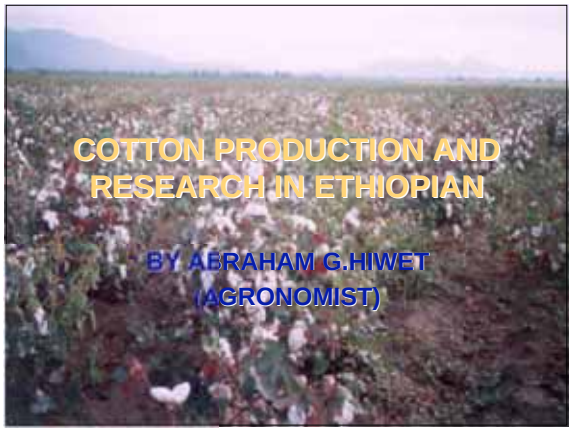

COTTON PRODUCTION AND RESEARCH IN ETHIOPIAN

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I. INTRODUCTION

- Cotton is one of the oldest cultivated fiber crops in Ethiopia
- *G. herbaceum*, race *acerifolium* -Berger (1969)
- >95% under production is the medium staple cotton (*G.hirsutum* L.)
- Cotton is one of the major cash crops in Ethiopia
- It offers considerable employment opportunity on farms, in textile factories and in the ginneries.
- It is extensively grown in irrigated lowlands and in warmer mid altitudes under rainfed

II.CURRENT RESEARCH STATUS

- Since the execution of cotton research in the country various recommendations were made in respect to breeding, agronomy, crop protection, soil and water management and socio-economic aspects.
- Research in cotton is still conventional
- Currently the research program has developed research projects for the next 5 years.

Table.1 Seed cotton and lint yield, and fiber properties of released cotton varieties under research center

No.	Variety	Seedcotton yield kg ha^{-1}	Lint yield kg ha^{-1}	G.O.T. %	2.5% Span length (mm)	Mic	Fiber strength P.S.I
1	Acala SJ2	3250	1109	34.12	28.62	3.15	79.34
2	DP- 90	3850	1341	34.83	27.70	3.73	77.30
3	Tayse	5280	2086	39.50	26.98	3.78	74.63
4	Arba	3580	1455	40.64	30.32	3.48	79.74
5	Sille-91	3558	1389	39.79	27.85	3.63	72.72

PROJECT COMPONENTS

This project part comprises seven main components:

- (1) Development of high yielding cotton varieties with acceptable fiber quality;
- (2) Development of agronomic practices and cropping system for irrigated and rain grown cotton;
- (3) Development of integrated pest management practices;
- (4) Technology multiplication and promotion;
- (5) Socioeconomic studies
- (6) Post harvest handling, processing and by-product utilization; and
- (7) Capacity building.
  - **Source of budget: Government**

General Goals/Objectives:

The general objective of the cotton research project is

- To generate improved technologies that contribute to the increased production and productivity of cotton and thereby to bring the country to self-sufficiency, promote export, contribute to economic development and poverty reduction, conservation of integrity of natural resources and the environment.

Specific objectives of cotton research are:

- To develop acceptable and high yielding cotton varieties for export market and industry raw material
- To develop appropriate agronomic practices and suitable cropping systems for the different AEZs & farming systems,
- To develop integrated crop protection management practices
- To create strong and sustainable technology transfer system and linkage between stakeholders
- To undertake adoption studies, examine impact of cotton technologies on farmers' income, resource allocation and food security
- To strength human power and research facilities of the project

Table 3. Human resource currently engaged in cotton research on full time basis

Field of specialization	PhD	MSc	BSc	Dip.
Plant breeder	1	2	1	2
Agronomist	-	-	1	1
Physiologist	-	-	-	-
Entomologist	1	-	-	2
Pathologist	-	1	-	1
Fiber technologist	-	-	-	-
Total	2	3	2	6

IV. RESEARC NEEDS

- Research to develop varieties with high yielding potential and especially higher fibre quality that meet world market standard.
- The established crop management practices are mostly for irrigated commercial cotton production systems.
- Thus, the small-scale production system is suffering from lack of effective technologies that could increase productivity.
- poor access to improved varieties and high pest incidence are major problem in smallholder cotton growers under rain fed conditions.
- For newly developing potential areas, complete packages of production practices are needed.
- varieties must be available on a continuous basis in order to meet the evolving needs of producers and requirements of textile mills.
- Crop protection practices must cope-up with rapidly changing pest situation taking into account environmental friendliness

POSSIBLE COLLABORATION PROJECTS

- Based on the research needs:
  - Regional collaboration are crucial
    - In germplasm acquisition
    - Better techniques of seed production
    - standardizing fiber quality parameters
    - Organic cotton production practices and certification

Beneficiaries and impact

Beneficiaries

- State farms
- Private commercial farms
- Textile industries
- Farmers
- Researchers/Regional institutes
- Oil extracting factories
- Traders

Technology Dissemination Strategy

- Demonstration
- The popularization
- Scaling up, in collaboration with Ministry of Agriculture
- Publications (Annuals reports, journals, proceedings, manuals, leaflets, brochures etc.)
- Trainings, workshops, exhibitions, field days
- Web pages http://www.eiar.gov.et
- Media (Radio, television, news peppers)

III. PRODUCTION

- The potential total area agro-ecologically conducive for cotton production in Ethiopia is estimated to 2,575,810ha
- However, in spite of high potential area in the country, the current production could not exceed 125,000 ha.

PRODUCTION …cont

- In 2003 the total area covered by cotton was 110,000 ha with a production of 700,000 tons of raw cotton where contribution of the smallholder was estimated to 36,400 tons and
- The total area of the small-scale cotton producers was estimated to 56,000 hectares.
- While based on reports of MoARD (2005) the area have increased to more than 122,000 ha where more than 84,000 ha under smallholders and the rest 28,600 ha are under commercial private and state farms.

PRODUCTION …cont

- Production and productivity of cotton vary considerable from farm to farm due to various reasons.
- Productivity of commercial varieties
  - Under research - 3.5 to 4 tones
  - 2-3 and 1-1.2 tones in irrigated and rain grown commercial farms, respectively.
  - Under farmer's production systems- 0.3 to 0.7 tones/ha.
- The low productivity of farmer's production system is mainly due :
  - poor land preparation,
  - lack of access to improved plant varieties and inputs,
  - use of primitive mechanization, and knowledge gap in crop management techniques.

Table 2. Production.. cont

Year	Area under cotton (ha)	Total production (Tones)
2003	110,000	136,800
2004	125,000	137,500
2005	120,000	144,000
2006	122,000	140,300

Processing Industry

- In Ethiopia handloom village spinners and weavers traditionally woven cloths made of homemade cotton fabrics, mostly consume cotton produced by smallholders.
- The remaining portion goes to ginneries, textile and spinning mills through intermediary traders/assemblers.
- On the other hand, much of lint cotton produced by commercial state and private farms goes to textile/spinning plants and export market.

Processing ….

- The country has 11 ginneries, more than 15 textile and garment industries which are primarily based on cotton raw materials entirely produced by commercial and small-scale farms.
- Despite its high potential of production and processing the cotton sub-sector in Ethiopia is not organized and its development remains with slow pacing in the economy of the nation.

Table 2. Production.. cont

Year	Area under cotton (ha)	Total production (Tones)
2003	114,000	136,800
2004	125,000	137,500
2005	120,000	144,000
2006	122,000	140,300

Fig. Textile and apparel export and income earned (1998-2004).
Source: Data from EEPA, 2004.

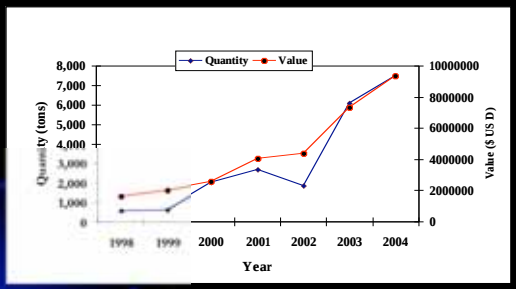

Table 3. Annual designed capacity and average actual consumption of raw cotton by 8 functional ginneries in Ethiopia

No	Ginneries	Capacity per annum (tons)	Actual consumption (tons)	Difference (tons)
1	Arbaminch Ginnery*	13,500	2,028	11,472
2	Shewa Ginnery PLC	2,400	326	2,074
3	Ture Trading PLC	10,000	8,290	1,710
4	MAADE*	48,900	37,440	11,460
5	Hiwot Farm PLC	30,000	7,000	23,000
6	Gonder Ginnery PLC			
7	TADE*	18,630	9,590	9,040
8	Abobo*	3,000	1,474	1,526
	Total	**136,430**	**72,748**	**63,682**

Table 4. Annual installed capacity and average actual consumption of 9 textiles mills in Ethiopia

No	Textiles and spinners	Capacity (tons)	Actual Consumption (tons)	Difference (tons)
1	Arbaminch Textile S.C	3800	795	3005
2	Awassa Textile S.C*	3000	2000	1000
3	Shewa Ginnery PLC	1000	986	14
4	Akaki Textile S.C	2100	1000	1100
5	Adey Abeba S.C	2500	2000	500
6	Almeda Textile PLC (ALTEX)	6,102	3,208	2894
7	Kombolcha Textile S.C	4500	3207	1293
8	Bahirdar Textile S.C	2500	2300	200
9	Dire Dawa Textile S.C	4500	3100	1400
	Total	30,002	18,596	11,406

Supply Structure

- The supply structure of the cotton industry in Ethiopia could be categorized in to 4 structures:
  - Cotton growers
  - Assemblers
  - Ginneries and
  - Textile and garment factories

PRODUCTION CONSTRAINTS

- Traditional farming practice in most of the smallholder farmers
- Lack of good quality seeds
- Inadequate fertility management
- Poor post harvesting techniques
- Lack of integration among actors in the sub-sector

PRODUCTION CONS..

- Un exploitation of potential cotton growing areas.
- Shortage of improved seed supply and acid delinted seeds to small holders
- Poor input supply system
- Lack of extension service in the cotton sector
- Limitation of cotton research in all cotton growing agro-ecologies

PRODUCTION CONS..

- Limitation of irrigation development facilities
- Limitation of access of cotton growers to technical information on cotton production, quality and market aspects
- Lack of contractual production and marketing system
- Less involvement of cooperatives in cotton production and marketing
- Financial problems in smallholder growers
- Lack of coordinating and regulating body of the sub-sector (production, processors, exporters and researchers) in the country.

CONCLUSION

- To promote cotton production in general, government and major actors in the sub sector should play a great role in strengthening the cotton research in the country.
- An institute, which coordinate and monitor cotton production, processing, research and market in the country, should be established. This will enable to have:
  - Sufficient information on domestic and foreign market.
  - Standardize outputs at a national level
  - Encourage production and export and training services.