see later). Moreover, labourers get employment opportunity only during specific seasons and there is lack of opportunities during other periods due to seasonal nature of the agricultural calendar.

These high production costs result in low profit margins in BT cotton cultivation. All this propels farmers to use the services of children for work on the farms.

Small-scaled BT Cotton & Cotton Seed Farms

Most of the BT cotton farmers are small and poor. The field survey conducted for the four states also confirms that cotton and BT cotton farm (landholding) are small-sized and marginal, and majority of the farms have an area less than 5 acres (Refer Table 4 in Appendix 2). As seen from above that BT cotton cultivation requires rather high production costs, structurally BT cotton technology is favourable for medium and large-sized farms for better returns on production costs due to economies of scale and easier access to resources (for investment in seeds, irrigation, pesticides, storage facilities, etc). However, this is not the case with small and marginal farms where generally returns only break even in terms of production costs. Thus, using child labour – household and/or hired becomes one way to keep BT cotton cultivation viable.

In case of BT cotton seed cultivation as well, the farms are by and large small-sized and marginal (Refer Table 5 of Appendix 2). Owing to high and increasing production costs (mainly labour

costs) and stagnant produce prices, large commercial farmers who primarily use hired labour are withdrawing from cotton seed cultivation or opting for share-cropping arrangements with labouring families. Further, in the recent years seed companies have witnessed demands for higher procurement prices from large cotton seed growers in Andhra Pradesh and Gujarat. This rise in the production cost is one of the reasons seed companies

By using child labour which costs less than adult labour, farmers are able to save considerable costs especially given the labour intensive nature of the cotton industry. Citing the reason for employing children in cotton and cotton seed cultivation, Sivaramakrishna, a seed farmer in Mahaboobnagar district, Andhra Pradesh, mentions the following, "...The most important thing is labour costs. Nearly half of our investment goes towards payment of labour charges. The wage rates for children are far lower than adult wages. We can reduce our labour costs considerably if we hire girl children. If we want to hire adult labour we have to pay higher wages. With current the procurement price we get from the seed companies we cannot afford to pay higher wages to the labourers."^{xiii}

have shifted production to new locations and prefer to contract with small farmers. Small and marginal farmers are less organised and cannot bargain as effectively for higher prices^{xiv}. Thus, to keep their earnings intact, seed companies deliberately look for impoverished areas where small and marginal farmers are willing to cultivate cotton seeds even at break even profits with support from family labour as well as cheap migrant labourers, their children or trafficked children^{xv} (see later).

Indebtedness among Farmers

To meet the high production costs, BT cotton farmers take loans from private sources and/or local money lenders (Refer Table 6 of Appendix 2). Due to the high rates of interest and the already low profit margins, many a time, farmers are unable to repay the loans in time. They enter into a debt trap and thus continue with BT cotton cultivation in the hope of earning

better returns in the next season. The field survey also showed that about 33% of farmers in the four selected states had drawn loans from different sources, and on an average a loan amount of Rs. 15,890 was outstanding per farmer at the time of the survey. Also, during the survey one farmer had committed suicide due to high indebtedness.

Difficulty in Switching to other Crops

In addition to the above-mentioned reason, BT cotton farmers face difficulties in switching to other crops due to other factors as well. BT cotton does not allow cultivation of other crops (for example, turmeric) due to the changed soil chemistry as a result of cotton cultivation. The incomes from BT cotton cultivation are thus limited to one season only, becoming another reason for the financial burden on the farmer. Further, privatisation of seed distribution has also induced changes in the cropping patterns.

Farmers have lost the choice for mixed and inter-culture cropping patterns to mono-culture of hybrids such as BT cotton based on external inputs. Instead of growing food crops, and maximising food and ecological security, farmers have been induced to grow BT cotton and other cash crops for the perceived “high profits”, without an assessment of risks, costs and vulnerability. Inability of farmers to shift from BT cotton farming has indirectly perpetuated the problem of child labour.

On 20th January 2011, Ramakrishna, a 32 year old cotton grower of Mahboobnagar district (Andhra Pradesh) committed suicide. He owned ½ acre of land and had taken 10 acres of land on lease from a former village Pradhan, the annual rent of which was Rs. 3000 per acre.

He was distressed due to a heavy loan he had taken over a period of three years for cotton cultivation amounting to Rs 2 lakh. Due to shortage of rainfall, the production of cotton had been too low continuously for three years. He had not even been able to recover the cost of production. Meanwhile, the money lender had started demanding the money back. Many a time, he had promised to return the money by any means on a certain date but was unable to do so.

Sadly, even after his death not much attention was given by any government official and his family did not receive a single rupee as relief.

Relocating BT Cotton Seed Production to New (Cheap Labour Abundant) Areas

As mentioned in the previous Chapter, due to the growing campaigns by NGOs, civil society, government, international organisations, etc., against employing child labour in cotton seed cultivation processes, seed companies are relocating and expanding their production to new areas situated in remote pockets where cheap labour is more readily available and there is less public attention about child labour^{xvi}. BT cotton cultivation has been relocated to impoverished and inaccessible areas to make use of cheap local (tribal) labour, migrant labour and trafficked children from the adjacent areas^{xvii xviii}.

The last five years have seen a clear shift in cotton seed production areas from Andhra Pradesh, Karnataka, Tamil Nadu and Maharashtra to Gujarat. In Gujarat, all new production locations are situated in remote tribal pockets, viz., Bodoli area in Vadodara district, Panchmahal district which is predominantly a tribal pocket, and Bayad, Shamlaji and Khedbrahma areas in

Sabarkantha district. In these new locations, most of the seed farmers are small and marginal landholders (of which majority are tribal people) who mostly depend upon their families (including children) for labour. Children and adults from tribal communities in the southern part of Rajasthan (Dungapur, Udaipur, Banswara and Khervad) are employed to work in the farms. Rajasthan being essentially a drought prone state witnesses a large-scale migration of labourers to other areas in search of wage work.

In case of Tamil Nadu as well the new seed production locations have been situated in remote tribal pockets, i.e., Karumandarai Hills in Salem district and Sitteri area in Dharmapuri district. Most of the farmers here are also marginal landholders with an average size of the cotton seed plot being less than 0.50 acres^{xix}. Hence, a clear link can be found between shifting of BT cotton seed production areas to backward areas inhabited by and adjacent to socially and economically deprived population and the increased child labour activities in these areas.

Process of Recruitment of Migrant Labour/Trafficked Children & Role of Middlemen

The recruitment of migrant labour and children for work in the cotton seed farms in Gujarat is mostly done through agents/labour contractors called 'Mates'. At times, recruitment also takes place with the help of friends and relatives who have already been working in the cotton seed fields. As Mates are residents of migrating districts, they exert a considerable influence on the local (tribal) people and society also acknowledges their contributions for providing earning opportunities to them.

Migration of tribal/indigenous population is usually seasonal as they prefer to return to their roots at least once or twice a year. They prefer to migrate in groups, preferable with families, friends and acquaintances. The tribals are simple people and their temperament of trusting people at face value has often been exploited by the Mates to their advantage. These people willingly send their children with the Mates to work in the fields for two-three months, not recognising the hazards these children are likely to face in the fields. In

cases, where family deny sending children to the field, Mates convince the child, and tell her/him where to meet from where they go to the field without parental knowledge. These children range between 8-16 years of age. During the field survey in Rajasthan, it was found that Mates usually recruit 50-100 children and their families from a village or group of villages for working in cotton seed fields in Gujarat.

For recruitment of child labour, there is collusion between Mates, farmers and transporters. Mates talk to the families of the children, fix the labourers as per the requirements of the farmers, collect the children at a common place, take them to the destination farms, settle them there, supervise their work, and at the end of the season settle accounts with the farmers and ensure safe return of the children to their homes. Mates provide a token advance of about Rs. 800-1,000 to the parents of the child. The balance wage amount is paid upon the return of the child. Mates are responsible for arranging transportation, place of stay and food for the child labourers and the money spent on these are deducted from their wages. In this way, migrant child labourers (and adult labourers) are completely dependent on Mates. Mates also have to ensure timely supply of required numbers of labourers for the farms. If some labourers leave work in between, then it is the responsibility of Mates to organise additional labourers. Mates are paid commission for the services they render while recruiting labour from nearby areas which is usually is Rs. 10-15 per day per labourer, which is deducted from the daily wages of the labourer.

It may be observed that as per the Indian law, payment of advances as discussed above violates the Bonded Labour Act (see later). Still, in these areas recruitment of labour against advances and bonded labour are common practices. Though, the above stated method of recruitment is often 'mis-termed' as migration at these fields, it violates the law of migration of labour and comes

under the ambit of trafficking for forced labour or exploitation of labour.

As per the United Nations Convention against Transnational Organised Crime (as known as Palermo Protocol), "trafficking in persons shall mean the recruitment, transportation, transfer, harbouring or receipt of persons, by means of the threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or a position of vulnerability or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person for the purpose of exploitation. Exploitation shall include, at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation, forced labour or services, slavery or practices similar to slavery, or removal of organs."

In relation to the meaning of forced labour, the Supreme Court of India has ruled in the case of People's Union for Democratic Rights (PUDR) vs. Union of India (1983) the following:

"...Any factor, which deprives a person of choice of alternatives and compels him to adapt one particular course of action may properly be regarded as 'force' and any labour or service which is compelled as a result of such 'force', it would be 'forced labour'..."

"...Where a person provides labour or service to another for remuneration which is less than minimum wage, the labour or service provided by him clearly falls within the scope and ambit of the word 'forced labour'...as described in Article 23 of the Indian Constitution."

Using the above definition of trafficking, it can be seen (from Diagram 1 below) how the method of recruiting children by Mates in Rajasthan for working in the cotton fields in Gujarat tantamounts to human trafficking for labour exploitation or forced labour.

Definition of Trafficking	Activities (What)	Recruitment	children hired for working in cotton fields (essentially for cross pollination activity)	Process of Recruitment of Children by Mates in Rajasthan for Cotton Fields in Gujarat
		Transportation	children collected at a common place and taken to destination farms, collusion between Mates and Transporters	
		Transfer	children handed over to the farmer/cotton seed labour	
		Harbouring or Receipt of a Person	children stay on or near the farms during employment	
	Means (How)	Fraud/Deception	false promises of better earning opportunities, not informed about health hazards involved	
		Abuse of Power	by Mates who influential people in the village, trusted by locals, maybe relatives of children	
		Position of Vulnerability	of children and their families, naïve and poor tribal people, limited employment avenues in the villages	
	Purpose (For)	Exploitation	for forced labour or labour exploitation as children work in unsafe conditions for long hours for wages below minimum wage rate/for low wages, and in most cases are unable to leave their employers unless their contract is over or the Mates come to collect them	

Diagram 1: Trafficking of Children under the “Garb” of Migration

Diminished Public Sector & Regulation

The presence of public sector in cotton industry especially for cotton seed production has diminished in the last few years. The public sector has been unable to compete with the private sector in developing better quality hybrids of cotton seeds due to lack of technological support and neglect in

conducting bio-technological researches in government universities and educational institute^{xx}. The role of the government in the liberalised economy has reduced since the introduction of the New Policy on Seed Development in 1988 which allowed foreign multi-national companies (MNC) to enter the seed market.

“With regard to cotton seeds, the government has subjugated its responsibility to the industry. Now we are in the hands of the seed industry.” – A senior officer of Society for Elimination of Rural Poverty (SERP), Hyderabad

The increase in BT cotton acreage in India following the introduction of BT cotton has created demand for BT cotton seeds. Farmers have been induced by seed companies to cultivate cotton seeds. At present, private seed companies, both MNCs and their Indian subsidiaries account for about 97% of the total cotton seed produced and marketed in the country as public sector seed companies are nearly invisible in the market. M/s Monsanto, owner of the BT gene operates in India through its joint venture company Mahyco-Monsanto Biotech Ltd. Other international seed companies that have entered the market include Unilever, Bayer and Syngenta which

have partnered with Indian subsidiary companies for developing hybrid cotton seeds (Refer Table 7 in Appendix 2). All the major Indian seed companies have sub-licensed BT gene from M/s Monsanto and other multi-nationals. In fact, the majority of the cotton seed farmers were using seeds from M/s Monsanto (Refer Table 8 in Appendix 2).

Due to diminished government regulations and lack of competition from a virtually non-existent public sector, seed companies have undertaken commercialisation of seeds by enticing farmers through aggressive and also false advertisements. In fact, newspaper advertisements have been one of the major sources of information for farmers for shifting to BT cotton cultivation. For the BT cotton farmers surveyed in the four states, advertisements in newspapers represented 5% of information received from all sources for cultivating BT cotton (Refer Table 9 in Appendix 2).



Image of a controversial advertisement by Mahyco-Monsanto for Bollgard II, a BT cotton variety that featured in Hindustan Times on August 30, 2011. The advertisement shows how farmers using the BT crop were profiting due to low bollworm attack and higher yields. A complaint has been filed against this advertisement and it has been challenged that the claims made on reduced insecticide usage, in-built plant protection, higher yields and increased income of farmers by Rs 31,500 crores are either false or unsubstantiated^{xxi}.

Also, illegal and uncertified varieties of BT cotton seeds have been proliferating in the market unchecked without any attention being paid to the medium and long term impacts of bollworm resistance on BT cotton. In the immediate terms, farmers cannot make anyone accountable for the losses they incur on account of these varieties especially as they become aware of crop failure only at an advanced stage of the crop maturing. The procurement prices fixed by the seed companies for the seeds produced by the farmers are low and not in tune with the high production costs incurred. The seed companies are merely concerned with their economic gains with little or no regard to interests of the farmers or the labour practices used by them such as employing children or illegal migrants or non-payment of minimum wages, etc.

Role of Seed Organisers

For BT cotton seed production, most seed companies operate through “seed organisers”, who act as intermediaries or middle men between seed companies and seed producers, i.e., the farmers. Seed organisers are contracted by seed companies for identifying farmers for cotton seed cultivation, supplying “foundation seeds” (both male and female genotype) and other inputs such as pesticides, fertilizers, etc., at fixed rates to the farmers. Generally, farmers willing to produce cotton seeds have to agree for a “package agreement” with the seed organisers to use specific brands of the inputs. Seed organisers are paid a commission for their services. Rarely do seed companies directly deal with the farmers and thus, seed organisers enter into contracts (mostly oral) with farmers on the conditions stipulated by the companies (Refer Table 10 in

Appendix 2). The terms of the contract involves a “buy back process”, where the farmer has to sell all seeds produced from the foundation seeds supplied. The seed companies/seed organisers fix the quantity to be produced by farmers, time of purchase, delivery of inputs, supervision requirement by company staff, complete buy back of seeds with no freedom to keep excess seeds and the procurement prices of cotton seeds to be paid to the farmers after proper testing of sample seeds. The terms of contract shift all control in the hands of seed organisers (and companies) and leads to loss of autonomy and increased vulnerability to exploitation for the farmers.

Cotton Seed Production Process

Seed production activities broadly can be divided into three stages. The first stage includes production of seeds at farmer's field. The second stage includes processing at ginning mills and selection of samples from seed lots for “GOT tests” (Grow Out Tests). The farmer is involved up to the second stage and bears all the costs up to this stage. The third stage includes seed testing, treatment and packing which is taken care of by the seed company itself. The company undertakes GOT in their laboratories to ascertain the germination percentage and genetic purity of the seeds. Once the seed lot passes the GOT, farmers receive their payments, seeds are treated with chemicals and packaged for sale.

Many times, seed organisers use the services of local/village seed agents and the facility of easy advance money made available for cotton seed cultivation to convince farmers to undertake production. About 65% of the farmers covered in the survey were informed by the village agent on behalf of seed organisers about seed cultivation and 25% felt attracted to the advance provided for purchase of inputs, meeting labour costs, etc. The loan usually referred as “advance” provided by the seed organisers to the farmers may or may not be obtained from the seed company. The seed organisers are at times seed retail business dealers and also act as money lenders.

The loan advanced is generally between Rs. 15,000 to Rs. 20,000 (US\$ 300 to US\$ 400) per acre of cotton seed area and may also depend on the trust between farmers and seed organisers. Though farmers are free to obtain loans from any source, in practice 67% of farmers surveyed were able to obtain loans only from seed organisers/money lenders with a monthly interest rate of 2% and a penalty of 1% per month in case of default on loan repayment with interest within the stipulated period. In 73% of cases, house was mortgaged and in 22% of cases land was mortgaged for the loan advanced to the farmers (Refer Table 11 in Appendix 2). This poses a considerable financial pressure on the farmers especially as payments for cotton seeds produced are usually received 9-12 months after receipt of the loan. Farmers receive payments only after positive GOT results which take about 3-5 months from the time of harvest (Refer Table 10 in Appendix 2). However, if the GOT test does not authenticate the reliability of the cotton seeds, the farmer cannot claim the payment. During

the field survey, 6% of the cases were reported to have failed the GOT test due to contamination. On an average, Rs. 25,923 loan amount was outstanding per farmer at the time of survey. For some farmers the outstanding loan has accumulated over last few years and this has led them to become captive seed growers for seed organisers.

“One gets tied to the whole process forever as the cotton seed production process is cost and labour intensive. Farmers have to seek loans at high interest rates and it is difficult to come out of this as there seems no end of the tunnel. Moreover, it is difficult to arrange continuity of labour supply. The returns are always after 9-12 months. Payments are even delayed on the pretext of GOT test for months.”

- A farmer at Sindhanur, Karnataka
(Source: Field Survey)

Control by the seed organisers, non-farmer friendly terms of contract and the financial pressure posed due the long payment cycle for cotton seeds produced and costly loan, - all have repercussions on employment of child labour in cotton seed cultivation which is a source of cheap labour.

No Price Control

Farmers in cotton industry have no control or say in the price that they can demand or expect to get for their own produce. With globalisation and opening up of the Indian economy, the domestic cotton prices are guided and influenced by international cotton price

movements. For instance, the price that Indian farmers get for their cotton produce may depend on the developments in China and other major cotton-producing regions.

For cotton seeds as well, the procurement prices are decided by someone else, i.e., the seed companies. Farmers surveyed for the study complained of low procurement prices of cotton seeds fixed by the seed companies. Thus, with no price control coupled with diminished government regulation, the farmers only end up being marginalised.

Labour & Other Laws : Awareness and Implementation

Farmers, labourers and families of child labourers lack sufficient knowledge and awareness about labour laws and others laws. The field survey conducted for this study confirmed this point. It was revealed that while labourers had little knowledge about laws relating to the compulsory right to education and child labour laws which prohibit hazardous work, they had comparatively better knowledge about minimum wages fixed by the government and the harmful health hazards that various work activities pose for children.⁴ As a result of this ignorance, labourers in the cotton industry do not benefit from the existing laws. Using this ignorance to their advantage, cotton/ cotton seed growers and seed companies flout the provisions of these laws.

4. Those employing children of their households expressed economic compulsions as the justification for making children as otherwise cotton and/or cotton seed cultivation will not be economically feasible.



Various Laws and Regulations

1) Child Labour (Prohibition and Regulation) Act, 1986 (CLPRA) : prohibits children below 14 years of age to work in any listed hazardous processes and occupations. Although CLPRA does not prohibit work by children in the agricultural sector, the list of hazardous occupations and processes given in CLPRA prohibits engagement of children in unsafe processes such as handling of pesticides and insecticides and processes involving exposure to excessive heat. It also provides for regulation of conditions especially number of hours of work, period of work, weekly holidays, health and safety measures at the work place, etc. All these provisions are flouted in case of children working on the cotton farms.

2) Minimum Wage Act, 1948 (MWA) : has a provision not only to ensure payment of minimum wage and overtime but it also has the provision for revision of wage every five years. Labourers especially tribal labourers have limited knowledge about their basic entitlements related to minimum wages. Labourers are generally paid less than the stipulated minimum wages and rarely paid for over time. In fact, wages are also deducted at times due to unsatisfactory work.

3) Bonded Labour System (Abolition) Act, 1978 (BLA) : suggests that there are four important stipulations that need to be

satisfied to be bonded labour. First, there should be an advance. Second, the worker should be doing work in lieu of that advance. Third, the wages paid are less than the minimum wage prescribed by the competent authority. Fourth, worker loses the right to move freely throughout the country. All these stipulations, as we noted above, are satisfied in case of the BT cotton workers irrespective of age, caste region and religion of the workers. In fact, the only one fact that workers are paid less than the minimum wage make them bonded labour as per the ruling of the Supreme Court of India.

4) Right of Children to Free and Compulsory Education Act, 2009 (RTE): asks for free and compulsory education for every child above 6 years and less than 14 years, under which the child cannot be expelled or withdrawn during this phase. However, the children working at the BT cotton seed farms do not get any education while working at the farms.

5) Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979 (ISMWA) : contains provisions to safeguard the interests of migrant workers and asks for registration of all establishments which hires more than five workmen and restriction on hiring migrant workers by any unregistered unit. Employers violate the law to avoid providing benefits to

migrant workers (child labourers) and don't get their establishments registered on the pretext of weak documentation. Additionally, a contractor/middlemen/trafficker in one state is used to recruit children (and other labour) to work in an establishment in another state. This has also been the case in BT cotton seed cultivation where children from Rajasthan have been recruited and trafficked through 'Mates' to work in farms in Gujarat.

6) Juvenile Justice (Care and Protection of Children) Act, 2000 (JJA) : defines a child as a person who has not completed 18 years of age. The Act demands protection of child employees against mental and physical exploitation which is not met in case of BT cotton and cotton seed cultivation where

children have to work for unduly long hours under unsafe conditions. The Act also prohibits the exploitation of a juvenile or child employee and is a cognizable offence.

Along with these national laws, there are various international Conventions (C) given by International Labour Organisation (ILO) for the welfare and protection of children and labourers such as C29 for Forced Labour, C105 for Abolition of Forced Labour, and C184 for Safety and Health in Agriculture, apart from C138 for Minimum Age, C182 for Worst Forms of Child Labour, as mentioned earlier. However, three Conventions, i.e., C138, C182 and C184 have not yet been ratified by the Government of India.

Skewed Supply and Value Chain

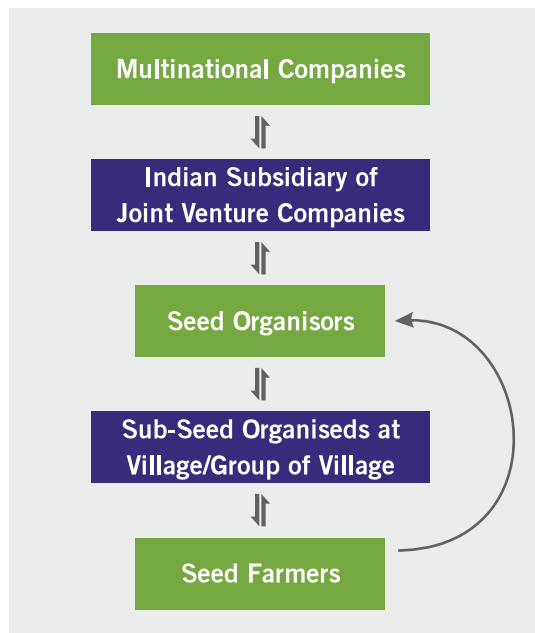
A major cause for the prevalence of child labour in cotton industry is the skewed supply and value chains of cotton cultivation, its final products (cotton textiles) and cotton seed cultivation in favour of the some actors. The range of actors involved from growing cotton to producing textiles include farmers, labourers, seed companies, chemical, fertilizers and pharmaceutical companies, ginning and yarn mill owners, manufacturers of textiles, national and multi-national textile retailers and designers. For cotton seed cultivation, the prime actors include farmers, labourers, seed organisers, and multi-national seed companies and their subsidiaries (Refer Diagrams 2 and 3 below). Companies, manufacturers and others

are organised, powerful with a large financial support and strong inter-links with other actors in the supply chains, while the farmers and labourers are unorganised, financially dependent with no individual or collective bargaining power. This imbalance in the supply chain leads to the marginalisation and exploitation of farmers and labourers such that their entry and terms of participation in the supply chains are pre-determined by the dominant power group. As can be seen from the above discussion, for the farmers this manifests in the form of high input prices, low procurement rates and the resultant thin profit margins. This further translates into unethical labour practices such as low wages and employment of children by the farmers.

Diagram 2
Supply Chain for Cotton and Textiles



Diagram 3
Supply Chain for Cotton Seed Production



It is known now that the earnings and profits from cotton and cotton seed cultivation (and textiles) are small and bare minimum at the lower end of the supply chain, i.e., for the farmers. However, this is not the case for those at the higher end of the supply chains where

profits are rather large. This can be seen from the value chains for cotton and cotton seed given below (Refer Diagrams 4 and 5). There is a very clear inequitable distribution of earnings from cotton and cotton seed cultivation among the different actors.



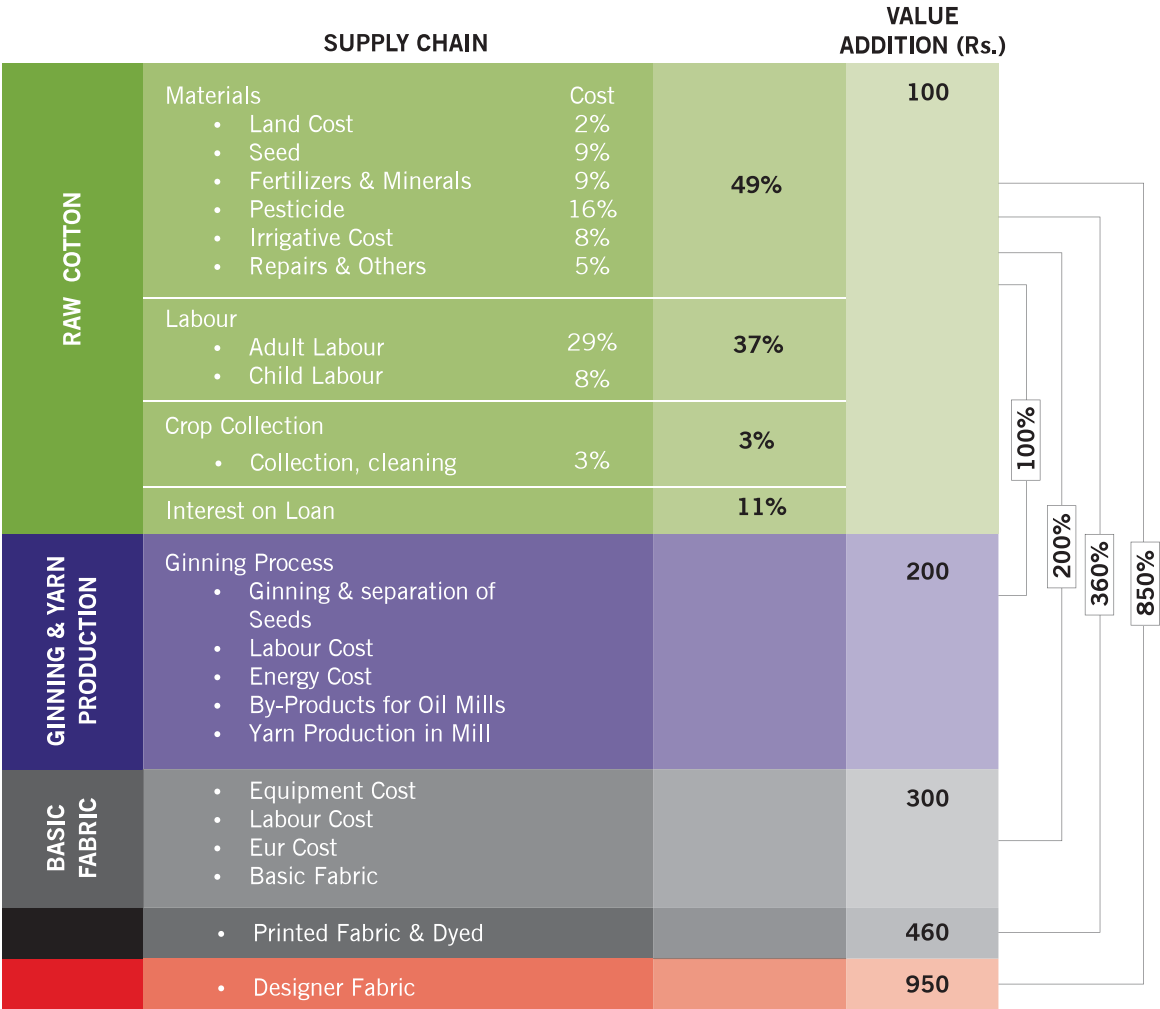


Diagram 4 : Value Chain of Cotton Production (and Textiles)

From producing raw cotton to transforming it into yarn and finally manufacturing a designer fabric, the value addition is a remarkable increase of 850%. Sadly, the farmers' share in this finished product which is valued at Rs. 950 (US\$ 19) and in the production of which the farmers have provided the basic input-raw cotton is a mere 10.5%. Also, adult labour's share is an embarrassingly low figure of 3% which is a complete contrast in terms of the labour effort. Surely, the huge shares of other actors such as manufacturers of basic fabric and of printed/dyed fabric of 31.5% and 48%

respectively can be shared with the cotton farmers and the labourers (adult) such that farmers are able to obtain fair returns from cotton cultivation and pay fair wages to the labourers. More importantly, child labour cost which is a miniscule value of only 0.8% of the final product can and ought to be certainly borne by the high-end actors in the supply chain having high margins. Definitely, employing children to save a cost of only 0.8% in producing the fancy designer fabric is avoidable (!).

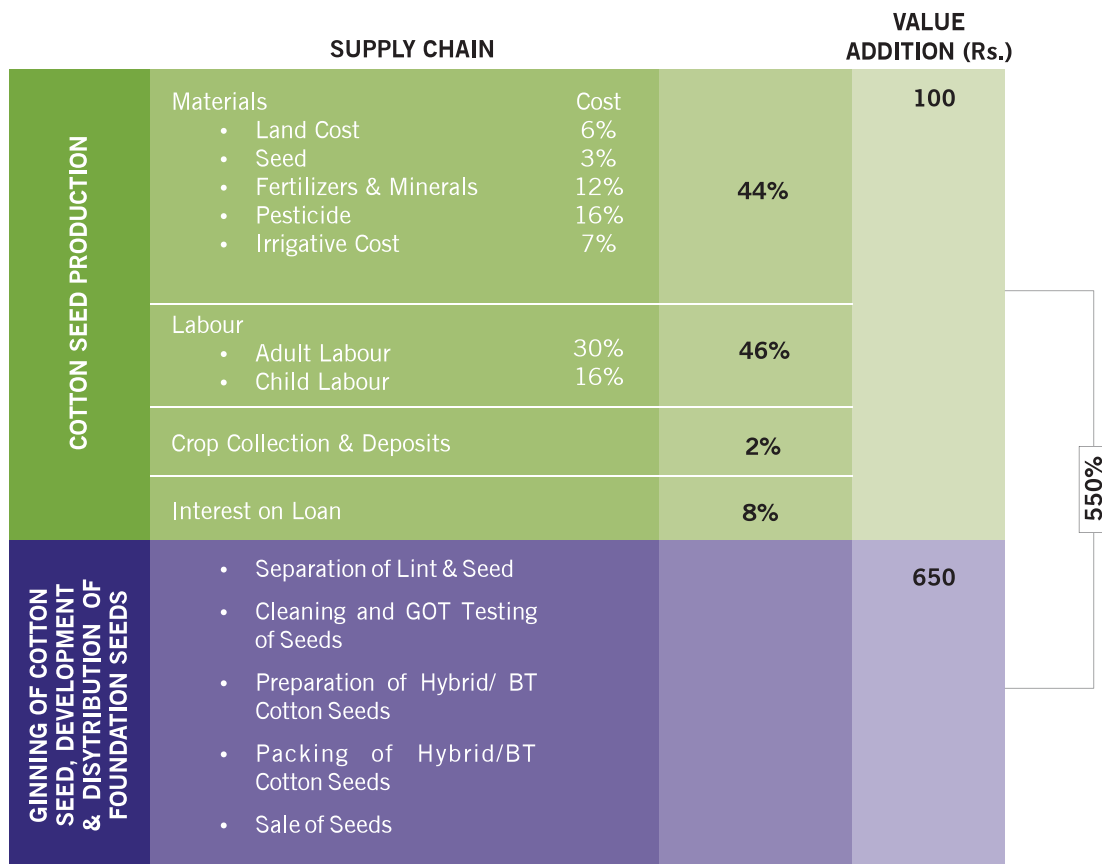


Diagram 5 : Value Chain of Cotton Seed Production

Similarly for cotton seed production with a substantial value addition of 550% from using foundation seeds for production to the sale of certified seeds, the child labour cost of only 2.5% is not justifiable.

Chapter 3 WORKING CONDITIONS

The cotton industry is highly labour intensive. Accordingly to the U.S. Department of Labour's Report 2011 on 'List of Goods Produced by Child or Forced Labour'^{xxii}, cotton is one the most common agricultural good that uses child and/or forced labour. As noted from the previous Chapter, since the farm size is relatively small for cotton and cotton seed cultivation, there is little scope for mechanisation. This is the case even for commercial cotton cultivation, leave alone cotton seed cultivation where rigorous labour is required for hybridisation of seeds and harvesting especially, plucking cotton and cotton seed pods. There is a high labour requirement for cotton and cotton seed cultivation straight from the stage of land preparation to harvesting (Refer Table 12 in Appendix 2). Thus, all kinds of labour, viz., family labour, regular labour, casual labour,

migrant labour and child labour (both local and trafficked) are continuously engaged in the cotton and cotton seed cultivation.

The plight of children engaged in cotton and cotton seed cultivation is deplorable. In case of Andhra Pradesh, Karnataka and Maharashtra, family child labour is engaged for 2-3 months during emasculation and pollination process for hybridisation of seeds. These children are forced against their wishes to discontinue schooling and work in the cotton farms. Hence, having remained absent from school for 2-3 months every year, unable to cope with the studies on their return these children eventually drop out from schools. Generally, girls are the major scapegoats as they are also needed for looking after their siblings and other domestic work.

Attendance Register showing drop in attendance rates on account of children's involvement in cotton seed cultivation

A group discussion in the Gadwal Elementary School at Mehboobnagar (Andhra Pradesh) clearly indicated the absentee rates during the cross pollination period. Attendance rates dropped to 20% during hybridisation period from 80-90% during other periods. Teachers expressed their unhappiness but could not do much against the wishes of the society. Parents also stated their reasons that in the absence of child labour, they would have to engage hired labour and the same would make it economically unviable to continue cotton seed cultivation. Majority of these parents are marginal farmers and had taken loans to continue cotton seed farming. Thus, their children supported them through intensive labour activity at the cost of their future education and even health. The children reported pain in the eyes, belly, and nails, nausea, headache and fever.

Work Hours

The working hours are strenuous beginning from dawn to dusk amounting to 9 – 10 hours per day. As a result of the time bound nature of work during cross pollination, children have to work continuously without break even during rains. In addition to farm work, many a time children have to also fetch water, cook food and clean the area as well as the utensils. There is hardly any time for studies, let alone leisure.

Table 13 : A Day in the Life of Children in Cotton Seed Farms in Gujarat

Time	Activity
4 – 5 A.M.	Wake up and freshen
5 – 5.30 A.M.	Go to the field /farm to check whether male flowers have opened up Identify the open male flowers
5.30 – 11.30 A.M.	Pluck open male flowers (200- 300 flowers per day) Granulate the plucked flowers Cross pollinate the granulated male flowers with pre-marked female flowers (The pollination would be for a minimum of 1,000-1,200 female flowers as each male flower is pollinated with 4-5 female flowers)
11.30-12 Noon 12-1 P.M.	Return to the houses/stay places Fetch water and prepare for cooking lunch
1-1.30 P.M.	Cleaning utensils and clothes Bathe
1.30- 2P.M.	Take lunch
2-3.30 P.M.	Rest and sleep
3.30- 7 P.M.	Return to the field/farm Emasculate female flowers (1,000-1,200) Mark them with coloured paper for next day's identification for cross pollination
7 P.M.	Return to the houses/stay places Cook meals and have dinner
8 P.M.	Go to sleep

Source : Field Work and Discussion with Working Children

Working Conditions

Children are engaged for emasculation, pollination, and plucking of raw cotton and cotton seed pods. The conditions in which the children have to work are harsh and inhuman. They have to work in extremely hot temperature conditions. The use of pesticides in BT cotton seed cultivation is high and children have to be in constant contact with the plants that have been treated with regular doses of pesticides (some of which are 'known' human carcinogens). Also, at the farms, there are no basic safety measures like caps for safeguard against heat, hand gloves, masks, etc. and in the majority of cases even shoes or slippers are not used. Hence, as a result of these deplorable working conditions, there are far reaching consequences on the health of children. In fact, a report published by Physicians for Human

Rights in 2003 pointed out that children (and adults) working in cotton seed farms are exposed to various health risks. Children working on the farms have reported health problem such as severe headaches, nausea, weakness, convulsions, pain in joints, respiratory depression, etc. There have been few cases of children's death due to pesticide exposure in Kurnool district of Andhra Pradesh.

Poisonous Pesticides Take the Lives of Three Children

Newspapers in Kurnool district, Andhra Pradesh widely reported death of three children due to pesticide exposure. The children were asked to perform both operations of spraying pesticides as well as cross pollination. Consequently, children were exposed to pesticides and insecticides for prolonged periods. On June 29, 2004, Mallesh (13 years) of Dudekonda village and on July 3, Paramesh (8 years) and Bhoolakshmi (12 years) of Rampur village died of exposure to poisonous pesticides.

Living Conditions

In case of migrant labourers and trafficked children, arrangements for stay are made either by the labour contractors in the vicinity of the farms or by the farmers/land owners within the farm premises or by the labourers themselves. Similar is the case for arrangements for food. However, where labour contractors or the farmers provide food, expenses for the same are deducted from their wages.

It was found that the housing conditions provided are very basic without any infrastructure. Most of the structures were kutcha, i.e., temporary/makeshift arrangements made of mud. In many cases child labourers and others stay in storerooms where fertilizers and other agricultural products are dumped. It was noted that on an average, 5 persons share a room of the size 10 feet by 8 feet with hardly any ventilation. Many a times, young girls and boys (essentially trafficked children) have to share the same room with adults. There have been several reported cases of sexual harassment inflicted on young girls and even boys.

There are no electricity and toilet facilities in most of the houses. Young girls (and women) have to defecate in open fields. Also, children may also have to sleep in the open and even during rains when the ground gets soggy and waterlogged. There have been reported cases of deaths due to snake bites caused by sleeping in the open^{xiii}.

Wage Rates

The wages are fixed and paid for the number of days of work in the farms and wage rates vary from state to state. The field survey noted that the wage rate was the least for Gujarat (Rs. 76, i.e., US\$ 1.52) and highest for Andhra Pradesh (Rs. 150) (Refer Table 14 in Appendix 2). However, in most cases [for Andhra Pradesh (for cotton plucking operations), Gujarat and Karnataka] these wages were lower than the stipulated minimum wages⁵ as can be seen from Table 15 below. Even if the wages were higher than the minimum wage rates, the “actual take home” wages were low on account of deductions for unsatisfactory work and provisions of food, stay, transport, medical aid, etc.

Table 15 : Actual Wage Rates vs. Stipulated Minimum Wage Rates

State	Wage Rate Paid Per Day (Rs.)	Stipulated Minimum Wage Rate Per Day (Rs.)
Andhra Pradesh	150	176 (for cotton plucking)
		112 (for ploughing, sowing, harvesting, weeding, digging, etc)
Gujarat	76	100
Karnataka	130	145
Maharashtra	124	120

In case of child labourers trafficked from Rajasthan to Gujarat to work in the cotton seed cultivation, the average wages received was Rs. 40-45 (\$1) per day after deducting the commission of the 'Mate'. The parents of these children informed that they would usually receive Rs. 1,500-2,000 per child for the whole season (i.e., April – October) after deductions for transport, stay and food charges. These low wages explain the reasons for relocation of cotton seed farms to Gujarat. The wages are paid in two installments, i.e., in the beginning as an advance (usually Rs. 800-1,000) and in the end after the children return home (usually Rs. 700-1,000). If the land owner is not satisfied with a child's work, wages are even deducted for the day. Further, during the initial period of training which lasts for 2-5 days depending upon the child's grasping ability, no wages are paid.

5. The stipulated wage rates are for the cultivating season covered in the field survey for this study.

Case Histories

Stories of Four Young Lives 'Making their Childhood' in Cotton & Cotton Seed Cultivation

1. Rekha is now a 16 year old girl and belongs to the Balicha village in Dungerpur, Rajasthan. It has been 4 years since she has been working in BT cotton farms. The local “Mate” took her along with 20 other children from around the village to be introduced to this farm work. She had just completed the BT cotton work and returned back to her family. It was yet to be decided whether she would ultimately go for working in the brick kilns or stay at home during the winters.

Her day would begin around 6 a.m. in the farm when the emasculation procedure would start and would continue till lunch time. The procedure is quite stressful as the separated male part of the flower has to be manually mingled with the female flowers. At lunch time, the children were expected to cook for themselves with vegetables, etc. provided by the owner of the farmer and the cost of the same was deducted from their salary. The same was done for the accommodation provided to them. Rekha was also expected to do some of the household work for the farmers in addition to the farm work.

The total hours of work she would put in were 10-12 hrs including the household work. She would be hired usually during the peak season for cotton cultivation, i.e., months of September to October and then she would continue to stay on until the plucking was over. The usual duration of the stay would be 2-3 months and she would earn around Rs. 1,500 at the end of the season.

2. Yasodha is a local girl whose cousin also works in the cotton farm. Parents normally have no issues in sending their daughter to the farm especially when someone else from the family is already working there. Yasodha was in the field for the first time and she quite enjoyed her new found freedom. Bubbling with life, she excitedly narrated how her day began with plucking of the cotton and ended with socialising with her friends. However, she was not too happy about the accommodation arrangements at the farm. They were forced to live in the tents which they had to share with seven other girls and had to sleep on thin straw mats instead of mattresses.



The farm, in which Yasodha worked, was the worst in terms of facilities. She had longer working hours, i.e., 12-15 hours and along with plucking she had to also undertake additional responsibilities such spraying insecticide and pest control. At this farm, food was barely edible and this was the same in all the other farms.

It was from Yasodha that the field surveyors learnt about the death of a young girl who was being harassed by the farmer. Along with Yashoda, there was a young couple who was also working on the farm. Though under-aged, they were married. The owner of the farm started demanding unsolicited attention from the young girl and had put pressure on the boy as well. After a few days it was found that the girl had committed suicide by drinking pesticide. The entire issue was hushed up and the farmer it seemed had given Rupees 50,000 to the boy so that he would not go to the police.

3. Parvati is 10 years old and lives in Goiraphala. This was the first time she had been to the cotton farm but she has been working for the past few years. Earlier she was working at a brick kiln while her brother Ramesh used to work in the farms. However, this year as her father was sick, Ramesh had to stay back and Parvati was asked to go in his place. She felt that the working conditions would be better in the cotton fields as compared to the brick kilns. The kilns were dirty and hot. The dust particles would make her eyes water, and she would choke and cough a lot. No doubt the conditions in the cotton fields were better but the pesticides affected her health badly. She worked hard and had to put in around approximately 8-10 hrs on the field every day. She has lost weight and looks much younger than her age. Her eyes are always sore and she complains of eye irritation.

While in the fields, Parvati got an eye check up done but the expenses for the same were deducted from her wages. There was no medical facility available and all health related instruments and medicines for common ailments were missing in the farms. Even the safety kit like gloves and mask were hardly made available by the farmers.

4. Laxman is a young boy aged 10 years who had run away from his village and joined his friends on the cotton farm. He was taken to the farms through the same 'Mate' who had engaged his friends on the farm. His father always insisted that he goes to the school but Laxman would not listen to him. He hated going to the school and missed his friends. He loved the work on the farm and found it better than attending school. He was proud of the fact that he had earned money by working in the farm. Although it was only a meagre amount of Rs. 1,800, it made him feel responsible and grown up.



On the farm he had to work from dawn to dusk, but did not mind it even though four hours of school were arduous for him. His work involved pollination and plucking.

The engagement of children in cotton and cotton seed cultivation is a matter of concern and is detrimental not only for their families and the children themselves, but for others as well, i.e., the government, seed companies, and the society at large. As mentioned earlier, there are about 400 thousand children engaged in the cotton industry and are thus deprived of their right to study and learn. Studies have shown that providing education to all can have positive effects on the economic development and growth of a country⁶. It is needless to say how trapping these children in labour will adversely impact the national income in the long-run. For seed companies and others, following unethical labour practices cannot be profitable and sustainable in long term. With companies being under regular check for ethical business and corporate social responsibility, such malpractices would only invite criticism from NGOs, consumers, etc. and be damaging for their reputation. Thus, prevalence of child labour in cotton industry (and child labour in general) is everyone's problem and needs to be addressed jointly on a priority basis.

The issue of child labour in cotton and cotton seed farming is actually a sub-set of the issue child labour in agriculture. The phenomenon of child labour in agriculture is widespread with about 60% of child labourers around the world being engaged in agriculture as per ILO estimates. A wide range of factors make child labour in agriculture difficult to address, viz., a large and disparate population in rural areas, children starting work in rural areas at an early

age, lack of regulation in agriculture, denial of education due to limited or non-existent access to schools in rural areas, etc. The establishment of the International Partnership for Cooperation on Child Labour in Agriculture in 2007 has been an important step for the elimination of child labour in agriculture. The International Partnership comprising the International Labour Organisation (ILO); Food and Agriculture Organisation (FAO); International Fund for Agricultural Development (IFAD); International Federation of Agricultural Producers (IFAP); International Food Policy Research Institute (IFPRI), representing the Consultative Group for International Agricultural Research (CGIAR); International Union of Food, Agricultural, Hotel, Restaurant, Catering, Tobacco and Allied Workers' Associations (IUF) aims to:

- promote cooperation and achieve policy coherence on child labour among the partners, and to develop policy and programme links especially at the field level
- create awareness of and mainstream child labour concerns into existing activities, programmes, and projects of agricultural organisations and help agricultural agencies and bodies to understand how the elimination of child labour in agriculture, especially hazardous child labour, contributes to achieving organisational mandates;
- promote action and cooperation in operational activities aimed at improving rural livelihoods, creating alternative income-generating activities;

6. A recently completed study from 50 countries established that every extra year of schooling provided to the whole population can increase average annual GDP growth by 0.37%.

- promote action and cooperation in operational activities to ensure that children do not carry out hazardous work in agriculture;
- promote opportunities for decent youth employment in agriculture and in rural areas

As inferred from these aims tackling child labour in agriculture surely requires stepping back to consider the much bigger picture of promoting rural programmes aimed at improving rural livelihoods. Since agricultural child labour is rooted in the livelihood systems of rural areas and the economic vulnerability of families, rural development programmes aimed at improving rural livelihoods, creating alternative income-generating activities, and addressing health and safety in agriculture have a critical role to play in reducing the use of child labour and the level of hazards and risks associated with it. Also, any sustainable solution to child labour in agriculture must be linked to ensuring that farmers are able to obtain fair prices for their products. Key to achieving this is building strong rural institutions to protect the interests and livelihoods of those who make their living in rural areas. This includes developing and strengthening the capacities of farmers' organisations and agricultural workers' trade unions to collectively bargain to improve adult incomes, wages and labour standards. Access to and quality of education in rural areas are deficient which contributes to the downward spiral of rural poverty and endemic child labour. Thus, ending engagement of children in agriculture also requires the government to fulfil its responsibility for providing access to free, public and good quality primary education to all children.

Tackling child labour in agriculture must be allocated the priority in future development programmes and actions of the government. There needs to be an improved knowledge base, the introduction of more efficient and effective resources, the implementation of sustainable and long-term programmes and the mainstreaming of child labour across policies, programmes and legislative frameworks.

Given below are the recommended actions that various stakeholders/parties should take for addressing the issue of child labour in cotton and cotton seed growing. Also, included are the recommendations for improving the overall labour conditions in cotton and cotton seed farming.

For Government

- Ensure the enforcement of various child labour laws including effective remediation and rehabilitation of child labourers
- Promote communication, coordination and collaboration between various government departments and law enforcement agencies for “child friendly” policies, programmes and action
- Rigorously enforce the Right of Children to Free and Compulsory Education Act 2009 throughout the country to ensure free and compulsory education to all children up to 14 years of age
- Meet the commitments for the ratified Palermo Protocol for human trafficking
- Inclusion of agriculture in the list of hazardous occupations and processes under the Child Labour (Prohibition and Regulation) Act, 1986

- Ratify ILO Conventions, C138 for Minimum Age, C182 for Worst Forms of Child Labour and C184 for Safety and Health in Agriculture
- Strengthen labour inspector mechanism through enhanced capacity building and training of labour inspectors for understanding and tackling child labour and labour violations in agriculture
- Provide support and assistance to cotton (and cotton seed) farmers through policies for subsidised loans and inputs, irrigation facilities, warehousing facility and shifting to alternate crops
- Facilitate education and awareness of farmers for good agricultural practices, farmers' rights, decent working conditions on farms and child labour
- Play a significant role in price fixation in cotton industry such as for procurement and selling price of cotton seeds
- Encourage and promote research for development of better varieties of cotton seeds in agricultural universities and institutes
- Participate actively in ensuring ethical practices are followed by corporations in supply chains, by evolving mandatory disclosure practices in production of goods

For Gram Panchayats (Village Councils)

- Educate villagers including farmers and families of children working on the farms about the ills of child labour
- Create awareness amongst labourers and families of child labourers about their entitlements under various labour laws and other laws

- Collaborate with Mates/local labour contractors for checking incidences of trafficking and child labour, and promote safe migration practices
- Work in tandem with the government/state governments to provide and/or improve education and development facilities in the villages
- Work with the farmers groups to understand their needs in terms of contract farming, labour recruitment, etc.

For Corporations (Seed, Textile Manufacturing Companies, etc.)

- Adoption of farmer friendly business policies and honest marketing by seed companies
- Become aware of labour violations including use of child labour in all the levels of the supply chain especially the neglected lower levels (i.e., stage of raw materials)
- Ensure the implementation of company codes of conduct and other ethical standards and norms throughout the supply chains
- Establish clear policies, procedures and responsibilities for identification, withdrawal and remediation of child labour from the supply chains
- Awareness, training and capacity building of the actors in supply chain (such as seed organisers, ginning and yarn mills, textile designers, etc.) on labour standards, child labour and ethical practices
- Greater engagement, collaboration and communication among all the actors in the supply chain including the workers

and their families on child labour and decent work standards

For Farmer Organisations and Associations

- Lobby with government for farmer friendly policies such as pricing, export and import of agricultural products
- Advocate with policy makers, corporations, etc for access to inputs and services, including agricultural credit
- Support small and marginal farmers in unionising and improving their bargaining power

For Civil Society

- Community groups, non-government organisations, teachers organisations should focus on fostering an enabling environment that addresses the drivers of child labour in cotton industry
- Craft a culture of communication, collaboration and engagement with different stakeholders (between civil society, civil society and government, civil society and corporations, etc.) to end child labour and other labour violations

- Training and development of all stakeholders (farmers, labour contractors, seed organisers, seed companies, textile manufacturers and designers, etc.) to invest them in the idea of abolishing child labour and to bridge the capacity gap
- Support in creating public awareness and a positive policy change in favour of child and education rights
- Collection, analysis and dissemination of data on child labour in cotton industry as well as in agriculture and rural areas
- Promote ethical consumerism

For Consumers

- Put pressure on companies especially the cotton textiles and garment manufactures to have child labour free supply chains, including the raw materials
- Demand disclosures on the all stages of product for use of child labour, trafficking, forced labour (slavery) (if any) in the production process
- Act as local, national and global watchdogs for the behaviour of international corporations

A cross-sectional research design was adopted to have proportional coverage in the 4 selected states. In consonance with the research design envisaged, a stratified two-stage sampling design was employed with blocks and villages as the first geographical strata or as the primary sampling units (PSU). All cotton farmers/BT cotton farmers and BT cotton seed farmers were eligible in the selected villages as the secondary sampling units (SSU). To measure the key objectives and attributes, sample size should be statistically adequate to identify and measure these attributes. The sample size must be of statistical significance.

The sample size required to assess these attributes considered:

- the actual size to represent the universe by designing sample size which is robust enough to even detect a magnitude of 10% at the village level
- the appropriate significance level, i.e., assigning probability to conclude that the observed phenomena are a reflection of effort and did not occur by chance, i.e., at 95% level

Based on the above, the required sample size (n) for a variable of interest as a proportion for a given group can be given by:

$$n = D [(Z_a + Z_b)^2 (P_1(1 - P_1) + P_2(1 - P_2)) / (P_2 - P_1)^2]$$

Where:

D = design effect (assuming a design effect of 1.3)

P₁ = the estimated proportion at the time of the first survey

P₂ = the proportion expected at the time of survey

Z_a = the z-score corresponding to a level of significance

Z_b = the z-score corresponding to the power

The required sample size taking into account the key attributes in the major cotton producing states at 95% level came out to be 4 states, 11 districts, 28 blocks and 46 villages.

Selection of Farmer/ Labourer/ Child Labourer Households

Household listing exercise was done within the villages to list all eligible farmers. Thirty-five farmers each engaged in cotton, BT cotton and BT cotton seed farming from each state were selected at random after attaining robust estimates of the household listing and mapping exercise. The objective of a mapping and listing exercise was to ensure that all households in the PSU were covered during the household listing exercise. Household listing exercises were carried out in the study area by the data collection agencies using the household listing form. Household listing sheet was finalised in

mutual consultation with the farmers and village community to obtain a complete list of all eligible respondents living in a household along with their relevant details.

Location Map

A location map of farms of the selected farmers was also prepared to relate it with the other locational parameters. This helped the main survey team in locating the Primary Enumeration Unit, i.e., the households. The location map also had a commentary by the mapper which not only specified the easiest routes but also specified the salient geographical features of the farm.

Training and Capacity Building

The listing and mapping training was conducted for two days. The training included briefing the investigators about the basics of household listing and mapping and practical experience of listing and mapping in the field where they were required to work. The training for the survey team included lessons on survey objectives, survey tools, sampling design and expected data quality. The training consisted of a combination of classroom training and practical experience. Before each training session, all researchers and field staff went through the field manual carefully along with the schedules. During the training, interviews were conducted in front of the class by two of the trainers as an example of the interviewing process. During this phase of training, the schedule sections, questions and instructions were discussed in detail. Facilitators practiced reading the questionnaire aloud to another person so that investigators became comfortable doing it themselves. The next phase of training was role playing in which an investigator practiced by interviewing another investigator. One person was the interviewer and the other was the respondent. The next phase of the training was in the field for practicing the schedule. Each interviewer was observed during the first two days of field work so that any errors made were caught immediately. Additional observations of each interviewer's performance were made during the rest of the field work.

Spot Check Observation

This included the following:

- Checking that the questions are asked in the right manner and interpreting the answers correctly
- Spot checking some of the addresses selected for interviewing to ensure interviewing of the correct household
- Spot checking some of the addresses selected for the interviewing to ensure correct identification of each schedule to ensure that it was complete and internally consistent
- Meeting with each member of the team on a daily basis to discuss his/her performance
- Solving any problems that the interviewer might have faced

Back Check and Validation

Field executive ensured that for all sampled area wherein the completion rate was found to be low or seemed to have a problem, back checks were done by himself or the supervisor of another team. A powerful tool in checking the quality of the data was to systematically check the information for particular households. This was done by conducting a short re-interview in some selected households and checking the results with what had been collected by the interviewer. Re-interviews helped reduce the types of problems that affected the accuracy of the survey data. After field editing, questionnaires were returned to the main survey office for data processing which consisted of office editing, coding of others category in open ended questions, data entry and editing inconsistencies found by the computer programmes.

Scrutiny and Coding

The scrutiny facilitated easy entry into the data entry program. The “other” responses were coded. The data collection team handled the data entry and validation work of the survey. CSPro software was used for data entry. After data entry, the obvious errors that occurred during the stages of data collection, coding and input were removed. An edit program was specified. This program looked into missing values, skips, range checks and checks for inconsistency.

Software used for Analysis

The choice and nature of data analysis depended on several factors such as types of variables, nature of variables and the mode of analysis performed. In this study both SPSS 17.0 and STATA 8.0 was used for analysis. While SPSS 17.0 was used for basic analysis and for generating tabulated reports, descriptive statistics, and complex statistical analyses, STATA was used for advanced analysis.

Sample Validation t-Statistics Test

An estimation of sample size was conducted to measure whether sample mean of cotton yield is within the estimated levels of the yield of cotton determined for the country by the Cotton Corporation of India estimates.⁷ T-Test was conducted to examine the sample mean of cotton yield from the selected households with the actual mean of cotton production as an estimate by the Cotton Corporation of India. The t-statistic to compare a sample mean to a population mean was calculated using the following formula:

7. David. S. Walonik, (2007), SURVIVAL STATISTICE, Published by, StatPac, Inc., 8609 Lyndale Ave. S. #209A, Bloomington, USA, pp 78-83. Occasionally, the mean of the population is known (perhaps from a previous census) In this case mean yield of cotton for the country as well as for the selected states was provided by the Cotton Corporation of India. After drawing a sample from the population, the mean yield of cotton was compared the mean cotton yield of the sample. If the means are not significantly different from each other, one could make a strong argument that the sample provides an adequate representation of the population. If, however, the mean of the sample is significantly different than the population, something may have gone wrong during the sampling process.

$$t = \frac{\bar{x} - \mu}{\sigma_{\bar{x}}}$$

$$df = n - 1$$

Where

t is the t-statistic

df is the degrees of freedom

\bar{x} is the mean of the sample

μ is the mean of the population

$\sigma_{\bar{x}}$ is the standard error of the sample mean and is given by the following formula

$$\sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}}$$

n is the sample size

Looking at a table of two-tailed critical t-values, we see that with 34 degrees of freedom, the t-statistic must be greater than or equal to 1.96 in order to be significant at the .05 level. Since our t-statistic is lesser than the critical value, we accept the null hypothesis and conclude that there is a not a significant difference between the sample and the population mean.

Thus, the t-test was performed to compare the mean of our sample to the mean of the population. The t-statistic was insignificant at the critical alpha level, $t(34)=3.60$, $p=.0001$. Therefore, we accept the null hypothesis and conclude that our sample was not significantly different than the population sample.

Appendix 2 SUPPORTING TABLES

Table 3 : Source of Irrigation (Percent Surveyed Households)

State	% Net Sown BT Irrigated Areas	Percent BT Irrigated Area by Source of Irrigation			
		Tube Well (Diesel)	Tube Well (Electrical)	Canal	Tank
Andhra Pradesh	75	6	94	-	-
Gujarat	88	23	74	3	-
Karnataka	95	-	20	77	3
Maharashtra	32	87	2	-	11
Combined	78	19	71	8	2

Table 4 : Landholding Size of Surveyed Farmers (Cotton and BT Cotton Farmers)

State	N	Average Land Size (acres)	Percent Households Land Size (acres)					% BT Cotton Area to NSA*
			<1	1-3	3-5	5-10	10+	
Andhra Pradesh	35	6.26 (4.24)	4	26	25	31	14	60
Gujarat	141	5.18 (3.76)	3	37	29	26	6	45
Karnataka	45	7.10 (6.09)	3	34	14	31	17	48
Maharashtra	35	4.60 (4.47)	5	38	16	25	16	40
Combined	256	5.25 (3.96)	3	35	24	29	9	47

Table 5 : Landholding Size of Surveyed Farmers (Hybrid/BT Cotton Seed Cultivation)

State	N	Average Land Size (acres)	Percent Households Land Size (acres)				
			<1	1-3	3-5	5-10	10+
Andhra Pradesh	30	6	27	37	20	7	9
Gujarat	70	4	14	44	27	11	4
Karnataka	30	4	13	53	23	4	7
Maharashtra	15	6	33	27	27	13	-
Combined	145	5	19	43	26	9	3

Table 6 : Loans Drawn by BT Cotton Farmers

State	N	% Farmers Drawn Loan	Source of Loan		% Mortgaged House/ Land	Average Loan Drawn per Farmer Last Year (Rupees)	% Average Interest Rate Per Month	Outstanding Loan Average Per farmer (Rupees) 2010
			Bank	Money Lender/ Others				
Andhra Pradesh	35	45	44	54	68	15,616	1.8	26,835
Gujarat	70	28	10	90	75	5,985	2	8,589
Karnataka	35	30	78	22	58	17,689	0.60	33,967
Maharashtra	35	35	55	45	78	15,980	1.70	28,289
Combined	175	33	20	68	73	8,680	1.80	15,890

Table 7 : Major Multi-National / National Cotton Seed Companies

Name of MNC	Indian Subsidiary
Monsanto-USA	Mahyco
	Mahyco-Monsanto Bio-tech td
Advanta-BV (The Netherlands)	Advanta India
Syngenta-AG (Switzerland)	Sygenta- India
Bayer (Germany)	Proagro
Emergent Genetics (USA)	Mehendra Hybrids
Unilever (The Netherlands)	Paras Extra Growth Seeds and Hindustan Lever Limited
International Dupont	
	JK Seeds, Raasi, Ankur, Nuziveedu, Tulasi, Vikram, Vibah, Nath Bio, Ajeet, Lakshmi

Table 8 : BT Cotton Seed Varieties used for Cotton Seed Cultivation by Farmers Surveyed & Seed Companies Working for

States	BT Cotton Seed Varieties Used	Company For Which Farmers were Working for
Andhra Pradesh	Mallika, Nuziveeda, Ankur, Vibha, Rasi-500 and 501, Brahma	HLL (Brahma), Syngenta (Sandocot 35)Mahyco-Monsanto, Ankur, Tulasi, Mallika, Monsanto, JK Seed, Bayer and Du-Point.
Karnataka	Monsanto, KSSDS	Mahyco-Monsanto, JK Seed, Raasi, KSSDS
Gujarat	Monsanto, Ankur, Nigam, Ajeet, Mikro, Vikram, N.C- 641, Newjic, Biosid, S-641, T 201, 211, K 2060	Vikram, Mahajan, Comonsel, Ajeet, Vibha, Nath Bio, Avani seeds, Nuziveedu seed Ltd, Narmada Seed Agency, Aravali Farm services.
Maharashtra	Sandocot 35	Mahyco-Monsanto, HLL (Brahma), Syngenta, Krishdan, Yashoda, Ajeet, Sheetal

Table 9 : Information Sources for Using BT Cotton (Percent)

State	Newspaper	Pamphlet	Radio	Other Farmers	Others
Andhra Pradesh	3	6	3	71	16
Gujarat	7	-	-	90	3
Karnataka	6	-	14	66	14
Maharashtra	23	12	5	52	8
Combined	5	1	5	70	19

Table 10 : Hybrid/BT Cotton Seed – Contract and Production Terms

State	% Farmers Signed Contract	% Type of Contract		% Farmers Approached for Cultivation			% Delayed Payment	Received Payment After (Months)		
		Oral	Written	Agent	Self	Other		3	3-5	5
Andhra Pradesh	76	94	6	19	61	19	14	30	35	35
Gujarat	87	-	100	76	7	17	24	45	25	30
Karnataka	97	97	3	13	36	52	42	55	35	10
Maharashtra	100	100	-	72	20	8	81	40	30	20
Combined	92	96	4	65	24	21	48	45	20	35

Table 11 : Loan Drawn by Hybrid/BT Cotton Seed Farmers

State	N	% Farmers Drawn Loan	Source of Loan			% Mortgaged House/ Land	Average Loan Drawn per Farmer- Last Year (Rupees)	% Interest Rate Per Month	Outstanding Loan Average Per farmer (Rupees) 2010
			Bank	Money Lender	Seed Organizer				
Andhra Pradesh	30	80	42	4	54	78	43,616	1.8	36,816
Gujarat	70	10	-	-	100	80	10,985	2	8,642
Karnataka	31	87	59	7	34	85	37,689	0.80	43,967
Maharashtra	35	31	55	16	29	86	21,980	3	38,285
Combined	166	55	20	13	67	84	20,680	2.1	25,923

Table 12 : Cotton Cultivation Activities and Labour Requirement

Activity	Labour Types Engaged	Period of Activity
Land Preparation (i.e., making raised beds for irrigation channels)	Family labour, Hired labour both Male/ Female	5-10 days 10-12 hours per day
Sowing of Seeds	Hired labour, Casual Labour – Both Male/ Female	5 days 10-12 hours per day
Applying Fertilizers	Hired Labour- Mostly Males	3-5 days 8-10 hours per day
Irrigation	Family Labour/ Hired Labour Regularly on fixed days	4-5 irrigation days per months (depends upon temperature) 8 hours per day
Weed Control/ Stalking/Pruning	Family Labour/ Hired Labours- Mostly Women and Children	Weekly schedule 8-10 hours per day
Pest Control	Hired Labour/ Mostly Male- 3-5 Sprays during Maturation Period for BT Cotton	3-5 sprays during the crop calendar 8 hours per day
FOR COTTON SEED ONLY Cross pollination Process (i.e., emasculation and pollination)	Hired Labour- Mostly Migrant Family Labour- Male/ Female/ Children Migrant/Trafficked Labour - Adults and Children	60-90 days continuously without break 10-12 hours per day
Harvest of Crop	Family Labour, Hired Labour, Casual Labour, Child Labour	15 days 8-10 hours per day
Seed Extraction and Cleaning	Ginning Mills	5-10 days

Table 14 : Work Conditions and Wages

State	% Regular	% Casual	% Receive Wages			Wages Per Day Work Place	Wages / Day Home	Work Hours/ Day	Work Days/ Month	Wages Deducted due to Unsatisfactory Work
			Cash	Kind	Other					
Andhra Pradesh	20	80	98	2	-	150	70	8-9	20	8
Gujarat	80	20	95	5	-	76	50	9-10	24	10
Karnataka	100	-	87	10	3	130	100	8-9	20	5
Maharashtra	73	27	100	-	-	124	100	8-9	22	7

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