AFRICAN COTTON PROMOTION

LINKING EAST AND SOUTHERN AFRICAN GINNERS TO THE MARKET AND DEVELOPING PARTNERSHIPS WITH SPINNERS

SUPPORT PROGRAMME FOR THE CONSOLIDATION OF THE ACTION FRAMEWORK UNDER THE EU-AFRICA PARTNERSHIP ON COTTON

WORKSHOP ON AFRICAN COTTON PROMOTION
“LINKING EASTERN AND SOUTHERN AFRICAN COTTON INDUSTRY TO THE ASIAN MARKETS”

DATE: 2nd MAY, 2013
VENUE: ZAMBIA NATIONAL FARMERS’ UNION HEAD OFFICE
PARTICIPANTS: MALAWI, TANZANIA, ZAMBIA AND ZIMBABWE
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EXECUTIVE SUMMARY

PROJECT OBJECTIVES

The International Trade Centre (ITC) is implementing a project on African Cotton Promotion and Value Addition within the framework of the Support Programme for the Consolidation of the Action Framework under the EU-Africa Partnership on Cotton, which aims at contributing to sustainable improvements of the competitiveness, value addition and viability of African cotton value chains. ITC’s approach focusses on two main outcome areas:

- To sustain and expand established collaboration and capacity building initiatives with Asian spinning mills and transform these into long-term partnerships;
- To reverse the negative perception of African cotton in target markets, and identify equitable buyers who are willing to pay better prices for non-contaminated cotton.

In 2013, a number of visits and workshops were organized within the framework of the project:

PREPATION WORKSHOP – UNDERSTANDING BUYER REQUIREMENTS

A workshop was held in Lusaka, Zambia on 2 May 2013 to prepare East and Southern African ginners for cotton marketing missions to Thailand and Bangladesh. Ginners from Malawi, Tanzania and Zambia and Cotton Board organizations received market insights and recommendations from spinners.

COTTON PROMOTION MISSIONS TO THAILAND AND BANGLADESH

In May 2013, ITC led marketing missions to Thailand and Bangladesh to facilitate long-term partnership development between East and Southern African ginners and Asian spinners. Ginners from Tanzania and Zambia with operations in Malawi, Uganda and Zimbabwe, as well as representatives from Cotton Boards visited factories in Bangkok and Bangladesh to meet with potential buyers and learn about market requirements. Pilot cotton sales were realized as a direct result of these visits.

COTTON CONTAMINATION REDUCTION TRAINING IN TANZANIA

As a result of the marketing efforts undertaken, three spinners from Thailand and Bangladesh showed interest in developing more in-depth relations with African ginners. These spinners agreed to send their technical staff to Tanzania to build capacity among ginners to reduce contamination.

Training sessions were organized in 22 ginneries in the Shinyanga and Mwanza regions of Tanzania from July to August 2013. A total of 675 cotton ginnery workers and staff, of which 130 women, were trained by experts from a Thai spinning company on contamination reduction, creating awareness of the consequences of contamination and techniques to improve cotton quality. A follow-up inspection from one beneficiary ginnery after a week’s training showed contamination levels had been reduced by 50%.

In September 2013, a total of 910 farmers including 143 women, received training on contamination reduction in 18 villages in 5 districts in the Shinyanga and Mwanza regions of Tanzania. An additional 210 ginnery staff workers from 6 ginneries were trained as well. Focus was on sources of contaminants, the effects of contamination in terms of costs and consumer perception, best practices and practical steps that can be taken by the farmers and at the ginning mills to reduce contamination.

SHARING AND DISSEMINATION OF INFORMATION AND LEARNINGS

A regional training and dissemination workshop was organized in November 2013 by ITC in Dar es Salaam, Tanzania, in collaboration with the African Cotton & Textiles Industries Federation and the Tanzania Cotton Board. Participants came from 8 East and Southern African countries, the EU delegation in Tanzania and the Ministry of Industry and Trade. The workshop shared results and good practices from partnership building and contamination reduction trainings conducted by spinners from Thailand and Bangladesh and provided training on cotton trade and marketing.

TRAINING OF AFRICAN GINNERS AND SPINNERS IN INDIA

In December 2013, ITC organized a visit of three executives of Tanzanian and Ethiopian ginning, spinning and textiles companies to India to study the technological applications and management practices adopted by Indian ginners to control contamination in cotton. The visited Indian companies in Tamilnadu, Andhra Pradesh and Gujarat have installed contamination detection and removal machines that improve cotton quality. They shared their learnings and experience with the African companies.
OBJECTIVES OF THE WORKSHOP

To prepare ginners for visits to cotton markets in Thailand and Bangladesh in May 2013, a preparation workshop hosted by the Cotton Association of Zambia was held in Lusaka on 2nd May 2013.

WORKSHOP PREPARATION

The workshop provided opportunities for ginners to understand market and buyer requirements and to discuss and elaborate a marketing approach for these two markets, which included:

- Prepare cotton standard boxes;
- Provide cotton samples from last year’s crop from the same area;
- Ensure that all cotton samples are being instrumented tested and test results to be brought to Thailand and Bangladesh;
- Provide logistical information including transportation costs, shipping lines and routes as well as transit time to pre-determined ports (define inland port and shipment freight to Bangkok and Chittagong port);
- Clear price quotations for the cotton on a C&F basis;
- Engage with banks and try to convince them to join the mission;
- Provide detailed bank and L/C information (including corresponding bank information);
- Develop and/or update promotional material (brochures, sample packaging, etc.).
Mr Quamrul Ahsan, a spinner and cotton trader from Bangladesh provides useful insights on the growth dynamics of Bangladesh cotton imports.

The workshop provided opportunities to discuss and elaborate a marketing approach and to prepare ginners in meeting buyer requirements.

A presentation made by a Bangladeshi spinner and trader provided an overview of the Bangladesh textile industry and latest trends in ready-made garment exports, knit and woven garment exports and cotton import dynamics over the period from 2010 to 2012/13. In 2012, Bangladesh imported 593,773 MT of cotton lint, of which Africa’s share in total imports amounted to 84,701 MT or 14%, ranking Africa as the 3rd largest supplier of cotton to Bangladesh after India (22%) and Uzbekistan (31%).

During the meeting, spinner’s quality standards and requirements were discussed with regard to cotton selection criteria, acceptable fibre quality parameters and levels of contamination. The impact of contamination was highlighted with emphasis on the consequences from a client’s (spinning mill) perspective such as higher yarn and fabric wastage, loss of production, increase in manpower and more processing time.

As an incentive to improve cotton quality, spinning mills are willing to pay premium prices for contamination-free cotton. In order to increase exports to the market, spinners recommend that cotton producers not only focus their efforts on improving fibre quality and fibre maturity, but also undertake serious and effective efforts to control the level of contamination.
PARTICIPANTS

Ginners from Malawi, Tanzania and Zambia discussed the marketing mission to Thailand and Bangladesh and received market insights and recommendations from a Bangladeshi spinner and cotton trader.

<table>
<thead>
<tr>
<th>MALAWI</th>
<th>TANZANIA</th>
<th>ZAMBIA</th>
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<tbody>
<tr>
<td>WOGET COTTON (Ginnery)</td>
<td>SM HOLDINGS LTD (Ginnery) AFRISIAN Ginning Ltd.</td>
<td>MUMBWA Farmers Ginning and Pressing Co. Ltd</td>
</tr>
<tr>
<td>Mr Osward LUTEPO Chief Executive Officer</td>
<td>Mr Fahad NAHDI Director</td>
<td>Mr Nick NDAWA Operations Manager</td>
</tr>
<tr>
<td>Mr Amos SULUMA General Manager</td>
<td>Mr Alli M. NAHDI Director</td>
<td>Mr Thomas MANKWENDE Regional Manager</td>
</tr>
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<td>Mr Samir ESMAIL Director</td>
<td>Mr Danford SIMUJIKA Com3pany Secretary</td>
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<tr>
<th>ZAMBIA CONTINENTAL Ginery / PARROGATE Ginery (ZIM)</th>
<th>ZAMBIA Ministry of Agriculture and Livestock (MAL)</th>
<th>ZAMBIA National Farmers Union (NFU)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr Sanjeev KOHLI Vice-President</td>
<td>Mr Cosmore MWAANGA</td>
<td>Mr Graham RAE 2nd Vice-President</td>
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<tr>
<th>COTTON ASSOCIATION and COTTON BOARD OF ZAMBIA (CAZ &amp; CBZ)</th>
<th>COMESA SECRETARIAT</th>
<th>INTERNATIONAL TRADE CENTRE (ITC)</th>
</tr>
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<tbody>
<tr>
<td>Mr Christopher MWEENWA Chairman (CAZ)</td>
<td>Mr Fred KONG ‘ONG’GO Senior Regional Focal Point and Coordinator EU-ACP Programme</td>
<td>Mr Matthias KNAPPE Programme Manager, Cotton, T&amp;C</td>
</tr>
<tr>
<td>Mr Joseph NKOLE National Coordinator (CAZ)</td>
<td></td>
<td>Mr Quamrul AHSAN Managing Director Sarah Composite Mills (BD) and ITC Resource Person</td>
</tr>
<tr>
<td>Mr Mwansa CHALNE Accountant (CBZ)</td>
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OBJECTIVES OF THE VISIT

Ginners from Tanzania and Zambia with operations in Malawi, Uganda and Zimbabwe, as well as representatives from the Tanzania and Zambia cotton boards visited spinning factories in Bangkok and Bangladesh to meet with potential buyers and learn about market requirements and measures to address issues of contamination.

PARTICIPANTS

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<td>SM HOLDINGS LTD (Ginnery)</td>
<td>AFRISIAN Ginning Ltd.</td>
<td>COTTON BOARD</td>
</tr>
<tr>
<td>Mr Saleh NAHDI, Director</td>
<td>Mr Samir ESMAIL, Director</td>
<td>Mr Jim SUNGA, Cotton Classer</td>
</tr>
<tr>
<td>Mrs Maheen Sidik</td>
<td>Mr Adil Yakub</td>
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<tr>
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<td>Mr Dafulin KAONGA Chief Executive Officer</td>
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COTTON PROMOTION MISSION TO THAILAND, BANGKOK, 22 – 25 MAY

Thailand is the 11th largest cotton consumer in the world. In 2012, Thailand imported 308,000 MT of lint of which Africa’s share of total imports accounted for 34,000 MT or 11%.

Ginners and cotton board representatives visited two cotton processing factories in Thailand. The spinning mill is one of the largest mills in Thailand and the dyeing company consumes a large quantity of yarn from the mill. The mill produces a wide range of natural, synthetic and fancy yarns using Ring, Open-end and air Vortex technologies. The factory’s monthly consumption of cotton is 1,800 MT. Requirements and cotton quality parameters required for each type of spinning technology, in terms of strength, length, colour and maximum acceptable contamination levels of not more than 5 pieces/100 kg of lint were highlighted. The group also met with Thai local traders and cotton controllers from Wakefield Inspection Services.
TOUR OF THE FACTORY AND ON-SITE COACHING

Visit to the cotton storage warehouse. Raw material manager explains how cotton bales are inspected at the warehouse and qualified for spinning.

Many cotton bales from Africa arrive at the warehouse torn open and damaged exposing the raw cotton to moisture, dirt and other contaminants. African cotton has good fibre characteristics but poor storage and poor packaging can compromise its quality.

**Jute packing is not recommended.**

Blow-room operations are the starting point of the spinning process. Compressed bales are opened with opener machines and impurities such as trash and foreign matter are removed with the least amount of lint loss. Blending and mixing are performed to get better quality yarn.

Cotton fibre testing with HVI equipment. An assessment of the raw material is done to measure the physical and technical aspects of the fibre. Cotton is graded according to quality parameters and appearance, after which an inspection and passing report is established.

Ginners observe vendor grading reports established for cotton from different origins. These reports also include the types and levels of contaminants found.
Ginners observe ring spinning technology which is high-speed and produces high quality yarn.

Vortex Air-Jet technology is another spinning technique which is equipped with a yarn breakage detector.

Raw material manager explains that contaminated cotton can cause yarn breakages during the spinning process.

A sample of a woven fabric with flaws as a consequence of contaminated cotton is shown to the ginners. Contamination represents a significant cost to spinning mills in terms of increased labour costs, yarn breakages and complaints/rejections from fabric and garment manufacturers.

Cone yarn in cotton ready for weaving, knitting and dyeing.

The ginners visit a dyeing and finishing factory to observe the preparations for dyeing cotton materials. The problem in dyed cotton materials caused by contaminants was discussed. Flaws in fabrics become visible during the dyeing process in textiles, as contaminants are not receptive to dye. These tiny contaminants caused by fragments of PP strings are not visible to the naked eye.
LESSONS LEARNED

- Clear understanding of the market and buyer requirements and the consequences of contamination from the client's perspective.

OUTCOMES

- Cotton samples were exchanged and pilot orders negotiated. One ginner sold 100 tons of Malawi cotton;
- Training proposal on contamination reduction by the spinner was discussed and agreed by the giners.
COTTON PROMOTION MISSION TO BANGLADESH, DHAKA, 25 – 28 MAY

Bangladesh is the 2nd largest cotton importer in the world and relies on cotton imports for their spinning sector. In 2012, Bangladesh imported 593,773 MT of cotton lint, of which Africa’s share in total imports amounted to 84,701 MT or 14%, ranking Africa as the 3rd largest supplier of cotton to Bangladesh after India (22%) and Uzbekistan (31%).

The African ginners and members of the cotton boards visited 3 large spinning factories in Bangladesh and met with key members of the Bangladesh Textile Mills Association (BTMA) and the Bangladesh Cotton Association (BCA), as well as cotton agents, spinners and traders interested in doing more direct business with the ginners.

Meetings with members of the Bangladesh Textile Mills Association and the Bangladesh Cotton Association.

Meeting at Viyellatex Spinning Mills.

TOUR OF THE FACTORY AND ON-SITE COACHING

The ginners visited cotton storage warehouses to observe the conditions of bales upon arrival. Raw material managers raise awareness of poor packing of cotton bales using inappropriate materials. Proper bale covering is important to protect the baled cotton from contamination and damage.

An example of proper bale covering using a plastic tarpaulin and PET strappings for cotton bale packaging is shown.

Waterproof PVC for bale packing is suitable to improve quality and protection of cotton bales. It also improves the appearance and marketability of African cotton bales in international markets.
Blow-room operations involve a series of functions such as unpacking of bales, cleaning of impurities and mixing cotton blends before spinning.

Manual checking and removal of contaminants from cotton before release to the mill represents increasing labour costs for spinners.

Jute strings and Polypropylene threads are among the major contaminants found in bales.

Fabrics with flaws resulting from contaminated yarns are shown to the ginners.

Testing of cotton fibre is done using HVI instruments. **Cotton selection criteria** for Bangladeshi standards is based on the following parameters:

- HVI and AFIS test results from outturn samples
- Acceptable parameters for Ring spinning:
  - Good Middling / Strict Middling
  - 1-1/8”, 4.0 – 4.9 NCL, 29 GPT
- Level of Contamination:
  - Free of poly-propylene and foreign fibres
Ring spinning technology. Square Textiles Mills has a spinning capacity of close to 60,000 spindles with a daily production of 40,000 kgs of yarn.

Open-end spinning technology comprising 3,192 open end heads with a daily production capacity of 20,000 kgs of yarn.

LESSONS LEARNED

- Clear understanding of the market and buyer requirements and the consequences of contamination from the client’s perspective.

OUTCOMES

- Trial orders were made with a Bangladesh spinner of **100 tons** of **Malawi cotton**, as well as for **200 tons** of **Tanzanian cotton**.

- Training proposal on contamination reduction by Square Textiles and Viyellatex was discussed and agreed by the ginners;

- Square Textiles and Viyellatex Spinning Mills will depute two experienced raw material technicians to train ginneries in Tanzania on contamination reduction for a period of two weeks starting in August – September during the cotton season;

- Square Textiles in collaboration with ITC will elaborate a training outline for a film to be realized on contamination reduction from the perspective of the spinning mill.
CONTAMINATION REDUCTION TRAINING IN TANZANIA

BY SPINNERS FROM THAILAND AND BANGLADESH

1st Training: 21 July - 7 August 2013
2nd Training: 30 August - 14 September 2013

(SHINYANGA & MWANZA REGIONS)

OBJECTIVES OF THE TRAINING

The purpose of the training programme is to raise awareness in cotton producers and ginners of the consequences of contamination for cotton users and to learn how to identify the contaminants and implement corrective action to eliminate or lower it to acceptable levels required by the market. Elimination of contamination will improve quality and increase price as spinners are willing to offer premium prices for cleaner cotton.

TRAINING BY SPINNING TECHNICIANS

From 21 July - 7 August 2013, a total of 675 cotton workers were trained in Tanzania on contamination reduction in 22 ginneries located in the cotton districts of the Shinyanga and Mwanza regions. Trainees were mainly ginnery operators, cotton gin feeders, managers and supervisors comprising 545 men of whom 78 were supervisory staff and 130 women.

Initially only 2 beneficiary ginneries Afrisan Ginning and SM Holdings were targeted for intensive training. However, following the request of the Tanzania Cotton Board (TCB), the training was extended to 20 other ginneries, including Aham Investment Co., Jambo Cotton Ginnery, Frescho Investment Co., Gaki Investment Co., Kahama Oil Mills, KCCL Kahama Cotton Co. Ltd., Kahama Cotton Bukoli, NidaTextile Mills, Birchand Oil Mill, Vitrecs Oil Mill, NGS Investment Co., Biore Co. Ltd., Bibiti Ginneries, Olam, Alliance, MeTL Group, S&C Ginning Ltd., Walji Investment Co. and Mugango Ginnery.

From 30 August – 14 September 2013, a second training was organized and conducted by spinning technicians from Bangladesh. A total of 910 farmers including 143 women received training on contamination reduction in 18 villages located in 5 districts (Maswa, Meatu, Kishapu, Sangu and Kwimba) - in the Shinyanga and Mwanza cotton regions. An additional 210 ginnery staff workers from 6 ginneries were trained bringing the total to 1,111 trainees.

TRAINING APPROACH

Meetings with managerial staff of the ginneries were undertaken to discuss the training approach followed by an inspection tour of the factory by the quality trainers to make an inventory of good work practices and to evaluate employee cotton handling practices that contribute to cotton contamination.

The contents of the training focused on:

- What is contamination and types of contaminants;
- Effects of contamination in terms of costs and consumer perception;
- What steps are employed by spinners to minimize contamination at the spinning mills;
- Best practices to reduce contamination at:
  - farmer level
  - buying posts
  - during transportation from buying post to ginnery
  - at the ginnery
  - packaging of bales and transportation
- Benefits of contamination-free cotton for Tanzania
A. MEETINGS AND DISCUSSIONS WITH GINNERY STAFF AND MANAGEMENT

Meetings with managerial staff of ginneries to discuss the training approach, followed by an inspection tour of the factory by the quality trainers to make an inventory of good work practices and to evaluate employee cotton handling practices that contribute to cotton contamination.

Quality trainer trains ginnery management staff. A presentation is shown on Thailand's cotton imports and consumption, fibre quality requirements for purchases, price comparison analysis between Tanzania cotton and other origins is shown. Samples of contaminants are shown to the production manager and general manager.

Training and discussion sessions are held with management and technical staff of ginning factories. Quality trainer explains the effects of contamination from a spinner’s point of view.
| Training begins with an introduction highlighting that Tanzanian cotton has good fibre characteristics, but due to high levels of contaminants, cotton is sold at discounted prices. | Samples of various contaminants are shown to ginnery operators for identification and awareness building. Ginnery supervisor is seen taking a picture of stained cotton sample. |

| Flawed fabrics and T-shirts are also shown to the trainees derived from the use of contaminated yarns. This further raised awareness on the causes and effects of contamination from a spinner mill’s perspective. | Cotton inspectors from the Tanzania Cotton Board are present during all trainings. |

| Bale inspection was immediately done following the training and correct methods shown for identifying minute contaminants. | The pieces of contaminants were collected and counted. |
Ginnery workers being shown flawed T-shirts with weaving defects from contaminated cotton.

Workers inspecting samples of cotton contaminants: e.g. birds feathers, cable wires, jute and PP strings and sweets wrappers.

Ginnery workers assembled to attend training courses on cotton contamination and best practices.

TCB representative explaining consequences of cotton contaminations on the quality of woven fabrics.

Trainer showing presentation on Thai spinning mill operations and data on Tanzanian cotton.
Bangladeshi trainers explaining to farmers the types of contamination, effect of contamination, what steps have been taken by spinning mills and what steps they should take to eliminate it.

Training sessions conducted at several villages. Trainer visits buying post and observes quality cotton as a result of contract farming.

Farmers being trained on contamination and proper harvesting techniques including measures to avoid contamination. Trainer shows samples of major contaminants such as PP strings.
C. GOOD PRACTICES OBSERVED AT GINNERIES

<table>
<thead>
<tr>
<th>Cotton grading is done to separate A from B grade. After the cotton parameters are defined, the seed cotton is brought to the storage go-down and qualified for ginning.</th>
<th>Raw cotton pre-cleaner and lint cleaner machines are installed at the ginnery. Pre-cleaners remove impurities from seed cotton and lint cleaners reduce trash and contaminants and improve fibre quality.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women workers use a locally-made sand screen to sift sand from raw cotton before ginning. Contaminants are also removed in the process.</td>
<td>Contaminants are collected and placed into a plastic container.</td>
</tr>
<tr>
<td>A mechanical sand screen is used to sift the sand from the seed cotton. The sand is collected and weighed to determine the price paid to the farmer.</td>
<td>Cotton workers are seen using cotton bags to transport seed cotton to the feeding point.</td>
</tr>
</tbody>
</table>
Proper baling straps are used at the bale press. A complete bale is broken on a weekly basis and women check for contaminants.

Women cotton workers wear hip bags and segregate contaminants at the feeding point. Quality trainer suggests that workers who pick contaminants should work closely with gin feeders. This way they can effectively reduce contamination before seed cotton goes through the suction system to the gin stands.

Seed cotton is transported in cotton grey cloth bags to the ginnery go-down. Ginned cotton is wrapped up with grey cotton packing materials and sheltered from contamination and damp.
GOOD PRACTICES OBSERVED AT BUYING POSTS

A good buying post displays grading boxes outside with A + B grades and with clear indication of the current price per kilogram of seed cotton. This is in line with regulations by the Tanzania Cotton Board.

D. BAD PRACTICES LEADING TO CONTAMINATION AT GINNERY LEVEL

Jute bags are used to transport cotton and PP coloured strings are used to tie the bags. Brooms, brushes and plastic bags amidst seed cotton contribute to contamination.

Torn clothing worn by cotton handlers and worn-out jute bags used to transport cotton, cause threads to drop in the heap which mixes with the cotton and cause contamination.
Grooves made on worn-out leather-clad rollers for double roller machines inside the ginnery result in pieces of remnants to mix with the cotton and cause contamination.

Double roller gins are old and not well maintained.

A jute bag is seen stuck in a DR machine during the ginning process. This will contaminate cotton quality. Cotton seeds are not properly being separated from the lint due to poor maintenance.

Presence of sand in seed cotton during the ginning process.

Some ginneries use cotton fabrics to cover bales, but are unaware that jute strings used for tying cause contamination.

Steel wires should not be used for bailing. Cotton is sensitive to contamination by rust. Moreover, steel straps could cause fires in a spinning factory when opened by force.
Polypropylene strings are used to bind machine parts at gin stands.

Cotton seeds are collected in Polypropylene bags.

Insufficient number of workers engaged in segregating contaminants at the feeding point.

Cotton handlers using inappropriate materials for transporting seed cotton.

**E. BAD PRACTICES LEADING TO CONTAMINATION AT BUYING POSTS**

Seed cotton collected from the farm is transported to the buying posts on ox-driven carts. But quality is compromised with PP cloth coverings and jute bags on top of the heap.

Polypropylene bags are commonly found inside and outside buying posts.
Seed cotton is also transported to the buying posts on bicycles in PP bags and tied using PP strings.

F. FOLLOW-UP WITH AFRISIAN GINNING LTD – IMMEDIATE IMPROVEMENTS

A follow-up meeting with Director of Afrisian Ginning was scheduled to discuss and assess the impact of the training on contamination reduction. Quality trainer provides advice to increase personnel at the go-down and feeding (suction) points and to check final bales regularly and note the level of contaminants.

Quality trainer proposes strings made of sisal or nylon to tie up cotton bags and suggests the use of plastic orange tarpaulin bale covers that provide better protection against contamination and humidity for bale packing instead of jute bags.

Nylon strings are now used to tie up bales wrapped with cotton fabrics. The use of jute strings has been discarded.
Final bale inspections from current production are carried out daily and corrective action taken immediately to prevent contamination.

More contaminants have been detected and removed following daily bale inspections. A female ginnery worker shows a child’s shoe recently found in the heap.

ACTION TAKEN AND CHANGES IMPLEMENTED

Afrisian Ginnery has implemented changes upon recommendations made by Lucky Spinning. Since the training, they have successfully achieved **50% reduction** in contamination levels by taking the following corrective measures:

- Performing final bale inspections on a daily basis.
- Enforcing stricter control by deploying more employees at cotton feeding areas to ginnery and gin stands to pick up contaminants.
- The ginnery has instituted cotton awareness meetings among staff every 1st and 15th day of the month.

FUTURE PLANS BY AFRISIAN GINNERY TO REDUCE CONTAMINATION

- Provide cotton hip bags for all employees to collect contaminants where they are working
- Display signs from farm gate to ginnery to increase awareness among employees.

G. RECOMMENDATIONS BY QUALITY TRAINERS FROM THAILAND AND BANGLADESH

The recommendations presented here provide cotton growers and ginners with a practical approach to the prevention of contamination at farm level, buying post and ginnery level.

FARM LEVEL

- Farmers lack knowledge about the effects of contamination and about the insecticide spraying process.
  - At the start of the season on contamination and cultivation, training programmes can be arranged by TCB with ginners' help.
- Cotton picking and cotton transport bags are not available to farmers.
  - Grey cotton bags for cotton picking and transporting of seed cotton must be provided by TCB and ginners
- Farmers are not rewarded for producing contamination free quality cotton.
  - Ginners should reward good quality cotton through financial benefit
• During harvest time, there is a lack of supervision of farmers and buying post manager to control contamination
  o Better supervision is needed to prevent seed cotton contamination at farm level, which makes it difficult to ensure contamination-free cotton
• Contract farming is necessary to ensure quality and increase productivity

BUYING POST

• Buying post managers should be trained on the effects of cotton contamination
  o Sign posts and notice boards on do’s and don’ts can be displayed as reminders
  o Buying posts conditions to be regularly checked and controlled by ginners

GINNERY

• Grey cotton packing material must be used for covering bales
• Need to develop a clean area for seed cotton handling
• Ginners need to introduce QMS (Quality Management System) in their factories.
• Training programmes to be arranged on a regular basis at the start of cotton picking
• Cotton seed processing area should be isolated from lint cotton
• Ginning wastage should not be collected in polypropylene bags inside the ginnery
• Seed cotton storage area should be free from polypropylene strings, bags and cover sheets
• Contamination checker may be introduced at the feeding point
• Contamination sorter machine may be introduced in the ginning process line

Following the training of 675 cotton ginnery workers and staff and 911 farmers, a meeting with members of the Tanzania Cotton Board including cotton ginners and inspectors from different regions took place to discuss a systems approach on how to make post training on quality control measures more sustainable and effective.
H. THE ROLE OF THE TANZANIA COTTON BOARD (TCB) AND THE TANZANIA COTTON ASSOCIATION (TCA)

Both the Tanzania Cotton Board (TCB, the regulatory body of the government) and the Tanzania Cotton Association (TCA - the umbrella organization of cotton farmers) can play an important role in creating a framework and an enabling environment that favours further development of the cotton industry in Tanzania.

- Create a training programme for trainers on cotton contamination. Continuous education is essential to improve and maintain the quality of cotton production. Such a programme could consist of training courses, but also of radio and cinema programmes that can reach a wider audience.
- Provide quality guiding principles and monitor compliance.
- Standardize performance across the industry by creating checklists as part of the cotton regulations. Such checklists can provide quality management on farm, buying post and ginnery levels.
- Improve the regulatory regime and improve collaboration with village leaderships to enforce rules on quality.
- Encourage different cotton price levels in accordance with the quality to encourage improvements.
- Procure proper cotton packaging materials in bulk to make them affordable to small scale farmers.
- Enforce mandatory usage of proper cotton packaging materials and ban the use of non-recommended contaminating materials.
- Encourage the use of digital scales and a calibration system to avoid disputes and cheating.
- Provide uniforms to ginnery staff to avoid contamination by worn-out clothes.
- Encourage ginneries to create quality management systems and processes with dedicated quality staff who will conduct quality checks at the buying posts and ginneries.
- Consider contract farming schemes that allow the farmers access to inputs and correct picking and packaging bags. It would also strengthen the position of farmers by increasing their cohesiveness to reduce their exploitation.
- Translate all training material into Swahili so as to ensure outreach to farmers.
Evaluation Report

Linking African cotton ginners to Asian spinners in partnership development is one important component of the new EDF 10 cotton programme, which aims to improve cotton quality and promote African cotton in Asian markets through training and feedback by spinning mills. In July and September 2013, ITC conducted two contamination reduction trainings in Tanzania undertaken by spinning technicians from Thailand and Bangladesh.

From 5-7 November 2013, in cooperation with the African Cotton & Textiles Industries Federation (ACTIF) and the Tanzania Cotton Board (TCB), ITC organized a Regional Training and Dissemination Workshop in Dar es Salaam, for 8 Eastern and Southern African (ESA) countries drawn from Ethiopia, Kenya, Malawi, Mozambique, Tanzania, Uganda, Zambia and Zimbabwe.

The objectives of the training and workshop were to:

- Provide a forum for ESA cotton stakeholders to share results, good practices and lessons learned from partnership building with Asian spinners and two contamination reduction trainings conducted by Thailand and Bangladesh, and other project activities;
- Understand international cotton trade and price dynamics; and
- Promote networking amongst workshop participants along the regional value chain.

The workshop seminar was attended by 26 participants from ginning and spinning companies, cotton associations and farmer cooperatives from 8 ESA countries, which included 4 women and 7 self-sponsored participants from Uganda, Malawi and Zambia. Local participants consisted of a mix of representatives from ginning companies, the EU Delegation in Tanzania, the Tanzania Cotton Board and the Ministry of Industry and Trade bringing the total to 41 attendees.
The technical training on marketing, international cotton pricing and logistics was provided by an ITC international consultant, which covered the following presentation topics:

- Cotton price volatility, implications for ginners and farmers
- Cotton price references: Cotlook A Index vs. New York Futures prices
- How traders calculate their buying price and what ginners need to know to negotiate the best possible deal?
- International cotton rules, dispute settlements, arbitration rules and the importance of using classification results in technical arbitration – How it works for African ginners?
- Price risk management that can be undertaken by independent African ginners
- Managing logistics of cotton in Africa
- Seed cotton pricing schemes in Africa: Why ginners need to work together with farmers?
## List of Participants (ESA Cotton Sector)

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Organization</th>
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<tbody>
<tr>
<td>Mr. Fassil Tadesse</td>
<td>CEO/Spinner</td>
<td>Kebire Textile Enterprises Plc. (Ethiopia)</td>
</tr>
<tr>
<td>Mr. Yared Hailemariam Abraha</td>
<td>Ginner</td>
<td>Hiwot Agricultural Mechanization Plc. (Ethiopia)</td>
</tr>
<tr>
<td>Mr. Joseph Nyagari</td>
<td>Program &amp; ICT Manager</td>
<td>ACTIF (Kenya)</td>
</tr>
<tr>
<td>Mr. John Adhola</td>
<td>Regional Manager</td>
<td>Cotton Development Authority (Kenya)</td>
</tr>
<tr>
<td>Mr. Francis Mwiliu</td>
<td>Ginner</td>
<td>Meru Ginnery (Kenya)</td>
</tr>
<tr>
<td>Mrs. Mary Mwaura</td>
<td>Spinner</td>
<td>Thika Cloth Mills (Kenya)</td>
</tr>
<tr>
<td>Ms. Elizabeth Magombo</td>
<td>Project Officer</td>
<td>African Institute for Corporate Citizenship (Cotton Development Trust, Malawi)</td>
</tr>
<tr>
<td>Mr. Vinay Kamble</td>
<td>Business Operations Manager</td>
<td>Toleza Agricultural Enterprises (Malawi)</td>
</tr>
<tr>
<td>Mr. Heinrich Potani</td>
<td>Crop Production Manager</td>
<td>Great Lakes Cotton Company (Malawi)</td>
</tr>
<tr>
<td>Mrs. Zulfate Walia</td>
<td>Cotton Trade Analyst</td>
<td>Mozambique Cotton Institution (Mozambique)</td>
</tr>
<tr>
<td>Mr. Paulo Marques</td>
<td>Company Representative</td>
<td>Sociedad Algodoeira de Mutuali (Mozambique)</td>
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<tr>
<td>Mr. Saleh Nahdi</td>
<td>Director</td>
<td>SM Holdings (Tanzania)</td>
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<tr>
<td>Mr. K. Shetty</td>
<td>General Manager</td>
<td>Afrisian Ginning Co. (Tanzania)</td>
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<tr>
<td>Mr. Adam Bwambale</td>
<td>Manager</td>
<td>Nyakatonzi Cooperative Union (Uganda)</td>
</tr>
<tr>
<td>Mr. Amdan Khan</td>
<td>Managing Director</td>
<td>Rwenzori Ginning Co. (Uganda)</td>
</tr>
<tr>
<td>Mrs. Jolly Sabune</td>
<td>Managing Director</td>
<td>Cotton Development Organization (Uganda)</td>
</tr>
<tr>
<td>Mr. Hitesh Panchmatia</td>
<td>Managing Director</td>
<td>Bon Holdings Ltd (Uganda)</td>
</tr>
<tr>
<td>Mr. John Okech</td>
<td>Manager</td>
<td>West Acholi Cooperatives Union (Uganda)</td>
</tr>
<tr>
<td>Mr. Jackson Oyugi</td>
<td>Ginner</td>
<td>West Acholi Cooperatives Union (Uganda)</td>
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<tr>
<td>Mr. Bob Ogen</td>
<td>Manager</td>
<td>East Acholi Cooperatives Union (Uganda)</td>
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<tr>
<td>Mr. Edwin Mwesigye</td>
<td>Ginner</td>
<td>Mutuma Commercial Services (Uganda)</td>
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<tr>
<td>Mr. Joseph Nkole</td>
<td>National Coordinator</td>
<td>Cotton Association of Zambia</td>
</tr>
<tr>
<td>Mr. Dafulin Kaonga</td>
<td>CEO/Board Secretary</td>
<td>Cotton Board of Zambia</td>
</tr>
<tr>
<td>Mr. Danford Simujika</td>
<td>General Manager</td>
<td>Mumbwa Farmers’ Ginning &amp; Pressing Company (Zambia)</td>
</tr>
<tr>
<td>Mr. K. Mabonga</td>
<td>Company Representative</td>
<td>The Cotton Company of Zimbabwe</td>
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<tr>
<td>Mr. Jay Patel</td>
<td>Company Representative</td>
<td>Cottzim (Zimbabwe)</td>
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### ITC Participants

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<thead>
<tr>
<th>Name</th>
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<tr>
<td>Mr. Matthias Knappe</td>
<td>Programme Manager, Cotton Textiles and Clothing</td>
</tr>
<tr>
<td>Mr. Gérald Estur</td>
<td>International Consultant (former cotton trader)</td>
</tr>
<tr>
<td>Ms. Cynthia Zijlstra-Adriano</td>
<td>Research Assistant</td>
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SUMMARY OF EVENTS - TUESDAY, 5 NOVEMBER 2013

Marketing Strategies for African Ginners

- ITC gave a presentation on the programme approach of linking African cotton ginners to spinners in partnership development, focusing on the importance to forge closer linkages between ginners and spinners. Based on transparency and mutual trust between partners, a win-win situation would result thereby leading to improvements in cotton quality, better prices and increased quantity.

Regional Training and Dissemination Workshop

- ITC delivered a presentation on the approach and results of 2 contamination reduction trainings in Tanzania undertaken with selected ginners and Asian spinning mills.

Other

- Other activities included the testimony to the entire programme approach from participating ginning companies, followed by a video on contamination reduction practices from a spinning mills’ perspective. A Zambian case study was presented on a farmer-owned ginnery.
- Discussions on how to promote African cotton more effectively and a brainstorming session on the approach and possible extension in terms of content and beneficiaries.
- At the end of the day, the participants were asked to evaluate the programme and to provide feedback and suggestions.

FEEDBACK ANALYSIS - DAY 1

Question 1: How do you judge the approach presented to promote ESA cotton to develop closer linkages with Asian spinners?

Question 2: Would you be interested to join the programme?

Question 3: Are you willing to cover your own costs for travel and accommodation?

The analysis of the answers from the quantitative feedback given in the evaluation forms confirms that the majority of participants regard the approach to promote African cotton and develop closer linkages with Asian spinners as appropriate.

Fig. 1 shows that 60% of the participants rated the approach as “Very Good”, while 38% of respondents judged it to be “Excellent”. A follow-on question regarding which markets would be of interest, the participants responded they were particularly interested in Bangladesh, China, India, Indonesia, Thailand and Vietnam as well as the African and Middle East markets. Fig. 2 shows that as much as 90% of participants are willing to join the programme.
With regard to costs, Fig. 3 shows that only 20% of participants are willing to cover costs of travel and accommodation, while a further 20% are in favour of cost-sharing. However due to budgetary constraints, approximately 60% of participants are not willing or unable to cover their own costs.

LESSONS LEARNED

- Cotton contamination does not only affect lint prices, but also has a negative impact on the branding of African cotton.
- Lint prices are determined by fibre properties, contamination by foreign matter, marketing factors and brand reputation.
- Low farm productivity affects farmers’ incomes, which in turn affects productivity at gin level resulting in lower incomes for the ginner and ultimately for the farmer.
- Controlling contaminants requires the concerted efforts by all ginners from the whole country. Ginners who are not making serious efforts to reduce contamination will increase the perceived risk by spinners that cotton from the country is contaminated.
- Contamination reduction training techniques should cover all aspects of the production chain from farm to ginning. This includes picking, transport, packaging materials, manual sorting of contaminants.

COMMENTS & SUGGESTIONS

- Weak cooperative companies should be strengthened. Its members who are cotton farmers could be included in capacity-building components.
- Spinners should contact ginners directly and make offers for lint and enter into contracts with them.
- Involve more ginners and focus on the benefits they can get from better quality.
- Increase focus on regional cotton trade.
• Project will be of good value to improve the quality of Ugandan cotton/ESA cotton.
• Conduct a similar workshop in Malawi so that more ginners can attend the training. This will increase their knowledge on how to link with spinners and boost the cotton industry.
• Avoid too much focus on regulation since enforcement is weak.
• Consider providing financial support to well-deserving firms and organizations who cannot afford to join the programme.
• Farmer organizations should be encouraged to source funds for study tours from development partners.
• All stakeholders should be trained in cotton contamination reduction, including farmers, agents, ginners, spinners, regulators, textile business people, politicians and government decision makers.
• Interest to see sophisticated machines used in ginneries in India that reduce contamination.
• The programme is excellent not only for farmers and ginners, but also for government officials to formulate or review policies to eliminate cotton contamination.
• Need to develop local textile mills and attract other foreign investors.
• As many farmers and ginners as possible should be assisted financially to join the programme.
• African countries have traditionally focused their attention on production rather than on the market. Closer interaction with clients and cotton consumers is vital to maintain international competitiveness.

SUMMARY OF EVENTS – WEDNESDAY AND THURSDAY, 6 AND 7 NOVEMBER 2013

Training on Cotton Trade and Price Risk Management

ITC delivered the following presentations on how to promote African cotton more effectively:

Cotton Pricing

- Cotton pricing volatility, implications for ginners and farmers
- Cotton price references: Cotlook A Index vs. New York Futures prices
- How traders calculate their buying price and what ginners need to know to negotiate the best possible deal
- Price risk management that can be undertaken by independent African ginners
- Seed cotton pricing schemes in Africa: Why ginners need to work together with farmers

Cotton rules

- International cotton rules, dispute settlement, arbitration rules and importance of using classification results in technical arbitration

Logistics

- Managing logistics of cotton in Africa

All participants were advised to come prepared and to bring along details of recent sales contracts. Each received a copy of the Price Risk Management training modules for study ahead of the training. A copy of the Cotton Exporter’s Guide was also distributed. The presentation training seminar was very interactive and participatory followed by a beneficial Q&A session during which African ginners better understood the challenges facing cotton trade and how to mitigate the risks associated with it.

Podium discussion with selected ginners and spinners for long-term cooperation

- To encourage intra-regional trade, selected ginners and spinners exchanged information on cotton production and consumption, methods of selling and procuring lint, which countries they sell to and buy cotton from, and interest to develop closer linkages.
Other:
- Case study on Zambia: Informative presentation on the establishment of a farmer-cooperative ginnery and potential to develop the handloom sector.
- At the end of each day, the participants were asked to evaluate the training and provide feedback and suggestions for an expanded programme approach.

The training workshop provided insights into cotton trading
Interactive discussions during Q&A sessions

**FEEDBACK ANALYSIS - DAYS 2 & 3**

Overall, the training presentations were highly rated and judged very useful. The most appreciated aspects of the training were the usefulness and relevance of the subject to the participant's work, which is shown next to each rating. Comparative results show that there is a positive correlation between appreciation and relevance variables.

On average, the technical content and quality of the presentations on cotton pricing (Figures 4, 5, 6, 7 and 8) fared well with 30% the participants rating the presentations “excellent” and a further 60% rating the presentations “very good”. The relevance and usefulness of the subject to their work has been fully and largely met with average scores of 40% and 45% respectively.

As the appreciation is lower when the relevance is low, this in no way carries a negative bearing on the technical aspect of the presentation. Simply, it is just less relevant to their work.
MAJOR LESSONS LEARNED

- There are 2 cotton pricing regimes in Africa. East and Southern Africa (ESA) follows price fixation before marketing based on the international price projection minus costs known as export parity price. West and Central Africa (WCA) follow the Pan-seasonal minimum guaranteed pre-planting price. The extra parity price followed by ESA subjects farmers to greater price volatility.
- On the issue of selling price, ginners must understand that the Cotlook A Index is only the prices quoted by cotton merchants and relevant for calculating price volatility. They do not reflect the actual selling price. In order to get better selling prices, ginners should base their negotiation deals on New York futures.
- Ginners must become well versed in all aspects of the INCOTERMS before entering into contracts
- African Cotton producers are price takers on the international market and this price is very volatile due to changes in cotton production and consumption.

COMMENTS & SUGGESTIONS

- The presentation topics are vital to our business and we have understood price volatility. This will help us negotiate better and fairer prices with merchants.
- The training was relevant to the practical problems surrounding pricing and understanding of markets.
- Adopt a more practical approach to the Futures and Cotlook A Index to understand pricing better.
- Organize exchange visits for ESA farmers to WCA farmers to learn of best ways to negotiate with ginners.
- Identify investment opportunities.
- The methodology used in this training has been extremely good. My Organisation has benefitted from these trainings and hope that we continue receiving more.
- Cotton trade deregulation has not benefitted Ugandan farmers. This policy needs to be critically analysed further.
- Topics were a bit technical and difficult to understand, but the general principles were understood.
- More educational and practical training required on how to get good prices for cotton
- The training has been very good especially on the topics of impact on price volatility and logistics.
- More practical examples are needed on contracts and documents used in cotton sales, e.g. Letter of Credit.
• Extend training support in Zambia and Uganda.
• A very good forum to bring the African cotton industry under one platform.
• Thank you ITC for the numerous exposures to international cotton trade. No other organization has done it for us.
• ESA countries should be assisted to becoming members of the Better Cotton Initiative (BCI), given that Uganda is already fully-compliant with carbon footprint standards.

Presentations on International cotton rules, dispute settlement, arbitration rules and importance of using classification results in technical arbitration, and managing logistics of cotton from Africa were well appreciated by the participants. The large majority rated these presentations “excellent” and “very good” (Figures 9 and 10).

Podium discussion with selected ginners and spinners for long-term cooperation

The participants of the discussion podium were spinners from Ethiopia and Kenya and a ginner from Zimbabwe. The panelists exchanged information on their relative cotton production and consumption, methods of selling and procuring lint, which countries they sell to and buy cotton from, and interest to develop closer linkages.

The interactive and participatory sessions kept trainees engaged in issues such as payment, quality, logistics and solutions for intra-regional trade. Figure 11 shows that 25% of participants rated the discussion topics “excellent” and 50% “very good”. The discussions were fully relevant to their work with a score of 40%.
LESSONS LEARNED

• The relatively long time it takes for ginners to receive payment from spinners, creating cash flow problems and an accumulation of interest which makes cotton procurement difficult.
• Ginners face uncertainty as to the quality of cotton which is sometimes downgraded once it reaches the destination.
• The existence of non-tariff barriers being a major obstacle to intra-African trade.
• Presence of weaker associations renders the task difficult to manage quality challenges.
• Spinners see contamination as a major problem. For e.g. ESA spinners (Ethiopia) are used to quality standards of Turkish cotton and hesitate to buy African cotton unless quality is improved.

COMMENTS AND SUGGESTIONS

• The African Cotton & Textile Industries Federation (ACTIF) should identify issues that hinder inter-regional trade and look for solutions together with COMESA.
• Regulatory bodies should ensure that stakeholder associations are strengthened to ensure high cotton quality standards are maintained and work towards the reduction of contamination is being implemented.
• There is need to engage Africa-Africa partnerships in cotton marketing. The Governments are to take a leading role in creating an enabling environment for investment opportunities.
OVERALL SUGGESTIONS BY THE PARTICIPANTS FOR IMPROVEMENTS IN ITC TRAINING WORKSHOPS IN TERMS OF TOPICS TO BE REVISITED AND INCLUDED:

TOPICS TO BE REVISITED FOR MORE IN-DEPTH LEARNING:

- Price risk management
- Seed cotton pricing schemes
- Price volatility
- Cotton References: Cotlook A Index and New York Futures Prices for cotton
- How to link African ginners and spinners for long-term cooperation?
- How traders calculate their buying price and what ginners need to know to negotiate the best possible deal?
- Cotton price references
- Managing logistics of cotton in Africa

TOPICS TO BE INCLUDED:

- Strengthening of farmer organizations
- Capacity building for regulators
- Efficient ginning operations
- Formulae for determination of producer prices for cotton
- Selling cotton and lint by auctioning
- Maximizing cotton yields from improved cotton varieties
- How to offer higher producer prices for cotton as in the case of West Africa?
- Price correlations with seasons in the southern and northern hemisphere countries
- Means of reducing contamination to add value to lint
- Incentives to reduce cotton contamination
- Business linkages between ginners and farmers
- How ex-merchants give inside information on how merchants work
- More and broader inter-relationships between spinners and ginners
- Value addition for our product
- Farmer to farmer interaction in the field sharing experiences in yields, prices and avoiding contamination
VISIT OF AFRICAN GINNERS AND SPINNER
TO INDIAN GINNING AND SPINNING MILLS
10 – 13 December 2013
(GUJARAT, ANDHRA PRADESH AND TAMILNADU)

In pursuit of learning the best practices on cotton contamination reduction, the International Trade Centre (ITC), in collaboration with the Textiles Committee, Ministry of Textiles, Government of India, organized a visit of two Tanzanian ginners and an Ethiopian spinner to India. The objective of the mission was to visit two 5-star rated ginneries, a spinning mill, a manufacturer of contamination detection machines and the India Cotton Federation.

PARTICIPANTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Company / Organization</th>
<th>Country</th>
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<tbody>
<tr>
<td>Mr Saleh NAHDI, Director</td>
<td>S.M. Holdings</td>
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<tr>
<td>Mr. Kibrom Fitsum Gebremeskel, Director General Manager</td>
<td>Kebire Enterprise PLC Garment &amp; Textile Factory</td>
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<td>Mr. K.M. Shetty, General Manager</td>
<td>Afrisian Ginning Ltd.</td>
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<tr>
<td>Mr. Ramanand Ram, ITC Resource Person</td>
<td>Textile Committee, Ministry of Textiles, Government of India</td>
<td>India</td>
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<tr>
<td>Mr. Marco Charles Mtunga, ITC International Consultant</td>
<td>International Trade Centre</td>
<td>Tanzania</td>
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VISIT SCHEDULE

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<td>10 December 2013</td>
<td>Rimtex Engineering Pvt. Ltd.</td>
<td>Surendranagar</td>
<td>Gujarat</td>
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<tr>
<td>11 December 2013</td>
<td>Amit Cottons Pvt. Ltd.</td>
<td>Mahboobnagar</td>
<td>Andhra Pradesh</td>
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<tr>
<td>12 December 2013</td>
<td>Vetal Electronics</td>
<td>Coimbatore</td>
<td>Tamilnadu</td>
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<td>12 December 2013</td>
<td>Hindustan Cotton Spinning Mills</td>
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<td>13 December 2013</td>
<td>Trade Fair Visit</td>
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<td>13 December 2013</td>
<td>Indian Cotton Federation</td>
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RIMTEX ENGINEERING PVT. LTD

On 10th December 2013 the group visited Rimtex ginnery which is located 125 km from Ahmedabad. Reduction of cotton contamination is the first priority of the ginnery and the factory is equipped with 2 contamination detection machines from a German manufacturer.

Managers from the Rimtex factory shared their experience with the contamination detection machine:

- The machine is capable of detecting 50% of the contaminants;
- The processing capacity is between 1.5 and 2 tons;
- Ginning efficiency is reduced as every lint must pass at the detection machine;
- The market is not offering premium for contamination controlled cotton to match with the investment made, although, quality cotton is given priority in the market;
- Apart from using the contamination cleaning machine, Rimtex Engineering ginnery manages contamination by adoption of the following good practices:
  - The offloading area is well surfaced to avoid any contaminants;
  - Seed cotton is received in loose form to allow inspection at offloading;
• Sorting of contaminants is effected at the offloading and feeding points by female workers who cover their heads with scarves to prevent hair contamination; and

• Currently they are using high density polyethylene (HDPE) to pack bales, but plans are underway to move to cotton packaging material.

Seed cotton being received at the ginnery in bulk
Female workers offloading seed cotton with their heads covered with scarves to avoid contamination with hair. They are wearing cotton hip bags pockets to collect contaminants
Female workers are feeding the gins at the suction pipe and at the same time removing contaminants

Picked contaminants at offloading and feeding points
Bales packed using high density polyethylene (HDPE)

AMIT COTTONS PVT. LTD

On 11 December 2013 the group visited Amit Cottons Pvt. Ltd which is located 50km from Hyderabad. The ginnery is a large complex with installed capacity to produce 1,800 bales per day (216 double roller gins). One wing of the ginnery is fitted with 3 contamination cleaning machines from the Indian manufacturer Vetal. From Amit Cottons Pvt. Ltd point of view, contamination reduction is a culture which needs to be nurtured. Amit adopted the following strategies to control contamination:

• Seed cotton is received in loose form and not in bags. Initially the company had to pay premium to any farmer or agent who would bring cotton in loose form;

• Farmers are paid according to quality after classification of their cotton. Once cotton is delivered a small quantity is ginned and is classified;

• The entire process from offloading to baling is completely automated, restricting the human element to the minimum;
• The installation of pre-gin cleaners and post-gin cleaners eliminates short fibres, trash, high density contents (such as metals, etc.)

• Amit Cottons gave the following advice with regard to the contamination cleaning machine:
  • The machine is important for a company which aims at building long relationship with customers;
  • However, the market is not paying premium for contamination controlled cotton;
  • Processing efficiency is reduced and this ought to be compensated by a premium which the market is not prepared to pay.
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<tr>
<td>Bailing press unit</td>
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<td>Storage of pressed bales</td>
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<td>A ginner from Tanzania is being shown contaminants ejected by a “Vetal” contamination cleaning machine</td>
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<td>Vetal contamination cleaning machine</td>
<td>Vetal contamination cleaning machine</td>
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<td>Vetal scan rejection report showing the number of ejected contaminants</td>
<td>Vetal scan rejection report showing the number of ejected contaminants</td>
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<td>Tanzanian ginner showing ejected contaminants by machine</td>
<td>The group is looking at contaminants at the ejection point</td>
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<td>“Vetal” contamination cleaning machine connections</td>
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The group with Amit Cotton Management Staff

VETAL TEXTILES AND ELECTRONICS PVT. LTD

On 12 December 2013, the group had the opportunity to visit Vetal Textiles and Electronics Pvt. Ltd. The company is the manufacturer of the contamination cleaning machine Vetal.

Contamination Cleaning Machine

The following are salient features of the machine:

- It has a wide scanning area;
- Independent settings for sensitivity;
- Separate settings for delay timing;
- Micro controller based individual hardware for individual camera ensures continuous monitoring;
- 15 inches wide angle colour graphics display;
- Online, hour wise, day wise and month wise graphic reports;
- Built in computer enhances any type of connectivity to external world;
- Capacity 1500kgs to 2000kgs/hour;
- Independent zoning with line scan cameras focus the contamination directly and activates the nozzles to eject them, results in good fibre rejection;
• A unique collection system eliminates turbulence to pick up and transfer all ejected contaminants continuously to the bag.

**Working principles**

• Contamination detection by optical means

All systems detect contamination by optical means. Some use photo sensors and detect the contamination as being darker than the cotton. Other sorting machines use colour cameras and detect contamination as being different in colour. The difference in practical performance is insignificant.

• Contamination detection by ultrasonic means

The degree of reflectance of acoustic waves depends on the surface structure of the object in their path. It detects contamination independent of its colour on the basis of its surface structure. Most contamination has a denser surface structure than lose cotton tufts, in particular plastics. The sensor consists of a number of emitters of ultrasonic sound waves which are not audible for humans. The receiver receives waves which are reflected by the contamination contained in loose cotton. If no contamination is present, the ultrasonic waves will be absorbed in the absorber box located on the other side of the pipe.

• Contamination ejection by pneumatic valves

In case of detection of a contamination by the optical or acoustical system, the electronic control will activate pneumatic valves. It will take into account the transportation speed of the raw material and release the air blow after the necessary delay. The number of valves that are activated is variable, depending on the size of the detected contamination. The air blow will be targeted by activating only those valves which are located in front of the passing contamination. The contamination will be deviated through an opening in the pipes into the waste container of the machine.

**Key components of contamination removal system**

• Material transport sub system

This consists of a transport duct through which cotton passes. The duct has a transparent illumination section for cameras to view and capture images of passing fibre tufts. Just below this, high-speed pneumatic air nozzles are positioned to blow out the contamination. The ejection nozzle has a side-way opening in the duct directly opposite to air nozzle, thus enabling separation and collection of contamination into a waste collector.
• Machine vision subsystem
This consists of high-speed colour CCD cameras positioned on both sides of transport duct and an industrial computer integrated with imaging hardware and software. It also consists of high quality lightning and reflection mirror to enhance the camera view of passing cotton. The high-speed and sensitivity of colour CCD cameras make it possible to detect very accurately foreign material of small dimension. High frequency long length fluorescent tubes provide adequate and uniform lightning.

• Software subsystem
This consists of an operator interface and sophisticated software that control the operation of the entire equipment, which is the heart of entire system. It uses the most advanced technique to acquire images of detected and ejected foreign material at highest sensitivity levels. It is capable of adjusting automatically the different cotton mixings. The settings in this system are easy to understand and offer flexibility to control the entire system. An operator interface helps in trouble shooting in unlikely case of problems.

The most effective positioning of the contamination removal system is in the blow room line. The degree of opening of the cotton tufts is the controlling parameter for selecting the optimal position in the blow room line.

HINDUSTAN COTTON SPINNING MILLS

On 12th December 2013, the group also visited Hindustan Cotton Spinning Mill and had the opportunity to see the contamination cleaning machine in action at a spinning mill.
Contamination cleaning machine at Hindustan Spinning Mill

The group being briefed on the spinning process

Sorting of contaminants ejected by the contamination detection machine

Contaminants ejected by the contamination cleaning machine

Yarn clearer at work to ensure yarn quality is maintained
TEXTILE TRADE FAIR AND THE INDIAN COTTON FEDERATION

On 13 December 2013 the group visited the Textile Trade Fair and visited the India Cotton Federation. The group had fruitful discussions with the Federation which led to the following observations and recommendations:

• The intrinsic quality parameters of Tanzania cotton are very good but contamination reduction is the major challenge. One trader narrated the problem he encountered in 2009 when he bought presumably good quality cotton which turned brown after selling to customers. The cotton was contaminated with chemicals such as fertilizer. For Tanzania to penetrate Indian market the quality need to be above what is supplied locally or else sell at a lower price;

• Contamination reduction strategy should be developed at all levels from the farm to the ginning level;

• The federation is ready to help willing Tanzania ginners to sell directly to spinners instead of relying on merchants; and

• Contamination cleaning machines are not popular in India because their capacity to remove contaminants is not more than 60%. Moreover, the cleaned cotton does not fetch a premium price.

LESSONS LEARNED

The visit to India has been an important learning experience on how 5-star rated ginners in India manage contamination. The following are salient issues learned:

• In order to improve cotton quality at the ginnery level, there is a need to assess and grade all ginning factories. The exercise will benefit the industry in the following ways:
  o Rating of ginners will help buyers in selecting the appropriate ginnery to source their cotton;
  o For the cotton trader/ ginner, the rating will serve as an effective marketing tool. The rating will boost the credibility of the factory both in domestic and overseas markets;
  o The rating will induce competition among ginners towards modernization of their ginners which will stimulate quality improvement.

• Managing contamination involves building a culture of zero tolerance which needs to be embraced by all players along the value chain from farmers to spinners. To achieve this, consistent training is required at all levels;

• The high level of professionalism practiced by Amit Cotton Pvt. Ltd of buying cotton according to its quality after classification, created an incentive to control contamination;

• Contamination cleaning machines are not popular in India partly because no premium price is fetched for contamination controlled cotton to offset the cost of investment. However, those ginners which are fitted with the machine do get priority in selling their lint;

• Trading of African cotton to India requires either selling better quality than what is available locally or selling at a low price. It is easier to sell to India during the off-season period;

• Price of seed cotton ranges between 75 and 80 US dollar cents per kilogram. By African standards, where prices range from 35 to 50 US dollar cents, this is a high price. African countries can improve the income of their farmers by exploiting this market potential.

• In developing the training manual on cotton contamination, ITC can benefit from the Indian experience in the following areas:
  o Practical experience in handling contamination at the farm, storage, marketing yard, transportation and ginning; and
  o Best manufacturing practices at both ginners and textile mills.
GINNERS AND SPINNER OBSERVATIONS

The visiting African ginners and spinner had the following observations:

- The spinner from Ethiopia was impressed with the contamination cleaning machine and intend to install it at their mill;
- Due to the fact that spinners are not ready to pay premium for the contamination controlled cotton, ginners did not commit themselves to procuring and installing the contamination cleaning machine. However, they consider this an issue which needs to be discussed with their customers in order to justify the cost of investment;
- Ginners are willing to trade with India spinners and they are looking for better ways of doing it;
- Ginners learnt from Amit Cottons on how a big ginner can run the plant professionally. With production capacity of 1,800 bales per day, all cotton received at the gin is classed before it is bought. It requires commitment and knowledge to accomplish that;
- Ginners encouraged the government to look into ways on how the income of the farmer can be increased by re-examining the marketing process and taxation. Indian farmers are receiving a better price for their cotton;
- Having obtained contacts with Indian cotton Federation, some traders are already doing business with Tanzania. Ginners are looking forward to explore more markets.

RECOMMENDATIONS

- In order to encourage modernization of ginneries and improve the quality of lint produced, it is important to grade the quality. This is an area where the relevant cotton authorities in Africa, together with ITC, could work together with the Textile Committee of India and take advantage of their vast experience with the issue;
- In order to build a culture of zero tolerance to contamination, training of all players along the value chain should be enhanced. There is no short cut when it comes to managing contamination. ITC is encouraged to facilitate training of all operators along the value chain on contamination reduction;
- In order to allow full inspection of seed cotton received at ginneries, the Tanzania Cotton Board, the Cotton Association of Zambia and Ginners should explore the possibility of receiving cotton in loose form, which is more easy to clean;
- Dynamic companies should be encouraged to install classing equipment in order to buy cotton according to its quality;
- Companies with long term plans to build trading relationship with spinners should consider installing the contamination cleaning machine;
- The price difference for seed cotton between India and Africa needs a thorough investigation and policy advice to be given to relevant institutions. Though local consumption is a factor, there is are more factors that influence the price, such as how marketing is organized and the level of taxation. Since pricing is a delicate issue, ITC, Textile Committee of India, the Tanzania Cotton Board and the Cotton Association of Zambia could team up to uncover the underlying causes of the seed cotton price disparity between Africa and India;
- The Indian Cotton Federation indicated its willingness to work with African ginners who are interested to sell cotton directly to India. ITC, Textile Committee of India and interested ginners should closely look at all options available in order to improve the trading relationship;
- The need to explore other markets was echoed by ginners in India. ITC is advised to look into this and act accordingly.
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