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**Trialling short-staple varieties as raw material for absorbent cotton production in Uganda (Concept note)**

By

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The views expressed are those of the author and do not necessarily reflect the views of UNCTAD.



# **PROMOTING COTTON BY- PRODUCTIONS IN EASTERN AND SOUTHERN AFRICA**

**TRIALLING SHORT- STAPLE VARIETIES AS RAW MATERIAL FOR  
ABSORBENT COTTON PRODUCTION IN UGANDA  
CONCEPT NOTE**

Presented at;

UNCTAD/ Cotton South Africa Region Workshop

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# Outline of the Presentation:

- Introduction
- Identified National Action Plan Initiatives for Uganda
- Demands and Supply of Absorbent Cotton Wool and Potential Sources of Raw Materials in Uganda
- Plans and Costs for Multiplication of SATU Cotton and on Research for its further Improvement
- The Already Available Facilities For The Testing SATU Cotton
- Work Plan and Budgetary Requirements For Six Project Years
- Conclusion

# 1. Introduction:

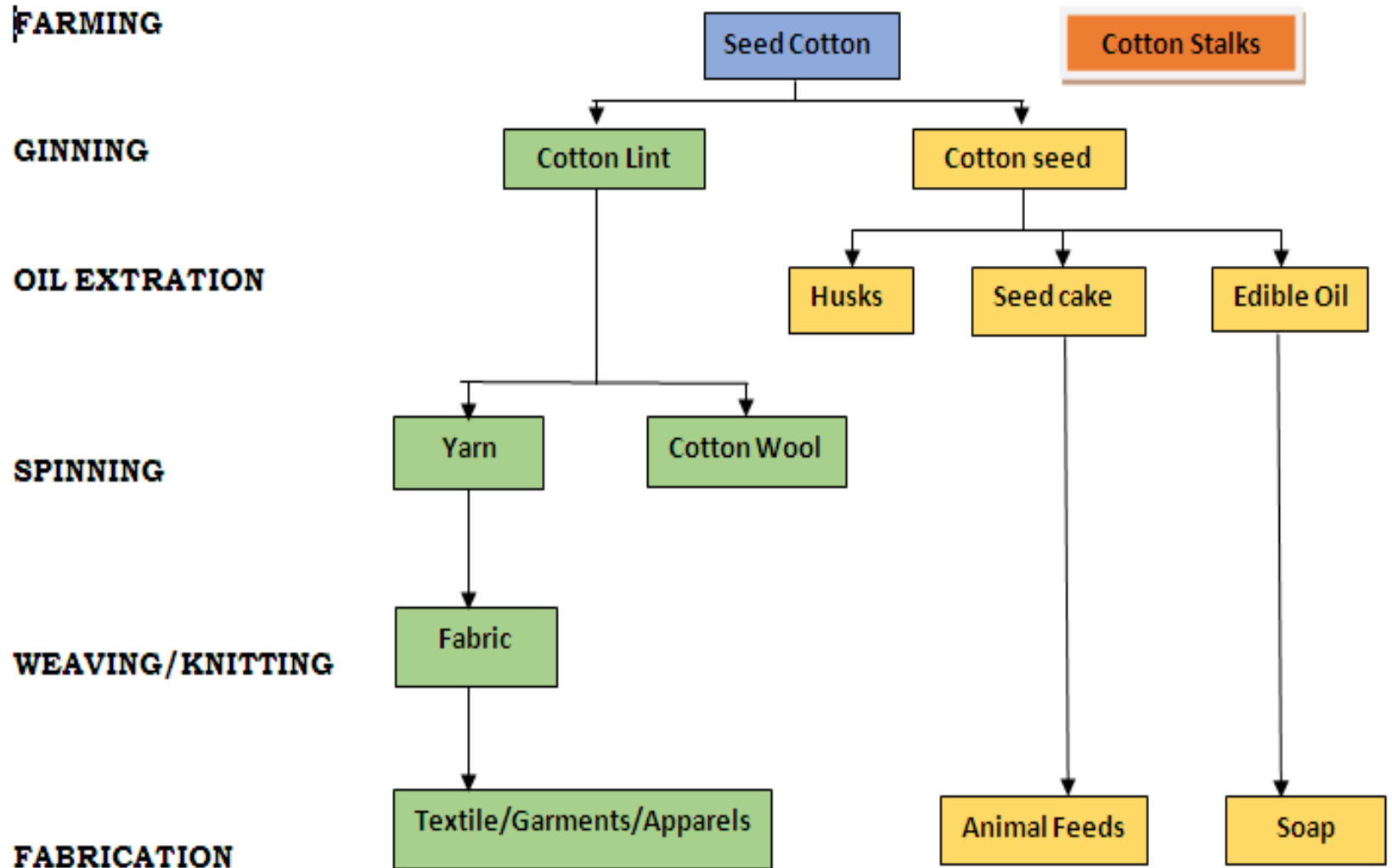
- In March 2018 UNCTAD & CDO had a capacity building workshop in Kampala
- Project “Promoting Cotton by-products in Eastern and Southern Africa”
- Stakeholders identified priority value addition initiatives

## 2. Identified National Action Plan Initiatives for Uganda:

- Extend the market for cotton seed to the non-ruminant feed segment by implementing de-gossypolising technology
- Increase domestic production of absorbent cotton wool
- Develop a new value chain for cotton stalks, to produce charcoal briquette
- Scale up commercial mushroom production using cotton biomass

This Concept note gives the preliminary Interventions for provision of raw materials at Research level for the initiative “Increasing Domestic Production of Absorbent Cotton Wool”

# Fig. 1. The Cotton Value Chain in Uganda



### 3. Demands and Supply of Absorbent Cotton Wool and Potential Sources of Raw Materials in Uganda

- Absorbent cotton wool refers to both unsterilized and sterilized surgical or medical cotton wool types.
- Absorbent cotton wool products are in high demand in Uganda
- Products in form pharmaceutical, cosmetics (e.g. ear cleaning buds) and baby care (pampers or nappies) products
- Six firms in Uganda dealing in the manufacture of absorbent cotton wool
- They operate much below their combined installed capacity which is 2,010mt of cotton wool per annum

# **Demands and Supply of Absorbent Cotton Wool Cont'd**

- This is mainly due to the small volumes and seasonality of supply of short staple cotton with coarse fibers
- Consequently most absorbent cotton products in Uganda are imported
- The National Medical Stores(NMS) AND the Joint Medical Stores(JMS) together imported 124MT of absorbent cotton in 2016
- Suitable raw material for absorbent cotton making is the Serere Albar Type Uganda(SATU) cotton

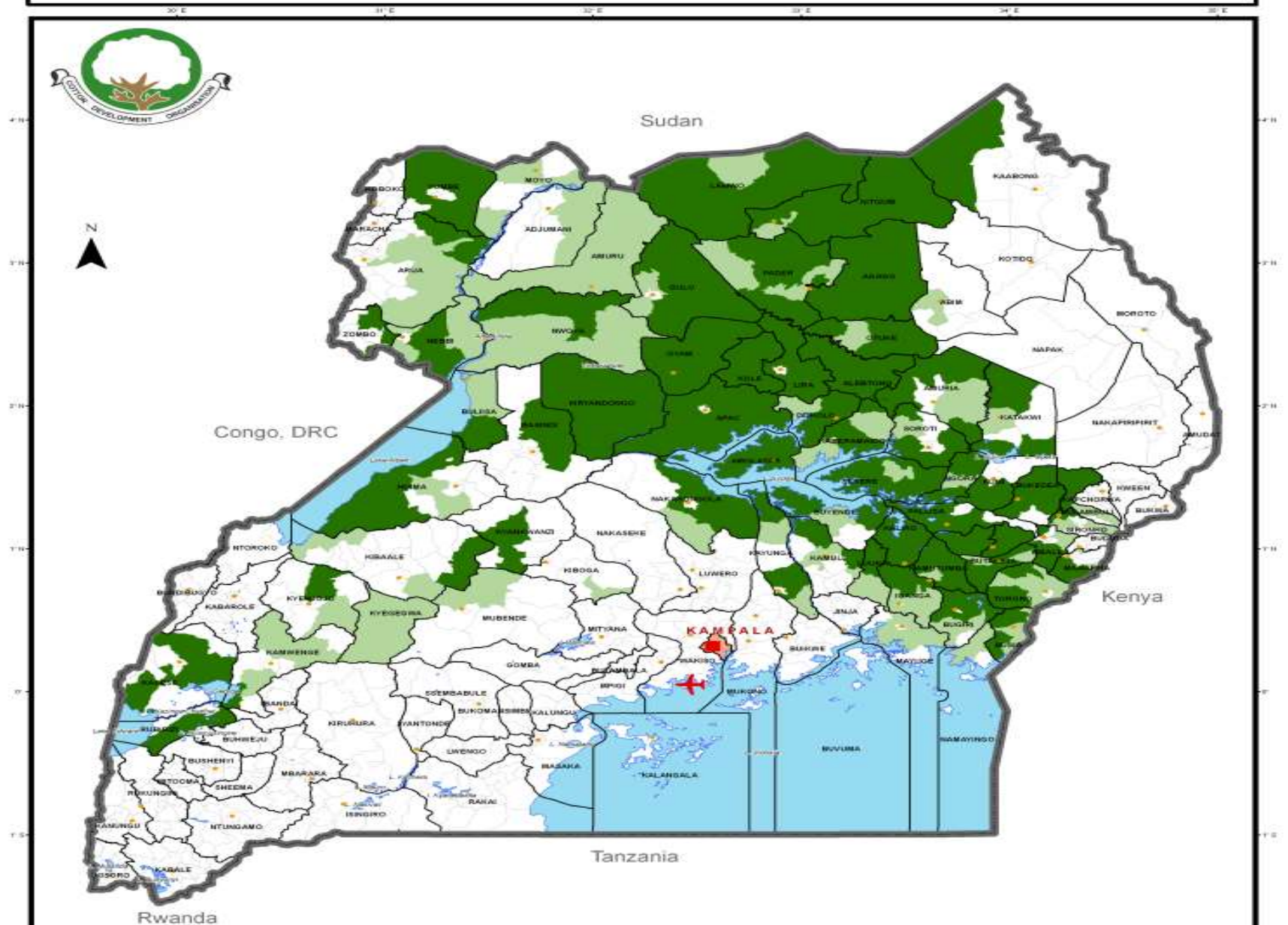


# **Demands and Supply of Absorbent Cotton Wool Cont'd**

- SATU-Short fibers approximately 27mm staple length and coarse fibers with Micronnaire values in the range of 4.0-4.5
- Compared to the Bukalasa Albar Type Uganda(BPA) cotton which has fiber staple length of over 33mm and Micronnaire values at least 3.2
- Prior to 1997 Uganda used to produce the two types of cotton SATU and BPA.
- SATU was for Northern and Eastern Uganda
- BPA production zones were Central and western Uganda

# COTTON COVERAGE

## COTTON PRODUCING AREAS AND POTENTIAL PRODUCTION AREAS IN UGANDA



# **Demands and Supply of Absorbent Cotton Wool Cont'd**

- SATU was marketed mainly for use in blends with man-made fibers
- BPA was for knitting and weaving into straight pure cotton products and brands
- Following the liberalization of cotton Sub-sector activities, including marketing of cotton in 1994, SATU was shelved for curbing mix-up of the two types of cottons
- Accessions of SATU cotton were, though, maintained at NaSARRI and under cold storage at NARO's gene bank in Entebbe
- Accessions have now been retrieved for revival of multiplication and research for further improvement on SATU for use in this Project

## 4. Plans and Costs for Multiplication of SATU Cotton and on Research for its further Improvement

- **Multiplication of SATU Cotton Seed**
- 3.7kgs of SATU accessions retrieved from the NARO gene bank and the NaSARRI germplasm collection.
- Comprise advanced SATU lines and SATU 71 Variety
- In 2019 season multiplied out on 1.2 acres during the first rains and expected to give rise to a bout 390 kgs of seed
- These seeds to be planted into 130 acres during the second rains of 2019 at NaSARRI and at nearby Prison Farms. This first SATU crop is expected to give rise to 94 bales of lint each weighing 185kgs

- **Multiplication of SATU Cotton Seed Cont'd**
- This revival of Foundation seed multiplication at NaSARRI will be continued with over another five years of the project
- Seeds to be fed into the production scheme at participating Prison Farms and individual Farmers around lake Kyoga peninsular and Northward

- **Breeding for Improvement of SATU for Higher Attributes**
- Need now to rejuvenate the research for improvement of SATU cotton on requirements for absorbent cotton production
- Evaluating the already acquired non- SATU germplasms on their fiber properties and yield components
- Collection of more germplasm accessions from various breeding programmes
- Using germplasm in crosses to SATU for raising the fiber coarseness levels to Micronnaires greater than 6 and with short fibers

- **Breeding for Improvement of SATU for Higher Attributes Cont'd**
- Select in the new cross combinations with SATU for resistance to pests and diseases including resistance to Bacterial blight diseases and resistance to sucking pests which are repelled by SATU's dense hairiness on the plant parts
- Testing crosses at Progeny, Strain and Line stage levels following the Pedigree selection method
- Testing the line stages at both NaSARRI and at Technology Verifications Centers(TVCs)

# 5. The Already Available Facilities For The Testing SATU Cotton

- NARO's cold storage Gene-bank
- Fields, Glass Houses and Laboratories for testing at NaSARRI
- Technology Verification Centers(TVCs) and Prison Farms for multi-locational testing
- A ginnery with double roller gins and single roller laboratory gins
- The CDO High Volume Instrument(HVI)Laboratory at Cotton House testing of the cotton fiber parameters
- The facilitation by CDO through its Research Unit Staff and on wages for labour thus complimenting NARO's inputs
- Six absorbent cotton Manufacturing Firms where the experimental cotton will be tested for suitability for making cotton wool products.



# 6. Work Plan and Budgetary Requirements For Six Project Years

- The 2019 year will focus on rejuvenating the retrieved SATU Material through seed multiplication at NaSARRI for putting starting materials in place
- The 2020 – 2024 will address Research for SATU improvement based on trials at NaSARRI and at TVCs. The period will also cater for;
  - Testing of the lint fibers at CDO's HVI Laboratory in Kampala
  - Testing lint samples at Absorbent wool Manufacturing firms
- Releasing of new improved varieties for production
- Multiplication of seeds of the released varieties in the stages of; Breeders' Seeds, Nucleus and Foundation seed stage for release for production at Prison farms and Farmers' level

## Summary of Budget for Research and Seed Multiplication for SATU Cotton at NaSARRI and at TVCs; 2019-2024

ITEM NO	YEAR	ACTIVITY/	TOTAL COST	US \$@UGX3,750=	REMARKS
1	2019	Initial SATU cotton Multiplication	36,192,000=	9,651.2	At NaSARRI
2	2020	Research and seed Multiplication	124,175,100=	33,113.4	Research Trials to be sited at both NaSARRI, TVCs at Prison Farms
3	2021	Research and seed Multiplication	111,662,000=	29,776.5	With no procurements of chemical pumps
4	2022	Research and seed Multiplication	111,662,000=	29,776.5	Same as above
5	2023	Research and seed Multiplication	124,175,100=	33,113.4	Procurement of new chemical application pumps
6	2024	Research and seed Multiplication	111,662,000=	29,776.5	New chemical application pumps still in use
7		<b>Grand Total</b>	<b>619,528,200=</b>	<b>165,207.5</b>	

# 7. Conclusions

- The revival of cotton research and production on SATU cotton in Uganda will go a long way in alleviating the needs for raw materials for absorbent cotton wool in Uganda
- The support towards this initiative will contribute to creation of employment, maximizing foreign exchange earnings through exports of the absorbent cotton products and creating import substitutes
- All the above elements are in conformity with the Uganda National Development Plan (NDP) 11 and the Agriculture Sector Strategic Plan (2015/16 – 2019/20).

**Thank you**

