



THE SURVEY REPORT OF COTTON AND COTTON BY-PRODUCTS VALUE CHAIN IN TANZANIA



Cotton and Cotton By-products Country Survey Report for Tanzania

November, 2017



OUTLINE OF THE PRESENTATION

1. Introduction
 - About this Report
 - An Overview of Cotton Production in Tanzania
 - On-going Development Initiatives in the Sector
 - Why this Report
 - Objectives of the Report
 - Methodology
2. Main Characteristics of Respondents
3. Key Criteria for Actor's Decision to Invest
4. Production Environment
5. Cotton by-products and their Markets
6. Price, Cost Drivers and Profit Margins
7. Comparative Advantage of Tanzanian Cotton By-products
8. Main Impediments Affecting the Development of the Cotton Industry
9. Summary of Proposed Measures for Boosting the Cotton Value Chain

INTRODUCTION

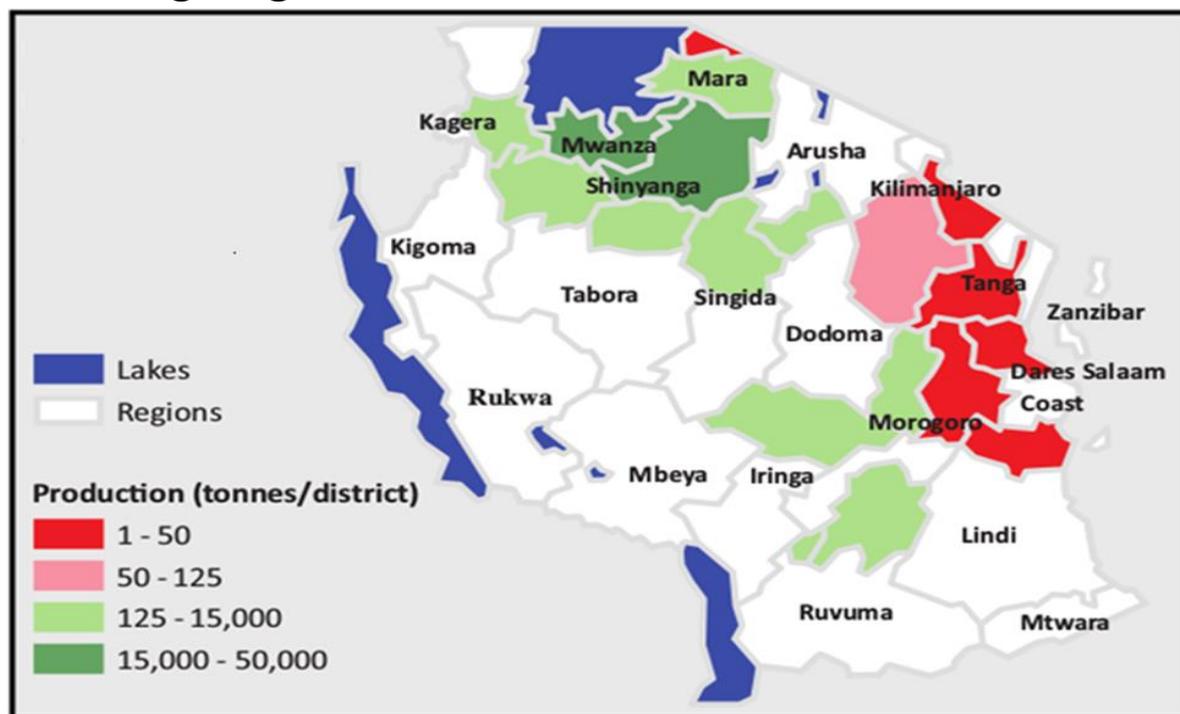
About the Survey Report

- **Is an analytical report of a cross-section survey of the various actors in the cotton value chain in Tanzania.**
- **It examines the main characteristics of the dealers and the key features of the business environment in the industry**
- **Presented in Nine Sections**

INTRODUCTION

An Overview of Cotton Production in Tanzania

- Produced in the WCGA and ECGA.
- The WCGA consists of the regions of Shinyanga, Simiyu, Mwanza, Mara, Geita, Tabora, Kigoma and Singida - and accounts for almost 97-99% of the total cotton production in the country.
- The ECGA includes Manyara, Morogoro, Coast, Kilimanjaro, Tanga and Iringa regions



INTRODUCTION

An Overview of Cotton Production in Tanzania Cont.

- **Cotton is grown predominantly by smallholder farmers**
- **The size of cotton farms ranges from 0.4 to 40 hectares, and averages 1.5 hectares with a yield of about 550 - 750kg of seed cotton per hectare.**
- **Cultivation is rain-fed in Tanzania**
- **Total cotton-sown area fluctuates from 350,000 to 450,000 hectares per season**
- **In the 2015/2016 season, about 44,132 tons of lint was produced, representing around half of the 2012/2013 cotton harvest**

INTRODUCTION

On-going Development Initiatives in the Sector

- **Tanzania Cotton Board (2010). The Second Cotton Sector Development Strategy (CSDS II): 2009- 2015: Has just ended: Stakeholder Roadmap for Increased Production, Productivity and Profitability of Cotton.**
- **The United Republic of Tanzania Cotton to Clothing Strategy 2016 – 2020. –On going.**
- **The Recently Renewed Government focus on strategic crops – cotton included**
- **Specific Recent Government Directives to Regional Commissioner with regard to revival of cotton production and processing in the country**

INTRODUCTION

Major Challenges in the Cotton Sector

- 1. Falling volume and quality of seed cotton production (a decrease by 50% in past few years)**
- 2. About half of the 79 registered ginnerers remained un-operational due to various reasons (Kabisa 2016)**
- 3. Poor quality of cotton seeds**
- 4. Small number of cotton by-product processing units**
- 5. Technological obsolescence/constraint**
- 6. Competition from local and imported products**

INTRODUCTION

We want to increase investment in the value addition of cotton by-products

It is important, as a first step, to objectively assess the entire value chain

- **Analysis of the logistic supply chain as well as primary production and processing of cotton by-products.**
- **It is crucial to examine the marketing conditions**

The findings are important inputs for designing appropriate evidence-based policies and incentives to attract investment

Why this Report

INTRODUCTION

To analyze the factors affecting the value chain of the cotton and cotton by-products in Tanzania. To understand:

- 1. Producers' demographic and income profiles;**
- 2. The key criteria in actor's decision to invest**
- 3. The main impediments to the development of cotton by-products**
- 4. Producers' margins and cost drivers;**
- 5. The perceptions, mind-sets and views about the development of cotton by-products.**
- 6. The incentives that would motivate farmers, ginners, spinners and other actors to develop cotton by-products.**

Objectives of
the Report

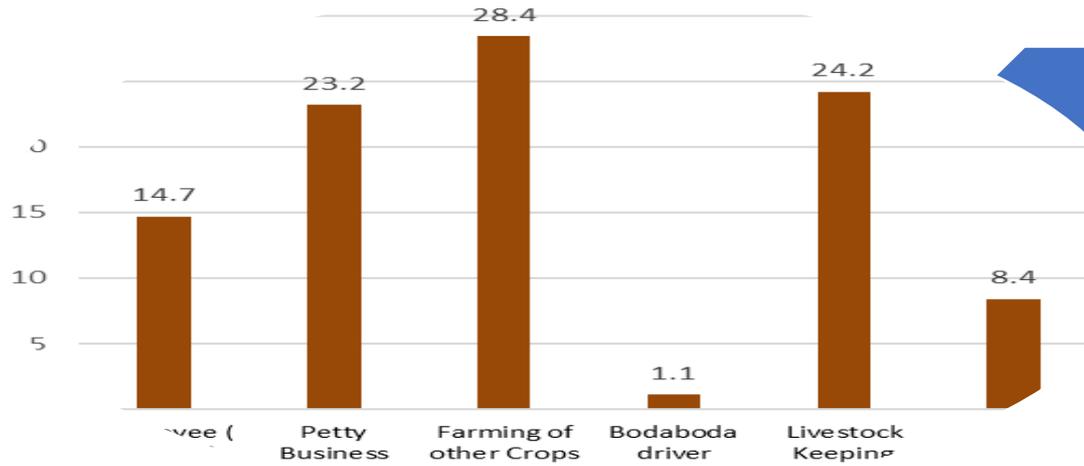
INTRODUCTION

Methodology

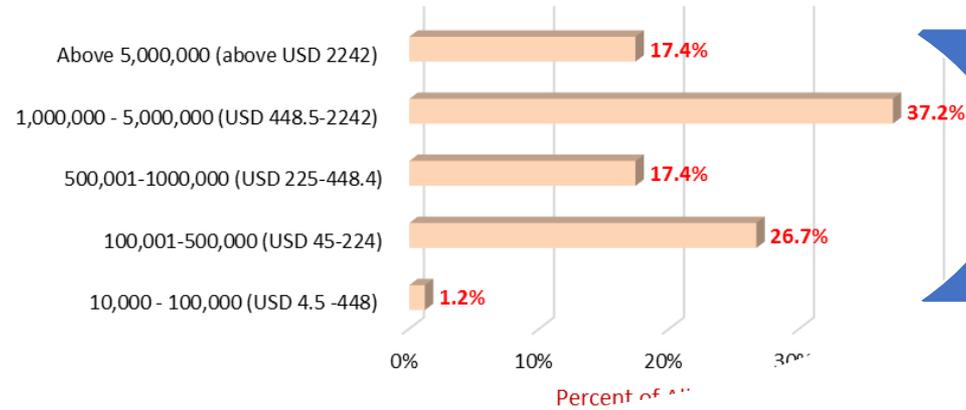
- **Collaboration with key cotton-sector stakeholders to get the documents and information required to inform the study**
- **A survey of selected actors and stakeholders: cotton farmers, cotton ginners, producers of cottonseed oil and cotton seed cake; and associations in the value chain.**
- **Analysis of the data and preparation of draft report**

MAIN CHARACTERISTICS OF THE RESPONDENTS

Farmers



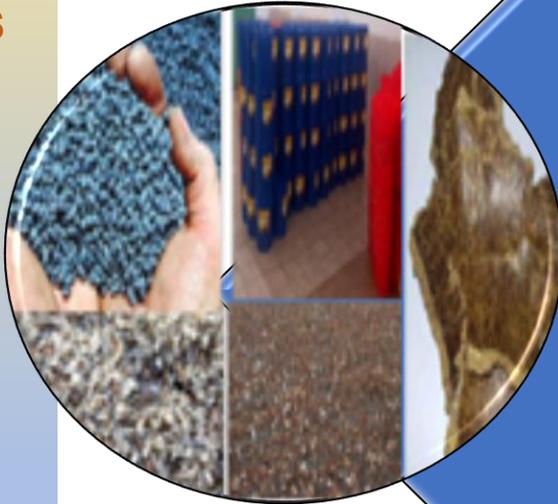
More than 90% have alternative source of income



50% of income is earned from other

MAIN
CHARACTERISTIC
S OF THE
RESPONDENTS

Firms



produced by surveyed firms include Cotton Seeds, Cotton Cake, Cotton Linters, Cotton Husks, Threads, Cottonseed oil for cooking and making

**THE KEY CRITERIA IN
EACH VALUE CHAIN
ACTOR'S DECISION TO
INVEST OR NOT IN
COTTON BY-PRODUCTS**

**Motives to invest in the
cotton sector**

Farmers

Motives to invest in the cotton sector

- ✚ Farmers have traditionally continued with production of seed cotton alongside other economic activities as a major source of livelihood.
- ✚ Not capital intensive in the local context
- ✚ Highly marketable relative to other crops
- ✚ Has gross profit of about 50% labour costs included (Gross earnings of TZS 2.37m per hectare in 2016)
- ✚ Contributes about 50% of household income

Disincentives

- ✚ Problems of inputs availability and affordability
- ✚ Poor storage and handling
- ✚ Constrained access to finance
- ✚ Fluctuating price
- ✚ Delayed payments to farmers
- ✚ Weak extension services
- ✚ Farmers' cooperatives have not performed well

**THE KEY CRITERIA IN
EACH VALUE CHAIN
ACTOR'S DECISION TO
INVEST OR NOT IN
COTTON BY-PRODUCTS**

**Motives to invest in the
cotton sector**

Firms

Firms' motives to invest

- ✦ Cotton pays very well (about 28% net return – on average for all firms in the value chain)
- ✦ Marketability is high and reliable
- ✦ Potential cross subsidization between businesses when engaged in multiple products
- ✦ Existence of free market in the sector
- ✦ Price of raw materials is reasonable
- ✦ Available bank contracts facilitate the business
- ✦ Long time experience in the sector

Firms' Disincentives to invest

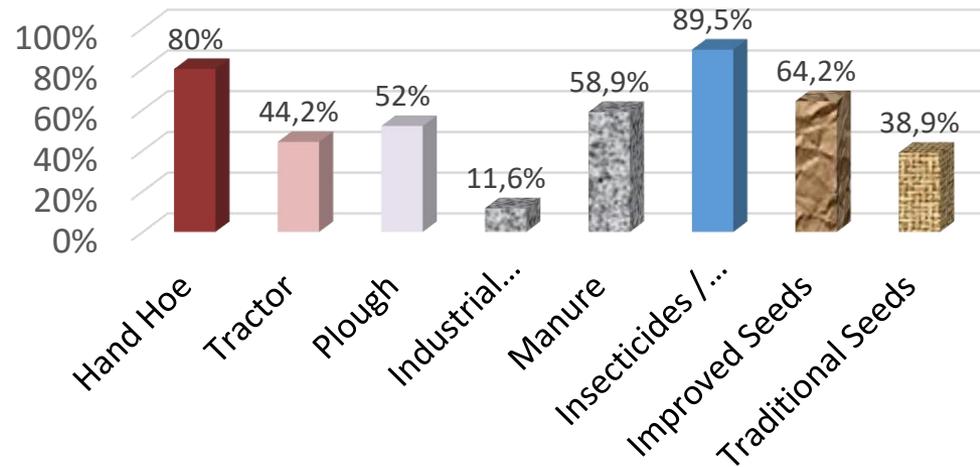
- ✦ Costs of production are increasing (e.g. machines, etc.)
- ✦ Loan contracts for the producers are increasingly becoming difficult to get
- ✦ Declining production of seed cotton is costly – e.g. causes idle capacity
- ✦ Transport costs
- ✦ Poor/or lack of storage facilities in villages
- ✦ Un-trustful farmers and agent who temper with weight and measures

PRODUCTION ENVIRONMENT

Cotton Growing

- Mainly peasant farming (average hh cultivated land 1.5 hectares)
- Rain-fed – recurring drought

Figure: Distribution (in per cent) of Farmers Using Indicated Technologies



Cotton Growing

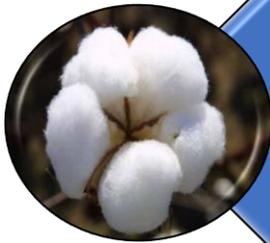
Firms/Producers

- ✚ Rural feeder roads are not good
- ✚ No storage facilities in villages
- ✚ un-trustful farmers add sands or foreign substances with the aim of increasing weigh of their seed cotton
- ✚ Unstable and expensive electricity supply (about 14% of the total costs of production)
- ✚ No water supply for some of the firms
- ✚ Technological obsolescence
- ✚ Rundown storage and factory premises
- ✚ Multiple taxes and contributions



**ASSESSMENT
OF EACH
COTTON BY-
PRODUCT AND
ITS MARKET**

Seed cotton



On average.: one ton of crushed cottonseeds yielded:
16% crude oil (12% after cleaning)

45-55% cottonseed cake

25-27% husks

Export markets consumed about 69.6% of the production, the remainder (31.4%) was consumed locally.



Concerns on declining production

ASSESSMENT OF EACH COTTON BY- PRODUCT AND ITS MARKET

Cotton seeds



-The market for cotton seeds is big, and includes both domestic and international markets.

-In 2016, about 19,878 tonnes were produced, yielding total revenue of TZS 844,865,753,800 (USD 378,863,566). This was 0.8% of GDP.

-Used as seeds for replanting and production of cottonseed by products

-Demand for cotton seeds is high compared to the amount produced

-Concerns on declining production and quality

ASSESSMENT OF EACH COTTON BY- PRODUCT AND ITS MARKET

Cottonseed Oil



Many of the oil millers press the seeds without removing husks (constrained by the available and affordable technology)

Some mills produce semi refined cottonseed oil while others produce refined cooking oil

The main local market for cottonseed oil is in the Lake Zone where the oil is used for roasting fish.

Export markets for cottonseed oil are mainly Switzerland, China and India.

In the last season, the total amount of cottonseed oil produced was 214,520 liters yielding total revenue of TZS 359,429,663.

Cottonseed oil is seen as not being as good as sunflower in the market, and thus it faces competition including imports of cheap and subsidized edible oils (e.g. Palm oil)

**ASSESSMENT
OF EACH
COTTON BY-
PRODUCT AND
ITS MARKET**

*Cottonseed
Cake/meal*



neighbouring countries such as Kenya, Uganda and Rwanda - which are expanding

The total production of cotton cake, by the respondents of the survey, last season was 14,410 tonnes, worth TZS 4,468,894,489 in total revenue. This was 0.004% of GDP in 2016

Cottonseed cake is not available

**ASSESSMENT
OF EACH
COTTON BY-
PRODUCT AND
ITS MARKET**

Cotton Husks



options for production of by-products from cotton from husks.

A few mills have the technology of separating the inner soft part of the seeds from husks

Husks are used as a source of cheaper alternative feed for ruminant livestock

A small is sold for livestock feed, charcoal making and for burning bricks and making charcoal

**ASSESSMENT
OF EACH
COTTON BY-
PRODUCT AND
ITS MARKET**

Cotton Stalks



people use them for fire wood and animal feed. It is only 2% who sell cotton stalks to factories

Potential products from stalks include charcoal briquettes, hard boards,

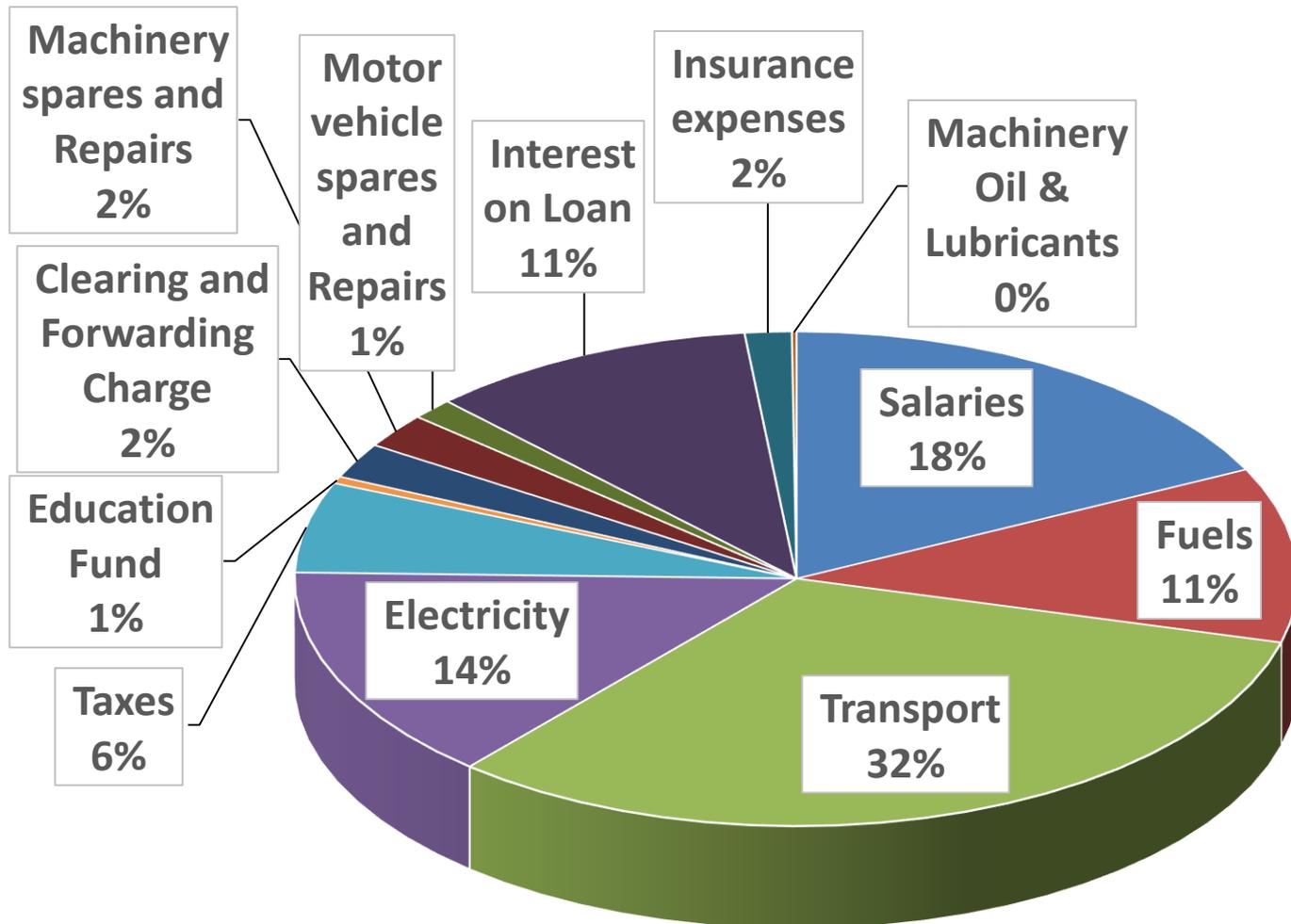
**PRICE, COST
DRIVERS AND
PROFIT
MARGINS**

Price-Setting

- The price of seed cotton is set by the Tanzania Cotton Board (TCB), with input from representatives of the farmer and producer associations
- The prices of cotton by-products are set by looking at several factors including **production costs, world market**, negotiations and generally demand and supply.

PRICE, COST DRIVERS AND PROFIT MARGINS

Cost Drivers



PRICE, COST DRIVERS AND PROFIT MARGINS

Turnover and Profitability

- ✚ Productivity is very low (580 kg per hectare). Its only 25% of Australia – the best in the World, about 75% of South Africa, and more than one and half of production in Uganda and Zambia
- ✚ Estimated gross profit margin for farmers was 56% last season.
- ✚ Considering labour costs of about 27% of total costs, average net return on seed cotton farming in Tanzania is estimated to be 45%.
- ✚ Estimated gross profit margin for firms (i.e. before interest expense and tax) was 33%; and estimated net profit margin was 28.3%.

**COMPARATIVE
ADVANTAGE
OF TANZANIAN
COTTON
PRODUCTS
AND BY-
PRODUCTS**

- ✚ Other countries in the region have an average cost of seed cotton production of USD 0.32 compared to USD 0.24 in Tanzania.
- ✚ Tanzania produces more per hectare than neighbouring countries (Zambia and Uganda)
- ✚ Tanzania has more arable land than its neighbours
- ✚ Cottonseed cake contains the enzyme gossypol, not good for non-ruminants; and therefore has a relatively small domestic market
- ✚ Stalks and husks are potentially abundant, but the constraint is technological setback

**MAIN
IMPEDIMENTS
AFFECTING
DEVELOPMENT
OF THE
COTTON
INDUSTRY IN
TANZANIA**

**Specific
Impediments
Facing Cotton
Farmers**

- Low price of seed cotton
- Constrained supply of inputs
- Low productivity
- Unfavourable weather conditions
- Lack of access to finance
- Multiple taxes and financial contributions to farmers associations

**MAIN
IMPEDIMENTS
AFFECTING
THE
DEVELOPMENT
OF THE
COTTON
INDUSTRY IN
TANZANIA**

Impediments
Specific to Firms
in the Cotton
Value Chain

- Inadequate supply of raw materials
- Unfavourable Business Environment (Finance, technological constraints, cheating by some of the agents and farmers, competition, etc.)
- Multiple taxes and contributions

**PROPOSED
MEASURES
FOR BOOSTING
DEVELOPMENT
OF COTTON
BY-PRODUCTS**

Increase
productivity and
improve quality
of seed cotton
production

- Improve input supply and access
- Carry out capacity building to farmers (Extension services)
- Improve marketing, pricing and on-time payment for seed cotton

**PROPOSED
MEASURES
FOR BOOSTING
DEVELOPMENT
OF COTTON
BY-PRODUCTS**

Promote
and
support
locally
produced
cotton by-
products

- multiple cotton by-products
- Take advantage of the on-going and planned improvement in road and railway transportation
- Improve weighing and measure for seed cotton
- Increase supply of electricity at a reduced tariff rate
- Improve extraction and refinery of cottonseed oil
- Promote acquisition of appropriate technologies for removing the enzyme gossypol from cotton seed cake to expand its market to feedstock

**PROPOSED
MEASURES
FOR BOOSTING
DEVELOPMENT
OF COTTON
BY-PRODUCTS**

Promote
and
support
locally
produced
cotton by-
products

- Improve quality of cottonseed cake and promote it in the domestic market
- Sensitize and motivate firms to produce by-products from cotton husks
- Sensitize and motivate firms to produce by-products from cotton stalks
- Address the issue of multiple taxes and contributions introduced by Local Authorities



ASANTENI
KWA
KUSIKILIZA