Developments in the Global Cotton Market

‘Small Steps to Make a Big Difference’

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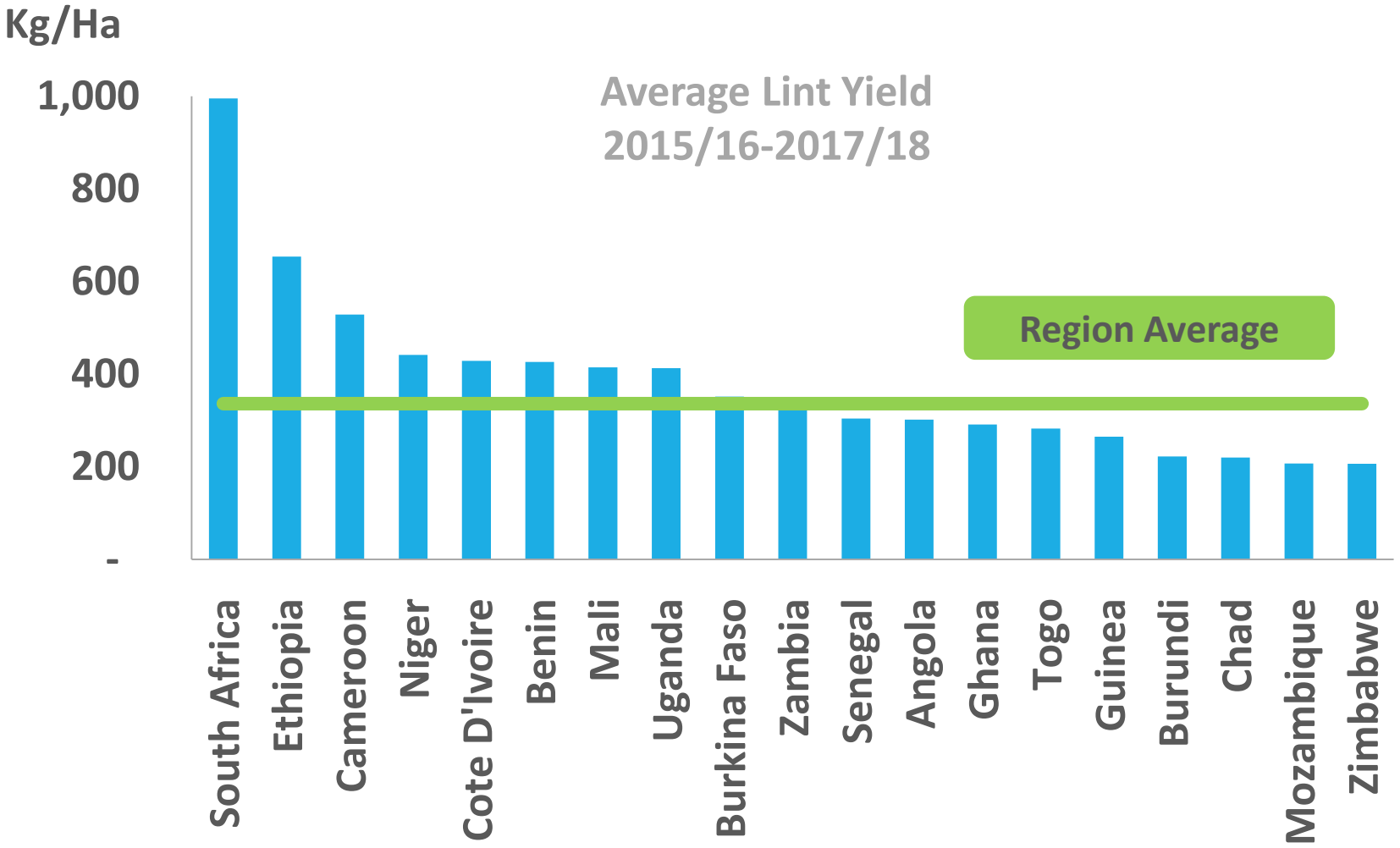
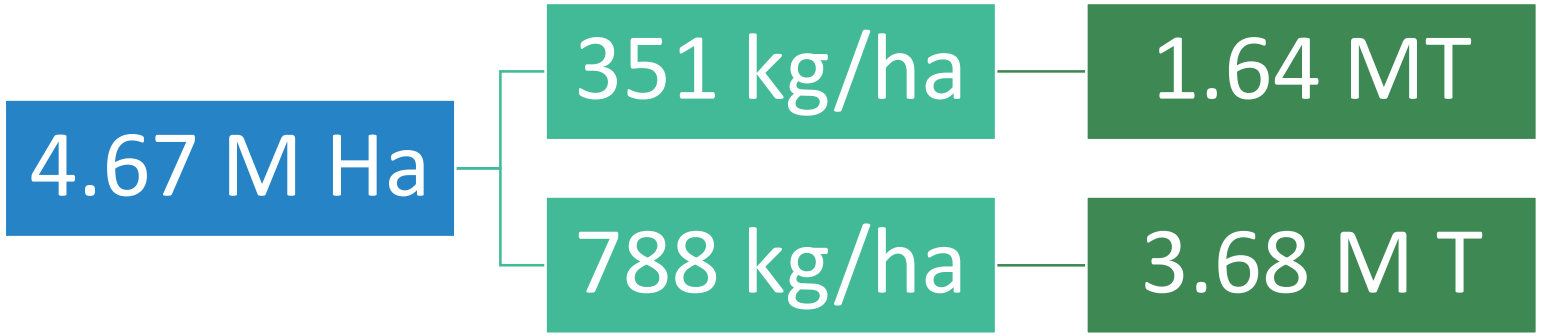
Africa's cotton yields have been stagnant for over four decades



www.icac.org

If cotton yields are increased is all Sub-Saharan Africa then lint production would increase by an additional 2 million tonnes



By increasing the yields in India to the world average, lint production would increase by 3.77 million tonnes

12.23 M Ha

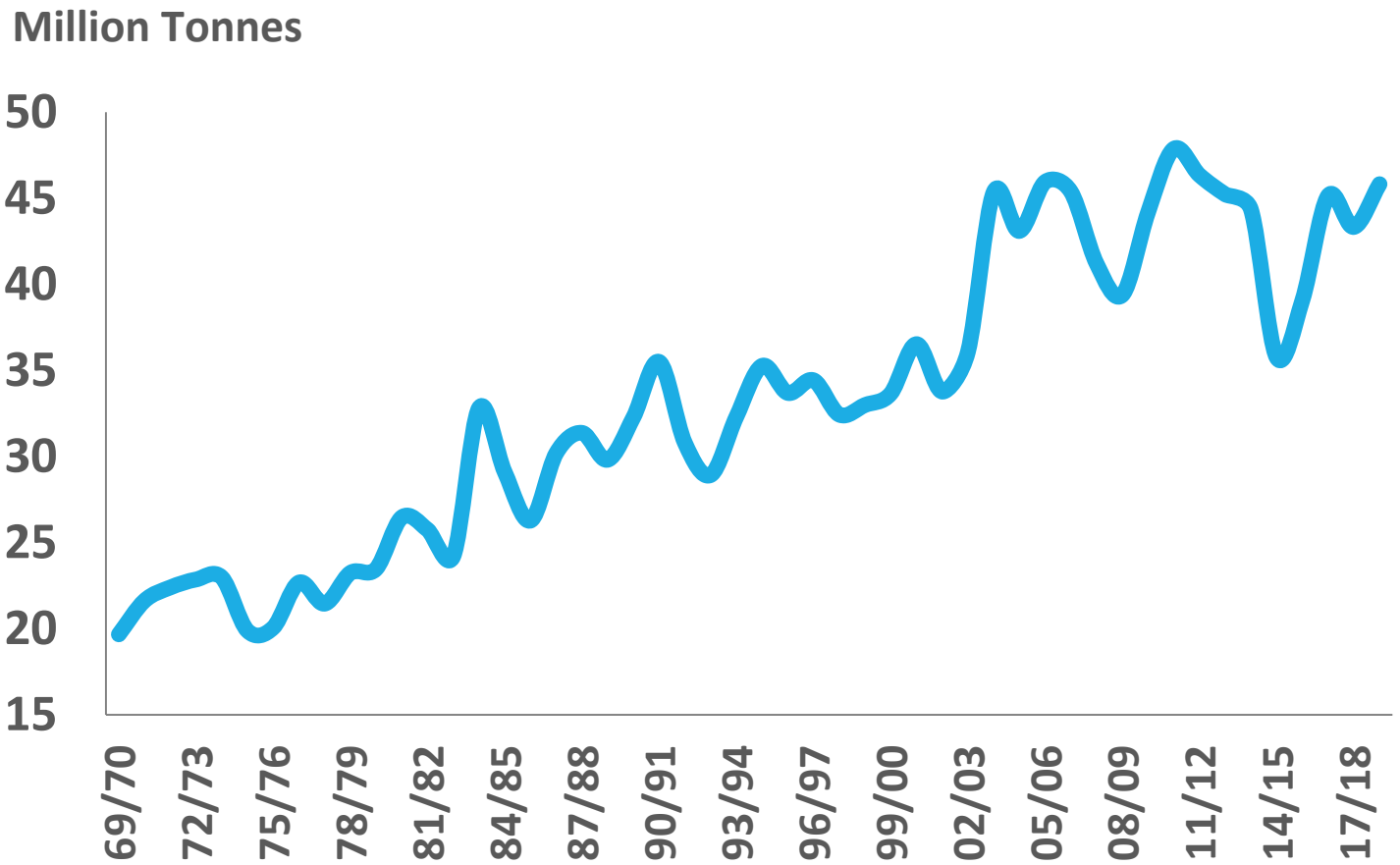
- 480 kg/ha — 5.87 MT
- 788 kg/ha — 9.64 M T

FACTORS INFLUENCING SUSTAINABILITY

1. Cotton seeds
2. Harvest Index and Hybrid seeds
3. Cotton stalks
4. Naturally occurring biological control

COTTON SEEDS

World Cotton Seed Production



Global cottonseed production has ranged between 36 and 48 million tonnes in the last decade

Source: USDA Oilseed report

FUZZY SEEDS

- Majority of African countries are wasting seed by sowing fuzzy seeds (75% of the area)
- Instead of using 10 to 12 kg/ha of cotton seed, estimates show that Africa uses at least 5 times more than the recommended quantity.
- **A very conservative estimate show that least 110,250 tonnes of cotton seeds, worth at least $27.5 million, are wasted in Africa.**

Cotton Seed Wastage in Africa

	Area '000 Ha	% Fuzzy seeds sown	Area planted with fuzzy seeds '000 Ha	Cotton seeds wasted '000 Tonnes	*Value of wasted seeds Million US$
Benin	580	100	580	17.4	4.35
Burkina	735	10	73.5	2.2	0.55
Cameroon	250	100	250	7.5	1.88
Chad	375	100	375	11.3	2.81
Cote D'Ivoire	426	80	341	10.2	2.56
Ethiopia	82	10	8.2	0.2	0.06
Kenya	25	99	24.8	0.7	0.19
Malawi	85	80	68	2.0	0.51
Mali	782	100	782	23.5	5.87
Mozambique	182	95	173	5.2	1.30
Nigeria	270	80	216	6.5	1.62
Senegal	20	100	20	0.6	0.15
Sudan	198	40	79.2	2.4	0.59
Tanzania	512	70	358	10.8	2.69
Togo	185	100	185	5.6	1.39
Uganda	76	5	3.8	0.1	0.03
Zambia	137	100	137	4.1	1.03
TOTAL	**4,920**	**75%**	**3,675**	**110.2**	**27.56**

*US$ 250 per Tonne. Data Source: Calculations: ICAC

FUZZY SEEDS

Fuzzy seeds cause low yields

- Carry pathogens, mites, mealybugs and other insects
- Difficult to grade for high vigour
- Ungraded seed has poor germination % & weak vigour

- Difficult for seed treatment & mechanical planting
- Improper planting geometry causes low yields
- Thinning adds to seed costs

DELINTED SEEDS

Delinted seeds enhance yields

- Are sanitized –No diseases & insects – high yields
- Easy grading
- High germination % & vigour cause high yields

- Easy for seed treatment
- Easy to use with mechanical planters
- Increased oil extraction %
- Proper planting geometry causes high yields

HARVEST INDEX
- NUTRIENT WASTAGE

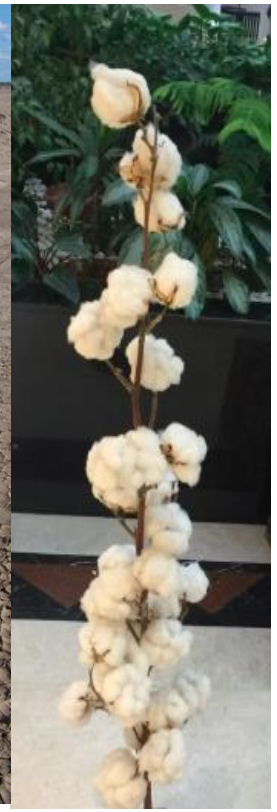
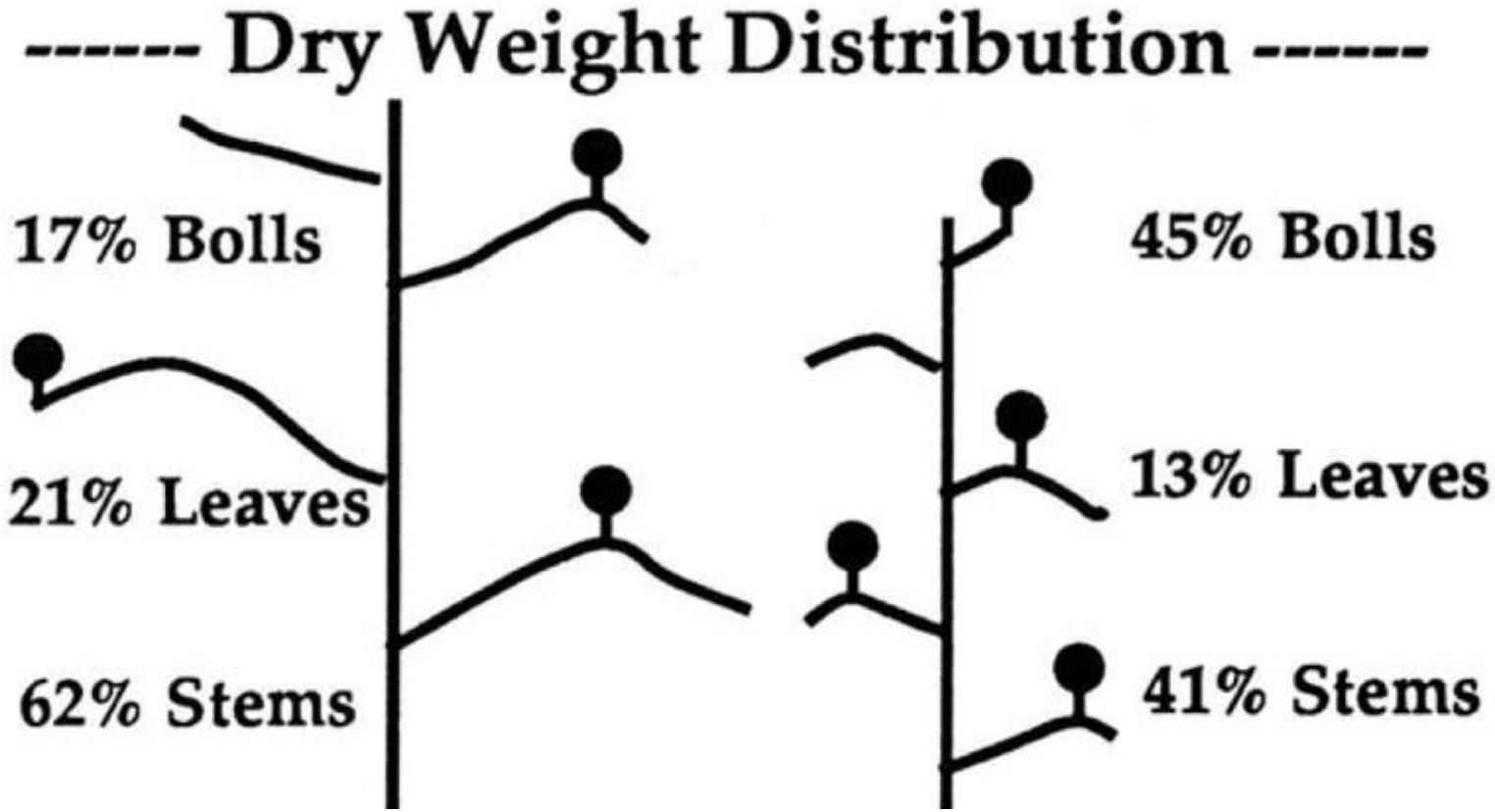


Photo: James Quinn

Harvest Index -Definition

‘Proportion of harvestable yield versus the total bio mass’

HARVEST INDEX



HARVEST INDEX

Asia and Africa are wasting precious nutrients from the soil.

In India, Pakistan and Africa more than 80% of nutrients are channelised to stems, leaves and burs and rest for boll development, whereas in many developed countries more than 40% of nutrients are channelized to boll development.

Thus, the harvest index is less than 20% or 0.2 in Africa, India and Pakistan.

HYBRID SEEDS

VS

NPK Synthetic Fertilisers

Recommended amounts to be used:

Varieties	60: 30: 30
Desi Cotton	40:20: 20
Hybrids	120:60:60

HYBRID SEEDS

Hybrid cotton is unsustainable

- Seeds purchased every year
- Seed cost 100-200 USD/ha
- Seeds laborious - about 25% child labour

- Need more water
- Need more fertilisers
- Deplete soil nutrients quickly

- More monopodial branches
- Low harvest index


STALKS

COTTON STALKS

- Cotton stalks contain nutrients that they take from the soil. For sustainability -these nutrients must be ploughed back into the soil.
- Majority of African and Asian countries burn stalks
- Africa produces about 12 million tonnes of cotton stalks worth more than $120 million; India and Pakistan together produce 50 million tonnes of stalks worth at least $500 million.
- **By burning about 50 million tonnes of stalks African and Asian countries not only waste a precious soil nutrient resource but release about 73.3 million tonnes of CO2 into the atmosphere.**

COTTON STALKS MUST ENRICH SOILS FOR SUSTAINABILITY

Simple technologies such as

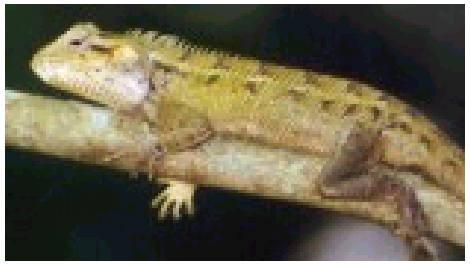
- Incorporation of stalks into soil
- Surface cotton-stalk-chipped-mulch
- conversion of cotton stalks into biochar
- cotton-stalk-compost

can work miracles for the soils in Africa and Asia to enhance yields without substantial addition of synthetic fertilizers.

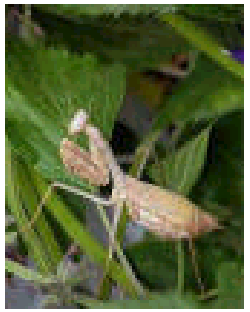
NATURAL PEST CONTROL
















CONSERVING BIOLOGICAL CONTROL

1. Short duration varieties
2. Early/timely sowing
3. Prudence with chemicals
4. Conserve Natural control
5. Intercrops assist biological control
6. USE IPM STRATEGIES

Thank You

Any Questions?

International Cotton
Advisory Committee