



# **PROMOTING COTTON BY-PRODUCTS**

**in Eastern and Southern Africa**



## **Uganda**

### **Policy recommendations**

Agreed by consensus at the multi-stakeholder national workshop

Golf Course Hotel, Kampala, Uganda, 16 March 2018

Validated by the Cotton Development Organisation

4 October 2018

## Summary

The participants of the national workshop on “Promoting cotton by-products in Uganda” recommend, by consensus, that the Government of Uganda adopt the following policies, to support the development of value added activities on cotton by-products:

1. Create a level playing field for domestic cottonseed;
2. Support the transition to renewable energy sources, including biomass briquettes;
3. Promote mushroom cultivation from cotton biomass; and
4. Extend the mandate of the Cotton Development Organisation to oversee the entire cotton value chain.

On behalf of the Government, the Cotton Development Organisation (CDO) validated this National Action Plan on 4 October 2018 (see Annex 1).

The following section introduces the national workshop and the context for these policy recommendations, while the subsequent sections provide a detailed description of each recommendation.

## Introduction

The United Nations Conference on Trade and Development (UNCTAD) and the Cotton Development Organisation (CDO) held a three-day national capacity-building workshop in Kampala on 14-16 March 2018, as part of the technical cooperation project “Promoting cotton by-products in Eastern and Southern Africa”. Approximately 83 participants attended the workshop, including policy makers, researchers and stakeholders from the cotton value chain.

The objectives of the workshop included: a) equipping stakeholders to identify priority value added activities on cotton by-product to develop in Uganda; and b) assisting government officials in drafting evidence-based policies to support the identified initiatives. Correspondingly, the national workshop comprised a two-day programme for stakeholders (14-15 March) and a one-day programme for policy makers (16 March).

During the stakeholder component of the workshop, participants agreed on a National Action Plan for developing cotton by-products in Uganda. The action plan includes the following four proposed initiatives:

1. Extend the market for cottonseed to the non-ruminants feed segment by implementing de-gossypol technology;
2. Increase domestic production of absorbent cotton wool;
3. Develop a new value chain for cotton stalks, to produce charcoal briquettes; and
4. Scale up commercial mushroom production using cotton biomass.

In support of the National Action Plan, participants at the policy-making component of the workshop agreed by consensus on the following policy recommendations. At the request of participants, UNCTAD drafted the agreed recommendations and submits them alongside the National Action Plan, for validation by the Cotton Development Organisation, on behalf of the Government.

## Recommendation 1: Create a level playing field for domestic cottonseed

### *Background*

Lint and cottonseed are the two main by-products of the ginning process. While ginners have a ready market for lint, they often struggle to sell all of their cottonseed. This undermines the viability of their business, as well as the producer price for seed cotton that they pay to farmers.

In Uganda, policies place domestic products derived from cottonseed at a competitive disadvantage with imports and substitutes. Local cottonseed incurs value-added tax (VAT), while imports are duty-free. Meanwhile, a lack of enforcement of standards contribute to a market for substandard and adulterated products. For example, cheap imported stockfeed drives local producers to buy only maize as a cheaper, but lower quality raw material.

**Participants therefore recommend that the Government create a level playing field for domestic cottonseed, relative to imports and substitutes, using trade policy and enforcement of standards.**

### *Policy objectives*

- Ensure more reliable revenues from cottonseed for ginners;
- Increase seed cotton producer prices paid to farmers;
- Expand the domestic stockfeed industry; and
- Replace imported animal feed concentrates with feeds made with cottonseed cake.

### *Specific actions*

- Conduct a sensitization campaign on the benefits of removing gossypol from cottonseed cake;
- Enforce standards on, for example:
  - Handling, storage and processing of cottonseed;
  - Quality of cottonseed oil and cake; and
  - Composition and nutritional characteristics of stockfeed.
- Level the playing field for local cottonseed producers, with respect to smuggled and duty-free imports.

### *Related policies*

- Buy Uganda Build Uganda (BUBU), for example to promote local production of cottonseed and stockfeed.

### *Responsible institutions*

- Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), Ministry of Trade, Industry and Cooperatives (MTIC), Uganda National Bureau of Standards (UNBS)
- Uganda Cottonseed Oil Processors Association

## Recommendation 2: Support the transition to renewable energy sources, including biomass briquettes

### *Background*

Uganda loses approximately 100,000 hectares of forest cover every year to deforestation, according to the Ministry of Water and Environment.<sup>1</sup> Reasons for the high rate of deforestation include: farmers clearing land for cultivation; and the widespread use by households of firewood and wood-based charcoal for heating and cooking. Deforestation undermines Uganda's environmental conservation and climate change mitigation efforts, while emissions from burning wood contribute to respiratory and other ailments in households, as well as poor air quality in cities. In addition, 70 per cent of Uganda's primary energy consumption comes from fossil fuels, nearly all of them imported.<sup>2</sup> Taken together, deforestation and fossil fuel consumption pose environmental, health and energy security risks that undermine Uganda achieving the Sustainable Development Goals and its commitments under the Paris Agreement.

An opportunity exists to process cotton stalks into charcoal briquettes for use as fuel in household and commercial applications, based on domestic technology developed by the Uganda Industrial Research Institute (UIRI). Stalks are the main cotton by-product at the farm level,<sup>3</sup> but they are currently unutilized due to a lack of commercial applications. Cotton stalks share many characteristics with hardwood species, including a high calorific value, making them ideal as a biomass fuel. As a low-cost, renewable fuel, stalk-based briquettes would replace consumption of wood-based charcoal and fossil fuels. This creates rural business opportunities, reduces waste and deforestation and substitutes imports.

To support this commercial initiative, as part of a wider energy transition, participants recommended that Government create incentives for businesses and households to use renewable energy sources, including biomass briquettes.

### *Policy objectives*

- Improve household health and air quality;
- Reduce waste in the cotton value chain;
- Increase the share of renewable sources in energy consumption;
- Create a new income stream for farmers, especially women and youth groups; and
- Preserve the environment, for example from air pollution and deforestation.

### *Specific actions*

- Commercialise and implement hand-operated carbonised briquetting machines, designed by UIRI;
- Utilise cotton stalks and husks as raw materials, as well as biomass from other crops;
- Create incentives to consume energy from renewable sources, such as biomass briquettes, in place of, for example, wood-based charcoal and liquefied petroleum gas (LPG);
- Favour the use of briquetting machines by women, youth groups and other entrepreneurs; and
- Establish and enforce standards for household and commercial use of briquettes, including:

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<sup>1</sup> Mr. Paul Mafabi, Director of Environmental Affairs, Ministry of Water and Environment, cited in: Ssenyonga, A. (2017). Uganda's forest cover reduces by 100,000 hectares annually. New Vision, 17 October. Kampala, Uganda. Available at: <https://www.newvision.co.ug>

<sup>2</sup> International Energy Statistics, United States Energy Information Administration (EIA).

<sup>3</sup> Participants estimated that the 77,000 hectares of land under cotton in Uganda, at an average of three metric tonnes of stalks per hectare, produced a total of approximately 231,000 tonnes of stalks per year.

- Calorific values;
- Emissions;
- Composition; and
- End user specifications.

### ***Related policies***

- Renewable Energy Policy 2007-2017;
- National Environment Act;
- Uganda's Reducing Emissions from Deforestation and Degradation (REDD+) strategy;
- Micro, Small and Medium Enterprise (MSME) Policy; and
- Buy Uganda Build Uganda (BUBU).

### ***Responsible institutions***

- MAAIF, MTIC, UNBS
- Ministry of Environment, National Environment Management Authority (NEMA)
- Ministry of Energy and Mineral Development
- Ministry of Finance
- UIRI

## **Recommendation 3: Promote mushroom cultivation from cotton biomass**

### ***Background***

Malnutrition remains a widespread challenge in Uganda, contributing, for example, to a high rate of stunting (29 per cent) and anaemia (50 per cent) among children under five years.<sup>4</sup> Many factors contribute to malnutrition, including poverty, lack of education, landlessness, disease, natural disasters and environmental degradation.

Diet is another contributing factor, and the Government has targeted improved nutrition as a strategic priority, for example featuring it in the Second National Development Plan (NDPII) for 2015/16-2019/20, as part of the Uganda Vision 2040. Among the Government's nutrition guidelines, it recommends reducing the relative consumption of starches, while increasing that of fibre and low-fat proteins.

Mushrooms are rich in lean protein, fibre, potassium and selenium and offer various health benefits. Increased consumption of mushrooms can therefore contribute to the Government's goals for improved nutritional and health outcomes in Uganda.

As part of the National Action Plan to develop cotton by-products in Uganda, participants recommended establishing a new value chain for cotton stalks. With their high cellulose and lignin content, cotton stalks are productive substrates for mushroom cultivation. As part of the wider commercialisation of cotton stalks in Uganda, the mushroom value chain is therefore an obvious demand segment to develop.

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<sup>4</sup> Data from the 2016 Demographic and Health Survey (DHS) in Uganda, a USAID program, cited in: USAID. (2018). Uganda: Nutrition Profile, April 2018. USAID, Washington, D.C. Available at: <https://www.usaid.gov>

Participants recommend that the Government include the commercialisation of local mushroom cultivation in its nutrition-related programmes and support the development of a new value chain for cotton stalks.

### *Policy objectives*

- Create new income opportunities for women, youth and farmers in general.
- Improve nutrition; and
- Reduce waste in the cotton value chain.

### *Specific actions*

- Build a laboratory and related research infrastructure to develop a stable mushroom spawn, suitable to use on a commercial scale;
- Coordinate training and research activities on mushrooms among scientific institutions;
- Conduct a sensitization campaign about the benefits of cultivating, selling and consuming mushrooms;
- Upgrade technology and training for farmers already cultivating mushrooms;
- Support women, youth groups and other entrepreneurs to build mushroom businesses; and
- Establish a supply chain of cotton stalks, husks and gin waste for use as substrate for growing mushrooms.

### *Responsible institutions*

- MTIC
- UIRI
- National Agricultural Research Organisation (NARO)
- Makerere University
- Ministry of Health

## **Recommendation 4: Extend the mandate of CDO to oversee the entire cotton value chain**

### *Background*

The current institutional structure governing the cotton value chain in Uganda is relatively fractured. The Cotton Development Act focusses mainly on cotton production, with few provisions for value addition. As a result, CDO has a clear mandate and plays an active role regulating cotton production and facilitating seed breeding. CDO also convenes the actors responsible for value addition and participates in these discussions but has no formal mandate or budget to regulate downstream activities. As a result, oversight of the downstream value chain is spread among the agriculture, industry, trade and finance ministries, as well as producer associations. This fractured institutional setting precludes a coherent policy treatment of the cotton value chain.

To allow for a more coherent governance of the value chain, including the implementation of the National Action Plan to develop cotton by-products in Uganda, the participants recommended that the Government extend the mandate of CDO to regulate the entire cotton value chain.

### ***Policy objectives***

By streamlining the institutional structure in the cotton value chain, Government would achieve the following:

- Implement a coherent policy treatment of the cotton value chain;
- Provide cotton-specific policy and regulatory support to underserved nodes of the value chain, including most value added activities; and
- Allow for immediate policy and regulatory support of innovative new value added activities in the cotton value chain, for example the commercialisation of cotton stalks.

### ***Specific actions***

- Amend the Cotton Development Act to mandate CDO to regulate the entire cotton value chain, from production through value addition.

### ***Responsible institutions***

- MAAIF
- CDO
- MTIC
- Ministry of Finance

## Annex 1: Cotton Development Organisation validation letter



### COTTON DEVELOPMENT ORGANISATION

Cotton House, Plot 15, Clement Hill Road, P. O. Box 7018, Kampala Uganda  
Tel: +256- 414- 232968/230309, Fax: +256- 414- 232975,

Our Ref: CDO/CLS 214 (a)

Your Ref:

04<sup>th</sup> October 2018

The Officer-in- Charge, Commodities Branch  
UNCTAD, Palace of Nations,  
**CH-1211 Genève, Switzerland.**

Dear Ms. Yanchun Zhang,

**RE: UGANDA NATIONAL ACTION PLAN AND POLICY RECOMMENDATIONS**

During the National Capacity Building Workshop on Cotton By-Products in Uganda held at Golf Course Hotel- Kampala Uganda from 14<sup>th</sup> to 16<sup>th</sup> March 2018, stakeholders agreed and produced the following strategy documents:

- *Uganda National Action Plan* to develop value added activities on Cotton By-products in Uganda.
- *Uganda Policy Recommendations* to support development of value added activities on Cotton by-products in Uganda.

The above two documents have been examined by Cotton Development Organisation (CDO) and improvements thereon have been agreed upon with UNCTAD.

CDO hereby confirms that the *National Action Plan* and *Policy Recommendations* do represent the desire and aspirations of the stakeholders. Further, CDO will coordinate the *National Action Plan* and *Policy Recommendations* with all stakeholders in accordance with the CDO Strategic Plan and Uganda National Development Plans.

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We therefore look forward to your final approval to enable CDO and UNCTAD undertake the implementation of the programme.

Yours faithfully,

For and on behalf of,

**COTTON DEVELOPMENT ORGANISATION (CDO),**



Jolly Sabune (Mrs)

**MANAGING DIRECTOR/ACCOUNTING OFFICER.**