THE SUSTAINABILITY STORY OF COTTON

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THE CARBON STORY
Tons of CO$_2$eq GHG per Ton of cotton lint produced

2.37 Tons CO$_2$eq/Ton in Pakistan
1.60 Tons CO$_2$eq/Ton in Australia
1.47 Tons CO$_2$eq/Ton in Iran
2.93 Tons CO$_2$eq/Ton in China, India, Pakistan, Tajikistan & Turkey (BCI)
1.70 Tons CO$_2$eq/Ton in USA (Cotton Inc.)

Data Source: Kranthi, 2023 ICAC RECORDER
CARBON FOOTPRINT MODULE: ICAC COTTON EXPERT APP

Dr Sandhya Kranthi & Dr Kater Hake
# CARBON SEQUESTRATION Kg CO$_2$-eq /Hectare

<table>
<thead>
<tr>
<th>Description</th>
<th>CO$_2$-eq GHG/ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>COVER CROP AS ROTATION</td>
<td>1,170</td>
</tr>
<tr>
<td>ZERO-TILLAGE</td>
<td>918</td>
</tr>
<tr>
<td>MINERAL SOIL CARBON SEQUESTRATION (2000 Kg seed-cotton)</td>
<td>55</td>
</tr>
<tr>
<td>COTTON FIBRE CARBON SEQUESTRATION (10 YRS LIFE) (800 Kg Lint)</td>
<td>86</td>
</tr>
<tr>
<td>BIOCHAR PRODUCED FROM STALKS (3 Tons)</td>
<td>4,500</td>
</tr>
<tr>
<td>CHOPPED ON SOIL (3 Tons)</td>
<td>154</td>
</tr>
<tr>
<td><strong>TOTAL CO$_2$-eq GHG/ha</strong></td>
<td><strong>6,729</strong></td>
</tr>
</tbody>
</table>

It would be possible to sequester **1.87 Tons** of Carbon per hectare every year through Regenerative Agriculture

Data Source: Kranthi, 2023 ICAC RECORDER
Cotton Emits Lower CO$_2$ Kg eq of GHGs per Kg fibre in Production

SOCIAL IMPACT OF COTTON
IN 2022, COTTON FARMS PROVIDED

- **INCOME FOR** 23.9 Million Farmers
- **FULL TIME EMPLOYMENT**
- for 8.8 Million Persons on Farms +
- 125 Million Persons in Value Chains

Data Source: COTTON DATABOOK 2023
IS PESTICIDE USE HIGHEST ON COTTON?
PESTICIDE USE (Tons)
IN COTTON 2021

IS LESS THAN SOYBEAN, CORN, WHEAT, RICE Etc.

Data Source: BAYER / COTTON DATABOOK 2023
PESTICIDE USE (Kg/ha) IN COTTON 2021
IS LESS THAN SOYBEAN, POTATOES, VEG, FRUITS Etc.

Data Source: BAYER / COTTON DATABOOK 2023
PESTICIDE SHARE (%) OF COTTON IS DECREASING

Cotton: 2.38% of the arable land. Pesticide share: 3.94%

Data Source: BAYER / COTTON DATABOOK 2023
IS THE COTTON CROP A WATER GUZZLER?
COTTON OCCUPIES 2.38% OF THE GLOBAL ARABLE LAND
AND CONSTITUTES 4.2% OF THE GLOBAL IRRIGATED AREA.

52.1 Trillion litres of water were used in cotton, which was only 1.80% of the total irrigation water withdrawn for Agriculture

Data Source: Kranthi, unpublished
IRRIGATION WATER FOOTPRINT 2022

Global Average
2,135 Litres per Kg Lint

Data Source: COTTON DATABOOK 2023
IS FERTILIZER USE HIGH IN COTTON?
COTTON OCCUPIES 2.38% OF THE GLOBAL ARABLE LAND BUT USES 3.9% OF THE GLOBAL FERTILIZERS.

Data Source: Kranthi, unpublished
China uses the highest at 486 Kg NPK/ha
Use in African countries is the lowest

Data Source: COTTON DATABOOK 2023
IS COTTON ECONOMY SUSTAINABILITY?
COTTON PROFITABILITY WAS HIGH IN 2022

Data Source: COTTON DATABOOK 2023
PRODUCTION COST ($/Kg) OF SEED-COTTON was the highest in 2022

Data Source: COTTON DATABOOK 2023
PRODUCTION COST ($/Kg) OF LINT was the highest in 2022

Data Source: COTTON DATABOOK 2023
Thank you

Mr Eric Trachtenberg,
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THANK YOU, ITC, EU & GIZ

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