



# Report of the Regional Workshop on Cotton By-Products in Eastern and Southern Africa

28 - 30 May 2019  
Johannesburg, South Africa

Hosted by



COTTON SA



UNCTAD Project 1617K  
Promoting Cotton By-Products in Eastern and Southern Africa







UNCTAD Project 1617K

**Promoting Cotton By-Products in Eastern and Southern Africa**

# **Report of the Regional Workshop on Promoting Cotton By-Products in Eastern and Southern Africa**

28 – 30 May 2019

Johannesburg, South Africa

Hosted by

**COTTON SA**

Report prepared by: Cotton SA

Geneva, July 2019

## **Acknowledgments**

UNCTAD commissioned this report as part of United Nations Development Account Project 1617K: “Improving the value added of cotton by-products in Eastern and Southern Africa (ESA)”. The report summarises the proceedings and outcomes of the regional capacity-building workshop, held on 28-30 May 2019, Premier Hotel O.R. Tambo, Johannesburg, South Africa. For more information, please visit the project site at:

<http://unctad.org/en/Pages/SUC/Commodities/SUC-Project-1617K.aspx>.

## **Disclaimer**

The material in this paper represents the personal views of the author only, and not the views of the UNCTAD secretariat or its member States.

This is an unedited publication.

The designations employed, and the presentation of the material do not imply the expression of any opinion on the part of the United Nations concerning the legal status of any country, territory, city or area, or of authorities, or concerning the delimitation of its frontiers or boundaries.

## **Note**

Material in this publication may be freely quoted or reprinted, but acknowledgement is requested, together with a copy of the publication containing the quotation or reprint to be sent to the UNCTAD secretariat.

## **Contacts**

For further information on the Commodities Branch, please contact us at:

UNCTAD  
Commodities Branch  
Palais des Nations  
8–14, Avenue de la Paix  
1211 Geneva 10  
Switzerland  
Phone: +41 22 917 1648 / 6286  
E-mail: [commodities@unctad.org](mailto:commodities@unctad.org)

**Table of Contents**

1. Introduction..... 1

2. Opening session..... 1  
 Remarks by delegations ..... 2

3. Panel discussion: Cotton by-products and sustainable development..... 2

4. Presentation of the project synthesis report ..... 3  
 Outcome #1 Key outcomes of the study ..... 3  
 Outcome #2 Cotton by-products are financially viable ..... 4  
 Outcome #3 Challenges ..... 4  
 Outcome #4 Opportunities ..... 4  
 Outcome #5 Key lessons learnt from UNCTAD cotton by-product project ..... 4  
 Conclusions ..... 4  
 Recommendations..... 4

5. Exchange of project lessons and experiences..... 5

6. Extending the project’s work on developing cotton by-products ..... 5  
 Country presentations ..... 5

7. Presentation of follow-on project proposals ..... 6

8. Next steps..... 8

9. Closing session..... 9

Annex 1: Programme of the Regional Workshop..... 10

Annex 2: List of participants ..... 14



## 1. Introduction

Cotton by-products industries are underdeveloped in Eastern and Southern Africa (ESA) owing to several impediments, including inadequate policies supporting the development of cotton by-products industries, insufficient data to assess the viability of investments in cotton by-products and a lack of information about technologies available in other countries for processing, for example, cotton stalks, linters or ginning waste. The United Nations Conference on Trade and Development (UNCTAD), together with its partners, the Common Market for Eastern and Southern Africa (COMESA) and the United Nations Economic Commission for Africa (UNECA), designed the technical cooperation project “Promoting cotton by-products in ESA” to address these impediments. The project is funded by the multi-donor United Nations Development Account.

As part of the project activities, UNCTAD organized a regional workshop at the Premier Hotel O.R. Tambo in Johannesburg, South Africa, on 28-29 May 2019. The main objective of the regional workshop was, to exchange lessons from the project, advise on necessary follow-on work and present the commercial and policy initiatives they have developed through the project activities. UNCTAD commissioned a consultant to draft a synthesis report of the knowledge and lessons accumulated through the project’s activities and deliverables. Cotton SA, the cotton industry association in South Africa, hosted the regional workshop. The workshop was followed by a field visit to the Marblehall cotton-growing area, north of Johannesburg on 30 May 2019.

## 2. Opening session

**Mr. Thabo Ramashala, Director Plant Production Department of Agriculture, Forestry and Fisheries, Government of South Africa**, welcomed the representatives from UNCTAD, UNECA, the delegations of Mozambique, Uganda, Zambia and Zimbabwe, the leadership and management of Cotton SA and all other stakeholders participating in the cotton value chain.

In his welcome remarks, **Mr. Hennie Bruwer, CEO of Cotton SA**, highlighted that, since cotton has high input costs, every possible opportunity must be investigated to increase the value of cotton at farm level. Against the backdrop of ever-increasing production costs, value addition of cotton by-products can create new income opportunities for farmers and should be pursued alongside increasing the productivity of seed cotton. Mr. Bruwer anticipated a bright future for the primary cotton industry in South Africa, with real prospects to expand production and to diversify to other value-added products.

**Ms. Yanchun Zhang, Chief of the Commodities Branch of UNCTAD** outlined the main objective of the workshop, which is aimed at promoting value-added cotton by-products in ESA. In her view, no matter how much recognition the project receives, what matters most is the real benefits the project brings to UNCTAD’s beneficiaries – the stakeholders along the cotton value chain, especially cotton farmers. Although the project will finish at the end of 2019, joint efforts must continue. Ms. Zhang emphasized that UNCTAD stands ready to move forward with project countries and partners on follow-on activities.

**Mr. Stephen Karingi, Director of Regional Integration and Trade, United Nations Economic Commission for Africa (UNECA)**, outlined the importance of the cotton sector in African economies, including the value chains from seed cotton to textiles, as well as the chains for by-products, such as cottonseed oil and cake. For several countries, the sector remains vital in generating export revenues for governments, as well as employment and incomes for families.

Regarding the project in the four beneficiary countries – Uganda, the United Republic of Tanzania, Zambia and Zimbabwe – there are many opportunities to promote markets for cotton by-products. However, findings reveal that seizing these opportunities requires addressing existing challenges such as low productivity and production of seed cotton,

infrastructure bottlenecks and gaps in regulatory policies.

The outcomes and recommendations from UNCTAD's project on cotton by-products will help address some of these challenges. Adopting a regional approach to developing agricultural value chains will also be important.

### **Remarks by delegations**

**Mrs. Jolly Sabune Managing Director, Cotton Development Organisation (CDO), Uganda** gave feedback on a study tour to India organized by UNCTAD for representatives of value chain stakeholders. It enabled stakeholders to see examples of cotton by-product technologies and learn from entrepreneurs how to run their businesses and market their products. The Government of Uganda prioritized strengthening agro-industrialization for increased household incomes and an improved quality of life. The Buy Uganda, Build Uganda (BUBU) Policy to promote procurement of locally produced goods and services, was also launched.

**Dr. Mavis Sibanda, Permanent Secretary, Ministry of Industry and Commerce, Zimbabwe** stated that cotton offers a lot of scope for development in Zimbabwe and provides income to the rural communities. Focus is placed on production of surgical cotton wool and biomass briquettes and pellets.

**Mr. John Mulongoti, Director, Industry, Ministry of Commerce, Industry and Trade, Zambia** gave feedback on the state of cotton production in Zambia. Although the cotton sector growth has generally declined due to a number of challenges, cotton remains the major smallholder cash crop and is key to Zambia's socio-economic growth.

**Mr. Luis Tomo, Director-General, Mozambique Institute for Cotton** reported, that despite challenges, Mozambique produces eighty thousand tons of seed cotton yearly. After ginning, thirty eight percent comprises lint, two per cent is waste and the remaining sixty per cent represents cottonseed, from which forty per cent is exported to regional and international markets. Around twenty per cent is employed in the seed-crushing mills for production of edible oil,

soap and cake for livestock. Unfortunately, the value addition activities in the country are very limited. As for this project, Mozambique is open to learning from the beneficiary countries' experiences.

### **3. Panel discussion: Cotton by-products and sustainable development**

In this session, a roundtable of distinguished experts reflected on the potential for cotton by-products to contribute to sustainable development in African cotton-producing countries, as well as identifying what is necessary to realise viable markets and businesses for cotton by-products.

**Mr. Kai Hughes, Executive Director, International Cotton Advisory Committee (ICAC)** was asked the following question: "What are the global issues around cotton and its by-products related to competitiveness, value-addition and trade"?

He responded that the greatest challenges in Africa are low yields and underutilization of cotton and its by-products. If countries in Sub-Saharan Africa increased their yields to the world average, they would increase total lint production by approximately two million metric tonne (MT), generating direct employment for more than four million people. African cotton would also become more competitive as yields increase and production costs fall. Furthermore, improving yields increases the supply, not only of lint, but also of cottonseed, from which we derived the most valuable cotton by-products, edible oil and animal feed.

**Mr. Stephen Karingi, Director of Regional Integration and Trade, UNECA,** responded to the question: "The African Continental Free Trade Area (AfCFTA) will enter into Force in two days on 30 May. In your view, what are the provisions in the AfCFTA that will be of most interest to cotton producing countries in Africa?"

Mr. Karingi informed participants that the AfCFTA Agreement is expected to enter force on 30 May, following deposit of its instruments of ratification by 22 States Party as of 30 April 2019. The operational phase of the Agreement



will be officially launched in July 2020 during the African Union (AU) summit in Niger.

By progressively reducing and eliminating tariffs and removing non-tariff barriers on intra-African trade, the AfCFTA, once implemented, will support the development of regional value chains, in particular in areas such as intellectual property rights and competition policy.

The AfCFTA protocols on trade in goods, including annexes related to tariff concessions, rules of origin, customs, cooperation, trade facilitation, non-tariff measures (NTMs), technical barriers to trade (TBTs), sanitary and phytosanitary (SPS) measures, transit and trade remedies – all of which are necessary to foster efficient movement of inputs and outputs that will support the development of cotton value chains across the continent.

Mr. Karingi remarked that not all cotton-producing countries in Africa will have the economies of scale to build integrated value chains. These countries can nonetheless still benefit from the provisions in the AfCFTA that facilitate regional trade and the create of regional value chains. For example, there are a number of African countries with vibrant textile sectors, but that don't produce seed cotton, so import their raw material. The AfCTFA and other trade Agreements will contribute to addressing these gaps by integrating continental markets. It is therefore critical to effectively implement of regional and continental trade agreements.

**Ms. Belinda Edmonds, Managing Director, Africa Cotton Foundation** was asked to give advice for farmers to grow cotton. The primary concern is that the yield needs to be increased. Risks for farmers needs to be addressed. Extension services need to be expanded in order to become more agriculturally diverse.

**Mr. Tom Apina, Regional Director Cotton Expert House Africa**

Their focus is supporting smallholder farmers, ginners and value-added processors. Cotton Expert House Africa has a three-pronged approach, namely working directly with the ginning companies, at sector level and with cotton associations. They have active projects in eight countries in Africa. They also focus on innovations and the introduction of modern

technologies, especially information and communications technologies (ICT).

**Mr. Umair Zaveri, Executive Director, Alliance Gineries**

Alliance Gineries operates in three countries, Zambia, Zimbabwe and the United Republic of Tanzania. 90% of the farmers are small scale farmers. These farmers are seen as partners and core of Alliance. Transparent value chains are needed.

**Mr. Matthias Knappe, Senior Programme Manager, International Trade Centre (ITC)** responded to the following question: "What do you see as the most promising products or activities to develop value-added processing of cotton in Africa"? He answered that edible oil is the most profitable cotton by-product, while others include briquettes derived from cotton stalks and stock feed from cottonseed cake, to capitalize on the growing livestock industry.

**Mr. Fabrizio Meliado, Economic Affairs Officer, World Trade Organization (WTO)** commented briefly on the issue of how cotton by-products contribute to the priorities of cotton producing countries in the context of the slow progress of cotton trade discussions. The WTO works on the trade related aspects of cotton as well as the development assistance aspects of cotton. He emphasized that consistency of supply is a key consideration for investors.

## 4. Presentation of the project synthesis report

UNCTAD commissioned a synthesis report as part of the project plan to review lessons from project activities. The report is intended to inform the project countries' ongoing efforts to develop cotton by-products. The author, Mr. Stephen Kabwe of the Indaba Agricultural Policy Research Institute in Zambia (IAPRI), presented a summary of the report.

### Outcome #1 Key outcomes of the study

- There is some level of development of cotton by-products with regards to cottonseed (edible oil and cake) in all the three countries.

- To a lesser extent, there are a few commercial absorbent cotton wool businesses in operation.
- There are currently no commercial applications for cotton stalks.

### **Outcome #2 Cotton by-products are financially viable**

- Briquettes technology is financially viable in all the three countries (Uganda, Zambia and Zimbabwe), with positive net present values (NPVs) and internal rates of return (IRR) greater than the cost of borrowing.
- Absorbent cotton wool project is also financially viable since the NPV is positive and the IRR is greater than the cost of borrowing.

### **Outcome #3 Challenges**

- Low seed cotton production and productivity
- Climate change
- Low seed cotton prices
- Reduced input pre-financing
- Imports of cheap refined or semi refined cooking oil
- Lack of appropriate, affordable processing technologies
- Inadequate infrastructure development, e.g. feeder roads
- Market challenges e.g. a lack of transparency in seed cotton pricing

### **Outcome #4 Opportunities**

- Generally good climatic conditions for cotton production in all the three countries
- Cotton is considered a priority crop in all the countries
- Availability of feedstock for cotton by-products, especially stalks
- Trade deficits for target product markets, such as edible oil, absorbent cotton and solid industrial fuels

### **Outcome #5 Key lessons learnt from UNCTAD cotton by-product project**

- Value addition to cotton by-product cannot be considered in isolation from seed cotton production.
- Awareness building about the business opportunities in adding value to cotton by-products is well received by stakeholders.
- Cotton production in Eastern and Southern Africa is low compared to its potential.
- Briquettes/pellets can help mitigate environmental challenges related to deforestation, driven by charcoal consumption.
- Relative price of alternative fuel sources (e.g. charcoal, electricity or LPG) may affect the viability of briquette businesses.
- There is need to consider national and local preferences in promoting cotton by-products, for example carbonized vs compressed briquettes.

### **Conclusions**

- The importance of cotton cannot be overemphasized in Uganda, Zambia and Zimbabwe, as it supports many actors along the value chain.
- Cotton by-products have a role in making cotton production more attractive.
- Cotton by-products are financially viable business ventures.
- However, for some cotton-products, e.g. carbonized vs compressed briquettes, there is need to understand consumer preferences.

### **Recommendations**

- Cotton by-products should not be looked at in isolation but as part of the entire value chain.
- Conduct more awareness campaigns about briquettes/pellets as competitive substitutes for charcoal.

- Encourage farmers and other actors to form cooperatives in order to reach the economies of scale necessary to mount a commercial by-products business.
- Encourage countries to incorporate cotton by-products in their strategies.
- Encourage exchange study visits to learn what other countries are doing.

## 5. Exchange of project lessons and experiences

Participants proceeded from reactions to the synthesis report to statements from the government focal points from the three project countries. They shared lessons learned from the project that can inform each other's continued efforts to develop cotton by-products.

### Mr. George Wilson Ssekisambu, Director, Uganda Cotton Oil Producers Association

During a study visit to the Central Institute for Research on Cotton Technology (CIRCOT), Nagpur, India, Mr. Ssekisambu learned about the removal of gossypol from cottonseed cake, which allows it to be fed to non-ruminants (e.g. poultry, pigs and fish). De-gossypolized cottonseed cake is a perfect replacement for soybean as source of protein in livestock feeds. Other lessons learnt are that cotton stalks can be used to produce substrates for domestic and commercial mushroom growing and that the utilization of cotton stalks reduces the spread of diseases and pests.

### Mr. John Mulongoti, Director of Industry, Ministry of Commerce, Industry and Trade, Zambia

Two initiatives have been identified for development in Zambia: absorbent cotton and pellets and briquetting. There are two national research institutions in Zambia, and they are working on the proposals. A study visit was undertaken to India. It provided the opportunity to link with equipment suppliers in the private sector. There's a need to have a supporting policy. Mr. Mulongoti stated that stakeholders need to take ownership of the identified initiatives, after which many benefits can be realized.

### Mr. Washington Mubvekeri, Head of Institute Cotton Research Institute, Zimbabwe

Following the study visit, a committee was formed to plan for the implementation of the priority cotton by-products initiatives identified in the National Action Plan. Issues regarding the potential of the cotton growers to generate enough cotton stalks were identified. Farms produce an estimated two tonnes of stalks per hectare, representing a total potential supply of raw material of 600,000 MT per year in Zimbabwe. End users for each of the by-products were also identified.

## 6. Extending the project's work on developing cotton by-products

UNCTAD's project proposed a three-year programme of capacity-building activities to assist four countries in Eastern and Southern Africa (ESA) to develop cotton by-products. By design, much work remains to implement each country's National Action Plan, comprising commercial and policy initiatives. Moreover, several other cotton-producing countries in ESA, constrained by many of the same conditions and challenges faced by the project countries, could benefit from similar capacity-building activities. In this session, participants identified the next phases of technical assistance required in the project countries, as well as other potential countries in which to replicate the first phase of capacity-building activities.

### Country presentations

#### Mr. Bob Alberto Ogen, General Manager, West Acholi Cooperative Union, Uganda

In his presentation, Mr. Bob Alberto Ogen said that the de-gossypolization technology and development of a new value chain for cotton stalks to produce briquettes and mushrooms needs to be implemented. For absorbent cotton wool, research is needed to revive production of the short-staple Serere Alba Type Uganda (SATU) cotton variety in Uganda. A multi-stakeholder oversight committee must be formed to oversee the implementation of the National Action Plan.

**Mr. Dafulin Kaonga, Executive Director,  
Cotton Board of Zambia**

Mr. Kaonga emphasized the need to incorporate cotton and its by-products into the Government's Buy Zambia campaign, aimed at increasing consumption of local products. On the regulatory side, there is a need for a central body, dealing with the entire cotton value chain. To accomplish this, the Cotton Act must be reviewed, the cotton value addition committee of Zambia Association of Manufacturers (ZAM) needs to be strengthened and new centres of excellence for the cotton value chain are necessary.

**Mr. Washington Mubvekeri, Head of  
Institute, Cotton Research Institute  
Zimbabwe**

Zimbabwe is committed to reviving its cotton sector. A free Cotton Input Support Program must be put into place to assist farmers in increasing their production and yields. More research is needed on appropriate technologies for producing biomass briquettes, including from cotton stalks, including whether compressed or carbonized briquettes are the more appropriate format. Research is also needed on the suitability of cotton biomass as a substrate for mushroom production, as well as on any residual pesticide risks associated with processing cotton stalks into briquettes.

**Mr. Tararama Gutu, Director, Cotton  
Processing Company, Zimbabwe**

In his presentation, Mr. Tararama Gutu said that import substitution can strengthen the cotton value chain. Replacing imported absorbent cotton wool products with local production is feasible and can contribute to policy priorities through the development, for example, of cotton-based feminine hygiene products. To enter premium absorbent cotton wool markets, product lines must be diversified and produced with locally grown raw cotton, rather than ginning and spinning waste fibres. Technology transfer and enhanced returns in the cotton value chain were other objectives discussed.

**Dr. Annette Bennett, Technical Manager  
Cotton SA**

Potential cotton by-products for development in South Africa include cottonseed oil and cake,

surgical cotton wool, and using cotton stalks to produce briquettes and pellets. After its exposure to this workshop and the project countries' experiences, Cotton SA needs to coordinate an evaluation of these opportunities among local stakeholders.

**Mr. Luis Tomo, Director-General,  
Mozambique Institute for Cotton**

Cotton by-products are relatively undeveloped in Mozambique. To improve value addition to ginned cottonseed, expeller pressing machines are needed. The use of gin waste fibres to produce absorbent cotton wool is promising. Finally, cotton farmers in Mozambique must be informed of the possibilities for adding value to cotton stalks at the farm level.

## **7. Presentation of follow-on project proposals**

Countries were assisted in evaluating and selecting priority cotton by-products for development during the project activities. Based on their selections, the project provided tailored activities, information and tools to equip the countries to undertake concrete projects and investments to develop their priority by-products. In this session, the project countries presented concepts for priority by-product initiatives.

**Prof. Charles Kwesiga, Executive Director  
UIRI: 'Charcoal briquettes: Affordable  
clean energy for Uganda'**

Prof. Kwesiga and UIRI propose piloting a well-equipped demonstration centre for conversion of waste to briquettes, with specific focus on cotton stalks. The plant could double as a regional centre of excellence for briquetting technology. The proposed plant would have an annual capacity of 720 MT of carbonized briquettes.

The project would include fabrication of basic equipment for briquette making, as well as setting standards for the supply chain, production and quality assurance of briquettes, i.e. from farmers to end users. UIRI would also use the facilities to research improved technologies and processes that will lead to more efficient production methods and products.



The project would also include outreach activities to engage farmers in a technology for conversion of waste to char for making carbonized briquettes.

The proposed project would require funding of US\$ 175,000, for construction, machinery and working capital.

**Mr. Admire Masenda, Director, Association of Cotton Value Adders of Zimbabwe: “Biomass briquettes for Zimbabwe”**

Mr. Masenda presented a proposal for a commercial biomass briquetting plant with 4,000 MT annual capacity in Gokwe, Midlands province, near dense cotton-growing areas. Target end users for the compressed briquettes would be tobacco producers, who require fuel to dry tobacco leaves. There are also industries in the area that use coal-fired boilers, which are easily converted to use biomass briquettes. Biomass briquettes can be processed further into charcoal, and a ready market exists to individual consumers through supermarkets and retailers. The Zimbabwe power company can replace some of its boilers to use biomass briquettes to fulfil its demand for fuel and reduce consumption of costly imports. Households can be persuaded to adopt use of biomass fuels for heating and cooking.

The proposed project would require funding of US\$ 80-150,000 per plant.

**Mr. Tararama Gutu, Director, Cotton Processing Company, Zimbabwe**

Mr. Gutu presented a proposal to build a 500 MT surgical cotton wool plant in Harare-Marondera, Zimbabwe. The plant will produce cotton balls and cotton tampons for the local market, where expensive imports are often out of reach for poorer consumers. The plant will be operated as a cooperative.

Raw material is available in Zimbabwe, in the form of ginning or spinning waste fibres for inexpensive end products, and raw cotton for premium medical-grade products. With an efficient plant using adequate technology, a local business would have a comparative advantage against imports, which are expensive.

The business would market its cotton balls to hospitals, dental clinics and pharmacies and its tampons to supermarkets and stores.

The project would require a total investment of US\$ 300,000.

**Dr. Lastus Serunjogi, Plant Breeder, CDO**

In his presentation, Dr Serunjogi, focused on the absorbent cotton wool initiative identified in the National Action Plan for Uganda. Absorbent cotton wool products, such as pharmaceutical, cosmetic and baby care products, are high in demand and only six local firms currently manufacture them. They operate much below their combined installed capacity of 2,010 MT of cotton wool per year, due to the small volumes and season supply of short-staple cotton with coarse fibres. Most absorbent cotton products are consequently imported.

Suitable raw material for absorbent cotton making is the Serere Albar Type Uganda (SATU) variety, which grows fibres with a 27 mm staple length and Micronaire values in the range of 4.0 to 4.5, compared to the widely grown Bukalasa Albar Type Uganda (BPA), with its fibre staple length of over 33 mm and Micronaire values of at least 3.2. SATU was shelved in the 1990s, but accessions of SATU cotton were maintained at NaSARRI and under cold storage at NARO’s gene bank in Entebbe.

CDO therefore proposes a research and development project to trial and adapt the SATU variety for use in the production of absorbent cotton wool. Accessions have now been retrieved for revival of multiplication and research for further improvement on SATU for use in the production of absorbent cotton wool.

SATU accessions have now been retrieved and will be planted into 130 acres during the second rains of 2019 at NaSARRI and nearby prison farms. This project will be continued with over the next five years.

Research needs to be rejuvenated to adapt the SATU variety to the requirements of absorbent cotton production. Facilities for testing SATU cotton, NARO’s cold storage gene bank, technology verification centres, a ginnery with double roller gins and single roller laboratory gins, are all available.

CDO and NaSARRI would require a total budget of US\$ 165,208 to complete this research and development project.

**Mr. Carrivorous Simasinti, Director,  
Premier Cooperative**

Mr. Simasinti presented a proposal to establish a modern cotton processing plant, in Lusaka, Zambia, with appropriate machinery to produce international quality absorbent cotton wool at a competitive cost. The Premier Multi-Purpose Co-operative Society Limited is a registered Co-operative in Zambia and its core business is processing raw lint into absorbent or surgical cotton wool for medical and sanitary use.

According to the market analysis, absorbent and surgical cotton wool is mainly used for medical purposes. The demand for surgical cotton, directly related with the increase in population and expansion of public health services, is on the increase. All surgical cotton wool used in Zambia is currently imported.

There are a few business challenges, setting up a modern cotton processing plant, such as lack of machinery, development capital, land and market connections and the local availability of raw material.

According to Mr. Simasinti, all necessary preparations for the project are in place, land for the factory site is available, and discussions with machine manufacturers are complete. The maximum project timeline is seven months.

The cost analysis for this project requires an investment of US\$ 1,207,743.77.

**Mr. Dafulin Kaonga, Executive Director,  
Cotton Board of Zambia**

Mr. Kaonga presented a proposal on behalf of Mr. Michael Kapembwa of the National Institute for Scientific and Industrial Research in Zambia, who was unable to attend the workshop. Mr. Kapembwa proposed a project to research and develop a process that converts forestry and agricultural residues charcoal briquettes that meet environmental, operating and product standards and compete with wood charcoal on the market.

Mr. Kapembwa underlined that wood fuel constitutes 68 per cent of Zambia's energy consumption and that 82 per cent of the

Zambian population use biomass from wood for cooking. This has contributed to high rates of deforestation, with an average annual loss of over 300,00 ha of forest cover.

Meanwhile, every hectare of cotton yields approximately three metric tonnes of stalks, which are destroyed. The properties of cotton stalks make them an attractive potential raw material for producing charcoal briquettes. Establishing a commercial use – and supply chain – for cotton stalks would provide opportunities for small-scale farmers, small and medium-scale enterprises and communities in Zambia to benefit by selling their stalks or participating directly in charcoal briquetting businesses.

The project would address outstanding challenges, such as: ensuring a sufficient and uninterrupted supply of raw material; high energy consumption during briquette drying; and inefficient kilns for pyrolysis resulting in smoke emissions, energy loss and ash production. Aims and objectives are investigating and identifying optimum raw materials and binders, as well as designing more efficient kilns.

## **8. Next steps**

WTO, UNCTAD and ITC introduced their new joint initiative on cotton by-products as a potential channel for responding to some of the follow-on project proposals.

On behalf of the initiative, the WTO requested funds from the Enhanced Integrated Framework (EIF) for a two-phase project, with the first phase a feasibility study in the “cotton four” (C4) countries (Burkina Faso, Benin, Chad and Mali) and Mozambique, followed by a pilot project phase in eight countries – the same five countries, plus three from the UNCTAD project: Uganda, the United Republic of Tanzania and Zambia.

**Mr. Fabrizio Meliado, Economic Affairs  
Officer, WTO**

Mr. Meliado outlined the feasibility study phase of the EIF project. With the study, all efforts will be made to bring the C4 countries and Mozambique to the same level as the three countries that benefitted from the UNCTAD

project: The United Republic of Tanzania, Uganda and Zambia.

On the basis of the feasibility study findings, implementation of pilot projects could start in January 2020. The WTO will assist with proposals and present them to donors. The WTO would create the partnership of donors and technical implementation partners to fund countries' requests and provide the necessary technical expertise.

**Mr. Matthias Knappe, Senior Programme Manager, International Trade Centre ITC)**

Supporting farmers and bringing them to a higher level is key. The model needs to change for farmers to continue farming cotton. It is also necessary to support and assist them when it comes to planning, negotiating with donors and financial institutions and implementing strategies.

**Mr. Kris Terauds, Economic Affairs Officer, UNCTAD**

Uganda, Zambia, and the United Republic of Tanzania are part of UNCTAD's project. The EIF has considered that the work that has been done in this project, such as the surveys, the National Action Plans and the subsequent initiatives, are equivalent to the EIF project's feasibility study phase, which will be undertaken in the C4 countries and Mozambique. UNCTAD will work on transmitting that information to the project on behalf of the three countries. This initiative is an excellent channel to pursue some of the initiatives started under the UNCTAD project.

In the next six months, UNCTAD will also assist countries in pursuing other channels to help with the implementation of their initiatives. One of the channels is an extension for the UNCTAD project. They will also continue to work with the countries on their concept notes, refine them

further and present them to relevant partners and donors.

## 9. Closing session

In her closing statement, Ms. Yanchun Zhang, Chief of UNCTAD's Commodities Branch, said that a lot was learnt during this regional workshop. The discussions were open, and openness is very powerful. UNCTAD will continue to be open and provide services and support to its project countries. As the project has shown, there are many shared objectives among the countries and their stakeholders, the most of important of which is to ensure that benefits from these initiatives need to reach the cotton farmers.

Mr. Hennie Bruwer, CEO of Cotton SA closed the workshop after thanking participants and organizers for a successful workshop.

## **Annex 1: Programme of the Regional Workshop**

### **Tuesday, 28 May**

#### **8:45-10:30 Opening session**

Chairperson: Mr. Thabo Ramashala, Director, Plant Production, Department of Agriculture, Forestry and Fisheries, Government of South Africa

Welcome remarks: Mr. Hennie Bruwer, CEO, Cotton SA

Opening statement: Ms. Yanchun Zhang, Head, Commodities Branch, UNCTAD

UNECA remarks: Mr. Stephen Karingi, Director of Regional Integration and Trade, United Nations Economic Commission for Africa (UNECA)

Remarks by delegations:

- Mrs. Jolly Sabune, Managing Director, CDO, Uganda
- Dr. Mavis Sibanda, Permanent Secretary, Ministry of Industry and Commerce, Zimbabwe
- Mr. John Mulongoti, Director, Industry, Ministry of Commerce, Industry and Trade, Zambia
- Mr. Luis Tomo, Director-General, Mozambique Institute for Cotton

#### **11:30-12:30 Panel discussion: Cotton by-products and sustainable development**

Description: The concept for UNCTAD's project on cotton by-products sprang from the COMESA's 2009 Regional Strategy for Cotton-to-Clothing Value Chain, prepared in partnership with ITC and ACTIF. More recently, requests by Member States for technical assistance on cotton by-products have multiplied at the dedicated cotton discussions at the WTO, notably from the "Cotton-4" (C-4) and other cotton-producing countries in Africa. These interventions view cotton by-products as a source of value addition and of new income opportunities that can make cotton more profitable for farmers. In this session, a roundtable of distinguished experts will reflect on the potential for cotton by-products to contribute to sustainable development in African cotton-producing countries, as well identifying what is necessary to realise viable markets and businesses for cotton by-products.

Facilitator: Mr. Simon Matsvai, Zimbabwe

Panellists: Mr. Kai Hughes, Executive Director, International Cotton Advisory Committee (ICAC)

- Mr. Stephen Karingi, Director of Regional Integration and Trade, UNECA
- Ms. Belinda Edmonds, Managing Director, Africa Cotton Foundation
- Mr. Tom Apina, Regional Director, Cotton Expert House Africa
- Mr. Umair Zaveri, Executive Director, Alliance Ginneries
- Mr. Matthias Knappe, Senior Programme Manager, International Trade Centre (ITC)
- Mr. Fabrizio Meliado, Economic Affairs Officer, World Trade Organization (WTO)

#### **14:00-15:30 Session 1: Presentation of project synthesis report**

Description: As part of the project plan, UNCTAD commissioned a synthesis report (Activity 1.5) to review lessons from project activities. The report is intended to inform the four countries' ongoing efforts to develop cotton by-products. In this session, the report author, Mr. Stephen Kabwe of the Indaba Agricultural Policy Research Institute (IAPRI) in Zambia, will present a summary of the report, after which discussions will provide Mr. Kabwe with feedback for the preparation of the final report and inform the subsequent workshop sessions on lessons, experiences and next steps for the project.

Facilitator: Mr. Simon Matsvai, Zimbabwe

Synthesis report: Mr. Stephen Kabwe, Zambia (author)



Moderated discussion

### **15:45-17:30 Session 2: Exchange of project lessons and experience**

Description: In this session, participants will proceed from reactions to the synthesis report, on to statements from the government focal points of three project countries – Uganda, Zambia and Zimbabwe – on lessons from the project and outlook for the implementation of their National Action Plan to develop cotton by-products. The objective of this session is not to review the project or its activities, but to share among the countries lessons that can inform each other's continued efforts to develop cotton by-products.

Facilitator: Mr. Simon Matsvai, Zimbabwe

Resource person: Mr. Stephen Kabwe, Zambia (author of synthesis report)

Country statements:

- Mr. George Wilson Ssekisambu, Director, Uganda Cotton Oil Producers Association
- Mr. John Mulongoti, Director, Industry, Ministry of Commerce, Industry and Trade, Zambia
- Mr. Washington Mubvekeri, Head of Institute, Cotton Research Institute, Zimbabwe

Moderated discussion

## **Wednesday, 29 May**

### **8:45-10:30 Session 3: Extending the project's work on developing cotton by-products**

Description: UNCTAD's project proposed a three-year programme of capacity-building activities to assist four countries in Eastern and Southern Africa (ESA) to develop cotton by-products. By design, much work remains to implement each country's National Action Plan, comprising commercial and policy initiatives. Moreover, several other cotton-producing countries in ESA, constrained by many of the same conditions and challenges faced by the project countries, could benefit from similar capacity-building activities. In this session, participants will identify the next phases of technical assistance required in the project countries, as well as other potential countries in which to replicate the first phase of capacity-building activities.

Facilitator: Mr. Simon Matsvai, Zimbabwe

Country presentations:

Mr. Bob Alberto Ogen, General Manager, West Acholi Cooperative Union, Uganda

- Mr. Dafulin Kaonga, Executive Director, Cotton Board of Zambia
- Mr. Washington Mubvekeri, Head of Institute, Cotton Research Institute, Zimbabwe
- Mr. Tararama Gutu, Director, Cotton Processing Company, Zimbabwe
- Mr. Marco Mtunga, Director-General, Tanzania Cotton Board
- Dr. Annette Bennett, Technical Manager, Cotton SA
- Mr. Luis Tomo, Director-General, Mozambique Institute for Cotton

Moderated discussion

### **10:45-12:30 Session 4: Presentation of follow-on project proposals**

Description: Early project activities assisted countries in evaluating and selecting priority cotton by-products for development. Based on these selections, the project then provided tailored activities, tools and information to equip the countries to undertake concrete projects and investments to develop their priority by-products. In this session, project countries will present concepts for their priority cotton by-product initiatives.

Facilitator: Mr. Simon Matsvai, Zimbabwe

Introduction: Mr. Kris Terauds, Economic Affairs Officer, UNCTAD

Presenters:

- Prof. Charles Kwesiga, Executive Director, UIRI: “Charcoal briquettes: Affordable, clean energy for Uganda”
- Mr. Admire Masenda, Director, Association of Cotton Value Adders of Zimbabwe: “Biomass briquettes for Zimbabwe”
- Mr. Tararama Gutu, Director, Cotton Processing Company, Zimbabwe: “Producing surgical cotton, cotton balls and dental swabs in Zimbabwe”

Moderated discussion

#### **14:00-15:30 Session 4: Presentation of follow-on project proposals (continued)**

Facilitator: Mr. Simon Matsvai, Zimbabwe

Presenters:

- Dr. Lastus Serunjogi, Plant Breeder, CDO: “Trialling short-staple varieties as raw material for absorbent cotton production in Uganda”
- Mr. Carrivorous Simasinti, Director, Premier Cooperative: “Surgical cotton, made in Zambia”
- Mr. Dafulin Kaonga, Executive Director, Cotton Board of Zambia: “Biomass pyrolysis and briquetting as alternative energy in urban and peri-urban areas”

Moderated discussion

#### **15:45-17:15 Session 5: Next steps**

Description: This session will involve structured debate on the proposals raised in earlier sessions, such as for new phases of technical assistance and project countries (sessions 2 and 3) or for the specific proposals presented in session 4. The three international trade organisations – WTO, UNCTAD and ITC – will also introduce their new joint initiative on cotton by-products, as a potential channel for responding to some of the proposals.

Targeted outcomes: Commitments by project countries and development partners on the next steps for extending the project’s work to develop cotton by-products in Africa.

Facilitator: Mr. Simon Matsvai, Zimbabwe

Presenters: “Joint WTO-UNCTAD-ITC initiative on cotton by-products”

- Mr. Fabrizio Meliado, Economic Affairs Officer, WTO
- Mr. Matthias Knappe, Senior Programme Manager, International Trade Centre (ITC)
- Mr. Kris Terauds, Economic Affairs Officer, UNCTAD

#### **17:15-17:30 Closing session**

Chairperson: Mr. Simon Matsvai, Zimbabwe

Closing statements:

- Ms. Yanchun Zhang, Head of Commodities Branch, UNCTAD
- Mr. Hennie Bruwer, CEO, Cotton SA

### **Thursday, 30 May: Field visit**

#### **Organised by Cotton SA**

Purpose: Experience the harvesting process in Marblehall area and visit a world class ginnery

Hosts: Mr. Joseph Kempen, CEO, Loskop Ginnery; Mrs. Tanya Aucamp, Cotton SA and Cotton Cluster.

8:00 Depart by bus from Premier Hotel O.R. Tambo  
10:30-11:00 Refreshments at Marblehall Country Lodge  
11:00-13:30 Visits to commercial and smallholder cotton farms  
13:30-14:15 Lunch at Marblehall Country Lodge  
14:15-15:15 Visit Loskop Ginnery  
15:15 Depart by bus from Loskop Ginnery  
17:45 Arrive at Premier Hotel O.R. Tambo

## Annex 2: List of participants

Last Name	First Name	Title	Organization's	Country
Mr. Karingi	Stephen	Director, of Regional Integration and Trade	UN Economic Commission for Africa	Ethiopia
Mr. Chandrasekaran	Sundaramoorthy	Senior Scientist	ICAR-CIRCOT	India
Mr. Apina	Tom	Regional Manager	Cotton Expert House Africa	Kenya
Mr. Banze	Adalberto	Director of Services	Mozambique Institute for Cotton Development	Mozambique
Mr. Tomo	Luis	Director-General	Mozambique Institute for Cotton Development	Mozambique
Mr. Dettmer	Richard		oil mill	South Africa
Mrs. Ambrosio	Natasja	Value Chain RP Foundation Director	MRPG	South Africa
Mrs. Aucamp	Tanya	Communication Specialist	Cotton SA	South Africa
Dr. Bennett	Annette	Technical Manager	Cotton SA	South Africa
Ms. Bohlmann	Liza		media	South Africa
Mr. Bruwer	Hennie	CEO	Cotton SA	South Africa
Mr. Buitendag	Johan		Gin Koedoeskop	South Africa
Ms. Edmonds	Belinda	Interim Managing Director	Africa Cotton Foundation	South Africa
Mrs. Fourie	Colleen	Chief Research Technician, Loskop Experimental Farm	ARC-IIC	South Africa
Mr. Gannon	Shaun		MRPG	South Africa
Mr. Kempen	Joseph	CEO	Loskop Gin	South Africa
Mr. Khumalo	Themba		IDC, Africa Desk	South Africa
Mrs. Le Roux	Gerda	Media	Landbou Radio	South Africa
Mr. Le Roux	George	Agri-Business Senior Specialist	IDC	South Africa
Mr. Lehana	Letlatsa	Head of Khula Credit Guarantee	SEFA Small farmer funders	South Africa
Mr. Lengton	Barry	Senior Project Manager	IDC	South Africa
Mr. Letebele	Beni	Director	Aggre-Fund	South Africa
Mr. Malela	Frans		Small farmer	South Africa
Mr. Malinga	Lawrence	Cotton Researcher	Agricultural Research Council	South Africa
Mr. Ndlovo	Mandla		Solidaridat	South Africa
Dr. Owoye	Lawrence	Senior Research Manager	IIC-ARC	South Africa
Ms. Paulson	Noel		Edcon	South Africa
Mr. Price	Ivor		media	South Africa
Mr. Schoeman	Tertius	Manager: Agricultural Development & Transformation	Cotton SA	South Africa
Mr. Simbi	Fungai	Manager	Bayer	South Africa
Mr. Sithole	Petros	Cotton Farmer	Nkomazi	South Africa
Ms. Slabbert	Antoinette	Journalist	Rapport	South Africa
Ms. Smith	Elaine		DTI	South Africa
Mr. Steyn	C	Chief-Director: Chemicals, Pharmaceuticals, Plastics & Fabrication		South Africa
Mr. Taverner	Ian		SASTAC NPC	South Africa
Ms. Van Hille	Nicky		Moss Group	South Africa
Mr. Van Wyk	Dawid	Textile Industry Champion	IDC	South Africa
Mr. Kamenda	Muyumbwa	Counsellor	Permanent Mission of Zambia in Geneva	Switzerland
Ms. Laurent	Alexandra	Statistician	Commodities Branch, DITC/UNCTAD	Switzerland
Mr. Mathias	Knappe	Senior Programme Manager	ITC	Switzerland
Mr. Meliado	Fabrizio	Economic Affairs Officer	World Trade Organisation	Switzerland
Mr. Mwanika	Brian Phenox	First Secretary	Permanent Mission of the Republic of Uganda in Geneva	Switzerland

Last Name	First Name	Title	Organization's	Country	
<b>Ms.</b>	Terauds	Kris	Economic Affairs Officer	Commodities Branch, DITC/UNCTAD	Switzerland
<b>Mrs.</b>	Zhang	Yanchun	Chief of Branch	Commodities Branch, DITC/UNCTAD	Switzerland
<b>Mr.</b>	Itungulu	Fred	Ginning Engineer	Cotton Development Organization	Uganda
<b>Prof.</b>	Kwesiga	Charles	Executive Director	The Uganda Industrial Research Institute	Uganda
<b>Mr.</b>	Mubvekeri	Washington	Research Officer and Acting Head of Institute	Cotton Research Institute	Uganda
<b>Ms.</b>	Mugenzi	Sheila	Deputy Director	Uganda Investment Authority	Uganda
<b>Mr.</b>	Mwesigye	Edwin	Director	Mutuma Commercial Agencies	Uganda
<b>Mr.</b>	Ogen	Bob Albert	General Manager	West Acholi Cooperative Union	Uganda
<b>Ms.</b>	Sabune	Jolly	Managing Director (Permanent Secretary)	Cotton Development Organization	Uganda
<b>Dr.</b>	Serunjogi	Lastus Katende	Plant Breeder	Cotton Development Organization	Uganda
<b>Mr.</b>	Ssekisambu	George Wilson	Director	Uganda Cotton Oil Producers Association	Uganda
<b>Mr.</b>	Hughes	Kai	Executive Director	International Cotton Advisory Committee	USA
<b>Mr.</b>	Kabwe	Steven	Consultant	UNCTAD Consultant	Zambia
<b>Mr.</b>	Kaonga	Dafulin	Executive Director	Cotton Board of Zambia	Zambia
<b>Mr.</b>	Makasa	Mukula	Director	Zambia Development Agency	Zambia
<b>Mr.</b>	Mulongoti	John	Director	Ministry of Commerce, Trade and Industry	Zambia
<b>Mr.</b>	Nkole	Joseph	Chief Executive Officer	Mumbwa Ginnery Limited	Zambia
<b>Ms.</b>	Phiri	Zungaye	Senior Economist	Ministry of Commerce, Trade and Industry	Zambia
<b>Ms.</b>	Phiri Banda	Christine	Vice-Chairperson	Cotton Association of Zambia	Zambia
<b>Mr.</b>	Simasinti	Carrivorous	Manager	Premier Cooperative	Zambia
<b>Mr.</b>	Zaveri	Umair	Executive Director	Alliance Ginnery Zambia	Zambia
<b>Mrs.</b>	Chaturuka	Sylocious	Principal Economist	Ministry of Industry, Commerce and Enterprise Development	Zimbabwe
<b>Mr.</b>	Gutu	Tararama	Managing Director	Sumburero Investments	Zimbabwe
<b>Ms.</b>	Magumise	Hazel	Principal Economist	Ministry of Industry, Commerce and Enterprise Development	Zimbabwe
<b>Mr.</b>	Masenda	Admire	Director	Association of the Cotton Value Adders of Zimbabwe	Zimbabwe
<b>Mr.</b>	Matsvai	Simon	Facilitator	Symacon Solutions	Zimbabwe
<b>Mr.</b>	Munanga	Wisdom	Agricultural Engineer	Tobacco Research Board	Zimbabwe
<b>Mr.</b>	Nyoni	Rodgers	Cotton National Chairman	Zimbabwe Farmers Union	Zimbabwe
<b>Dr.</b>	Sibanda	Mavis	Permanent Secretary	Ministry of Industry, Commerce and Enterprise Development	Zimbabwe