Cotton: Technology Transfer / Logistics in Africa

DG’s Consultative Framework Mechanism on Cotton

Geneva

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ICAC
SUMMARY

1) Technology Transfer
2) Cotton Logistics in Africa
3) Market Trends
TECHNOLOGY TRANSFER
Technology Development

• Public sector
  – Knowledge development
  – Knowledge management
  – Agents:
    • National agricultural research systems
    • Universities
    • State and provincial networks
  – Public goods / no direct and visible remuneration
  – Weak implementation of intellectual property rights
Technology Development

• Private sector
  – Use of fertilizers
  – Use of pesticides boosts private extension services
  – Introduction of biotech cotton / planting seed
  – Strong protection of intellectual property rights
  – Development of “technology packages”
International Collaboration

• Cotton lagging behind other crops
  – Increase of yields in cotton has been slower than in food crops (e.g. rice & wheat)

• ICAC role
  – World Cotton Research Conference
  – Publications
  – Organization of regional research networks
Technology Transfer

- Technology must be transferred to be useful
- Public sector: extension services
- Private sector: private consultants
Technology Transfer

• Constraints:
  – Extension workers called upon to be experts in all crops
  – Insufficient number of extension workers relative to farmers
  – Extension workers lack resources
  – Adaptation to new forms of information transfer (Internet etc.)
  – Need for familiarity with local culture and traditions
  – Need for understanding of interactions among inputs
Technology transfer

• Past:
  – Focus on timely planting and selection of varieties
  – Use of fertilizers has been optimized
  – Methods: conferences, demonstration plots, information brochures, mass media (radio programs, television)
Technology Transfer

• Future:
  – Focus on optimal input use (interactions, timing and quantities)
  – Diminishing emphasis on insecticides
  – Methods:
    • Internet, social media, cellular phones
    • Crop clinics
    • Farmer Field Schools / Farmer Training of Facilitators / Farmer-to-farmer Field Schools
Conclusions

• Transfer of technology has lagged behind developments in research
• Farmers receptive to learning new methods
• Training of trainers remains an issue
• Need to use new methods of mass communication more effectively
• Need for cost-effectiveness in view of decline in public funding
• Need for collaboration among disciplines and between public & private sectors
• Need for customized approaches
• Need for new focus on interaction of inputs
COTTON LOGISTICS IN AFRICA
Cotton Logistics in Africa

- Informal survey of leading international trading houses
- Use exports to China (largest importer) as parameter
- Two steps:
  - Inland: Interior (gin) → port of shipment
  - Maritime: Port of shipment → port of destination
- Two factors:
  - Cost
  - Transit time
Cost
(US cts/lb)

- Australia: 1.2
- Brazil: 1.12
- India: 1.12
- USA: 0.5
- Africa, East: 1
- Africa, South: 0.75
- Africa, West: 1.9
Transit time
(days)

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- Inland
- Maritime
Observations

- Non-scientific, informal survey
- Cotton is a high volume/low weight product. Share of logistics in final cost is greater than in most commodities. African transportation costs = 5.5% to 9.7% of C&F China price
- Interest of shipping companies in Africa has increased substantially since 2010. More ships/routes being added
- Bottlenecks: data don’t take into account congestion in ports. Can add significant time (3 to 4 weeks)
- Long transit time/congestion requires shippers to buy/transport goods before opening of L/C, thereby increasing risk
Conclusions

• Transit time for African origins (excluding port congestion delays) is higher than for most, but not all, leading competitors

• Inland transportation costs higher than most leading competitors, with exception of Brazil

• Maritime costs relatively low and do not vary substantially among countries

• Further research needed on logistics costs from farm to gin, which are likely to me higher in Africa than elsewhere
MARKET TRENDS
Estimated Size of China National Reserve

Million tons

August 2011: 0
October 2011: 0
December 2011: 1.05
February 2012: 1.70
April 2012: 4.92
June 2012: 4.79
August 2012: 5.05
December 2012: 8.44
February 2013: 6.83
April 2013: 10.40
June 2013: 10.28
August 2013: 10.98
October 2013: 9.64
December 2013: 13.03
February 2014: 13.14
April 2014: 11.76
June 2014: 11.50
Direct Assistance to Cotton

US$ billions

97/98 00/01 03/04 06/07 09/10 12/13
Observations

• Changes in forms of government assistance in China and USA
• Effect of changes is difficult to measure *ex ante* and time will be required to evaluate costs
• In both cases, and for reasons not necessarily related to gov’t support, significant long-term expansion in production is unlikely
World Ending Stocks

Million tons

Stock-to-Use Ratio

05/06 06/07 07/08 08/09 09/10 10/11 11/12 12/13 13/14 14/15

World-less China  China  S/U
Cotton and Polyester Prices*

Source: Cotton Outlook

A Index

China Polyester

Source: Cotton Outlook
Thank you

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