United Nations Conference on Trade and Development

Regional Workshop on Promoting Cotton By-Products in Eastern and Southern Africa

28-30 May 2019, Johannesburg, South Africa

Hosted by Cotton SA

Cotton production in South Africa and possible potential for investing in the production of cotton by-products

By

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Susan Koch (PPRI – ARC)

The views expressed are those of the author and do not necessarily reflect the views of UNCTAD.
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COTTON LINT BALES (200kg bales)

<table>
<thead>
<tr>
<th>PRODUCTION SEASON</th>
<th>REALISTIC</th>
<th>OPTIMISTIC</th>
<th>PESSIMISTIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019/20</td>
<td>250 000</td>
<td>300 000</td>
<td>200 000</td>
</tr>
<tr>
<td>2020/21</td>
<td>275 000</td>
<td>400 000</td>
<td>175 000</td>
</tr>
<tr>
<td>2021/22</td>
<td>300 000</td>
<td>500 000</td>
<td>150 000</td>
</tr>
<tr>
<td>2022/23</td>
<td>330 000</td>
<td>600 000</td>
<td>125 000</td>
</tr>
<tr>
<td>2023/24</td>
<td>350 000</td>
<td>620 000</td>
<td>100 000</td>
</tr>
</tbody>
</table>

3rd estimate
Cotton production

2018/19 year: 4th estimate:

RSA:
- **Irrigation**: 23 324 ha  Yield: Seed cotton/ha: 4694 kg
- **Dryland**: 19 0 64 ha  Yield: 989 kg/ha

- Handpicked: 1% KwaZulu Natal & Mpumalanga
- Mostly machine picked

Expected no. of hectarages to increase to 100 000 ha over time
SMALL-SCALE FARMER PRODUCTION AREAS
(Total of 82 Co-Operatives)

Mpumalanga:
Nkomazi (410 ha – 151 farmers)

KwaZulu-Natal:
Makhathini (Dryland 2200ha, Irrigation 200 ha – 1247 farmers)

North-West:
Batshweneng (Irrigation 106 ha – 6 farmers)

Matlerekeng (Dryland 60ha, Irrigation 10 ha – 3 farmers)

North-West:
Taung (Irrigation 230 ha – 23 farmers)

Limpopo:
Dichoeng (Dryland 10 ha, Irrigation, 100ha – 11 farmers)

Mpumalanga:
Nkaneng (Dryland, 610ha – 188 farmers)

Mpumalanga:
Nkomazi (410 ha – 151 farmers)

KwaZulu-Natal:
Makhathini (Dryland 2200ha, Irrigation 200 ha – 1247 farmers)
## Smallholder Cotton Production in Limpopo, North West, Mpumalanga and KZN 2018-2019

<table>
<thead>
<tr>
<th>Province / Co-op</th>
<th>Smallholder Cotton Farmers</th>
<th>Hectares Dryland-Current</th>
<th>Hectares Dryland-Potential</th>
<th>Hectares Irrigation-Current</th>
<th>Hectares Irrigation-Potential</th>
<th>Estimated Lint bales- 200 Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mpumalanga - Nkomazi (22 Co-op)</td>
<td>151</td>
<td>410 + 1000 (not part of Project)</td>
<td>10 000</td>
<td>0</td>
<td>1250</td>
<td>710</td>
</tr>
<tr>
<td>Mpumalanga - Matlerekeng (1 Co-op)</td>
<td>3</td>
<td>60</td>
<td>2000</td>
<td>10</td>
<td>200</td>
<td>140</td>
</tr>
<tr>
<td>Mpumalanga - Nokaneng (17 Co-op)</td>
<td>188</td>
<td>610</td>
<td>3000</td>
<td>0</td>
<td>100</td>
<td>690</td>
</tr>
<tr>
<td>Limpopo - Dichoeng (2 Co-op)</td>
<td>11</td>
<td>10</td>
<td>600</td>
<td>100</td>
<td>600</td>
<td>1120</td>
</tr>
<tr>
<td>North West - Taung (1 Co-op)</td>
<td>23</td>
<td>0</td>
<td>400</td>
<td>230</td>
<td>500</td>
<td>2185</td>
</tr>
<tr>
<td>North West - Batshweneng (1 JV)</td>
<td>6</td>
<td>0</td>
<td>900</td>
<td>106</td>
<td>146</td>
<td>1007</td>
</tr>
<tr>
<td>KZN - Makhathini (38 Co-op)</td>
<td>1247</td>
<td>2200</td>
<td>4000</td>
<td>200</td>
<td>2000</td>
<td>3450</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1629</strong></td>
<td><strong>2880</strong></td>
<td><strong>20 900</strong></td>
<td><strong>646</strong></td>
<td><strong>4796</strong></td>
<td><strong>9302</strong></td>
</tr>
</tbody>
</table>

**Seedcotton (kg/ha)**

800-1200kg/ha, Rainfed/dryland
Fibre/Lint (38% = Gin out Turn)

Gin motes (broken seed & fibres, dust, plant material) (approx. 1.5-1.7%)

De-linted seed (51%)

Cotton Stalks


By-products---
Seed cake
Fertilizer
Substrate for mushroom farming
Compost
Pellets from hulls
Briquettes

Cattle feed

Fuzzy seed

Seed hulls (8.5%)
Potential projects... The way forward.

- **Cotton Oil**
  - Commercial production
  *Previously Neden Oils / (Afgri Operations, 2005) (Polokwane – Mokopane/Potgietersrus– 1990’s) – at present sunflower and soya oils*

  **Cost of production?** Determine niche market.

- **Cotton motes/fuzzy seed/hulls:** Cattle feed *(Sold to local buyers-Bester Feed & Grain – (Northern Cape), possibly Meadow Feeds, Astral includes cotton material?)*

- **Medical uses of cotton** *(short staple/high micronaire): (all cotton in SA – Bt-Cotton – GMO cotton)*

  *SA has BCI cotton – Better Cotton Initiative - Possibility of looking into using BCI cotton? Find retailers/local markets interested in BCI.*
Potential projects... The way forward.

Cotton seed oil cake (AFMA)

Full fat cotton cake: 2018/2019 PROJECTED LOCAL PRODUCTION: 60 000 T
- Investigated at present

Raw material usage by Animal Feed Manufacturing Association members:
- Cotton Seed oil cake: 0.07% (4 307 T)
- Full fat cotton seed: 0.15% (9 921 T)
The way forward

**Cotton Stalks**

- **Briquettes**: Funding to do a feasibility study
  - Small-scale farmers- Ratoon cotton & Current legislation – feasible?
    - Hectarages low, to include commercial plantings
  - Determine interests from farmers/ginneries/farmer associations e.g. Nkomazi area near Komatipoort
  - Mill/shredder on farm for stalks, for briquettes and other uses
  - Determine biomass (no. of plants/ha needed in relation to biomass produced per variety, e.g. DP1541 vigorous growing variety

- **Composting**

- **Mushroom farming** – connect to local markets – South African Mushroom Growers Association – connect to producers/gins
Potential projects – cotton stalks and hulls

Mushroom production for human consumption: Interested party: Agricultural Research Council (Plant Protection Research Institute – Dr. Susan Koch)

Possibilities for manufacturing of industrial structural products: Packaging, Insulation boards,

- Mushroom substrate - post cultivation
- Substrate degrading more palatable and nutritious for ruminants
- Insulation boards
- Mushroom mycelium as bonding agent
- Composting
- Packaging to replace polystyrene
Thank you