INDIA-AFRICA COOPERATION
ALONG THE COTTON VALUE
CHAIN

INDIA, 15-26 NOVEMBER 2010
Mention of firm names and commercial products does not imply the endorsement of ITC.

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Report and Pictures by: Cynthia Zijlstra-Adriano, ITC

FOR FURTHER INFORMATION, PLEASE CONTACT

Matthias Knappe
Programme Manager for Cotton, Textiles and Clothing
Sector Competitiveness
International Trade Centre
Palais des Nations
CH-1211 Geneva 10
Switzerland

Tel.: +4122 730 0111
E-mail: knappe@intracen.org

Cover photo: Participants visit ALOK Industries Limited - one of India’s largest vertically-integrated textile companies. Picture shows textile worker printing labels on embroidered fabrics using a silk screen process.
India – Africa Cooperation along the Cotton Value Chain
Mumbai, Nagpur and Ahmedabad
15 – 26 November, 2010

Introduction

The ITC African Cotton Development Initiative consists of three main components:

1. **Building cotton trading capacity in developing countries** through the Cotton Exporter’s Guidebook published in 2008. To further reach out to cotton stakeholders around the world with a focus on Africa, the ITC developed in 2010 a multi-lingual website on the Cotton Guide.

To access the online cotton exporters’ guide, click [http://www.cottonguide.org](http://www.cottonguide.org)

2. **Facilitating South-south cooperation** in cotton and cotton value-addition including:
   a) Learning from successful cotton producing countries in the south;
   b) Developing capacity to transform cotton through training;
   c) Sourcing cotton inputs from other developing countries, and
   d) Encouraging Intra-African cooperation.

3. **Promoting African cotton** by providing a firm understanding of cotton markets and promoting African cotton in Asian markets through, *inter alia*, buyer/seller meetings.

The International Trade Centre (ITC) defined the objectives and outcomes of the training event on India-Africa Cooperation along the Cotton Value Chain, under the supervision of Mr. Matthias Knappe, ITC Programme Manager for Cotton, Textiles and Clothing, Sector Competitiveness Section, Division of Market Development. Also present was Mr. Emilio Portocarrero, Chief, Sector Competitiveness Section, Division of Market Development.

Mr. S. Raswant, Joint Secretary, Confederation of Indian Textiles Industry (CITI), coordinated the Buyer/Seller’s meeting in Mumbai.

Ms. Cynthia Zijlstra-Adriano (ITC) coordinated the participation of African delegates in the event, managed seminar logistics and prepared this brochure.

The European Commission provides financing to the ITC Cotton Programme under the EU All ACP Agricultural Commodities Programme.

Within the framework of ITC cotton development activities and under the sponsorship of the EU-funded All ACP Commodities Programme, the International Trade Centre (ITC) conducted a two-week training programme aimed at south-south cooperation and promotion of African cotton to India from 15 to 26 November 2010 in Mumbai, Nagpur and Ahmedabad.

34 high-level delegates from East and Southern Africa from the government, ginning, farming and research sectors in Ethiopia, Kenya, Malawi, Mozambique, Tanzania, Uganda, Zambia and Zimbabwe took part in the training seminar. Representatives from the African Cotton Textile Industries Federation (ACTIF) also participated in the event.

The training event entitled “India-Africa Cooperation along the Cotton Value Chain”, was organized by ITC in collaboration with Mr. Suresh Kotak, and in partnership with the Confederation of Indian Textiles Industries (CITI), the Cotton Association of India (CAI), the Cotton Textiles Export Promotion Council (TEXPROCIL), the Cotton Cooperation of India (CCI), Indian Home Fashion Week, Fibre2Fashion, Bajaj Steel Industries, Gujarat Cotton Farmers Cooperative Federation (GUJCOT), the
Indo-African Chamber of Commerce and Industries, the Indian Merchants Chamber, the Kotak Group, the Central Institute for Research on Cotton Technology (CIRCOT) and the Central Institute for Research on Cotton (CICR), as well as Alok Industries and Arvind Textile Mills, all of whom contributed significantly to the success of this event.

The pre-conference seminar in Mumbai focussed on the Indian Cotton Economy, followed by a seminar on Utilizing Cotton & Textile Opportunities and a Buyer/Seller meeting. During the networking session, participating delegates presented cotton samples and met with Indian importers of lint and exporters of cotton inputs. The participants also had discussions with investors and representatives from important spinning, textiles, fertilizer and agricultural machinery companies.

Field trips in Nagpur and Ahmedabad provided the participants with exposure to the entire cotton value chain. Visits were made to cotton farms, ginning factories using modern double-roller ginning technology, handlooms, research institutes for seed development, new plant varieties and pest control management. Participants gained valuable insights through interactions with local farmers, members of cooperatives and research scientists during the study tour. The meeting concluded with a networking session in Ahmedabad in association with Fibre2Fashion and GUJCOT.

**The training programme fulfilled the following objectives:**

- Learn from India’s enormous experience and knowledge in developing a vibrant and world-class cotton to clothing industry
- Identify and elaborate concrete south-south cooperation projects between India and Africa in the cotton, textiles and clothing sectors
- Develop business linkages between Indian spinning mills and African ginning companies for possible future cotton lint exports from Africa to India
- Explore business opportunities for imports of cotton-related inputs such as seeds, fertilizers, chemicals, as well as agricultural, ginning and textiles machinery from India

**Overview**

India’s successful cotton industry is very much attributed to the Technology Mission on Cotton (TMC) programme launched by the Government of India in 2000. The TMC programme consists of four Mini Missions on (i) research and development on cotton; (ii) dissemination of technology to farmers; (iii) improvement of marketing infrastructure; and (iv) modernization of the ginning and pressing sector. Since the launch of TMC, India’s cotton production and productivity have increased to over 500kg/ha making India the world’s second largest cotton producer after China. Through Mini Missions (iii) and (iv) cleaner and better quality cotton is being produced, thereby satisfying the requirements of textile mills.

India ranks high in the world textile industry as textiles and apparel make up the largest segment in the Indian economy offering high employment opportunities. Through a 25% investment subsidy from the government in the TMC programme, the Indian cotton industry is modernizing, thereby becoming more efficient and competitive.

**Business prospects and trade opportunities between Africa and India**

The African cotton industry is looking for export opportunities and welcomes investments. As India has a well-developed cotton and textile industry, there is a great potential for trade between India and Africa to import cotton and develop cotton production.

**Opportunities to use African cotton:** Demand for cotton is high and prices are soaring due to world-wide shortages of cotton supply following several natural disasters. This creates an extensive opportunity for exports of African cotton to the Indian market.

**Opportunities to trade with and export to Africa:** Africa requires advanced technology machines for cotton processing as well as good quality farm inputs to increase yield and productivity.

**Opportunities to develop cotton production:** Africa has unused land suitable for commercial production of cotton to expand their export potential.
Participants

Group photo with East and Southern African participants, ITC staff, Dr Jadhav and Dr Arude, Senior Scientists from the Central Institute for Research on Cotton Technology, and Mr. M.K. Sharma, President Bajaj Steel Industries Ltd.
## Participants

<table>
<thead>
<tr>
<th>ETHIOPIA</th>
<th>KENYA</th>
<th>MALAWI</th>
</tr>
</thead>
</table>
| Mr. Asefa Aga ROBA  
General Manager  
Ethiopian Cotton Producers, Ginners and Exporters Association (ECPGEA) | Mr. Micah POWON  
CEO  
Cotton Development Authority (CODA)  
Mr. John ADHOLA  
Regional Manager  
Cotton Development Authority  
Ms. Esther Mutindi KALOE  
Farmer  
KITUI Ginnery | Ms. Margret SAUZANDE  
Principal Trade Officer  
Ministry of Industry and Trade (MIT)  
Mr. Patrick KHEMBO  
Chairman  
Cotton Development Trust  
Mr. Symowden MBALAFANA  
Regional Manager  
NASFAM |

<table>
<thead>
<tr>
<th>MOZAMBIQUE</th>
<th>TANZANIA</th>
<th>UGANDA</th>
</tr>
</thead>
</table>
| Ms. Zulfate WALIA  
Cotton Trade Analyst  
Mozambique Cotton Institute (IAM)  
Mr. Hélder de SOUSA  
Agronomist – Responsible for Bt Cotton  
Mozambique Cotton Institute  
Mr. Leovigildo LUIS  
Executive Director  
ITD (Cotton lint joint export initiative)  
Ms. Basilea MACHATINE  
ABA Textiles Ltd. (Cotton lint local processing initiative) | Mr. Marco C. MTUNGA  
Acting Director General  
Tanzania Cotton Board (TCB)  
Mr. Boaz ABIERO  
General Manager  
Alliance Ginneries  
Mr. Lazaro NDUTA  
Chairman  
Tanzanian Cotton Growers Association  
Mr. Elias G. MABUBA  
Farmer  
Tanzanian Cotton Growers Association  
Mr. Mohamed SHAWEJI  
Director and CEO  
MSK MWALUJO Ginnery | Mrs. Jolly SABUNE  
Managing Director  
Cotton Development Organization (CDO)  
Dr. Peter ESELE  
Chairman  
Uganda National Cotton Farmers Federation  
Mr. Bob A. OGEN  
Secretary Manager  
East Acholi Co-operative Union Ltd  
Dr. Lastus SERUNJOGI  
Director  
National Agricultural Research Organization  
Dr. Pius ELOBU  
Senior Scientist  
National Agricultural Research Organization  
Dr. George EPIERU  
Entomologist  
National Agricultural Research Organization |

<table>
<thead>
<tr>
<th>ZAMBIA</th>
<th>ZIMBABWE</th>
<th>ASSOCIATIONS - ACTIF</th>
</tr>
</thead>
</table>
| Mr. West K. CHITAH  
Director  
Cotton Development Trust (CDT)  
Mr. Barry J. COXE  
Chairman  
Cotton Development Trust  
Mr. Joseph NKOLE  
Board Secretary  
Cotton Association of Zambia  
Mr. Christopher MWEEFTWA  
Chairman  
Cotton Association of Zambia  
Ms. Molly HACHILALA  
Board Member  
Cotton Association of Zambia  
Mr. Aaron PHIRI  
Board Member  
Cotton Association of Zambia | Ms. Hazel MAGUMISE  
Senior Officer  
Ministry of Industry and Commerce  
Mr. Maxwell MUDZUKWA  
Economist  
Ministry of Industry and Commerce  
Mr. Godfrey MUTSIVERI  
Regional Coordinator  
Cotton Ginners Association (CGA)  
Mr. Maxwell TENDAYI  
Regional Member  
The Cotton Company of Zimbabwe | Mr. Rajeev ARORA  
Executive Director  
African Cotton Textiles Industries Federation  
Mr. Joseph NYAGARI  
Trade Policy and ICT Manager  
African Cotton Textiles Industries Federation |
Contributing Associations and Companies

- Confederation of Indian Textile Industry (CITI)
- Ministry of Textiles, Government of India
- Central Institute for Research on Cotton Technology (CIRCOT)
- Indian Merchants Chamber
- Department of Cotton Directorate, Government of India
- Cotton Corporation of India (CCI)
- South Indian Mill Owners Association
- Central Institute for Research on Cotton (CICR)
- Indo-African Chamber of Commerce and Industries
- Cotton Textiles Export Promotion Council (TEXPROCIL)
- ALOK Industries
- ARVIND Limited - SANTEJ Garment plant
- Infrastructure Leasing & Financial Services Ltd.
- BAJAJ Steel Industries Ltd. – Nagpur
- Gujarat State Co-operative Cotton Federation (GUJCOT)
- Fibre2Fashion - Gujarat
- Deligent Ginning Machinery Pvt. Ltd.
- RANPUR Project - Gujarat (Khadi and Handloom/Weavers/Knitting Activities)
- DHANDUKA Cooperative Cotton Ginning and Pressing Unit
- Ministry of Agriculture, Gujarat
- RAJA Industries
- All India Co-op Cotton Federation Ltd.

Pre-Conference Seminar: The Indian Cotton Economy
Mumbai 15 – 16 November 2010

Opening remarks and introduction to the programme

At the opening ceremony, Mr. D.K. Nair, Secretary-General of Confederation of Indian Textile Industry (CITI), addresses a warm welcome to the participants and guests followed by keynote speeches from high-level dignitaries:

- Dr. S. Sreenivasan, Former Director, Central Institute for Research on Cotton Technology (CIRCOT)
- Mr. A.B. Joshi, Textiles Commissioner, Ministry of Textile, Government of India
- Mr. Shishir Jaipuria, Chairman (CITI)
- Mr. Suresh Kotak, Past President, Indian Merchants Chamber
- Mr. Matthias Knappe, Programme Manager, Cotton, Textiles and Clothing (International Trade Centre (ITC)
Country presentations from East and Southern Africa: Sharing of intra-African information

In his introductory speech, the ITC Programme Manager highlighted India’s strengths in the advancement of cotton production, machinery and research technology that provide a wealth of lessons and opportunities to attract investment and increase cotton trade between India and Africa.

Heads of delegations from Ethiopia, Kenya, Malawi, Mozambique, Tanzania, Uganda, Zambia and Zimbabwe delivered presentations to Indian representatives on their respective cotton sectors. Presentations focussed on growing areas, productivity, ginning methods used, varieties grown, fibre properties, production levels, harvesting periods and destination markets. Issues and challenges facing the cotton sector of the respective countries were also shared during the session. Some details of these countries’ current status of cotton production are provided below.

<table>
<thead>
<tr>
<th>Country</th>
<th>Key Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethiopia</td>
<td>Ethiopia has an average production of 40,000 MT of lint and 64,000 MT of oilseeds</td>
</tr>
<tr>
<td>Kenya</td>
<td>In Kenya, a significant boost in cotton production is expected due to investments on irrigation schemes by the government</td>
</tr>
<tr>
<td>Malawi</td>
<td>90% of Malawi cotton is grade A. Average lint production is 30,000 MT</td>
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<tr>
<td>Mozambique</td>
<td>Mozambique’s average lint production is 35,000 MT</td>
</tr>
<tr>
<td>Tanzania</td>
<td>Tanzania’s average lint production is 123,000 MT and most cotton is hand-picked</td>
</tr>
<tr>
<td>Uganda</td>
<td>Uganda’s average lint production is 30,000 MT and ginning is done by roller gins</td>
</tr>
<tr>
<td>Zambia</td>
<td>Zambia’s average lint production is 40,000 MT</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>Zimbabwe’s average cotton production amounts to 270,000 MT. About 300,000 farmers are involved in cotton growing</td>
</tr>
</tbody>
</table>
The following technical presentations on production, processing, distribution, consumption, trade and research in the cotton sector were delivered by well-known industry experts from the government, trade, ginning and research institutions:

- Overview of the cotton production in India
- The cotton ginning sector in India
- The role of the Indian government in the cotton sector: Seed cotton procurement, protection of farmers, minimum support price
- The T&C sector in India and their cotton requirements
- Trends in cotton consumption
- The Indian handloom and retailing sector
- Cotton trade in India
- Research and Development to promote cotton and its by-products

Key speakers and participants at the pre-conference meetings

Dr. Anupam Barik, Director, Dept. of Cotton Directorate gives an overview of the cotton production in India

Participant from Tanzania (agricultural sector) inquires about seed costs and cotton varieties that thrive under rain-fed conditions

Participants from the Ethiopia and Uganda discuss cotton production with Dr. Barik

Dr. S.B. Jadhav, Senior Scientist, CIRCOT provides insights into the cotton ginning sector in India

Participant from Zambia inquires about the life span of a roller gin and its maintenance costs

Participants from farmer and cotton research associations keenly listen to a presentation at the seminar
<table>
<thead>
<tr>
<th>Mr. Suresh Kotak, Past President, Indian Merchants Chamber shares insights into the Indian handloom and retailing sector</th>
<th>Participants discuss with Mr. Alok Makharia (2nd from left) key speaker on cotton trade in India</th>
<th>Mr. Prem Malik, Vice-Chairman, CITI presents the T&amp;C sector in India and their cotton requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. C.S. Teotia, Marketing Director, CCI, discusses seed cotton procurement, protection of farmers and minimum support price</td>
<td>Representative (ACTIF) inquires about price fixing agreements before planting</td>
<td>Participant from Malawi asks details on how India reduced the use of pesticides by 50%</td>
</tr>
<tr>
<td>Mr. J. Thulasidharan, Chairman, South Indian Mill Owner’s Association talks about trends in cotton consumption in India</td>
<td>Dr. Kranthi, Director, CICR shares insights into research and development to promote cotton and its by-products</td>
<td>Participant from the research sector in Uganda inquires about insecticide testing kits</td>
</tr>
</tbody>
</table>
Conference Seminar: Utilizing Cotton & Textile Opportunities - Mumbai

Opening remarks and introduction to the programme

From left, Matthias Knappe, Programme Manager (ITC), Mr. Genet Teshome Jirru, Consul General of Ethiopia, Mr. Amit Ruparelia, Chairman (TEXPROCIL), Mr. Prem Malik, Vice-Chairman (CITI), Mr. Dilip Dandekar, President, Indian Merchants Chamber and Mr. K.L. Daga, Vice-President, Indo-African Chamber of Commerce and Industries.

Opening remarks were made by Messrs. Prem Malik, K.L. Daga, Dilip Dandekar, followed by Matthias Knappe on the role of ITC in cotton development and south-south cooperation. Mr. Amit Ruparelia delivered a keynote address and Mr. Genet Teshome Jirru addressed a vote of thanks.

The following technical presentations were delivered by key experts from Alok Industries, Cotton Cooperation of India, Indo-African Chamber of Commerce & Industries, Infrastructure Leasing & Financial Services and East African Delegate on:

- Cotton requirement of the Indian T&C industry and experience with African cotton
- India's cotton trade (export and import)
- How to do business between India and Africa
- Investment opportunities in the African cotton sector
- Why buy East African cotton?

Buyers – Sellers Meeting

During the networking session, participants had bi-lateral business meetings with investors and representatives from textile industries, machinery and agricultural inputs companies. The meeting provided trade opportunities for lint exports to India and agricultural input exports to Africa.

On behalf of ESA cotton producing countries, African delegate highlights that ESA cottons are hand-picked and shares information with investors on latest crop, varieties, fibre qualities & progress in contamination reduction. Representative from ACTIF at the networking session
Ethiopian delegate discusses with CEO from JADHAO Gears Pvt. Ltd. dealers in ginning & pressing machines

Indian spinners testing Tanzanian cotton samples

Zambian and Zimbabwean cotton samples are displayed for inspection

Zambian delegates discuss possibilities to purchase roller gins with executives from BAJAJ Steel Industries

Carver Technology Equipment Pvt. Ltd. specializing in delinting and lint machines present their products

ARVIND Mills discuss land requirements with the Mozambican delegation

Representatives from the Gujarat State Cooperative Cotton Federation (GUJCOT) discuss business opportunities

Ugandan delegate shows cotton test results to Alok Mills

Indian spinners testing Ugandan cotton samples

Kenyan delegate meet with representatives from TEXPERS

Malawi delegation discuss with executives from a fertilizer company

Malawi delegate with the chairman from TEXPROCIL
Outcomes and results of the Buyers-Sellers Meeting

- **Ethiopia**: Through the intervention of the delegate from Ethiopia, Amibara, Ag. Devt. PLC, the largest cotton producing country in Ethiopia has negotiated a purchase for a double roller ginnery from BAJAJ Industries worth USD 642,000 and with a ginning capacity of 90,000 quintal of raw cotton.


- **Mozambique**: The Cotton Institute of Mozambique – business prospects with ARVIND Ltd. - for land requirements for the commercial production of cotton in Mozambique.

- **Tanzania**: Lint sales - visits by prospective Indian buyers of raw cotton, March 2011

- **Uganda**: Joint venture with ARVIND Ltd. on land for cotton production. BAJAJ Steel Industries visited Uganda in December 2010 on the prospects of machinery sales

- **Zambia**: The Cotton Association of Zambia started the process to purchase a 9 Double-roller Gin and Pressing Facility from Bajaj Steel Industries in February 2011

- **Zimbabwe**: Lint sales – visits by prospective Indian buyers of raw cotton, March 2011.

Home Fashion India Week Conference

*The participants had the opportunity to attend the 5th edition of “Home Fashion India Week” with a focus on emerging business dynamics from manufacturing to retail.*

*The participants benefitted from new insights by industry expert speakers on important markets for home textiles, furnishing fabrics and home decoration.*

Key speakers include ESA representatives from Tanzania, Zambia, KOTAK group, ACTIF, TEXPROCIL and ITC

The Chairman from TEXPROCIL conducts the opening ceremony in traditional Indian style

ITC Programme Manager delivers a presentation on “A new business opportunity for home textiles in the emerging global cotton scenario”

ESA Representatives encourage Indian companies to invest in Africa and discuss win-win opportunities in cotton production and textiles
Field Visit to Alok Industries Ltd. and Arvind Mills Ltd.

Alok Industries Ltd. is one of India’s largest vertically integrated textile companies. Its business domain involves weaving, knitting, processing, home textiles and ready-made garments and polyester yarns. Grabal, Alok Impex Ltd. the sister company of Alok Industries is among the largest global manufacturers of embroidered products. Alok Industries has 7 spinning factories with an installed capacity of 50,000 spindles in each mill.

During the tour of the factory and on-site training, participants witnessed the process of vertical integration and the production of a variety of products throughout the value chain. A visit was also made to Arvind Mills Ltd, the world’s third largest denim producer, in Santej.

Tour of Alok Textile Mills and onsite-training

Mr. Jitender Kumar, Assistant Vice-President (cotton procurement) of Alok Industries extends a warm welcome to the participants and comments on the textile industry’s experience of using African cotton.

Welcome speeches by CEO (spinning), ITC and Vice-Presidents of cotton procurement & marketing.

Group photo with East and Southern African participants, ITC staff and CEOs from ALOK Mills and KOTAK Group.
<table>
<thead>
<tr>
<th>Image</th>
<th>Description</th>
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<tbody>
<tr>
<td><img src="image1" alt="Cotton spinning using ring frame technology" /></td>
<td>Cotton spinning using ring frame technology</td>
</tr>
<tr>
<td><img src="image2" alt="Manager explains winding technology using a Process Coner that winds residual yarn after weaving and knitting" /></td>
<td>Manager explains winding technology using a Process Coner that winds residual yarn after weaving and knitting</td>
</tr>
<tr>
<td><img src="image3" alt="Factory manager explains spun yarn appearance standards – an ASTM method used for grading yarn" /></td>
<td>Factory manager explains spun yarn appearance standards – an ASTM method used for grading yarn</td>
</tr>
<tr>
<td><img src="image4" alt="Participants keenly observe a variety of cotton samples before testing" /></td>
<td>Participants keenly observe a variety of cotton samples before testing</td>
</tr>
<tr>
<td><img src="image5" alt="Lab technicians demonstrating HVI cotton fibre and yarn testing equipment" /></td>
<td>Lab technicians demonstrating HVI cotton fibre and yarn testing equipment</td>
</tr>
<tr>
<td><img src="image6" alt="Participant observes a circular knitting machine using 100% cotton and cotton blends" /></td>
<td>Participant observes a circular knitting machine using 100% cotton and cotton blends</td>
</tr>
<tr>
<td><img src="image7" alt="In the crochet department, participant observes a lace and ribbon-making machine. Fancy lace trimmings on display" /></td>
<td>In the crochet department, participant observes a lace and ribbon-making machine. Fancy lace trimmings on display</td>
</tr>
<tr>
<td><img src="image8" alt="Textile worker demonstrates the functioning of advanced embroidery technology using multi-head machines" /></td>
<td>Textile worker demonstrates the functioning of advanced embroidery technology using multi-head machines</td>
</tr>
<tr>
<td><img src="image9" alt="Participants observe computerized embroidery techniques by different machines producing intricate patterns" /></td>
<td>Participants observe computerized embroidery techniques by different machines producing intricate patterns</td>
</tr>
<tr>
<td><img src="image10" alt="Quality control – first checking done by women to detect embroidery defects" /></td>
<td>Quality control – first checking done by women to detect embroidery defects</td>
</tr>
<tr>
<td><img src="image11" alt="Second checking - embroidery correction done by sewing machines" /></td>
<td>Second checking - embroidery correction done by sewing machines</td>
</tr>
<tr>
<td><img src="image12" alt="Women workers folding and packing finished textiles" /></td>
<td>Women workers folding and packing finished textiles</td>
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</tbody>
</table>
Visit of the Central Institute for Research on Cotton Technology (CIRCOT)

The Central Institute for Research on Cotton Technology (CIRCOT) is a unit under the Division of Agricultural Engineering of the Indian Council of Agricultural Research (Department of Agricultural Research and Education, Ministry of Agriculture, Government of India,) engaged in research and development activities in cotton technology. The Institute is an acknowledged leader for well over 85 years in the field of testing, standardisation and development of test methods for different types of textile materials.

Presentations were made by senior scientists on the core areas of the Institute as well as the cotton value chain. Participants actively interacted with senior scientists on discussions revolving around awareness generation among farmers to produce higher quality lint, organic weed control using mulch (wood chips), the benefits of using bio-mass, research work on by-products and technologies for Africa.
Visit to the Cotton Association of India (CAI)

The Cotton Association of India (CAI) is engaged in providing a wide range of services to the entire cotton value chain since its incorporation in 1921. CAI represents all segments of the cotton trade and textile industry including mill buyers, growers and grower cooperatives, ginners, brokers, merchants, importers and exporters.

The President of the Cotton Association of India made a presentation on CAI’s activities and training programmes followed by a visit to the Standards Room.

(Right) Mr. Manish Sheth, Director of the Cotton Association of India (CAI) briefs participants about the grade standard boxes of Indian cottons, including India’s finest and highest quality, the Suvin variety

Participants take turns to examine and compare different cotton grades in the Standards Room.

Participants admire the statue of Sir Purshotamdas Thakurdas at CAI, known for his exceptional courage and great commitment to the cause of India’s prosperity and progress

(Right) Mr. Dhiren Sheth, President of the Cotton Association of India (CAI) explains the history of the Mumbai cotton exchange to participants

Group photo of participants and members of the Cotton Association of India
In association with Bajaj, CIRCOT and CICR, the Nagpur programme consisted of visits to Bajaj Steel Industries – manufacturers of cotton ginning machinery, a cotton research farm, the Central Institute for Research on Cotton Technology (CIRCOT) and the Central Institute for Research on Cotton (CICR).

Arrival in Nagpur from Mumbai

Participants given a warm welcome and were treated to a cultural show.

Visit to BAJAJ Steel Industries & and on-site training

Bajaj Steel Industries is one of the largest and most modern cotton ginning and pressing machinery manufacturers in India. The company produces machineries for all cotton ginning technologies including Double Roller ginning. Participants learned that Double Roller (DR) gins consume less energy, have a higher outturn of lint and is suitable for African cottons. DR gins produce 100kg of lint/hour per 300kg bags of seed cotton.

Participants meet with Production Managers of Bajaj Steel Industries

Production Manager shows gear train parts and explains the functioning of the rollers of the double roller gin.

Participants keenly observe a screw conveyor which conveys seed cotton to the Double Roller Gins

Participants view lint ginned from a Double Roller Gin

Lady farmer and ginnery owner from Kenya examines the quality of the fibre.
Participant from Uganda shows interest in acquiring cotton processing equipment

Participants from the research sector in Zambia show keen interest in the laboratory Double Roller gin for cotton breeders

Manager explains the performance of a high capacity cotton seed delinting machine producing superior quality linter

Participants observe a fully-automatic down packing baling press

Delegates representing the ginning sectors in Zimbabwe and Tanzania are being interviewed by the Press

### Cotton Research at Farm Level

The participants visited a research farm in Nagpur where new varieties of cotton and new farming techniques are being developed. Research is done on *Gossypium arboreum*, commonly called tree cotton, a species of cotton native to India and Pakistan. Various intercropping schemes are investigated with, for instance, pigeon peas and soya beans. Also, emphasis is given to organic farming.

Dr. M.S. Kairam (left), a private researcher, shows the participants specially-bred *G. arboreum* plants that are used to increase productivity

Participants taking notes on intercropping practices

Participants from the farming sectors in Kenya and Zambia examining cotton bolls per plant

Hand-picking of organic cotton (*G. Arboreum*) variety

Discussions between researchers and farmers on irrigation practices
At the end of the visit to the research farm, the participants were given the opportunity to interact with farmers and ask questions about farming techniques, minimum support prices, input providers, division of labour between men and women, etc.

Visit to the Ginning Training Centre of CIRCOT (Central Institute for Research on Cotton Technology)

Proper ginning practices have an impact on fibre quality. The Central Institute for Research on Cotton Technology (CIRCOT) has supported the cotton industry through research and development in the area of post-harvest processing, quality assessment, yarn and fabric manufacture and by-product utilization. CIRCOT operates a Ginning Training Centre and conducts practical training programmes on ginning technology for ginning personnel.
Outcomes of the visit to the Ginning Training Sector

**Zambia:** The Cotton Development Trust in Zambia will send two technicians to the Ginning Training Centre of CICR to train in ginning technology and gin operations. The training will be undertaken in the course of 2011.

Visit to the Particle Board Demonstration Plant of CIRCOT (Central Institute for Research on Cotton Technology)

*CIRCOT runs a research project on the utilization of cotton by-produce for value-added products. India produces about 23 million tonnes of cotton stalks every year, which were mainly treated as agro-waste or as domestic fuel. It was a great discovery for the participants to learn that this project developed technologies that allow cotton stalks to be used for making paper, particle boards and raising edible mushroom crop on stalks.*

<table>
<thead>
<tr>
<th>Arrival at the Particle Board Demonstration Plant</th>
<th>Dr Jadhav explains technologies that convert cotton stalks into value-added products. Cotton stalks, that used to be considered as agro-waste, are now used to produce products</th>
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<tr>
<td><img src="image1.png" alt="Image" /></td>
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<td><img src="image2.png" alt="Image" /></td>
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<tr>
<th>A scheme outlining the process of particle board production from cotton stalks</th>
<th>Participant from Malawi feeding cotton stalks into a chipper machine</th>
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<td><img src="image3.png" alt="Image" /></td>
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<tr>
<th>Scientist shows the conveyor that feeds the chipped cotton stalks into the particle board machine</th>
<th>Participant examines coarse and fine particles obtained during the milling process</th>
<th>A melamine-coated particle board made from processed cotton stalks</th>
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<td><img src="image4.png" alt="Image" /></td>
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<td><img src="image5.png" alt="Image" /></td>
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Visit to the Cotton Testing Laboratories of CIRCOT

CIRCOT Test House was established in 1937. The main objective of the Test House is to carry out quality tests on cotton samples by standard methods/specifications. The facility of CIRCOT Test House is at present widely utilised by both government and private organisations.

Standard samples of cotton qualities are used to calibrate testing equipment

Participants observe various cotton quality testing equipment to evaluate fibre property characteristics of cotton

Quality testing is done with High Volume Instruments (HVI) to classify and grade cotton based on fibre strength and length, colour, uniformity, etc.

Visit to the SULTANIA Ginning, Pressing and Oil Mill in Pandhurna

Pandhurna is home for many cotton ginning and pressing factories. Participants observed seed cotton storage facilities, ginning and baling operations at Sultania ginning, pressing and oil mill.

Arrival at the Sultania Ginning, Pressing and Oil Mill plant

Participants at the seed cotton storage area and conveyor systems

Cylinders convey seed cotton to the roller ginning machines

Workers demonstrate strapping of compressed bale using high grade polyester straps

Participants assist with the packing of a bale using cotton cloth. A cotton slide is employed to move heavy bales down to the ground for transport
Visit to the Central Institute for Research on Cotton (CICR)

Crop Protection Division – Cultivar Development

The Central Institute for Research on Cotton (CICR) in Nagpur conducts basic and strategic research on cotton to improve yield, fibre quality and by-products. They create new genetic varieties, adapted to specific conditions, appropriate farming/cropping system for different cotton growing zones, effective soil fertility management and development of disease and pest management strategies.

<table>
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<tr>
<th>Dr. K R Kranti (right), Director of CICR, explains research done at the Institute with new varieties of cotton and agricultural techniques</th>
<th>CICR scientist showing agronomy trials with experimental cotton varieties</th>
<th>New varieties of cotton are being developed, adapted to specific conditions such as drought and poor soil and bollworm-resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr Kranthi explaining a research project on natural enemies of insects that attack cotton plants, to reduce pesticide use</td>
<td>Roundup sprayed BG II RRF cotton is compared with existing alternate weed control strategies</td>
<td>African participants investigate the possibility to launch Indian Bt cotton in their countries</td>
</tr>
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</table>

Insectary and Biocontrol Laboratories

As part of CICR’s Crop Protection and Integrated Pest Management programmes, participants witnessed the mass multiplication of predatory beetles on mealy bugs at the insectary and biocontrol laboratory. The Institute also conducts research on resistance of the pink bollworm to Bt transgenic cotton. The pink bollworm, together with the mealybug, is among the major pests of cotton in India.

| Pink bollworm research led by Dr. (Mrs.) Kranthi | Participant observes in vitro cultures of pink bollworms | Dr. (Mrs.) Kranthi showing pink bollworm larvae |
Outcomes of the visit to the CICR

Zambia: The Cotton Development Trust in Zambia will send an entomologist working on the development of an Integrated Pest Management programme on cotton and a plant breeder working on the development of stress tolerance on cotton varieties in Zambia to the CICR in Nagpur for a one-week study tour of relevant research programmes, possibly by October/November 2011.
In association with the Gujarat State Co-operative Cotton Federation (GUJCOT), Fibre2Fashion, Deligent Ginning Machinery and Kotak Group, the ITC training programme consisted of visits to observe the Khadi and handloom/weaving/knitting activities of the RANPUR project, the DHANDUKA cooperative cotton ginning and pressing society, and meeting with high officials from the Ministry of Agriculture.

**Visit to the Handloom Weavers’ Cooperative - Observe the Khadi, weaving and knitting activities of the Ranpur Project**

The handloom sector is the second largest employer in India after agriculture. It generates great employment opportunities in the rural areas. Khadi is a cotton fabric, which is hand spun and hand-woven, making Khadi textiles eco-friendly. Natural dyes obtained from vegetables are used to colour Khadi clothes. Weaving and knitting activities run by the Ranpur Project aim at empowering women, especially widows. The participants observed the khadi value chain and learned that handloom machinery used is low-cost and environmentally-friendly.

- Cotton as well as wool is spun into thread on a spinning wheel called a “charkha”
- Participants observe the quality of hand-spun yarn
- Reelers winding reeled cotton onto spindles
- Weaver adjusting thread tension on a loom
- Weaver working on the handloom
- A hand powered knitting machine
- Mr N.M. Sharma, the Managing Director of Gujcot shows woven fabric produced by artisans
- Khadi cloth is dyed by men using hot water and natural ingredients. The dyeing process utilizes 70% solar energy and 30% wood fire
- Participants examining and buying finished Khadi garments in fashionable colours and designs
Visit to the DHANDUKA Cooperative Cotton Ginning and Pressing Society Ltd.

The participants were warmly greeted by senior board members of the cotton cooperative. Group discussions were held with farmers about seeds, pesticides, and fertilizers. The participants gained insights into how ginning and pressing factories are set up and the benefits of cotton co-operatives.

Field Visit to the Government Agricultural Cotton Research Farm – Anand Agricultural University, Viramgam

The Regional Cotton Research Station of the Anand Agricultural University in Viramgam was created in 1921. The Institute conducts research with the following objectives: (1) crop improvement: breeding new resistant varieties, or plants adapted to specific soil conditions (2) Resource management: optimal use of fertilizers, crop interbreeding techniques, etc. (3) crop protection: ascertain pest incidence and screening plants for pest resistance.
Meeting with High Officials of the Ministry of Agriculture of Gujarat

The participants had the opportunity to meet with a delegation of high officials of the Gujarat Ministry of Agriculture, led by the Honourable Minister for Agriculture, Mr. Dilip Sanghani. The participants learned that Gujarat is very important for the Indian cotton industry, with 40% of the total production coming from the state. Gujarat uses the successful PPP (Public Private Partnership) model to attract private investments to support the cotton sector. The Government also stimulates and supports R&D, providing farmer protection through minimum price support and input procurement.

Visit to TMC Ginning Plant of Raja Industries & the TMC Delinting Plant of Pashupati Cotton Industries, Kadi

The participants also visited the TMC Ginning Plant of Raja Industries & the TMC Delinting Plant of Pashupati Cotton Industries in Kadi, Gujarat. Under the TMC (Technology Mission on Cotton) scheme, the government of India subsidizes 25% of the costs of modernization of cotton production facilities.
Presentations and Networking Sessions in Ahmedabad, Gujarat

In association with Fibre2Fashion, the world’s largest apparel market place and Gujarat Cotton Farmers Cooperative Federation GUJCOT, the India-Africa Cooperation along the Value Chain programme concluded with a networking session between the African delegates, investors and input providers.

Presentations were delivered by leading executives on:

- Welcome and Introductory Address, Dr. P.R. Roy, Director, Fibre2Fashion
- Fibre2Fashion services, Mr. Viren Mehta, Head of Marketing
- ITC activities in the cotton sector, Mr. Matthias Knappe, Programme Manager, Cotton, Textiles and Clothing
- Current African Cotton Scenario, Mr. Joseph Nkole, Spokesman for the African Delegation
- India & Gujarat – A cotton perspective, Mr. Rahul Jitendra, ACME International
- Seeds – Dr. D.B. Desai, President, Gujarat Seed Producers’ Association
- Pesticides – Dr. A.G. Patel, General Manager, Buyer India Ltd.
- Cotton Imports & Exports – Mr. G.C. Shah, Chairman, Sagar Group, Mr. H.C. Raval, Chairman, All India Cooperative Cotton Federation
- GUJCOT
- Vote of Thanks, Mr. Suresh Kotak, Chairman, Kotak Group

Dr Roy, Director of Fibre2Fashion, extends a warm welcome to the participants and emphasized the need to develop cooperation between India and African countries.

ITC Programme Manager summarizes the purpose of the whole visit and looks forward to cooperating with research institutes in training researchers and ginners.

Participants having discussions with investors and representatives from machinery and seed companies (ACME International) and Ronak Seeds Pvt. Ltd.
## Lessons learned and follow-up activities

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<tr>
<th>LESSONS LEARNED</th>
<th>FOLLOW UP</th>
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<tr>
<td><strong>SUPPORT TO THE COTTON AND TEXTILE SECTOR</strong></td>
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<tr>
<td>• India and, especially, the State of Gujarat created highly effective Public Private Partnership (PPP) programmes that improved the effectiveness of cooperatives</td>
<td>• Lobby with African governments to facilitate similar PPP programs</td>
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<tr>
<td>• India invested significantly in cotton R&amp;D, resulting in improved yields</td>
<td>• Lobby with governments to increase investment in agricultural R&amp;D institutes</td>
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<td>• India has shown interest to cooperate with African countries in R&amp;D, training and consultancies</td>
<td>• Collaborate with African scientists in the introduction of Bt cotton</td>
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<tr>
<td>• The Indian government supports the cotton sector with minimum price support, farmer protection and seed cotton procurement.</td>
<td>• Supply of cotton seeds, chemicals and fertilizers to farmers at reasonable costs</td>
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<td>• India has developed a high performing cotton to textiles value chain sector</td>
<td>• Strengthen training programs for farmers and ginners to transfer the knowledge obtained during this training program</td>
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<tr>
<td>• Moving up the value chain in the cotton-to-clothing industry has significantly contributed to the Indian economy and created employment</td>
<td>• Create exchange programs between India and African countries to benefit from the Indian expertise</td>
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<tr>
<td>• The advantages that stem from a cooperative and supportive system (e.g. improved communication, no exploitation of farmers by middle men)</td>
<td>• Lobby with African governments to prioritize cotton production and stimulate the sector</td>
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<td>• Strong farmers’ and other stakeholder associations are key to the development of the cotton sector</td>
<td>• Promote cotton cooperatives in Africa</td>
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<td>• Develop strong partnerships between Indian cooperatives such as Gujcot and African cooperatives</td>
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<tr>
<td><strong>COTTON QUALITY AND PRODUCTION</strong></td>
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<tr>
<td>• The use of GM cotton, developed in India, improves yields and reduces pesticide use</td>
<td>• Training of African researchers in India</td>
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<tr>
<td>• Technical improvements in ginning technology increases productivity and quality</td>
<td>• Conduct research on introducing Bt genes in African cotton varieties</td>
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<tr>
<td>• India has world-class roller ginning manufacturers, which are suitable for African cotton</td>
<td>• India to support research programmes in Africa</td>
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<td>• India has well-known ginning training facilities</td>
<td>• Upgrade ginning capacities with modern double roller gins to reduce neps and short fibre content</td>
</tr>
<tr>
<td>• The processing of cotton by-products adds value to the sector</td>
<td>• Indian ginning trainers to provide capacity building in Africa</td>
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<td></td>
<td>• India to help in establishing and reviving ginning schools</td>
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<td></td>
<td>• Process cotton stalks to produce products such as particle boards, etc.</td>
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### COTTON QUALITY AND PRODUCTION

- The importance of technology updates for fibre and quality testing to address the challenges of the sector
  - Install HVI machines in Africa to have all the lint parameters tested before export
  - Standardize cotton grading requirements along the region
- In depth understanding of Indian cultivation and harvesting techniques
  - Introduce intercropping techniques in Africa, e.g. with pigeon peas
- Large spinning mills are interested to engage in contract farming in Africa
  - Facilitate explorative visits to Africa, ensuring a truly win-win outcome

### COTTON TRADE

- India is an attractive market for African cotton exports
  - Expand production capacity employing modern technologies
  - Develop new cotton growing areas in Africa
- Indian cotton trade and marketing is transparent with an auction system
  - Provide African farmers with market information to be able to adjust to market conditions
- Opportunities of enhancing trade and investments between India and Africa (South-South Cooperation)
  - Export African lint to India during the Indian off season
  - Collaborate with Cotton Association of India to promote African cotton to India
  - Import of Indian technology inputs and machinery
- The importance of a good marketing strategy for African cotton exporters
  - Promote in-depth knowledge of the products to be introduced in the international markets; well prepared and labelled representative samples
  - Utilize Fibre2Fashion as a marketing support for African cotton in India and Asia

### TEXTILE INVESTMENT AND TRADE

- The advantages of vertically-integrated textile mills
  - Promote vertical integration at regional level (e.g. through FDI technology transfer) and improve value addition (e.g. modernization of textile machinery)
- Use of handlooms creates value addition to the cotton sector and generates many jobs
  - Benefit from India’s experience in establishing and managing a successful handloom sector
  - Train artisans on handloom production
  - Train handloom operators on fashion and design
- Indian textile companies are interested to invest in Africa
  - Analyse the experience of Alok Industries who is investing in Burkina Faso
  - Explore possibilities to attract other Indian investors to Africa
- India is willing to invest in African cotton-to-textile industry
  - Create partnerships with India to develop the African cotton sector
  - Lobby African Governments through ACTIF to create a conducive policy environment that protects Indian investments and enforces existing trade agreements (e.g. AGOA)
Confederation of Indian Textiles Industry

In partnership with:

European Communities

Sponsored by:

Street address: ITC,
54-56, rue de Montbrillant,
1202 Geneva, Switzerland

Postal address: ITC,
Palais des Nations,
1211 Geneva 10, Switzerland

Telephone: +41-22 730 0111
Fax: +41-22 733 4439
E-mail: itcreg@intracen.org
Internet: www.intracen.org