



PROMOTING COTTON BY-PRODUCTS

in Eastern and Southern Africa



Uganda

National action plan

Agreed by consensus at the multi-stakeholder national workshop

Golf Course Hotel, Kampala, Uganda, 15 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, the following National Action Plan to develop value added activities on cotton by-products in Uganda. The plan includes four commercial 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; and
3. Develop a new value chain for cotton stalks, to produce charcoal briquettes; and
4. Scale up commercial mushroom production using cotton biomass.

Participants also propose a multi-stakeholder committee to oversee the implementation of these initiatives, the related activities of the UNCTAD technical cooperation project, as well as any follow-up activities.

On behalf of the Government, the Cotton Development Organisation validated this National Action Plan on 4 October 2018 (see Annex 2).

The following section introduces the national workshop and the context for this National Action Plan, while the subsequent sections provide a detailed description of the proposed initiatives and oversight committee.

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: stakeholders from the cotton value chain; policy makers from the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), the Ministry of Trade Industry and Cooperatives (MTIC) and other associated agencies; researchers and academics.

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, detailed below.

In support of the National Action Plan, participants at the policy-making component of the workshop agreed by consensus on the following policy recommendations:

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

At the request of participants, UNCTAD drafted the agreed policy recommendations as a separate document, to submit alongside the National Action Plan, for validation by the Cotton Development Organisation, on behalf of the Government.

Initiative 1: Extend the market for cottonseed to the non-ruminants feed segment by implementing de-gossypol technology

Background

Cottonseed contains an enzyme, gossypol, which is toxic to non-ruminants, such as poultry, pigs or fish – as well as to humans. Commercial stockfeed producers typically only use cottonseed cake in feed for ruminants, such as cows and goats, which can detoxify gossypol during digestion. This constricts the market for cottonseed cake in Uganda, as cattle farmers in the country, as well as in neighbouring Kenya and the United Republic of Tanzania, tend only to pen-feed their herds when drought restricts grazing.

By contrast, poultry represents the main stockfeed market in Uganda. Standards prohibit the use of cottonseed cake in poultry feed, to prevent the transmission of the enzyme gossypol into the human food chain.

Meanwhile, in India, the Central Institute for Cotton Research (CIRCOT) has commercialised a new microbial process to remove gossypol from cottonseed cake. The commercial process is small-scale and CIRCOT was trialling a larger-scale process at the time of writing.

If de-gossypol technology can be economically implemented in Uganda, it would extend the market for cottonseed cake to the larger non-ruminant segment. This would increase demand for cottonseed, and, by extension, seed cotton grown by farmers. Cottonseed is the main by-product, alongside cotton lint, of the ginning process. With additional revenues and a more reliable market for their cottonseed, ginners could offer higher and more stable producer prices to farmers.

Participants recommend that the Government facilitate the importation from India of the microbial process to remove gossypol from cottonseed cake, to pilot for its wider implementation in the non-ruminants feed segment in Uganda.

Business case

Please see Annex 1 for a more detailed analysis of the business case for de-gossypol technology, applying the Indian model to figures for cottonseed cake production in Uganda. Below is a summary of the investment, financial and marketing components of the business case.

Establishing a pilot de-gossypol process would require an estimated total capital investment of US\$ 23,000, including land, plant and auxiliary equipment.

In return, investors could expect an estimated return on investment of 32 per cent and a payback period of 38 months, as shown in Table 1.

Table 1 - Summary of financial projections

Item	De-gossypol plant
Total capital investment (US\$)	23,000
Total revenues / year (US\$)	93,300
Net profit / year (US\$)	7,400
Return on investment, annual	32%
Investment payback period (months)	38

Source: CIRCOT

Note: The equipment for the de-gossypol microbial process is relatively small, so could be installed by oil crushers or stockfeed producers as an additional process unit on their existing production line.

Participants suggested that the Government structure this initiative as a pilot project, installing de-gossypol processes at a small number of oil crushers. Lessons from this pilot project will inform whether and how to implement the technology more widely.

Requirements for one pilot project

Investment:	An up-front total capital investment for the pilot project of approximately US\$ 23,000. Costs to adapt the technologies to the context in Uganda.
Operating costs:	US\$ 85-90,000 per year.
Raw material:	300 metric tonnes (MT) of cottonseed cake per year.
Technology:	Importation of microbial preparation from CIRCOT in India. Licencing of any technical training programmes.
Outreach:	Recruit oil crushers to participate in this initiative. Engage target customers to obtain their user requirements and specifications. Sensitise consumers about the benefits of consuming poultry fed with cottonseed cake without enzyme gossypol.
Capacity-building:	Training of technicians.

Initiative 2: Increase domestic production of absorbent cotton wool*Background*

Absorbent cotton products are in high demand in Uganda. Medical surgical cotton wool products are the main demand segment, but there is also growing demand for pharmaceutical, cosmetic and baby care products. Local surgical cotton wool producers serve this market, but they operate well below capacity¹ due to the small volumes and seasonality of the supply of short-staple cotton,² the raw material. As a result, most absorbent cotton products are imported. For example, the two main buyers – National Medical Stores and Joint Medical Stores – together imported 124 MT of absorbent cotton in 2016.

In the 1990s, National Agricultural Research Organisation (NARO) bred and disseminated the Serere Albar Type Uganda (SATU) variety of cotton, which yielded short, coarse lint fibres, suitable for processing into absorbent cotton wool. However, after the liberalisation of the cotton subsector in Uganda, SATU fetched a lesser price for farmers than the BPA variety, which has the longer, finer fibres that are valued for spinning into yarn. Production of the SATU variety was therefore shelved. Although the SATU variety has not been grown in Uganda for several years, the germplasm is still maintained at NARO Institutes.

Participants recommend that CDO, together with NARO, revisit the SATU variety, to evaluate the suitability of its lint for absorbent cotton production. If it proves suitable, CDO could then work with partners to multiply the seed and distribute it to farmers, for production on contract for local absorbent cotton wool producers.

Business case

This initiative will benefit absorbent cotton wool producers, who stand to receive an increased domestic supply of short-staple cotton. More generally, increasing the domestic supply of absorbent cotton wool products will increase value added in Uganda and replace imports.

¹ UNCTAD, 2018. "Analysis of cotton by-products survey in Uganda". UNCTAD, New York and Geneva. UNCTAD/DITC/COM/INF/2018/2. Available at: http://unctad.org/meetings/en/SessionalDocuments/1617K_Survey_Uganda.pdf.

² "Staple" refers to a fibre's length. In general, spinners prefer long-staple cotton (3cm+), as it yields finer yarns. Short-staple cotton (<2.5cm) is less valued. Ginneries can recover short-staple cotton after they clean their seed cotton prior to ginning, and then their lint prior to baling. In small volumes, it is often uneconomical for ginneries to recover short-staple cotton, so it is often disposed of as "gin waste". Spinners can also recover short-staple cotton after combing, which is known as "comber noil".

Requirements

Investment:	Costs to research the suitability of growing the SATU variety as a supply of short-staple lint for absorbent cotton production. Cost for annual multiplication of the SATU planting seed.
Operating costs:	Working capital to finance the outgrower packages extended to farmers, either through the Cotton Development Fund or a comparable arrangement.
Raw material:	Provided SATU is confirmed as a suitable variety to produce short-staple lint for absorbent cotton wool production, existing firms would contract farmers to grow the volume of raw material they require.
Technology:	This initiative uses existing ginning and cotton wool manufacturing technologies and the SATU variety of cotton plant.
Outreach:	Recruitment of absorbent cotton wool producers to participate in the initiative. Negotiation of the terms for the outgrower contracts with farmers.
Capacity-building:	Training of extension workers and farmers on growing the SATU variety. Training of Technicians in ginning and cotton wool manufacturing technologies.

Initiative 3: Develop a new value chain for cotton stalks, to produce charcoal briquettes

Background

Stalks are the main cotton by-product at the farm level. They share many characteristics with hardwood species, including their fibrous structure and high calorific value. In recent years, engineers in some countries have commercialised technologies to utilise the characteristics of cotton stalks in producing, for example, fuel pellets or particle board.

In Uganda, there are currently no commercial applications for cotton stalks.

As a result, stalks are either underutilised, as firewood, or burnt in the field as waste. Nevertheless, there is a ready opportunity to utilise cotton stalks as a biomass fuel with charcoal briquetting technology developed by the Uganda Industrial Research Institute (UIRI).

UIRI fabricates small-scale, manual briquetting kilns and has disseminated 150+ of them, along with training, to individuals and SMEs in 16 districts in Uganda. The programme and its kilns currently focus on converting municipal and paper waste into charcoal briquettes for household cooking. This creates business opportunities, while reducing waste and deforestation.

According to UIRI, the technology can be adapted to use cotton stalks as a raw material, to produce briquettes with a high calorific – i.e. heating – value. These briquettes could therefore have wider commercial potential, by selling them to businesses and industrial users. To realise this potential, commercial markets and a supply chain must be developed.

Participants recommend that the Government of Uganda scale up the charcoal briquette programme at UIRI, as the basis for a new value chain for cotton stalks.

Business case

Establishing a pilot cotton stalk value chain, producing charcoal briquettes and mushroom substrates, would involve the following activities:

1. Adapting UIRI's charcoal briquette kilns to use chipped cotton stalks as raw material;

2. Installing one or more commercial-scale charcoal briquette plant;
3. Deploying mobile carbonising machines in cotton growing areas;
4. Transporting carbonised stalks to distribution points;
5. Distributing carbonised stalks to commercial briquette plants, as well as cottage briquette businesses;
6. Training and skilling of farmers and technicians in SME's
7. Processing chipped stalks into charcoal briquettes and mushroom substrates;
8. Delivering briquettes and mushroom substrates to commercial users.

Establishing a pilot supply chain for one commercial briquetting plant, with a daily production capacity of four MT, would require an estimated total capital investment of US\$ 53,500, with the breakdown shown in Table 2.

Table 2 - Capital requirements

Item	Total estimated cost (Uganda shillings)	Total estimated cost (US\$)
Charcoal briquetting kilns (2)	130,000,000	35,000
Large-scale carbonising machine	15,000,000	4,000
Mobile carbonising machines (2)	3,700,000	1,000
Land and building (0.5 hectares)	50,000,000	13,500
Total capital investment	198,700,000	53,500

Sources: Cost of machinery – UIRI.

Land cost is a rough average, based on per-hectare prices for village plots in the Eastern, Northern and Western regions, as advertised by Jumia House (<https://house.jumia.ug>), accessed 7 May 2018.

US\$:UGX exchange rate = 0.00027, from Google, accessed 25 May 2018.

For their investments in a briquetting plant, investors could expect a guaranteed supply of raw material, an estimated return on investment of 131 per cent per cent and a payback period of nine months, as shown in Table 3.

Table 3 - Summary of financial projections

Item	Briquetting plant
Total capital investment (US\$)	53,500
Total revenues / year (US\$)	180,000
Net profit / year (US\$)	70,000
Return on investment, annual	131%
Investment payback period (months)	9

Source: UNCTAD calculations based on data from UIRI.

As well as fuel for household cooking, the charcoal briquettes would be marketed to industrial and commercial users. For example, in India, briquettes are used as a substitute for coal in industrial boilers and for liquefied petroleum gas (LPG) in restaurant cookers. Cost is the major differentiator: cotton stalk-based briquettes in India cost 20 per cent less than coal and 50 per cent less than LPG.

Among potential customers, participants identified cement factories, tea factories and breweries in Jinja (Eastern) and Kasese (Western) as the most promising.

Farmers will earn a new income stream by selling their carbonised cotton stalks to the briquetting plant. In a comparable example in India, farmers received approximately US\$ 43.25 per MT for their stalks.³ In

³ CIRCOT.

addition, mobile carbonising machines and small-scale briquetting kilns are potentially feasible for farmers to operate as a commercial enterprise, either individually or in groups. Farmers can also consume briquettes themselves, reducing their cooking costs.

Biomass charcoal briquettes are a renewable source of energy, replacing dirtier fossil fuels and wood charcoal, as well as reducing the incidence of deforestation. This feature is of policy interest to the Government of Uganda, and of marketing interest to businesses that wish to promote a lower carbon footprint in their supply chains.

Requirements

Investment:	An up-front total capital investment for the pilot briquetting plant of approximately US\$ 53,500. Costs to adapt UIRI's charcoal briquetting kilns to use cotton stalks.
Operating costs:	US\$ 110-120,000 per year.
Raw material:	The proposed briquetting plant has a daily output of four MT per day (4 MT/day), or 1,040 MT/year. With a recovery rate of approximately 90 per cent, the plant would require raw material of: 1,150 MT/year of biomass This biomass can include cotton stalks or other sources available in sufficient volumes, for example: soybean, maize, sugar cane, etc. Assuming one hectare of cotton can produce three MT of stalks per year, the briquetting plant could fill its annual raw material needs from approximately 385 hectares of cotton.
Technology:	This initiative uses local technologies: UIRI already fabricates the charcoal briquetting kilns and carbonising machines.
Outreach:	Inform farmers groups about the opportunity for them to invest in these technologies for village-level operations. Engage target customers to obtain their user requirements and specifications.
Capacity-building:	Training of machine operators, technicians and farmers.
Infrastructure:	Improved roads to accommodate loaded lorries travelling from farm, to processing plant, to market. Access to the existing fleet of trucks and lorries. Warehouse collection points at the village level.

Initiative 4: Scale up commercial mushroom production using cotton biomass

Background

Diets are changing in Uganda, including a rising consumption of mushrooms, for their lean protein content and other health benefits. There is already significant demand from supermarkets and restaurants, but they rely on imports. Meanwhile, approximately 800 cottage-scale mushroom growers, mostly rural women and youth, operate in three districts in Uganda.⁴ They mainly sell fresh mushrooms on local markets, due to various limitations related to, for example, standardisation, economies of scale and infrastructure.

A programme at UIRI aims to expand mushroom cultivation and help growers mount commercial enterprises. Part of the commercial development involves establishing a supply chain for inputs, including the substrate material on which the mushrooms grow. Because of their high cellulose and lignin content, cotton stalks

⁴ Kabale, Kanungu and Kisoro.

and husks are productive substrates for mushrooms. As part of the wider commercialisation of cotton stalks in Uganda, the mushroom value chain is therefore an obvious demand segment to develop.

UIRI's mushroom programme remains at a pre-commercial stage. Their entrepreneurs require financial support to establish the production and cold storage facilities necessary for commercial-scale enterprises. More research is also needed to develop a more stable mushroom spawn and to multiply it on a commercial scale.

The requirements for establishing a value chain for cotton stalks was described in the previous section. In addition, the mushroom initiative would require: a) mobile chipping machines to reduce the bulky cotton stalks in farmers' fields to a density suitable for transportation and use as a substrate; and b) investment capital to build a commercial mushroom farm, with a small-scale cold storage facility.

Participants recommend that the Government of Uganda commercialise UIRI's mushroom programme, including linking mushroom growers to a supply of cotton stalks and husks to use as substrate.

Business case

Establishing a supply chain of cotton stalks and husks for mushroom cultivation would involve the following activities:

1. Deploying mobile chipping machines in cotton growing areas;
2. Negotiating agreements with oil crushers for their cottonseed husks;
3. Transporting the husks and chipped stalks to distribution points;
4. Distributing cotton stalks and husks to mushroom growers;
5. Delivering mushrooms to commercial buyers.

A small-scale commercial farm, with an annual capacity of 3,600 kg of mushrooms, would require an estimated total capital investment of US\$ 14,850, with the breakdown shown in Table 4.

Table 4 - Capital requirements

Item	Total estimated cost (Uganda shillings)	Total estimated cost (US\$)
Land (0.5 hectares)	50,000,000	13,500
Building	3,000,000	810
Materials and equipment	500,000	135
Mobile chipping machine	1,500,000	405
Total capital investment	55,000,000	14,850

Sources: Cost of machinery, materials and building – UIRI.

Land cost is a rough average, based on per-hectare prices for village plots in the Eastern, Northern and Western regions, as advertised by Jumia House (<https://house.jumia.ug>), accessed 7 May 2018.

US\$:UGX exchange rate = 0.00027, from Google, accessed 25 May 2018.

A commercial mushroom farm would also need cold storage facilities. Depending on the business model chosen, this could involve purchasing a solar-powered refrigerator for the farm's use only, with a cost of approximately US\$ 3,000.⁵ Alternatively, it could install a larger cold storage facility, with a capital cost of

⁵ For example, the SolarChill project has a commercial unit, SolarChill B, designed for cold storage of agricultural produce, <https://www.solarchill.org/>.

approximately US\$ 65,000,⁶ that could provide an additional revenue stream, renting space to farmers and wholesalers.

For their investment in a mushroom farm, investors could expect a guaranteed supply of cotton stalks or husks as raw material, an estimated return on investment of 24.5 per cent and a payback period of 49 months, as shown in Table 5.

Table 5 - Summary of financial projections

Item	Briquetting plant
Total capital investment (US\$)	14,850
Total revenues / year (US\$)	5,832
Net profit / year (US\$)	3,644
Return on investment, annual	24.5%
Investment payback period (months)	49

Source: UNCTAD calculations based on data from UIRI.

Mushrooms will be marketed to commercial buyers, such as supermarkets, food service companies and restaurants, predominantly in urban markets. Surplus production can be sold on local markets and/or sun dried. Due to the need for a cold storage chain, the mushroom farm would be ideally situated in cotton-growing regions near cities, such as Gulu, Kasese or Lira.

Cost is the major differentiator between local fresh mushrooms and imports.

As described in the preceding initiative, farmers will earn a new income stream by selling their chipped cotton stalks to mushroom plants. Similarly, oil crushers will have new buyers for their cottonseed husks.

UIRI estimates there are approximately 800 small-scale mushroom farmers in Uganda,⁷ many of them women or young people selling fresh mushrooms at local markets as a supplementary source of income. Establishing a successful model for a commercial mushroom farm would allow these women and young entrepreneurs to scale up their businesses, acquire new skills and earn more income.

More generally, mushrooms are rich in lean protein, fibre, potassium and selenium and offer various health benefits. Increasing the local supply of affordable mushrooms can therefore contribute to improved nutritional and health outcomes in Uganda.

Requirements

Investment:	An up-front total capital investment for a pilot commercial mushroom farm of approximately US\$ 14,850. Capital investment in a cold storage solution, for example a solar-powered refrigerator at US\$ 3,000. Costs for UIRI to develop a more stable mushroom spawn.
Operating costs:	US\$ 2,200-2,400 per year.
Raw material:	The proposed pilot commercial mushroom farm would use a negligible volume of cotton husks or chipped stalks as a substrate raw material. The challenge is therefore to link mushroom farmers with the new supply chain for cotton stalks, as described in Initiative 3.
Technology:	This initiative uses local technologies: UIRI already has a cost-effective model for a small-scale mushroom farm.

⁶ For example, Station Energy builds its Solar Cold Room unit from refitted shipping containers, <http://station-energy.com/>.

⁷ Mayambala, J., 2017. Production and marketing of mushrooms: Global and national scenario. Presented at: National capacity-building workshop, Promoting cotton by-products in Eastern and Southern Africa, Golf Course Hotel, Kampala, Uganda, 14-16 March. Available at: https://unctad.org/meetings/en/Presentation/Uganda_1617K_Myambale_UIRI.pdf

Outreach:	Inform existing mushroom farmers about the opportunities to scale up their businesses. Engage target customers to obtain their user requirements and specifications.
Capacity-building:	Training of growers on commercial mushroom cultivation. Training of entrepreneurs on integrating buyers' supply chains, related to, for example: order fulfilment, food safety standards, weights and measures, labelling and packaging.
Infrastructure:	Access to cold storage, either owned or rented.

Multi-stakeholder oversight committee

Participants propose that the Cotton Development Organisation (CDO) convene and host a multi-stakeholder committee to oversee the implementation of this plan, including any related activities of the UNCTAD project. Participants invite the Managing Director of CDO to chair the committee and set its membership criteria, e.g. the appropriate expertise, rank and decision-making authority of committee members. The group proposes the committee include the following organisations or groups:

1. Cotton Development Organisation (CDO) – Coordinator/Chair
2. Absorbent cotton producers' representatives
3. Farmer representatives
4. National Agricultural Research Organisation
5. Ministry of Agriculture Animal Industry and Fisheries
6. Ministry of Energy and Mineral Development
7. Ministry of Finance, Planning and Economic Development
8. Ministry of Trade Industry and Cooperatives
9. Ministry of Water and Environment
10. Stockfeed producers' representatives
11. Uganda Ginners and Cotton Exporters Association
12. Uganda Oil Seed Producers and Processors Association
13. Uganda Industrial Research Institute
14. Uganda Investment Authority (UIA)

Role of UNCTAD

UNCTAD will support the Government of Uganda and the proposed oversight committee in the implementation of the National Action Plan, where the scope and budget of its technical cooperation project permit.

In this context, UNCTAD can support the implementation of the National Action Plan with the following services, for example:

- Secretarial support and drafting of documents for project-related activities;
- Introducing the Government of Uganda to technology owners, for example in India;

- Organising a study tour (Activity 1.4 in the project plan);
- Procuring advisory services (A 2.2);
- Drafting investment profiles (A2.3); and
- Organising a regional workshop among all four project countries (A 2.4).

Annexes:

Annex 1: Detailed analysis by CIRCOT of the business case for the de-gossypol microbial process, applying the Indian model to Uganda's figures for seed cotton production

Annex 2: Cotton Development Organization Agreement on National Action Plan and Policy Recommendations (dated 4th October 2018)

Annex 1

Detailed analysis by CIRCOT of the business case for the de-gossypol microbial process, applying the Indian model to Uganda's figures for seed cotton production.

Pilot Scale Production: Degossypolised cake

A	Capital Investment (1 TPD Capacity)	INR (Mn.)	USD
	Land and Building (Land Area: 2000 sq. m; Building for Machinery: 50 Sq. M ; Material storage area:500 Sq. M ; Office Building: 40 Sq. M)	0.50	7,962
	Plant and Equipment	0.90	13,846
	Auxiliary and Service Equipment (Electricals and handling tools)	0.10	1,538
	Total investment	1.50	23,077
B	Operational Expenses		
	Raw Material Cost for 4 months(1 TPD for 120 days @ Rs. 20,000 per tonne)	2.40	36,923
	Operational cost including repair and Maintenance and other charges (Rs. 3000/tonne) for 4 months	0.36	5,538
C	Gross Annual Income (Rs. 25000/tonne)	6.0	93,308
	Net annual income (Rs. 2000/tonne)	0.48	7,385
D	Payback period: 38 months	Return on investment : 26.3%	

Author and source of figures: Dr. P.G. Patil, Director, ICAR-CIRCOT, Mumbai (India).

Annex 2. 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:

04th 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 14th to 16th 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.

E-mail: cdo@africaonline.co.ug / cdo@cdouga.org
Website: www.cdouga.org

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.