Cotton: Technology Transfer / Logistics in Africa



DG's Consultative Framework Mechanism on Cotton

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SUMMARY

Technology Transfer
Cotton Logistics in Africa
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





Transit time

(days)



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



Africa Production & Exports

(million tons)



Africa Production & Exports

(% of World)



Production Exports







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







Source: Cotton Outlook

Thank you

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