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SUPPORT PRICE POLICY FOR SEED COTTON, 2006-07 CROP

AGRICULTURAL PRICES COMMISSION
GOVERNMENT OF PAKISTAN
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ABBREVIATIONS

AARI	:	Ayub Agricultural Research Institute
ALMA	:	Agricultural and Livestock Marketing Adviser
APCOM	:	Agricultural Prices Commission
APTMA	:	All Pakistan Textile Mills Association
BCR	:	Benefit Cost Ratio
BPS	:	Basic Pay Scale
CEC	:	Cotton Export Corporation
CIF	:	Cost, Insurance and Freight
CLCV	:	Cotton Leaf Curl Virus
COP	:	Cost of Production
CPI	:	Consumer Price Index
CRIM	:	Cotton Research Institute, Multan
CRIS	:	Cotton Research Institute, Sakrand
DAP	:	Di. Ammonium Phosphate
DRC	:	Domestic Resource Cost Co-efficient
ECC	:	Economic Coordination Committee
E&M	:	Economics & Marketing
EPC	:	Effective Protection Co-efficient
FBS	:	Federal Bureau of Statistics
FCA	:	Federal Committee on Agriculture
FOB	:	Free on Board
FSC&RD	:	Federal Seed Certification and Registration Department
FYM	:	Farm Yard Manure
GCP	:	Ghee Corporation of Pakistan
GDP	:	Gross Domestic Product
GOT	:	Ginning Out Turn
HSD	:	High Speed Diesel
ICAC	:	International Cotton Advisory Committee
ICPM	:	Integrated Crop Production Management
IPM	:	Integrated Pest Management
IPNS	:	Integrated Plant Nutrition System
IRRI	:	International Rice Research Institute (Group of rice varieties Grown in Pakistan which were developed at this Institute)
ITMF	:	International Textile Mills Forum
KCA	:	Karachi Cotton Association
MINFAL	:	Ministry of Food, Agriculture and Livestock
MOC	:	Ministry of Commerce
NARC	:	National Agriculture Research Centre
NIAB	:	Nuclear Institute of Agriculture and Biology
NPC	:	Nominal Cost Co-efficient
NWFP	:	North West Frontier Province
NSC	:	National Seed Council
OLS	:	Ordinary Least Squares
PAPA	:	Pakistan Agriculture Pesticides Association
PARC	:	Pakistan Agricultural Research Council
PCCC	:	Pakistan Central Cotton Committee
PCGA	:	Pakistan Cotton Ginners Association
PCSI	:	Pakistan Cotton Standards Institute
PSC	:	Punjab Seed Corporation
SSC	:	Sindh Seed Corporation
TCP	:	Trading Corporation of Pakistan
WTO	:	World Trade Organization

SUPPORT PRICE POLICY FOR SEED COTTON, 2006-07 CROP

EXECUTIVE SUMMARY AND RECOMMENDATIONS

Cotton production in the country has been fluctuating between 9 and 14 million bales during the decade ending 2005-06. The production has averaged at 12.2 million bales during last three years. The average annual growth in its production has been 2.67 per cent, 2.54 per cent on account of yield and 0.12 per cent due to area. The cotton farming is vulnerable to a host of insects/pests. Its production in recent years has especially become a risky proposition. Even in good crop years farmers have suffered because of low prices. The swing in cotton production and prices has adversely affected all the cotton related sub-sectors of the economy. In view of the importance of cotton, there is an urgent need to minimize incidences of these fluctuations and ensure minimum support price to the cotton growers. The Government had fixed the support price for seed cotton at Rs 975 per 40 kgs for 2005-06 crops. The average of domestic market prices during the season comes to Rs 1,038 per 40 kgs.

2. Punjab is the main cotton producer accounting for 79 per cent of its area and 77 per cent of the production. The share of Sindh in area is 20 per cent and in production 22 per cent. National production of cotton for 2005-06 crop season as reported by provincial governments is reported at 12.2 million bales. The cotton crop assessment committee of the Ministry of

Food, Agriculture and Livestock, has estimated cotton production at 12.7 million bales in its meeting held on 19-12-2005 at Karachi.

3. The global production of cotton in 2005-06 is projected at 24.96 million tonnes. Consumption is forecast to 24.14 million tonnes whereas the closing stocks are calculated to 11.07 million tonnes. Cotton prices in international market during 2005-06 have shown upward trend. The average cif price of Sindh/Punjab (Afzal 1-1/32") recorded at 52.95 US cents per pound during 2005-06 as compared to previous year's price of 46.10 cents during 2004-05 (increased by 15 per cent). The price of Index-B cottons recorded at 53.89 US cents per pound during 2005-06 as compared to the previous year's price of 51.19 cents per pound, increased by 5 per cent.

4. The prices of fertilizer, diesel and other inputs have been on the rise. If increasing trend in the prices of inputs is not arrested Pakistan's exports competitiveness in international market will be at stake. The quality of the cotton also needs to be improved to improve its competitiveness.

5. Annual meeting of the Agricultural Prices Commission's Standing Committee on cotton was held at Islamabad on 5-12-2005. The meeting discussed, at length, the situation with regard to cotton crop, problems faced by farmers in cotton production and marketing and emphasized the need for development of a suitable technology package for sustainable production of cotton. It highlighted the role of Integrated Pest Management (IPM) to arrest the pest attack and to protect the environment. There was a consensus in the meeting for having a programme which ensure incentive prices to the farmers in general and in good crop years in particular. Based on the analysis of relevant factors discussed at length in main text of the report, likely pricing options for cotton, 2006-07 crop are summarized as follows:

	Base	Worked back price of seed cotton at ginnery level	
		Rupees per 40 kgs	
1	Domestic price of yarn at Karachi	947	
2	Export parity prices based on:		
	i) Actual average export price of Pakistani cotton:		
	- During 2004-05	868	
	- During 2000-01 to 2004-05	885	
	ii) Average cif (North Europe) value of Index-B cottons:		
	- During 2005-06 (Aug-Nov)	919	
	- During 2000-01 to 2004-05	882	
	iii) Average cif (North Europe) quotations of Afzal 1-1/32":		
	- During 2005-06 (Aug-Nov)	903	
	- During 2000-01 to 2004-05	862	
	iv) Futures contract prices of New York No.2 cotton (average of October 2006, December 2006)	897	
	v) Average fob prices of Pakistani cotton yarn (20's):		
	- During 2005-06 (Aug-Nov)	802	
	- During 2000-01 to 2004-05	808	
3	Import parity prices based on:		
	i) Actual average cif (North Europe) quotations of Orleans/ Texas SLM 1-1/32"		
	- During 2005-06 (Aug-Nov)	1,252	
	- During 2000-01 to 2004-05	1,198	
	ii) Cif Karachi prices of imported cotton:		
	- During 2004-05	1,255	
	- During 2000-01 to 2004-05	1,256	
4	Average domestic market price of seed cotton in 2005-06 (August-November)	1,038	
5	Cost of production for 2006-07 crop		
	Punjab	985	
	Sindh	908	
6	Cost of domestic resources (Table-17) involved in:	At exchange rate Pak rupees = one US $	
		Punjab	Sindh
	i) Producing cotton for import substitution		
	- Based on 2005-06 prices of cotton	29	27
	- Based on average prices of cotton 2002-03 to 2005-06	25	22
	ii) Producing cane for export of cotton		
	- Based on 2005-06 prices of cotton	44	40
	- Based on average prices of cotton 2002-03 to 2005-06	39	37

RECOMMENDATIONS

- **Support Price for 2006-07 Crop**

6. As per analysis of relevant factors, summarized in paras-78 to 89 of this Report, APCom recommends to enhance the support price of seed cotton (base grade 3 with staple length 1-1/32" and micronaire range of 3.8 – 4.9 NLC) to Rs 1,025 per 40 kgs for 2006-07 crop.

7. The proposed price favourably covers the cost of production at the current input prices in the Punjab. However, it provides a reasonable margin of 13 per cent in Sindh.

8. The actual incentive to the cotton growers should come from the market. So the government policy of the private sector in cotton marketing should be continued.

- **Implementation of Support Price and Quality Premia/Discounts**

i) TCP be assigned the task of implementing the support price policy of seed cotton through buying lint at the price to be based on the support price of seed cotton. Adequate resources be provided to TCP for the implementation of the support price policy.

ii) TCP should also enforce the premia and discounts in the purchase of lint as given below:

Premia/Discounts for Various Grades/Staple Lengths for Lint offered to the Procurement Agency

(Rs per 40 kgs)

Grade	Staple length				
	1"	1-1/32"	1-1/16"	1-3/32"	1-1/8"
Super	206	260	314	367	421
One	119	173	227	280	334
Two	42	96	150	203	257
Three	-54	Base	54	107	161
Four	-167	-113	-59	-6	48
Five	-279	-225	-171	-118	-64

- **Improving Productivity**

Improved Seed

i) Public and private seed companies be asked to multiply and distribute the seed of recommended varieties for cultivation in sufficient quantity.

ii) Provincial Agricultural Extension Departments should educate growers to cultivate only the recommended varieties and ensure the adoption of recommended agronomic practices and attaining optimum plant population.

iii) Provincial Governments should establish Foundation Seed Cells in all Cotton Research Institutes to multiply and distribute the quality seed.

iv) The FSC&RD should be technically strengthened to monitor the private seed companies in order to promote the quality seed production.

Soil Management/Balanced Use of Nutrients

9. Provincial Agricultural Research Institutes should develop various bio-fertilizers and area/crop rotation specific fertilizer recommendation and publicize it through extension department and mass media.

Integrated Pest Management (IPM)

i) The Government should strengthen the IPM Programme of NARC for its effective implementation in the entire cotton growing area.

ii) The private companies should also be encouraged for commercial rearing and marketing of useful insects and other predators.

Quality Control of Pesticides

10. To check the menace of adulteration in pesticides and improve quality control thereon, the Agricultural Prices Commission recommends that:

i) Each company must sell its pesticide through its own dealer.

ii) Magistrates should be posted with the agricultural department for quick disposal of pesticides cases.

iii) To promote proper usage of pesticides each company must indicate amount and nature of active ingredients in a branded product to the Directorate of Plant Protection.

iv) The Directorate of Plant Protection should specify dosage of each product for a particular pest or disease.

- **Improving Quality and Marketing**

Picking

11. The Provincial Extension Departments should launch educational campaign to apprise the growers about the improved practices of cotton picking. Picking should start when dew has dried and about 60% of the bolls have opened. Farmers be advised to store seed cotton for each variety separately. First and last pickings and produce from healthy and non-healthy bolls may not be mixed.

Ginning

i) A Ginning Research Institute should be established at Multan to deal with the issues of cotton ginning and related matters.

ii) In order to avoid problems in crop size assessment and exports, ginning factories should be advised to adhere to the standard weight of the bale of 170 kgs.

Proper packing and labeling

12. The Government should ensure truthful labeling of cotton bales and proper packing indicating the grade, staple length and micronaire of the cotton contained in the bale.

Contamination free cotton

13. Textile industry should support the production of contamination free cotton, purchasing all the bales of clean cotton and by making payment to ginneries according to the quality grades of lint determined by the PCSI.

Underweighment and undue deductions

14. In order to check the malpractices of underweighment and undue deductions in cotton marketing, supervisory committees consisting of the representatives of Provincial Agriculture Departments, local market committees, growers and cotton dealers may be constituted.

(M.B. Malik)
Chairman

December 26, 2005.

SUPPORT PRICE POLICY FOR SEED COTTON, 2006-07 CROP

1. INTRODUCTION

Cotton is the most important cash crop in Pakistan. Annually cultivated on an area of about 3 million hectares, accounting for 13 per cent of the cropped area in the country. On an average, it contributes 28 per cent of the value added by major crops. The share of cotton in GDP is 2.4 per cent. Cotton farming is the principal source of raw material for the textile sector -- the largest agro-based industry employing 40 per cent of the industrial labour. The foreign exchange earned from export of cotton and its made ups constitutes about 60 per cent of earnings from merchandise exports. An important complementary product of cotton farming is its seed a valuable source of edible oil and is also used in feeding livestock.

2. The domestic consumption of cotton in the textile sector has ranged between 8.83 million bales in 1994-95 to 14.67 million bales in 2004-05. The capacity of the sector in terms of spindles has ranged between 8.1 to 9.8 million. The production of cotton yarn has oscillated between 1370 million kgs in 1994-95 to 1,718 million in 2004-05 and that of cotton cloth from 322 to 688 million square meters.

3. The cotton production has experienced wide fluctuations, having peaked at 14.27 million bales in 2004-05. Cotton production was 8.79 million bales in 1998-99. It has averaged at 12.2 million bales from 2003-04 to 2005-06. Since production of cotton is vulnerable to a host of insect/pests, its cultivation is a risky proposition. Even in good crop years farmers have suffered because of low prices. The swings in cotton production and prices have adversely affected all the cotton related sub-sectors of the economy. In view of the importance of cotton, there is an urgent need to minimize incidence of these fluctuations and reverse the set back suffered in cotton production.

4. To reduce price risks in cotton farming and ensure reasonable supply to industry, the Government has instituted the price support programme for seed cotton. For the year 2005-06 support price was fixed at Rs. 975 per 40 kgs for the base grade with staple length 1-1/32". Farmers are getting price much above the support prices as the season progressed.

5. The cotton trade has become increasingly quality conscious. Even the local manufacturers of textiles now demand standardized cotton for producing quality goods. Under the WTO regime, in future these challenges are expected to become serious. Thus, it is very essential for Pakistan to prepare its cotton production and marketing strategies to face the emerging challenges in the domestic and global markets. In order to improve yields, quality and marketing of cotton, the APCom has proposed a number of price and non price measures which need due consideration of the Government.

2. SOWING AND PICKING

6. In major cotton growing districts of the Punjab and Sindh, sowing is generally recommended from 1st May to end June in the Punjab, 1st March to 10th June in Sindh and the whole month of May in the NWFP and Balochistan. Province-wise details of the recommended sowing times for cotton growing districts are given in Table-1.

Table-1: Recommended Sowing Times of American Cotton

Province/District	Time of Sowing
PUNJAB	
Faisalabad, Sargodha	1st May to 15th June
Jhang, Toba Tek Singh,	1st May to 15th June
Mianwali	10th May to 15th June
Sahiwal, Pak Pattan, Okara,	1st May to 15th June
Multan, Lodhran, Vehari	1st May to end of June
Khanewal,	15th May to 15th June
Bahawalpur, R.Y. Khan,	1st May to 15th June
Bahawalnagar	1st May to 20th June
Muzaffargarh, Layyah, D.G. Khan, Rajanpur	1st May to end of June
SINDH	
Mirpur Khas, Tharparkar	Ist March to 15th April
Hyderabad, Badin	10th April to 10th May
Sanghar	Mid April to mid May
Dadu, Khairpur, Sukkur, Ghotki	Mid May to 10th June
Nawabshah	1st May to 31st May
NWFP	
D.I. Khan	1st May to 31st May
BALOCHISTAN	
Lasbela, Dera Murad Jamali, Nasirabad	1st May to 31st May

Sources:

1. Cotton Research Station, Multan.
2. PCCC, Karachi.
3. Cotton Research Institute, Sakrand

7. Picking of cotton in Sindh and in some parts of the Punjab starts in August and may continue upto February in certain cases depending upon the crop and climatic conditions.

3. PROVINCIAL SHARES IN AREA AND PRODUCTION

8. Based on three years period of 2003-04 to 2005-06, annual production of cotton at country level has averaged at 12.17 million bales from 3.08 million hectares (7.61 million acres). The main cotton producing provinces Punjab and Sindh account for 79.0 and 19.7 per cent of cotton area and 76.7 and 22.4 per cent of its production (Table-2 and Figures-1 & 2).

Table-2: Provincial Shares in Area and Production of Cotton: Average of 2003-04 to 2005-06

Country/ Province	Area		Production	
	000 hectares	Per cent	000 bales	Per cent
Pakistan	**3080**	**100.0**	**12170**	**100.0**
Punjab	2434	79.0	9339	76.7
Sindh	605	19.7	2729	22.4
NWFP	2	0.1	5	0.1
Balochistan	39	1.2	96	0.8

Note: Worked out from the data given in Annex-I.

4. IMPORTANT COTTON GROWING DISTRICTS

9. District-wise data on area and production of cotton are given in Annex-III. Districts producing more than 100 thousand bales of cotton per year are Rahim Yar Khan, Bahawalpur, Vehari, Lodhran, Khanewal, Bahawalnagar, Muzzafargarh, Multan, Rajanpur, D.G.Khan, Sahiwal, Jhang, T.T.Singh and Faisalabad from the Punjab and Sanghar, Ghotki, Khairpur, Nawabshah, Hyderabad, Mirpurkhas, Naushero Feroze and Sukkur from Sindh. These 22 districts account for more than 96 per cent of the cotton production in the country.

10. The districts of Rahim Yar Khan, Bahawalpur, Vehari, Lodhran, Khanewal, Bahawalnagar, Muzzafargarh, Multan Rajanpur and Sanghar, each producing more than half million bales per year altogether account for 70 per cent of the cotton in the country.

Provincial Shares in Area and Production of Cotton Average of 2003-04 to 2005-06

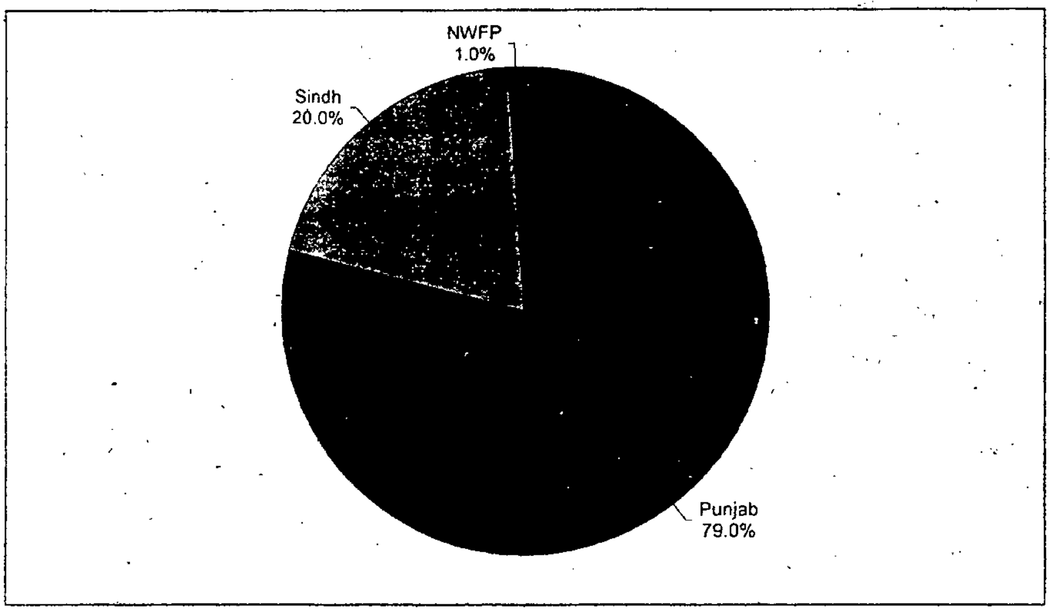

Fig - 1 : Share in Area

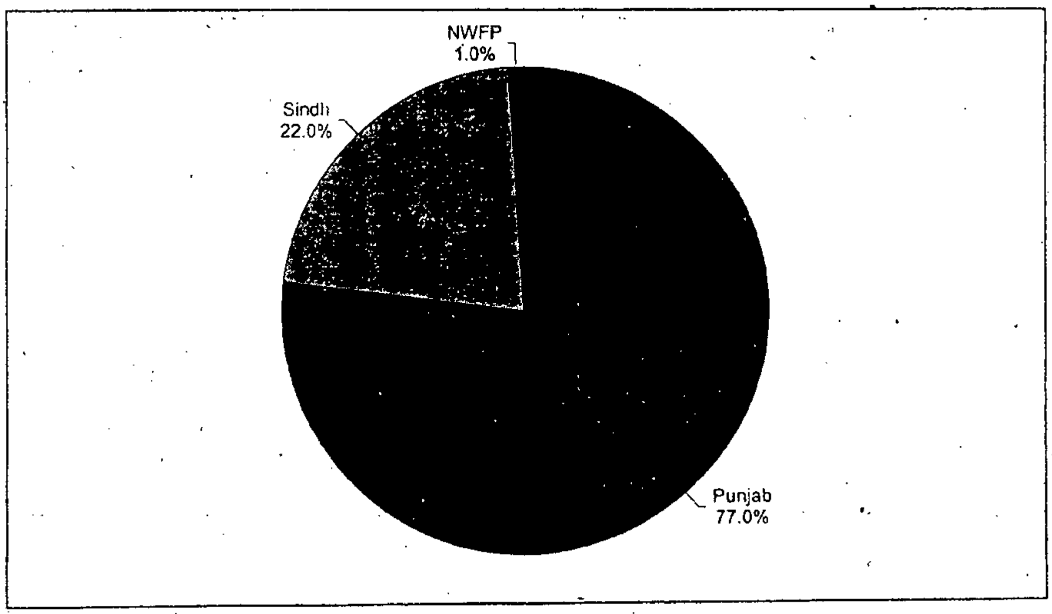

Fig - 2 : Share in Production

5. CHANGES IN AREA, YIELD AND PRODUCTION

11. During the period of 1995-96 to 2005-06, cotton area ranged between 2.79 and 3.19 million hectares (6.90 and 7.89 million acres) and yield between 506 and 760 kgs per hectare. The cotton production has ranged between 8.79 and 14.27 million bales during this period. Long and short term changes in area, yield and production are discussed below:

5.1 Long-term Changes: 1995-96 to 2005-06

12. Overall cotton production in Pakistan during 1995-96 to 2005-06 is estimated to have increased by 2.7 per cent per year due to 2.5 per cent improvement in yield and 0.1 per cent expansion in its area (Table-3).

Table-3: Average Annual Growth Rates of Area, Yield and Production of Cotton: 1995-96 to 2005-06

Country/ Province	Area	Yield	Production
	----------------	**Per cent**	----------------
Pakistan	**(+) 0.12**	**(+) 2.54**	**(+) 2.67**
Punjab	(-) 0.10	(+) 2.51	(+) 2.41
Sindh	(+) 0.33	(+) 2.98	(+) 3.31

Note: The growth rates have been worked out by estimating the equation, $Y=a(1+r)^x$, through Ordinary Least Squares (OLS) method from the data given in Annex-I.

13. During the period under reference, cotton production in the Punjab has risen by 2.41 per cent annually solely on account of 2.51 per cent improvement in yield as area under cotton has declined by 0.1 per cent per annum. While cotton production in Sindh has increased by 3.31 per cent due to increases of 2.98 per cent in yield and 0.33 per cent in area.

5.2 Short-term Changes 2004-05 Vs 2005-06

14. Cotton production at country level from 2005-06 crop estimated at 12.20 million bales is 14.5 per cent lower than the level of 14.27 millions in 2004-05 (Table-4). The decline in production is due to 4.3 per cent contraction in area and 10.7 per cent decline in yield

Table-4: Area, Yield and Production of Cotton: 2004-05 and 2005-06 Crops

Country/ Province	Area		Changes in 2005-06 over 2004-05	Yield		Changes in 2005-06 over 2004-05	Production		Changes in 2005-06 over 2004-05
	2004-05	2005-06		2004-05	2005-06		2004-05	2005-06	
	-- 000 hectares --		Per cent	--Kgs/hectare --		Per cent	-- 000 bales --		Per cent
Pakistan	3192.6	3056.9	(-) 4.3	760	679	(-) 10.7	14265.2	12196.5	(-) 14.5
Punjab	2518.3	2397.7	(-) 4.8	753	650	(-) 13.7	11149.0	9166.4	(-) 17.8
Sindh	635.1	619.8	(-) 2.4	808	803	(-) 0.6	3016.7	2927.7	(-) 3.0
NWFP	2.1	2.1	0.0	421	421	0.0	5.2	5.2	0.0
Balochistan	37.1	37.3	(+) 0.5	432	439	(+) 1.6	94.3	96.2	(+) 2.0

Source: Annex-I.

15. Cotton production in the Punjab estimated at 9.17 million bales during 2005-06 has decreased by 17.8 per cent than that of previous year, due to decrease in area and yield by 4.8 and 13.7 per cent, respectively. Cotton production in Sindh has decreased by 3.0 per cent, due to decrease of 2.4 per cent in area as the yield declined by 0.6 per cent. In the NWFP, cotton area and its yield remained the same as previous year's level. Production of cotton in Balochistan has increased by 2 per cent because of increase in area by 0.5 per cent and improvement in yield by 1.6 per cent.

16. Provincial Agricultural Departments have forwarded following reasons for changes in area, yield and production of cotton in 2005-06.

- **Punjab**

Area

1. Shifting of cotton area to maize crop particularly in the districts of Pakpattan, Sahiwal and Faisalabad division.

2. Increase in acreage of other competitive crops like seasmum in the district of Pakpattan, Muzaffargarh, Layyah and Faisalabad division.

3. On account of floods about 1.75 lac acres have been damaged in the districts of Layyah, Muzaffargarh, D.G. Khan, Rajanpur and R.Y.Khan.

Production

1. Decrease in acreage of the cotton crop by 4.8%
2. Due to late harvesting/threshing of wheat, cotton crop was sown late and could not attain proper height.
3. On account of high temperatures during the month of September at the time of boll formation, high fruit shedding occurred.
4. Low rainfall during the growth and fruit bearing stage.

- **Sindh**

Area

- In the last season 2004-05, the growers received a good return from the seed cotton and they gave preference, to bring more area under the cotton crop, but due to more inundation in river Indus and breaches in some canals/distributaries, the size of area has been reduced.

Production

- Production decreased due to decrease in area.

6. TARGETS VS CHIEVEMENTS: 2005-06

17. The Federal Committee on Agriculture (FCA) had fixed the target of domestic cotton production for 2005-06 crop at 15.0 million bales. Domestic cotton production estimated at 12.2 million bales is 18.7 per cent less than the target (Table-5). This situation is attributed towards non-achievement of area and yield targets by 5.9 and 13.7 per cent respectively.

Table-5: Targets and Estimated Achievements of Area, Yield and Production of Cotton: 2005-06 Crop

Country/ Province	Area		Deviation from target	Yield		Deviation from target	Production		Deviation from target
	Target	Achievement		Target	Achievement		Target	Achievement	
	000 hectares		Per cent	Kgs/ hectare		Per cent	000 bales		Per cent
Pakistan	3247.0	3056.9	(-) 5.9	786	679	(-)13.7	15000.0	12196.5	(-) 18.7
Punjab	2559.0	2397.7	(-) 6.3	773	650	(-)15.9	11650.0	9166.4	(-) 21.3
Sindh	638.0	619.8	(-) 2.9	866	803	(-)7.2	3250.0	2927.7	(-) 9.9
NWFP	10.0	2.1	(-) 79.0	170	421	(+)147.8	10.0	5.2	(-) 48.0
Balochistan	40.0	37.3	(-) 6.8	382	439	(+)14.8	90.0	96.2	(+) 6.9

Sources:

1. For targets: Working paper of the 83rd Meeting of the FCA.
2. For achievements: Annex-I.

18. In the Punjab targets of area, yield and production of cotton from 2005-06 crop could not be achieved. Achievement in area, yield and production lagged behind the targets by 6.3, 15.9 and 21.3 per cent, respectively.

19. In Sindh also area yield and production targets has not been achieved and remained behind targets by 2.9, 7.2 and 9.9 per cent, respectively.

20. In the NWFP targets of area and production are not achieved. In Balochistan the target of area could not be achieved and remained below the target by 6.8 per cent but yield and production surpassed their targets by 14.8 and 6.9 per cent.

7. FACTORS CONSIDERED FOR PRICE POLICY OPTIONS

21. In formulating price policy proposals for seed cotton, 2006-07 crop, following factors have been considered and analysed.

- 7.1 Domestic supply, demand, stocks and price situation
- 7.2 Cost of production of seed cotton
- 7.3 Comparative economics of cotton and competing crops
- 7.4 Economics of fertilizer use on cotton
- 7.5 Nominal and real prices of seed cotton
- 7.6 World supply, demand, stocks, trade and price situation
- 7.7 Prices of seed cotton as worked back from:
  - 7.7.1 Domestic parity prices
  - 7.7.2 Export/Import parity prices
- 7.8 Economic efficiency in cotton production

7.1 Domestic Supply, Demand, Stocks and Price Situation

7.1.1 Domestic supply, demand and stocks

22. Data on domestic production, consumption, imports, exports and stocks of cotton (lint) for the years 2003-04 to 2005-06 are presented in Table-6.

Table-6: Domestic Production, Demand, Stocks of Cotton (Lint): 2003-04 to 2005-06 (August-July)

Item	2003-04	2004-05	2005-06 (Provisional)
	------- Million bales -------		
1. Supply			
1.1 Opening stocks	1.76	2.09	3.09
1.2 Production	10.55	14.27	12.20
1.3 Imports	2.00	2.10	-
1.4 Total supply	14.31	18.46	15.29
2. Demand			
2.1 Consumption by reporting mills, non-reporting mills and fire loss	12.00	14.67	14.68
2.2 Exports	0.22	0.70	-
2.3 Total demand	12.22	15.37	14.68
2.4 Closing stocks	2.09	3.09	0.61

Notes: One bale = 170 kgs = 375 lb.
Source: PCCC, Karachi.

23. As per detail in Table-6, total availability of cotton during 2004-05 was 18.46 million bales. About 14.67 million bales were consumed by the domestic textile mills and non-mill sectors whereas exports of cotton totaled at 0.70 million bales leaving end year stocks at 3.09 million bales.

24. According to the latest estimates, 12.20 million bales have been harvested from 2005-06 crop. Accounting for opening stocks of 3.09 million bales, the total availability of cotton is estimated at 15.29 million bales, against the total requirements of 14.68 million bales (mill and non mill consumption). Thus end year stocks may be around 0.61 million bales subject to the actual imports/exports during the rest of the year.

7.1.2 Price situation

7.1.2.1 Seed cotton (phutti) prices

25. Monthly average wholesale prices of seed cotton (phutti) prevailing in the markets of R.Y.Khan, Multan, Bahawalnagar, Khanewal, Vehari and Ahmedpur East in Punjab and Hyderabad, Nawabshah, Sanghar, Ghotki and Sukkur in Sindh during the period of August to November 2005 are given in Table-7.

Table-7: Monthly Average Wholesale Prices of Seed Cotton (Phutti) in the Main Producer Area Markets During 2005-06 Crop (August-November)

Markets	August	September	October	November	Average	Support Price
		---------- Rupees per 40 kgs ----------				
Punjab						
R.Y.Khan		1002	1021	1124	1049	975
Multan		955	1017	1079	1017	"
Bahawalnagar		950	1043	1088	1027	"
Khanewal		-	-	1096	1096	"
Vehari		-	-	1098	1098	"
Ahmedpur East		939	988	1061	996	"
Average		961	1017	1091	1047	"
Sindh						
Hyderabad		922	1042	-	982	"
Nawabshah	-	950	1030	1015	998	"
Sanghar	978	966	1011	1025	995	"
Ghotki	-	-	1080	1105	1093	"
Sukkur	-	-	1080	1060	1070	"
Average	978	946	1049	1051	1028	"

Sources:

1. Directorate of Agriculture (E&M), Punjab, Lahore.
2. PCCC, Karachi for Sindh.

26. Monthly average wholesale prices of seed cotton (phutti) during current harvesting season in the Punjab ranged between Rs 939 per 40 kgs in Ahmedpur East in September 2005 and Rs 1124 in R.Y.Khan in November 2005. Prices received by farmers were relatively lower than support price during the month of September but picked up overtime and remained above the support price level during the months of October and November 2005. Prices averaged around Rs 1,047 during the period in comparison to the support price of Rs 975 per 40 kgs.

27. In Sindh, average monthly prices ranged between Rs 922 to 1,042 in Hyderabad in September and October 2005, in Sanghar monthly average prices ranged between 966 to 1,025 during August to November 2005, while in Nawabshah it ranged between Rs 950 to 1,015 per 40 kgs. In case of upper Sindh i.e. Ghotki these prices ranged from 1,080 to 1,105, while in Sukkur it ranged between Rs 1,060 to 1,080. Market price behaviour during the whole season was the same as in Punjab. Prices trended upward during the months of October and November and averaged at Rs 1,028 as compared to the support price of Rs 975 per 40 kgs.

7.1.2.2 Cotton (lint) prices

28. The daily spot rates of cotton (lint) are issued by Karachi Cotton Association (KCA) for "Base Grade" with staple length of 1-1/32" and micronaire value between 3.8 to 4.9 NCL (No Control Limit). Monthly average spot prices of cotton lint during August to December 2005 are presented in Table-8.

Table-8: Monthly Average Spot Prices of Raw Cotton at Karachi, 2004-05 and 2005-06 Crops (August – December)

Month	Base Grade-3, staple length 1-1/32", Micronaire Value between 3.8 to 4.9 NCL (No Control Limit)	
	2004-05	2005-06
	Rupees per 40 kgs*	
August	2,488	2,290
September	2,427	2,524
October	2,128	2,349
November	2,178	2,592
December **	2,048	2,580

Notes:

* Prices include expenses from up-country @ Rs 50/40 kgs

** Prices upto 12th December 2005.

Sources:

1. PCCC, Karachi for 2004-05.
2. KCA, Karachi for 2005-06.

29. Cotton lint prices this year increased as compared to previous year prices except in August. The monthly average of spot price of lint at Karachi during 2005-06 season is estimated to have ranged between Rs 2,290 and 2,592 per 40 kgs. Last year corresponding prices ranged between 2,048 and 2,488 per 40 kgs.

7.2 Cost of production of seed cotton

30. In formulating prices proposals for farm produces, cost of production is one of the important factors. Its empirical estimation, however, entails several conceptual problems and practical difficulties because of wide variations in agro- climatic conditions, use level of inputs, and farm systems under which the crop is raised.

31. The cost of production estimates of seed cotton for 2006-07 crop in the Punjab and Sindh have been synthesized by adopting the input-output parameters as used in the Support Price Policy Report for the Seed Cotton 2005-06 Crop alongwith the latest inputs prices and custom hire rates of field operations. To update the inputs prices and custom hire rates of different field operations involved in raising of seed cotton, APCom carried out a field survey in the major growing areas of the Punjab and Sindh during November 2005. These rates were also discussed in the meeting of the APCom's Standing Committee on Seed Cotton, held on 5th December 2005 in the Agricultural Prices Commission, Islamabad and supplemented with the information provided by the committee members. The detailed cost estimates of the Punjab and Sindh are given in Annex-IV and V respectively, while a summary of the results is presented in Table-9.

Table-9: Average Farmers' Cost of Production of Seed Cotton: 2005-06 and 2006-07 Crops

S.No	Items	Unit	2005-06 crop	2006-07 crop	Increase in 2006-07 over 2005-06
	Punjab				
1.	Cost of cultivation	Rs/acre	14903	16763	1860
2.	Yield	Kgs/acre	696	696	-
3.	Cost of production at farm level	Rs/40 kgs	856	963	107
4.	Marketing cost	Rs/40 kgs	20	22	2
5.	Cost of production at market/ ginnery	Rs/40 kgs	876	985	109
	Sindh				
1.	Cost of cultivation	Rs/acre	13843	15468	1625
2.	Yield	Kgs/acre	700	700	-
3.	Cost of production at farm level	Rs/40 kgs	791	884	93
4.	Marketing cost	Rs/40 kgs	22	24	2
5.	Cost of production at market/ ginnery	Rs/40 kgs	813	908	95

Note: The figures have been rounded off.
Source: Annex-IV and V.

Punjab

32. As per summary information given in the Table-9 and details in Annex-IV, the cost of cultivating one acre of seed cotton in the Punjab, during 2006-07 crop year is estimated at Rs 16763, including land rent. The cost of production, based on the average yield of 696 kgs per acre, works out at Rs 963 per 40 kgs. Adding the marketing charges @ Rs 22 per 40 kgs, the market/ginnery level cost of production come to Rs 985 per 40 kgs, higher by Rs 109 (12 per cent) than the corresponding cost of 2005-06 crop.

Sindh

33. During 2006-07 crop season, the cost of cultivating one acre of seed cotton in Sindh is expected to be Rs 15468, including land rent. Taking into account an average yield of 700 kgs per acre, farm level cost of production of seed cotton works out to Rs 884 per 40 kgs. Adding marketing cost @ Rs 24 per 40 kgs, the market/ginnery level cost of production would come to Rs 908 per 40 kgs, representing an increase of Rs 95 (12 per cent) over the corresponding cost of Rs 813 per 40 kgs in 2005-06 (for detail in Annex-V).

34. The escalations in the cost of production of seed cotton in both provinces are primarily attributed to rises in: the custom hire rates of tractors, cost of supplementary irrigation and transportation on account of continuous increases in the prices of diesel, fertilizers, land rent, picking charges and wage rates.

7.2.1 Cost of major operations

35. The cost of major items in the total cost of cultivation of seed cotton during 2005-06 and 2006-07 crops is presented in Table-10 below:

Table-10: Costs of Major Items in the Total Cost of Cultivation of Seed Cotton: 2005-06 and 2006-07 crops

S.No	Major operations	Punjab			Sindh		
		2005-06 crop	2006-07 crop	Change in 2006-07 over 2005-06	2005-06 crop	2006-07 crop	Change in 2006-07 over 2005-06
		Rs/acre		Per cent	Rs/acre		Per cent
1.	Land preparation	1051 (7)	1338 (8)	27	1346 (10)	1750 (11)	30
2.	Seed and sowing operations	658 (4)	722 (4)	10	922 (6)	1014 ((6)	10
3.	Irrigation	1642 (11)	2107 (12)	28	1115 (8)	1307 (8)	17
4.	Interculture	961 (6)	1103 (6)	15	1010 (7)	1167 (7)	16
5.	Plant protection	2827 (19)	2838 (17)	0.4	1890 (13)	1898 (12)	0.4
6.	Fertilizers including FYM	2256 (15)	2469 (15)	9	2050 (14)	2185 (14)	7
7.	Land rent	3333 (22)	3667 (22)	10	3333 (24)	3667 (23)	10
8.	Picking charges	1218 (8)	1392 (8)	14	1215 (9)	1367 (9)	13
9.	Others	1157 (8)	1377 (8)	19	1272 (9)	1463 (10)	15
10.	Gross cost	15103(100)	17013(100)	13	14153(100)	15818 (100)	12

Notes:

1. Others include mark-up, management, land revenue, land tax, drainage cess and cutting of sticks.

2. Figures in parenthesis are percent shares in total cost of cultivation per acre.

Punjab

36. As per information in Table-10, land rent is the major constituent of the cost of cultivation of seed cotton for the 2006-07 crop in the Punjab, accounting for 22 per cent. The other components are: plant protection (17%), fertilizers including FYM (15%), irrigation (12%), picking charges, land preparation and others (8% each), interculture (6%) and seed and sowing operations (4%).

37. The increase of Rs 1,910 (13 per cent) per acre in the cost of production of seed cotton 2006-07 crop over that 2005-06 crop has resulted from changes in cost of different items as: irrigation (28%), land preparation (27%), others (19 %), interculture (15%), picking charges (14%), land rent (10%), seed and sowing operation (10%) and fertilizer including FYM (9%).

Sindh

38. In Sindh, the major components of the cost of cultivation of seed cotton during 2006-07 Crop are: land rent (23%), fertilizer including FYM (14%), plant protection (12%), land preparation (11%), others (10%), picking charges (9%), irrigation (8%), and interculture (7%), seed and sowing operations (6%).

39. The increase of Rs 1665 (12 per cent) in cost of production of seed cotton for 2006-07 crop in Sindh is shared by different items as: land preparation (30 %), irrigation (17 %), others (15 %), picking charges (13 %), land rent (10 %), seed and sowing operations (10 %) and fertilizer including FYM (7 %).

7.2.2 Prices of major farm inputs

40. The major farm inputs prices used in estimation of the cost of production of seed cotton for the 2005-06 and 2006-07 crops are presented below:

Items	**Units**	**2004-05**	**2005-06**	**Percent change**
1. HSD	Rs/litre	26.03	37.25	43.10
2. Power tariff	Rs/KWH	3.28	3.28	-
3. DAP	Rs/bag	1050	1091	3.90
4. Urea	Rs/bag	454	498	9.69
5. Seed	Rs/kg	51	51	-

7.3 Comparative Economics of Cotton and Competing Crops

41. Resource allocation among the competing enterprises is primarily governed by the economic considerations as reflected in their gross cost, gross income, gross margin, net income, output-input ratio, etc. The estimation of these indicators may provide useful insights into the pattern of resource use at the farm level.

42. Cotton, a kharif crop, competes with rice for land, water and other farm resources in the areas where cultivation of both the crops is technically feasible. Cotton also faces indirect competition from sugarcane which, occupies the land throughout the year as an annual crop.

43. The economics of cotton and competing crops has been analysed in terms of input-output prices paid and received by the growers during the 2005-06 crop year. The details of the analysis are provided in Annex-VI. A summary of various economic indicators for the Punjab and Sindh is also presented in Table-11.

Punjab

44. Cotton has a definite edge over basmati and IRRI paddy in respect of all the economic indicators adopted in this analysis, viz. Output-input ratio and gross revenue per unit of cash inputs, crop duration and irrigation water.

45. In case of indirect competition with sugarcane, both the cotton+wheat and cotton+sunflower combinations do not compete favourably with sugarcane as the market prices of sugarcane are reported to be quite remunerative due to short supply this year. Both the cotton combinations lag much behind sugarcane in terms of returns to overall investment and purchased inputs. However, the cotton combinations get some margin over sugarcane in respect of returns to crop duration and irrigation water.

Table-11: Comparative Economics of Cotton and Competing Crops at Prices Realized by the Growers: 2005-06 Crops

Province/Crop/ Crop combination	Output-input ratio	Gross revenue per		
		rupee of purchased inputs cost	day of crop duration	acre-inch of irrigation water used
		--------- Rupees --------		
Punjab				
1. Cotton	1.17	2.47	75.29	821.35
2. Basmati paddy	0.93	1.61	64.72	200.85
3. IRRI paddy	0.98	1.71	57.39	166.63
4. Cotton+Wheat	1.07	2.37	71.79	886.76
5. Cotton+Sunflower	1.10	2.78	73.42	640.79
6. Sugarcane	1.28	3.67	70.64	579.87
Sindh				
1. Cotton	1.25	3.20	74.65	995.28
2. IRRI paddy	1.11	2.41	56.71	182.29
3. Cotton+Wheat	1.15	2.85	68.08	953.10
4. Cotton+Sunflower	1.14	3.32	73.02	701.00
5. Sugarcane	1.22	3.51	68.13	468.26

Source: Annexes-VI.

Sindh

46. In Sindh too, cotton farming has a distinct edge over IRRI paddy in terms of all the economic indicators adopted in this analysis.

47. In case of indirect competition with sugarcane, the cotton+wheat combination falls behind sugarcane in all the economic criteria except gross revenue per unit of irrigation water. However, the cotton+sunflower rotation is although poor in performance than sugarcane in terms of output-input ratio and gross revenue per rupee of purchased inputs but shows some edge over sugarcane in respect of returns to crop duration and irrigation water.

7.4 Economics of Fertilizer Use on Cotton Crop

48. The economics of fertilizer use on cotton crop has been analysed through estimating (i) Benefit Cost Ratio (BCR) of fertilizer use and (ii) parity ratio between the prices of fertilizers and seed cotton. The results are discussed below:

7.4.1 Benefit Cost Ratio (BCR)

49. BCR refers to the ratio between value of additional produce resulting from using a certain dose of fertilizers and the costs thereof, both direct and indirect. A BCR of greater than one means that benefits are higher than the costs entailed in the process and vice versa. To account for the variation in response of cotton to fertilizer use under different conditions, the BCRs have been computed at 4 different response levels. The results of the exercise are set out in Table-12.

Table-12: Benefit Cost Ratios (BCRs) of Fertilizer Use on Seed Cotton: 1996-97 to 2005-06

Year	Response Ratios (Seed Cotton: Nutrient) of			
	3.00:1	3.75:1	4.50:1	5.25:1
1996-97	3.05	3.62	4.13	4.60
1997-98	2.47	2.94	3.36	3.74
1998-99	2.66	3.15	3.60	4.00
1999-00	1.66	1.97	2.25	2.51
2000-01	2.51	2.96	3.35	3.71
2001-02	1.87	2.22	2.53	2.81
2002-03	1.97	2.45	2.79	3.11
2003-04	2.79	3.32	3.79	4.23
2004-05	1.75	2.09	2.39	2.67
2005-06	1.95	2.32	2.67	2.99

Sources:

1. For 2005-06: Annex-VII.
2. For 1996-97 to 2004-05: APCom's Support Price Policy Reports on Seed Cotton.

50. A perusal of these data suggest that BCRs were the most remunerative in 1996-97 at all response ratios. However, this position could not be sustained in the following years and BCRs touched the lowest levels in 1999-00 resulting from low cotton prices. These ratios improved in 2000-01 but again dipped in 2001-02 as a result of sharp fall in cotton prices. However, in the following two years the BCRs reflect improvement in the profitability of fertilizer use on seed cotton which is attributable to better prices of seed cotton. During 2004-05 crop season as a result of sharp fall in seed cotton prices, profitability of fertilizer use has deteriorated @ 37 per cent at all response ratio compared with 2003-04. However, during current crop season these ratios have shown improvement @ 11 to 12 percent at all response ratios over the previous year.

7.4.2 Parity ratio between prices of fertilizer and seed cotton

51. The ratio between prices of fertilizers and seed cotton indicates the quantity of seed cotton required to purchase a certain quantity of chemical fertilizers. Quantity of seed cotton needed to buy one nutrient tonne of nitrogen since 1996-97 has fluctuated between 0.58 to 0.98 tonnes (Table-13). The lowest ratio of 0.58 was observed in 2003-04 crop season, implying it a good year for the growers. Contrarily the year of 1999-00 was the worst for the growers as the parity ratio was at the highest level. However, in the current season purchasing power of seed cotton improved over the last year as parity has decreased to 0.79 from 0.82 in 2004 -05 due to remunerative market price of seed cotton.

52. The parity ratios between prices of phosphatic fertilizer and those of seed cotton have fluctuated from 0.83 to 1.61 during the period under review. The year of 2003-04 has been the most remunerative to the cotton growers as the parity ratio was at the lowest level. It implies that the growers paid least quantities of seed cotton in 2003-04 to barter for phosphatic fertilizer. Against this the growers suffered from the lower prices of seed cotton in 1999-00 as the growers had to spend maximum amount of seed cotton in exchange of phosphatic fertilizer. However, during the current crop season purchasing power of seed cotton in terms of phosphatic fertilizer remained same as computed for 2004-05 crop.

Table-13: Parity Ratio Between the Prices of Fertilizer and Seed Cotton: 1996-97 to 2005-06

Crop Year	Sale Prices of		Market Prices of Seed Cotton	Quantity of Seed Cotton (phutti) needed to buy one nutrient tonne of	
	Nitrogen N	Phosphorous P_2O_5		Nitrogen N	Phosphorous P_2O_5
	---------------Rupees per tonne------------			-----------Tonnes--------	
1996-97	13478	19509	21225	0.64	0.92
1997-98	15870	19573	20825	0.76	0.94
1998-99	15217	19828	22675	0.67	0.87
1999-00	15217	24914	15500	0.98	1.61
2000-01	14130	22300	22700	0.62	0.98
2001-02	16960	24230	19150	0.89	1.27
2002-03	16760	24590	21875	0.77	1.12
2003-04	18040	25550	30950	0.58	0.83
2004-05	18400	34000	22550	0.82	1.51
2005-06	19700	37900	25075	0.79	1.51

Notes:

1. The nutrient prices of nitrogen (N) and phosphorous (P_2O_5) have been worked out from the average sale prices of Urea and DAP as used in the COP estimates of the Punjab and Sindh in the support price policy for respective crop years.
2. Market prices are the average of monthly seed cotton prices, which prevailed during the post harvest season in important markets of the Punjab and Sindh as given in the respective Support Price Policy Reports.

7.5 Nominal and Real Prices of Seed Cotton (Phutti) at Support and Market Prices: 2000-01 to 2005-06

53. To ascertain overtime changes in the purchasing power of seed cotton, the nominal and real prices of seed cotton (phutti) at support and market prices from 2000-01 to 2005-06 were deflated by the Consumer Price Index (CPI), the most commonly used measure of inflation in the economy. The results are given in Table-14 and also shown in Figures-3 and 4.

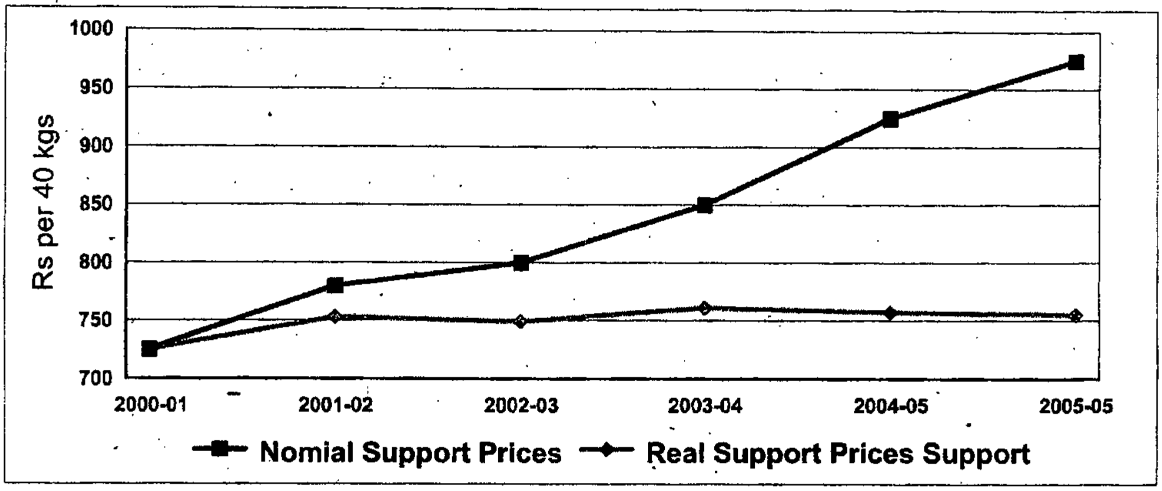

Fig-3 Nominal and Real Support Prices of Seed Cotton : 2000-01 and 2005-06

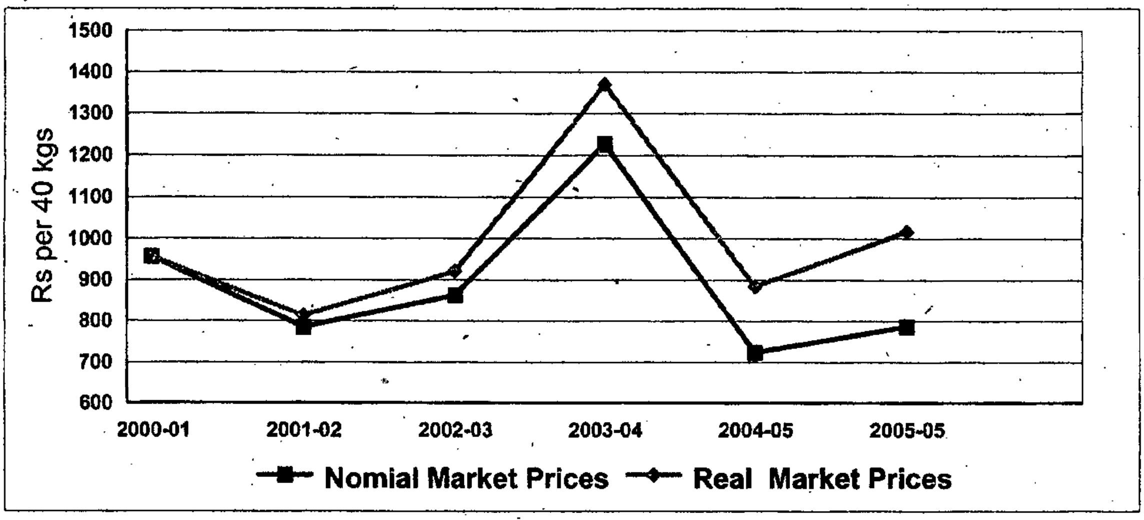

Fig-4 Nominal and Real Market Prices of Seed Cotton : 2000-01 and 2005-06

Table-14: Nominal and Real Support Prices of Seed Cotton (Phutti) at Support and Market Prices: 2000-01 to 2005-06

Crop year	Nominal prices		Consumer price Index (CPI)	Real Prices	
	Support	Market		Support	Market
1	2	3	4	5=(2/4)x100	6=(3/4)x100
	---- Rs per 40 kgs ----		2000-01=100	---- Rs per 40 kgs ----	
2000-01	725	957	100.00	725	957
2001-02	780	813	103.54	753	785
2002-03	800	921	106.75	749	863
2003-04	850	1370	111.63	761	1227
2004-05	925	885	122.23	757	724
2005-06	975	1017	129.22	755	787

Notes:

1. CPI for 2005-06 has been projected in view of the average rise in CPI during the last 3 years.
2. The support price of seed cotton (phutti) used here relates to the group of most commonly grown varieties like, Niab-78, Niab-Krishma, CIM-240, Niab-86, FH-87, CRIS-9, CIM-109, Gohar-87, H-682 and MNH-147 etc.
3. The support price fixed for 2005-06 crop was for the base grade 3 with staple length 1-1/32" and micronaire range of 3.8-4.9 (No Control Limit)
4. Market prices are the average monthly wholesale prices of seed cotton (phutti) during September - November in Multan market.

Sources:

1. Economic Survey of Pakistan: 2004-05.
2. Directorate of Economics and Marketing (E&M) Punjab, Lahore.
3. APCom.

7.5.1 Support Prices of Seed Cotton

54. The nominal and real support price of seed cotton for 2000-01 to 2005-06 are set out in Table-14 and depicted in Figure 3.

55. The nominal support price of seed cotton during the period 2000-01 to 2005-06 reflects an overall increase of 34 per cent i.e. from Rs.725 to Rs 975 per 40 kgs. During the same period, the CPI has shown a rise of 29 per cent. Consequently, the real support price of seed cotton in 2005-06 crop year estimated at Rs 755 per 40 kgs in 2000-01 reflects an improvement of

4 per cent over the base year. However, the real support price has experienced several fluctuations during the intervening period but remained above the base year level.

56. During the crop years of 2000-01 to 2003-04, the support prices were regularly enhanced upto the level of Rs 850 per 40 kgs by 2003-04, a rise of 17 per cent. In the meanwhile, the CPI surged by 12 per cent. Resultantly, the real value of seed cotton peaked to the level of Rs 761 per 40 kgs by 2003-04.

57. The support price of seed cotton (phutti) was enhanced from Rs 925 to Rs 975 per 40 kgs for 2005-06 crop (5 per cent), its real value in terms of 2000-01 prices is estimated at Rs 755 per 40 kgs, reflecting a marginal decline against the last year.

7.5.2 Market Prices of Seed Cotton

58. The nominal and real market prices of seed cotton for 2000-01 to 2005-06 are presented in Table-14 and also depicted in Figure-4.

59. The nominal market price of seed cotton averaging at Rs 957 per 40 kgs during the picking season of 2000-01 crop has risen to Rs 1,017 per 40 kgs in 2005-06, indicating overall increase of 6 per cent in the Multan market during September – November 2005. During the same period, the increase in CPI is estimated at 29 per cent. Consequently, the real market price has declined from Rs 957 to Rs 787 per 40 kgs in 2005-06, reflecting an erosion of 18 per cent.

60. The market prices of seed cotton during 2000-01 to 2002-03 have shown decreasing trend i.e from Rs 957 per 40 kgs (the base year) to Rs 921 per 40 kgs. During the same period, the CPI has surged at 7 per cent. As a result, the real value of seed cotton during these years declined to Rs 863 per 40 kgs, showing 10 per cent decline against the base year (2000-01).

61. In all the crop years except the year 2004-05, the market prices of seed cotton have ruled higher than the support price fixed by the government. The year 2003-04 was the best year for the growers in terms of nominal market prices of seed cotton, as the highest market price of Rs

1,370 per 40 kgs was recorded while CPI has risen by 12 per cent. As a sequel, the real market price of seed cotton also peaked at Rs 1,227 per 40 kgs in 2003-04, indicating a surge of 42 per cent over the last year and 28 per cent over the base year. After obtaining the highest market price of Rs 1370 per 40 kgs by the growers in 2003-04, the market price declined to Rs 885 per 40 kgs, showing 35 per cent decline over the last year. The CPI during this period was witnessed at 9.49 per cent. As a result, the real value of market price dipped to the lowest level of Rs 724 per 40 kgs during the period under reference, showing a decline of 24 per cent over the base year.

62. For the 2005-06 crop, the nominal market prices of seed cotton have averaged at Rs 1017 per 40 kgs. The real value though improved to Rs 787 per 40 kgs by 9 per cent over the base year of 2003-04 but fell short of the base year level by around 18 per cent. It may be noted that the real value of seed cotton remained much lower than the base year level of 2000-01 except 2003-04 crop year.

7.6 World Supply, Demand, Stocks, Trade and Price Situation

7.6.1 World supply, demand, stocks and trade

63. World production of cotton during 2004-05 was estimated at 26.23 million tonnes, 5.53 million tonnes (26.71 per cent) higher than in 2003-04. Adding the opening stocks of 8.09 million tonnes, total availability in 2004-05 worked out to 34.32 million tonnes, 4.96 million tonne (16.89 per cent) higher than that of previous year. For 2005-06, cotton production is projected at 24.96 million tonnes. Accounting for the opening stocks of 10.24 million tonnes, total supply of cotton would be 35.20 million tonnes, which shows an increase of 0.88 million tonnes (2.56 per cent) as compared to that in 2004-05. The International Cotton Advisory Committee (ICAC) has forecast production of cotton to increase to 25.06 million tonnes in 2006-07.

64. The global consumption of cotton was estimated at 23.44 million tonnes in 2004-05, up by 9.94 per cent over the level of 21.32 million in 2003-04. For 2005-06, consumption is estimated to rise to 24.14 million tonnes, 2.99 per cent higher than previous year. The consumption forecast for 2006-07 is 24.87 million tonnes.

65. Due to significant increase in production during 2004-05, the end year stocks which increased to 10.24 million tonnes in 2004-05 are estimated to further increase to 11.07 million tonnes in 2005-06 are forecast to rise to 11.26 million tonnes in 2006-07.

66. World trade (exports) in cotton, reported at 7.74 million tonnes in 2004-05, is forecast to increase to 8.27 million tonnes in 2005-06 but decrease to 8.22 million in 2006-07. Global supply, demand, stocks and trade situation for cotton is summarized in Table-15.

Table-15: World Production, Consumption, Stocks and Trade in Cotton: 2003-04 to 2006-07

S.No.	Item	2003-04 (Actual)	2004-05 (Estimated)	2005-06 (Projection)	2006-07 (Projection)
		------------Million tonnes----------------			
1.	Opening stocks	8.66	8.09	10.24	11.07
2.	Production	20.70	26.23	24.96	25.06
3.	Total supply (1+2)	29.36	34.32	35.20	36.13
4.	Likely consumption	21.32	23.44	24.14	24.87
5.	Trade imbalance and stock adjustment*	(+) 0.06	(-) 0.65	(+) 0.01	0.00
6.	Closing stocks (3-4+5)	8.09	10.24	11.07	11.26
7.	Trade (exports)	7.26	7.74	8.27	8.22

Note: * Trade imbalance i.e. difference in world imports and exports may exist due to inclusion of linter and waste, changes in weight during transit, difference in reporting periods and measurement error. Need for stock adjustment may arise due to difference between calculated stocks and actual ones.

Source: International Cotton Advisory Committee – "Report on Supply and Use/Distribution of Cotton", dated October 1, 2004.

7.6.2 International prices

67. The world prices of cotton have fluctuated widely during the last ten years. The price of Sindh/Punjab (Afzal 1-1/32") averaging at US cents 82.17 per pound in 1995-96 (Annex-VIII), the highest level during the period under review. Since then these prices have shown a declining trend averaging at US cent 47.23 per pound during 1999-00. During 2000-01, prices recovered and averaged at cents 56.78, but declined to US cents 38.41 per pound in 2001-02, the lowest level during the period under review. During 2002-03, price had shown upward trend and averaged at US cents 51.36 per pound. During 2003-04 Sindh/Punjab Afzal 1-1/32" has not been traded in international market. However these are interpolated from the historical differential

data for analysis purpose. During 2004-05 the prices have declined and averaged at US cents 46.10 per pound. During current year (August-November 2005) the price of Sindh/Punjab Afzal1-1/32" showing up ward trend averaged at US cent 52.95 per pound. The prices of other cottons have also showed a similar pattern. Information on the cif prices of Sindh/Punjab (Afzal 1-1/32") and Orleans Texas (SLM 1-1-/32") and value of Index-B Cottons for the period 1995-96 to 2005-06 are depicted in Figure-5.

7.7 Parity Prices of Seed Cotton

7.7.1 Domestic parity price

68. A sufficient proportion of cotton production is domestically processed into yarn by the spinning mills for domestic use and exports. Therefore, domestic prices of yarn can provide a useful reference for working back the price of its raw material (i.e. cotton and seed cotton). During September to November 2005, prices of yarn (21's) at Karachi have averaged at Rs 463 per bundle of 4.54 kgs. Accounting for various costs involved in processing of seed cotton in yarn viz conversion charges from lint into yarn, storage and transportation charges, ginning charges and recoveries from sale of cotton waste and cotton seed, seed cotton prices work back to Rs 947 per 40 kgs. Details may be seen in Annex-IX.

7.7.2 Export and import price

69. Estimation of export parity price of a commodity is helpful in ascertaining its competitiveness in international market while its import parity price is a useful measure of determining the opportunity cost of resources used in its domestic production. Since Pakistan is exporting as well as importing cotton, both the export and import parity prices of cotton have been worked out for analyzing price policy options for the next crop season.

70. The export and import parity prices of seed cotton have been calculated on the basis of their actual as well corresponding quoted prices. Inter-bank exchange rate, buying for export parity and selling for import parity has been used in these calculations. Detailed calculations in this connection are given at Annex-X to XV and summarized in Table-16.

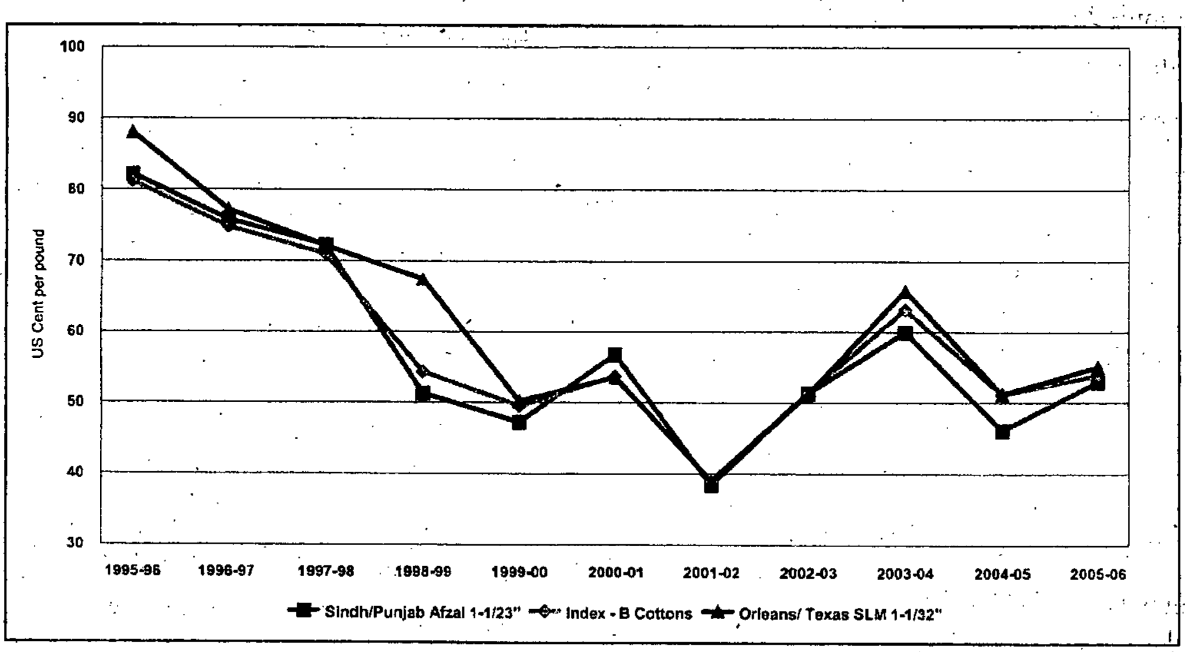

Figure-5: CIF NORTH EUROPE PRICES OF VARIOUS COTTONS: 1995-96 TO 2005-06

Table-16: Export/Import Parity Prices of Seed Cotton as Worked Back from Various Reference Prices

S.No.	Base/period	Reference price	Worked back price of seed cotton at gin
		US cents/lb	Rs/40 kgs
1.	**Export parity prices based on average:**		
	i) Actual export price of Pakistani cotton		
	- During 2004-05	44.40	868
	- During 2000-01 to 2004-05	45.40	885
	ii) Cif (North Europe) value of Index-B cottons:		
	- During 2005-06 (Aug-Nov)	53.89	919
	- During 2000-01 to 2004-05	51.69	882
	iii) Cif (North Europe) quotations of Afzal 1-1/32":		
	- During 2005-06 (Aug-Nov)	52.95	903
	- During 2000-01 to 2004-05	50.53	862
	iv) Futures contract prices of New York No.2 cotton (average of October 2006 and December 2006	56.65	897
	v) Fob prices of Pakistani cotton yarn (20's):	US cents/kg	
	- During 2005-06 (Aug-Nov)	177.00	802
	- During 2000-01 to 2004-05	178.00	808
2.	**Import parity prices based on average:**		
	i) Cif (North Europe) quotations of Orleans/Texas SLM 1-1/32"	US cents/lb	
	- During 2005-06 (Aug-Nov)	55.08	1,252
	- During 2000-01 to 2004-05	52.16	1,198
	ii) Actual cif (Karachi) prices of imported cotton:	Rs/40 kgs	
	- During 2004-05	3,252	1,255
	- During 2000-01 to 2004-05	3,254	1,256

Source: Annex-X to XV.

7.8 Economic Efficiency in Seed Cotton Production

71. The efficiency of resource use in cotton production has been evaluated by estimating its nominal protection coefficient (NPC), effective protection coefficient (EPC), and domestic resource cost coefficient (DRC), the most commonly used parameters in this context. As Pakistan exports as well as imports cotton, efficiency parameters have been estimated under both these situations. These parameters are based on the cost of production of seed cotton data as used

in APCom's Support Price Policy Papers for seed cotton. To ascertain the impact of overtime changes in input-output prices, the analysis has been carried out for the 2002-03 to 2005-06 crops. Moreover, to capture regional variations in the resource use efficiency, NPCs, EPCs and DRCs have been calculated for major cotton growing provinces of Punjab and Sindh. The coefficients are summarized in Table-17 whereas absolute values of gross revenues traded costs, domestic sectors cost and transfers estimated at private and social prices are given in Annexes-XVI to XVII

Table-17: Economic Efficiency Coefficients for Seed Cotton

Year/ Province	Under Importing Situation				Under Exporting Situation			
	NPC	EPC	DRC	Cost* Rs/US$	NPC	EPC	DRC	Cost* Rs/US$
Punjab								
2002-03	0.75	0.61	0.43	25.40	0.98	0.88	0.62	36.65
2003-04	0.91	0.83	0.36	21.25	1.22	1.21	0.53	30.95
2004-05	0.74	0.57	0.46	26.92	0.96	0.83	0.68	39.92
2005-06	0.82	0.67	0.48	28.66	1.10	1.02	0.73	43.55
Average	0.81	0.68	0.41	24.44	1.08	1.02	0.65	38.49
Sindh								
2002-03	0.70	0.58	0.40	23.12	0.93	0.83	0.56	33.05
2003-04	0.80	0.71	0.34	19.28	1.06	1.01	0.48	27.65
2004-05	0.74	0.58	0.42	24.66	0.97	0.94	0.61	35.72
2005-06	0.78	0.65	0.45	26.72	1.05	0.96	0.66	39.67
Average	0.75	0.63	0.37	22.10	1.03	0.97	0.61	36.10

Note: * Cost incurred on buying domestic resources to earn/save one US$.

7.8.1 Nominal Protection Coefficient (NPC)

72. NPC is estimated by dividing domestic prices with border prices (import/export parity prices) and measures the impact of output pricing policies without taking into consideration the distortions in input markets. The NPCs under export scenario were either close to one or greater than one whereas under importing situation these are substantially less than one. These coefficients support expansion in cotton production to meet the increasing raw material requirements of the textile industry as the imports have been more expensive than the domestic production.

7.8.2 Effective Protection Coefficient (EPC)

73. Effective protection coefficient is the ratio between the value added in producing a commodity at private prices and at social prices. Unlike the NPC, which ignores the distortions in the input markets, EPC also takes into account the impact of policy interventions in the input markets. Thus, it is a more meaningful measure for analyzing the protection/taxation of a given sector/commodity. The results of EPCs calculations also corroborate the inferences drawn from the estimates of NPCs.

7.8.3 Domestic Resource Cost (DRC)

74. Domestic resource cost (DRC) indicates the opportunity cost of domestic resources used per unit of the value added in the production of a commodity. The numerator in these calculations is the opportunity cost of non-tradable factors used in domestic production while denominator is the value addition calculated at social prices. DRC coefficient of greater than one indicates a "comparative disadvantage" in domestic production as the cost associated with its domestic production is greater than the economic cost of corresponding imports.

75. The results of the analysis (Table-17) indicate that DRCs have been much less than one during the period under analysis both under exporting and importing scenarios. Thus, Pakistan enjoys comparative advantage in cotton production. Based on the last 4 years' average prices, DRCs work out to 0.65 for the Punjab and 0.61 for Sindh, implying that cost of domestic resources involved in earning one US dollar through cotton export is 35 - 39 percent; less than the current exchange rate. Accordingly, increasing cotton production is an economic proposition even for exports.

76. DRCs calculated under cotton importing scenario (Table-17) are much lower than the corresponding coefficients estimated under exporting situation. As per these estimates cost of domestic factors involved in saving one unit of foreign exchange through increased cotton production is only 33-48 percent of its market price. Thus expansion in production of cotton for import substitution is highly cost effective.

8. CONSULTATION

77. Annual meeting of the Agricultural Prices Commission's Standing Committee on Cotton was held at Islamabad on 5th December 2005. It was attended by the representatives of farmers' associations, ginners, KCA and APTMA, progressive growers, cotton experts and officials of the Federal and Provincial Governments concerned with the cotton production and marketing. The meeting discussed, at length, the situation with regard to cotton crop and problems encountered by the farmers in cotton production and marketing. Future prospects of cotton crop in the changing economic environment also engaged the attention of the Committee. The participants in the meeting emphasized the need for development of a suitable technology package for sustainable production of cotton. They highlighted the need for strict quality control in pesticides' marketing and underscored the role of Integrated Pest Management to arrest the increasing menace of pests and to protect the environment. The grower members expressed their concern about rising prices of inputs and pleaded for bringing stability in prices. Though happy about the prices of cotton in the current year, farmers were concerned about the sharp decline in yield and increasing risk in cotton production in the wake of serious pest infestation. There was a consensus in the meeting for having a programme which ensured incentive prices to the farmers in general and in good crop years in particular.

9. TO SUM UP

78. Cotton production in the country has been fluctuating between 9 and 14 million bales during the decade ending 2005-06. The production for 2005-06 crop season is reported at 12.2 million bales.

79. World production of cotton in 2005-06 is projected at 24.96 million tonnes, 4.84 per cent lower than that of last year. Consumption is forecast to 24.14 million tonnes, thus the stocks comes to 11.07 million tonnes.

80. International prices of cotton have increased. The average cif price of Sindh/Punjab (Afzal 1-1/32"), recorded at US cents 46.10 per pound during 2004-05, has increased to 52.95

cents in August-November 2005-06. The value of Index B cottons is at 53.89 cents as compared to its corresponding value of 51.19 cents in 2004-05.

81. Based on the analysis of relevant domestic and international factors, the worked back prices of seed cotton alongwith market prices and cost of production are summarized below.

	Base	Worked back price of seed cotton at ginnery level (Rupees per 40 kgs)	
1	Domestic price of yarn at Karachi	947	
2	Export parity prices based on:		
	i) Actual average export price of Pakistani cotton:		
	- During 2004-05	868	
	- During 2000-01 to 2004-05	885	
	ii) Average cif (North Europe) value of Index-B cottons:		
	- During 2005-06 (Aug-Nov)	919	
	- During 2000-01 to 2004-05	882	
	iii) Average cif (North Europe) quotations of Afzal 1-1/32":		
	- During 2005-06 (Aug-Nov)	903	
	- During 2000-01 to 2004-05	862	
	iv) Futures contract prices of New York No.2 cotton (average of October 2006, December 2006)	897	
	v) Average fob prices of Pakistani cotton yarn (20's):		
	- During 2005-06 (Aug-Nov)	802	
	- During 2000-01 to 2004-05	808	
3	Import parity prices based on:		
	i) Actual average cif (North Europe) quotations of Orleans/ Texas SLM 1-1/32"		
	- During 2005-06 (Aug-Nov)	1,252	
	- During 2000-01 to 2004-05	1,198	
	ii) Cif Karachi prices of imported cotton:		
	- During 2004-05	1,255	
	- During 2000-01 to 2004-05	1,256	
4	Average domestic market price of seed cotton in 2005-06 (August-November)	1,038	
5	Cost of production for 2006-07 crop		
	Punjab	985	
	Sindh	908	
6	Cost of domestic resources (Table-17) involved in:	At exchange rate Pak rupees = one US $	
		Punjab	Sindh
	i) Producing cotton for import substitution		
	- Based on 2005-06 prices of cotton	29	27
	- Based on average prices of cotton 2002-03 to 2005-06	25	22
	ii) Producing cane for export of cotton		
	- Based on 2005-06 prices of cotton	44	40
	- Based on average prices of cotton 2002-03 to 2005-06	39	37

82. The price of seed cotton as worked back from the domestic price of cotton yarn at Karachi during the current season comes to Rs 947 per 40 kgs against the average domestic market price of Rs 1,038 per 40 kgs from August 2005 to November 2005.

83. The worked back price of seed cotton from the actual export prices of Pakistani cottons during 2004-05 and cif North Europe value of Index-B and Sindh/Punjab Afzal 1-1/32" cotton, during 2005-06 range between Rs 868 and 919 per 40 kgs. The prices of seed cotton worked back from corresponding average for 2000-01 to 2004-05, ranged between Rs 882 and 885 per 40 kgs. The worked back price of seed cotton from the futures contract price of New York No.2 cottons (average of October 2006 and December 2006) quoted on November 2005 comes to Rs 897 per 40 kgs.

84. The prices of seed cotton calculated from the average fob prices of cotton yarn (20's), during 2005-06 work back to Rs 802 per 40 kgs, and to Rs 808 when based on the average of corresponding price for 2000-01 to 2004-05.

85. The import parity price of seed cotton based on the cif North Europe quotations of Orleans/Texas SLM 1-1/32" during August 2005 to November 2005, comes to Rs 1,252 and to Rs 1,198 per 40 kgs when calculated from the corresponding average of quotations for 2000-01 to 2004-05. The import parity prices of seed cotton estimated from the actual average cif (Karachi) price of imported cotton in the current season comes to Rs 1,255 and to Rs 1,256 per 40 kgs based on the average for 2000-01 to 2004-05.

86. The monthly average of market prices in Punjab have ranged from Rs 939 to Rs 1124 per 40 kgs during September 2005 to November 2005. The prices in Sindh markets during this period have ranged between Rs 922 and Rs 1,105 per 40 kgs. The overall average of market price during the period under reference works out to Rs 1,038 per 40 kgs. The market prices throughout the period remained generally above the Government announced support price of Rs 975 per 40 kgs.

87. The cost of production (COP) of seed cotton at ginnery level for the 2005-06 crop is estimated at Rs 985 per 40 kgs for Punjab, and Rs 908 per 40 kgs for Sindh.

88. Keeping in view the developments in national and international markets and rising prices of farm inputs, there is a case for increase in the support price of seed cotton. APCom recommends to raise the support price to Rs 1,025 per 40 kgs. It covers the cost of production and allows some margin to growers particularly in Sindh. Pakistan has comparative advantage in cotton production and moderate increase in its support price is considered necessary to keep up the interest of growers.

89. The task of implementing the support price of seed cotton should remain with TCP. Since the support price for seed cotton is implemented through procuring the cotton lint, the price of lint be fixed accordingly. TCP should also enforce the premia and discounts for various grades and staple lengths.

10. QUALITY PREMIUM

90. The ECC of the Cabinet in its meeting held on 13-4-2005 decided to fix the support price for seed cotton (phutti) 2005-06 crop at Rs 975 per 40 kgs for "base grade 3" and the premium/discount rates for higher/lower quality grades and staple length were also approved and given in Table-18.

Table-18: Premia/Discounts for Various Grades/Staple Lengths for Lint Offered to the Procurement Agency

Grade	Staple length				
	1"	1-1/32"	1-1/16"	1-3/32"	1-1/8"
	------------------------------ Rupees per 40 kgs ------------------------------				
Super	119	178	237	294	353
One	67	124	181	237	294
Two	4	60	116	170	226
Three (Base)	**-54**	**Base**	**54**	**107**	**161**
Four	-122	-70	-18	34	86
Five	-184	-134	-83	-34	17

Note: The above margins are applicable to the seed cotton of micronaire ranging between 3.8 and 4.9 NCL.

91. For the cotton crop of 2006-07 the revised grade and staple margins for seed cotton are given below in Table-19.

Table-19: Premia/Discounts for Various Grades/Staple Lengths for Seed Cotton

Grade	Staple length				
	1″	1-1/32″	1-1/16″	1-3/32″	1-1/8″
	---------- Rupees per 40 kgs ----------				
Super	17.99	39.59	61.19	82.39	103.99
One	4.78	26.38	47.98	69.18	90.78
Two	-6.99	14.62	36.22	57.42	79.02
Three	-22	Base	22	43	64
Four	-38.84	-17.24	4.36	25.56	47.16
Five	-55.83	-34.23	-12.63	8.58	30.18

92. Since TCP purchases cotton lint instead of seed cotton, the premia/discount on lint are calculated in Table-20. By providing premia/discount on lint, the growers would be encouraged to produce quality seed cotton.

Table-20: Premia/Discounts for Various Grades/Staple Lengths for Lint

Grade	Staple length				
	1″	1-1/32″	1-1/16″	1-3/32″	1-1/8″
	---------- Rupees per 40 kgs ----------				
Super	206	260	314	367	421
One	119	173	227	280	334
Two	42	96	150	203	257
Three	-54	Base	54	107	161
Four	-167	-113	-59	-6	48
Five	-279	-225	-171	-118	-64

11. IMPROVING PRODUCTIVITY, QUALITY AND MARKETING

11.1 Improving Productivity

11.1.1 Improved seed

93. Improved seed occupies a key position in improving productivity of a crop. But despite considerable efforts, sufficient supply of quality seed is not available to farmers. Crop experts recommend to cultivate entire area of the cotton crop with certified seed but still a large area is sown with unapproved varieties because seed of unapproved varieties is supplied in the market by some traders and agencies. Farmers in general are not aware of the agronomic requirements of these varieties which results in lower yield. The data presented in Annexes-XVIII to XIX reveal that during the decade ending 2005-06 supply of certified seed has widely fluctuated against its requirements in the main cotton growing provinces i.e. Punjab and Sindh. However, in Sindh shortfall in supply of certified seed remained more worse than in the Punjab. Thus it needs concerted efforts to assure timely availability of certified seed in adequate quantities in the country. The Sindh province in this regard needs even more attention.

94. It is also suggested by the concerned quarters that to increase supply of certified seed the responsibility of production of foundation seed may be retained with the research institutes while for production of basic and pre-basic seed private sector may also be involved. There is also a need to strengthen the Federal Seed Certification and Registration Department (FSCRD) so that the private seed companies are properly monitored to promote production of quality seed.

11.1.2 Plant population

95. Yield of seed cotton is considerably undermined due to sub-optimal plant population. Number of plants per acre are generally reported to be upto 30 percent less than the recommended population of 23000 plants per acre. It means increasing number of plants per acre may enhance per acre yield approximately by 30 percent. Major factors responsible for less plant population per acre include poor health of the soil, lack of micro-nutrients, inferior quality seed,

poor land management, etc. All these require improvement in the functioning of agriculture extension services to promote use of compost manure, avoid too many dry cultivation, using appropriate farm implements for interculture and promoting crop rotation.

11.1.3 Balanced use of fertilizers

96. Increased cropping intensity has exhausted our soils and the fertility level has been declining particularly due to lack of application of micro nutrients to the soil. Productive capacity of the soils has been further reduced by the water logging and salinity problems. To cure the problems a well coordinated campaign is required to promote use of organic as well as inorganic nutrients to the soil. In this regard, provincial agriculture research institutes owe due role to develop various bio fertilizers to promote optimal usage of different fertilizers to various crops.

11.1.4 Integrated Pest Management (IPM)

97. Frequent attack of insects on cotton crop has led to enormous use of pesticides on this crop which has harmful effects on flora and fauna species in addition to huge expenses on pesticides. So an integrated approach involving biological, chemical and cultural measures needs to be adapted to check the insect attacks and their losses. These measures may include; (i) Use of insect resistant varieties (ii) adoption of agronomic practices preventing build up of insects; (iii) Trapping of pests; (iv) Use of bio-pesticides; (v) biological control by predators, parasitoids or insect pathogens; (vi) microbial control and (vii) physical control.

98. To improve the cultural operations as a part of IPM experts have suggested that farm machinery needs to be standardized. Agricultural Machinery research institutes should standardize different machinery for cotton crop and private manufacturers may follow these standards to promote uniform machinery for cotton. Likewise, at the ginnery level different graders should be made according to quality and price. This will help improve quality of the cotton at the farm level.

11.1.5 Quality control of pesticides

99. Pesticides being an important element in the production of cotton crop needs due attention to maintain its quality. It is occasionally complained that good quality pesticides are not available. To assure quality of the pesticides following measures are suggested:

i) Each company must sell its pesticide through its own dealer.

ii) Magistrates be appointed/posted with the agriculture department for quick disposal of pesticides cases.

iii) To promote proper usage of pesticides each company must indicate amount and nature of active ingredients in a branded product to the Directorate of Plant Protection.

iv) The Directorate of Plant Protection should specify dosage of each product for a particular pest or disease.

11.2. Improving Quality of Cotton

11.2.1 Picking

100. Proper picking plays an important role in improving the cotton quality. For this purpose, following steps are required to be followed by the growers.

i) The cotton picking should start at 10.00 A.M, when dew has fully dried.

ii) The picking should be done in a line and should start from the lower portion of the plant.

iii) The picked cotton of each variety should be placed separately under dry and clean conditions.

iv) The produce should be handled in cotton cloths only.

v) The produce of 1st and last pickings may be kept separately.

vi) The healthy produce should be kept separate from produce of dirty, pre-matured un-opened and infected boll.

vii) Effort should be made to ensure picking of clean cotton from the field which is devoid of plant leaves flower petals, sticks weeds and dust.

11.2.2 Ginning

101. Cotton quality can be improved considerably by adopting the modern techniques of ginning. The staple length and strength is adversely affected, if defective machinery is used in ginning. The domestic ginning industry usually uses the saw gins of poor and low quality. The saws are rarely replaced but their teeth are sharpened. This process adversely affects the cotton quality, as the teeth get deformed. Ginning has been identified as one of the weakest links in the processing of cotton. It is imperative that modern ginning machinery, pre-ginning cleaners and the lint cleaning apparatus be installed in gins to up-grade and modernize the cotton ginning sector. For this purpose, incentives and loans on easy terms and conditions may be provided to the ginners. Further for getting lint of higher grades, research on different types of ginning and cleaning machines and ginning techniques should also be undertaken. In this respect earlier recommendation of APCom for the establishment of a Ginning Research Institute at Multan is reiterated for implementing during 2006-07 season.

11.2.3 Less Contamination in cotton

102. There has been continuing problems of contamination in the raw cotton, which is affecting the cotton spinning industry. The contamination in cotton is a result of using jute, poly propylene and plastic bags and presence of human and animal hair, bird feathers, leave of plants, flower petals, sticks, dust and other like items in raw cotton. In order to fetch higher prices in the international market, the production of less contamination cotton is required. State Bank of Pakistan placed losses due to contamination cotton at $ 1.4 billion a year. National textile industry places these losses at $ 3 billion. Therefore, government in the past had introduced the system for the standardization. For this purpose PCSI stepped forward and with its available resources launched the programme in 2001-02 season. To reduce the contamination in Pakistani cotton, Rahim Yar Khan, Ghotki and Nasirabad districts were selected in the three cotton growing provinces of country.

103. As reported by APTMA, the contamination level in R.Y. Khan has been reduced to 4 to 5 grams per bale from 19 grams. The ginning factories where PCSI prescribed procedures for the production of high quality contamination free cotton had been fully adopted, the contamination

level gone down and recorded within the range of only 0.74 to 1.97 grams per bale. At international level, Pakistan used to be the most cotton contaminated country and ranked at No.2 in 1999, it has been lowered down in 2001 at 25th position which is quite encouraging.

104. As a result of the success of the programme in 2002-03 season, it was extended to the districts of Sanghar (Sindh), Bahawalpur (Punjab) and whole of Balochistan. For its implementation PCSI had established sub offices at the selected districts. Administrative, operational and marketing arrangements were included in the PCSI line of action. The classers after classification of lint cotton, issued quality certificate for each lot. The buyers were required to pay premium according to the contamination level over and above the quality premium in addition to the prevailing market price of cotton. Over 1300 persons have been trained in classing and grading by PCSI. The provincial governments prohibited the use of jute bags in handling/transporting of seed cotton/cotton lint. These arrangements have brought considerable improvement in quality of Pakistani cotton because the contamination level has gone down.

105. Despite the above mentioned encouraging steps, the Cotton Standardization Ordinance 2002 has not been properly enforced as yet. The cotton marketing is still being carried out on old traditional practices and the system of premium and discount in cotton marketing is yet to be adopted. The APTMA which is the main cotton buyer should start purchases of cotton on the basis of payments of premium based upon quality grades of lint. It will encourage the ginners to practice the quality grades of seed cotton and pay the growers accordingly. For the improvement of cotton quality PCSI has decided to establish cotton fibre testing laboratories equipped with HVI's in the districts of Sanghar, Ghotki, R.Y. Khan, Vehari and Multan. In order to further refine the programme of contamination free cotton, APCom had suggested the following measures in its previous support price policy paper, which are reiterated to be implemented during 2006-07.

- PCGA should gin and press seed cotton lots according to the grades of PCSI.
- The Ministry of Industries should persuade the APTMA to adopt the cotton pricing system of premium and discounts based upon its quality, as required under the Cotton Standardization Ordinance 2002.

11.3 Improving Marketing

106. Enhancing cotton production in general and through improving per hectare yield in particular has been perceived a leading objective of any national agricultural policy. It will enhance the profitability of cotton for the growers

107 For the purpose it is imperative that the government should launch a campaign for adoption of high yielding verities, adequate supply of certified seed, mobile research laborites for soil testing to know what type of fertilizer and nutrients are required for a particular land, protecting the crop against insect pest attack through Integrated Pest Management (IPM) approach is an other way to minimize the per acre cost. Proper picking plays an important role to get better quality cotton, resultantly the farmer can get better price of its produce. In this regard the government should educate the pickers by crop experts through media, lectures and at farmers field.

11.3.1 Under-weighment and undue deductions

108 The underweighment and undue deductions in cotton marketing on the part of 'beoparies', ginners and commission agents is not of recent origin. It is very common and wide spread practice. During the APCom field survey during November 2005 in the main cotton growing areas, the farmers complained about underweighment and undue deductions by the market intermediaries. In order to check these malpractices in cotton marketing, supervisory committees consisting of the representatives of Provincial Agriculture Departments, local market committees, growers and cotton dealers may be constituted. In this regard the Agriculture Extension department has informed that the department has deputed Cotton Inspectors/ Officers in ginning factories to cope up the complaints of growers.

11.3.2 Proper packing and labeling

109. Proper packing and labeling helps in improving the marketing of a commodity through good presentation and economizing the transaction time by attracting the buyers' demand. False labeling in the past had brought bad name for the country. It is, therefore, of utmost importance

that the truthful labeling and proper packing should be ensured. Although the government of Sindh has made amendment in section 13 sub section (1)&(3) of West Pakistan Ordinance XX 1966 under which mark of grade and staple length on each bale has been made compulsory. Cotton Inspectors in all the cotton growing districts in Sindh have been directed to implement it strictly. It is imperative to spread it all over the country.

11.3.3 Weight of a cotton bale

110. In the market cotton bales of different weights are noticed against standard net weight of 170 kgs. Ginneries produce bales of weight ranging from 165 to 168 kgs. Even the statement of PCGA has shown the average weight of a bale below the standard weight. The bales of different weights created problems in crop size assessment and the exports. In order to improve the situation and to avoid such problems and confusions all the ginneries should produce cotton bales of 170 kgs standard weight. Persons deputed in the ginneries at the bale formation stage should be properly instructed and trained for this purpose by the management. Ministry of Industries may issue instructions to ginneries to ensure standard size of bale by adopting stringent procedures.

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ANNEX-I

PROVINCE-WISE AREA (HECTARES),PRODUCTION AND YIELD OF COTTON IN PAKISTAN : 1995-96 TO 2005-06

YEAR	PUNJAB	SINDH	NWFP	BALOCH	PAKISTAN
AREA	---------- 000 hectares ----------				
1995-96	2463.3	529.3	0.2	4.5	2997.3
1996-97	2540.2	601.2	0.3	6.9	3148.6
1997-98	2348.4	600.3	0.5	10.5	2959.7
1998-99	2282.8	630.2	0.4	9.4	2922.8
1999-00	2329.3	633.5	0.3	20.0	2983.1
2000-01	2386.4	523.6	0.2	17.3	2927.5
2001-02	2526.4	547.4	1.6	40.4	3115.8
2002-03	2208.3	542.6	1.9	40.8	2793.6
2003-04	2386.8	561.4	2.0	39.1	2989.3
2004-05	2518.3	635.1	2.1	37.1	3192.6
2005-06	2397.7	619.8	2.1	37.3	3056.9
YIELD	---------- kgs per hectare ----------				
1995-96	602	598	255	495	601
1996-97	476	637	340	493	506
1997-98	494	662	272	494	528
1998-99	494	576	298	496	512
1999-00	643	638	340	493	641
2000-01	609	696	340	496	624
2001-02	542	759	436	502	579
2002-03	590	756	412	543	622
2003-04	549	680	425	426	572
2004-05	753	808	421	432	760
2005-06	650	803	421	439	679
PRODUCTION	---------- 000 bales ----------				
1995-96	8720.0	1861.5	0.3	13.1	10594.9
1996-97	7103.4	2250.2	0.6	20.0	9374.2
1997-98	6817.0	2335.5	0.8	30.5	9183.8
1998-99	6628.0	2134.1	0.7	27.4	8790.2
1999-00	8804.0	2377.4	0.6	58.0	11240.0
2000-01	8540.0	2141.1	0.4	50.4	10731.9
2001-02	8046.0	2443.2	4.1	119.3	10612.6
2002-03	7664.0	2411.8	4.6	130.2	10210.6
2003-04	7702.0	2242.8	5.0	97.9	10047.7
2004-05	11149.0	3016.7	5.2	94.3	14265.2
2005-06	9166.4	2927.7	5.2	96.2	12195.5

Note:

One bale = 170.09 kgs = 375 lbs

Source:

1. For 1995-96 to 2003-04 : Agricultural Statistics of Pakistan 2003-04, MINFAL, Islamabad.
2. For 2004-05 : Final estimates provided by Provincial Agriculture Departments.
3. For 2005-06 : I) 2nd estimate provided by Provincial Agriculture Departments of Punjab,Sindh & Balochistan.
   II) For NWFP: 1st estimates of area 2005-06 & production of previous year has been repeated.

ANNEX-II

PROVINCE-WISE AREA (ACRES),PRODUCTION AND YIELD OF COTTON IN PAKISTAN : 1995-96 TO 2005-06

YEAR	PUNJAB	SINDH	NWFP	BALOCH	PAKISTAN
AREA		---------- 000 acres ----------			
1995-96	6087.1	1308.0	0.5	11.1	7406.6
1996-97	6277.1	1485.6	0.7	17.1	7780.5
1997-98	5803.1	1483.4	1.2	25.9	7313.7
1998-99	5641.0	1557.3	1.0	23.2	7222.5
1999-00	5755.9	1565.4	0.7	49.4	7371.5
2000-01	5897.0	1293.9	0.5	42.8	7234.1
2001-02	6243.0	1352.7	4.0	99.8	7699.5
2002-03	5456.9	1340.8	4.7	100.8	6903.3
2003-04	5898.0	1387.3	4.9	96.6	7386.9
2004-05	6223.0	1569.4	5.2	91.7	7889.2
2005-06	5925.0	1531.6	5.2	92.2	7553.9
YIELD		---------- kgs per acre ----------			
1995-96	244	242	103	200	243
1996-97	192	258	138	200	205
1997-98	200	268	110	200	214
1998-99	200	233	120	201	207
1999-00	260	258	138	200	259
2000-01	246	281	138	201	252
2001-02	219	307	176	203	234
2002-03	239	306	167	220	252
2003-04	222	275	172	172	231
2004-05	305	327	170	175	308
2005-06	263	325	170	178	275
PRODUCTION		---------- 000 bales ----------			
1995-96	8720.0	1861.5	0.3	13.1	10594.9
1996-97	7103.4	2250.2	0.6	20.0	9374.2
1997-98	6817.0	2335.5	0.8	30.5	9183.8
1998-99	6628.0	2134.1	0.7	27.4	8790.2
1999-00	8804.0	2377.4	0.6	58.0	11240.0
2000-01	8540.0	2141.1	0.4	50.4	10731.9
2001-02	8046.0	2443.2	4.1	119.3	10612.6
2002-03	7664.0	2411.8	4.6	130.2	10210.6
2003-04	7702.0	2242.8	5.0	97.9	10047.7
2004-05	11149.0	3016.7	5.2	94.3	14265.2
2005-06	9166.4	2927.7	5.2	96.2	12195.5

Note:

One bale = 170.09 kgs = 375 lbs

Source:

1. For 1995-96 to 2003-04 : Agricultural Statistics of Pakistan 2003-04, MINFAL, Islamabad.
2. For 2004-05 : Final estimates provided by Provincial Agriculture Departments.
3. For 2005-06 :I) 2nd estimate provided by Provincial Agriculture Departments of Punjab,Sindh & Balochistan.
   II) For NWFP: 1st estimates of area 2005-06 & production of previous year has been rereated.

ANNEX-III

DISTRICT-WISE AREA AND PRODUCTION OF SEED COTTON: AVERAGE OF 2003-04 TO 2005-06

S.No.	Province/District	Area 000 hect	Percentage	Production 000 bales	Percentage	Yield Kgs/ha
	PUNJAB					
1	R.Y.Khan	309.04	10.03	1230.23	10.11	677.10
2	Bahawalpur	282.46	9.16	1127.58	9.26	679.01
3	Vehari	235.53	7.64	965.29	7.93	697.10
4	Lodhran	205.70	6.67	953.08	7.83	788.07
5	Khanewal	193.30	6.27	805.33	6.62	708.62
6	Bahawalnagar	209.76	6.81	794.60	6.53	644.32
7	M.Garh	204.63	6.64	742.94	6.10	617.53
8	Multan	188.31	6.11	735.84	6.05	664.63
9	Rajanpur	151.35	4.91	686.45	5.64	771.46
10	D.G.Khan	104.95	3.40	454.47	3.73	736.58
11	Sahiwal	82.69	2.68	202.30	1.66	416.11
12	Jhang	59.49	1.93	136.19	1.12	389.39
13	T.T.Singh	50.17	1.63	130.75	1.07	443.26
14	Faisalabad	43.71	1.42	113.17	0.93	440.37
15	Layyah	38.17	1.24	99.71	0.82	444.33
16	Pakpatan	37.09	1.20	94.45	0.78	433.10
17	Okara	9.44	0.31	18.89	0.16	340.30
18	Kasur	10.11	0.33	16.57	0.14	278.68
19	Sargodha	8.23	0.27	10.94	0.09	226.12
20	Mianwali	3.65	0.12	9.20	0.08	428.96
21	Bhakkar	2.70	0.09	6.61	0.05	416.71
22	M.B.Din	2.30	0.07	3.13	0.03	231.56
23	Khushab	0.40	0.01	0.45	0.00	188.36
24	Jhelum	0.41	0.01	0.39	0.00	161.79
25	Sheikhupura	0.40	0.01	0.32	0.00	134.65
26	Chakwal	0.27	0.01	0.26	0.00	159.72
	PUNJAB Sub-total	2434.27	79.0	9339.13	76.7	652.55
	SINDH					
1	Sanghar	125.98	4.09	606.97	4.99	819.52
2	Ghotki	110.87	3.60	479.33	3.94	735.38
3	Khairpur	76.79	2.49	344.36	2.83	762.75
4	Nawab shah	64.81	2.10	302.08	2.48	792.81
5	Hyderabad	57.94	1.88	268.37	2.21	787.86
6	Mirpurkhas/Umarkot	59.02	1.91	258.74	2.13	745.73
7	N.Feroze	39.30	1.27	174.33	1.43	754.58
8	Sukkur	35.70	1.16	151.37	1.24	721.11
9	Dadu	14.52	0.47	63.27	0.52	741.13
10	Jacobabad	6.14	0.20	23.58	0.19	653.18
11	Larkana	5.43	0.18	21.58	0.18	673.57
12	Badin	4.27	0.14	17.19	0.14	684.21
13	Shikarpur	3.66	0.12	14.23	0.12	661.54
14	Thatta	0.58	0.02	2.15	0.02	634.83
15	Tharparkar	0.44	0.01	1.61	0.01	623.71
	SINDH Sub-total	605.43	19.6	2729.16	22.4	766.71
	NWFP Sub-total	2.10	0.15	5.10	0.06	242.47
	BALOCH. Sub-total	37.80	1.23	96.13	0.79	432.56
	PAKISTAN Total	**3079.60**	**100.00**	**12169.52**	**100.00**	**671.65**

Note:
1. Data have been arranged in descending order of production.
2. Percentage share calculated on the basis of country total.
3. Districts in which Seed Cotton is not grown or for which the data are not availabl are excluded.

Source: Provincial Agriculture Departments.

ANNEX-IV

AVERAGE FARMERS' COST OF PRODUCTION ESTIMATES OF SEED COTTON IN THE PUNJAB: 2005-06 AND 2006-07 CROPS

S. No.	Operations / Inputs	Average No. of oprs/units/ acre	2005-06 crop Cost per unit	2005-06 crop Cost per acre	2006-07 crop Cost per unit	2006-07 crop Cost per acre	Change in 2006-07 over 2005-6
1	2	3	4	5 = 3 * 4	6	7 = 3 * 6	8 =7-5
				-------Rupees------			
1.	Land preparation:						
	1.1 Deep ploughing	0.228	425.00	96.90	500.00	114.00	17.10
	1.2 Rotavator	0.233	465.00	108.35	600.00	139.80	31.46
	1.3 Ploughing	3.200	155.00	496.00	200.00	640.00	144.00
	1.4 Planking	0.421	75.00	31.58	100.00	42.10	10.53
	1.5 Ploughing+planking	1.341	155.00	207.86	200.00	268.20	60.35
	1.6 Levelling (tractor hrs)	0.537	205.00	110.09	250.00	134.25	24.17
2.	Seed and sowing operations:						
	2.1 Seed (kgs)	7.643	52.00	397.44	52.00	397.44	0.00
	2.2 Sowing:						
	2.2.1 Ploughing+planking	0.394	155.00	61.07	200.00	78.80	17.73
	2.2.2 Ridging	0.228	155.00	35.34	200.00	45.60	10.26
	2.2.3 Drilling	0.772	155.00	119.66	200.00	154.40	34.74
	2.2.4 Manual labour for sowing, bund making and gap filling (m.days)	0.369	120.00	44.28	125.00	46.13	1.85
3.	Irrigation: * (Nos)						
	3.1 Canal	2.156	-	85.00	-	85.00	0.00
	3.2 Private tubewell	1.706	300.00	511.80	418.00	713.11	201.31
	3.3 Mixed	2.739	230.00	629.97	320.00	876.48	246.51
	3.4 Labour for irrigation and water course cleaning (m.days)	3.462	120.00	415.44	125.00	432.75	17.31
4.	Interculture:						
	4.1 With tractor	2.640	155.00	409.20	200.00	528.00	118.80
	4.2 Manual weeding/thining (m.days)	4.600	120.00	552.00	125.00	575.00	23.00
5.	Plant Protection including application (weedicides + pesticides)	5.769	490.00	2826.81	492.00	2838.35	11.54
6.	Farm Yard Manure including transport and application 50% (trolly load)	-	-	155.00	-	180.00	25.00
7.	Fertilizers: (bags)						
	7.1 DAP	0.731	1053.00	769.74	1104.00	807.02	37.28
	7.2 SSP	0.071	374.00	26.55	378.00	26.84	0.28
	7.3 SOP	0.029	946.00	27.43	1191.00	34.54	7.11
	7.4 NPK	0.046	935.00	43.01	1177.00	54.14	11.13
	7.5 Urea	2.297	455.00	1045.14	503.00	1155.39	110.26
	7.6 CAN	0.224	313.00	70.11	378.00	84.67	14.56
	7.7 NP	0.069	715.00	49.34	714.00	49.27	-0.07
	7.8 Fertilizer transport and application	3.467	20.00	69.34	22.00	76.27	6.93
8.	Mark up on investment @ 9 % per annum for 8 months on items 1 to 7 minus 3(1)	-	-	496.50	-	629.55	133.05
9.	Management charges for 8 months	-	-	368.00	-	405.00	37.00
10.	Land rent for 8 months	-	5000.00	3333.33	5500.00	3666.67	333.33
11.	Average weighted land tax @ Rs 131/acre/annum for 8 months	-	131.00	87.33	131.00	87.33	0.00
12.	Land revenue including local rate, chaukidara, etc.	-	-	5.00	-	5.00	0.00
13.	Payment to pickers (Rs/ 40 kgs)	17.400	70.00	1218.00	80.00	1392.00	174.00
14.	Cutting of cotton sticks	-	-	200.00	-	250.00	50.00
15.	Gross cost (item 1 to 14)	-	-	15102.60	-	17013.10	1910.50
16.	Value of cotton sticks	-	-	200.00	-	250.00	50.00
17.	Net cultivation cost (item 15-16)	-	-	14902.60	-	16763.10	1860.50
18.	Yield per acre (kgs)	-	-	696.00	-	696.00	-
19.	Cost of production at farm level: (Rs/40 kgs)						
	19.1 Including land rent	-	-	856.47	-	963.40	106.93
	19.2 Excluding land rent	-	-	664.90	-	752.67	87.77
20	Marketing expenses (Rs/40 kgs)	-	-	20.00	-	22.00	2.00
21	Cost of production at market/ginnery: (Rs/40 kgs)						
	21.1 Including land rent	-	-	876.47	-	985.40	108.93
	21.2 Excluding land rent	-	-	684.90	-	774.67	89.77

Note: Mark-up for 2005-06 crop is @ 8 per cent per annum.

ANNEX-V

AVERAGE FARMERS' COST OF PRODUCTION ESTIMATES OF SEED COTTON IN SINDH: 2005-06 AND 2006-07 CROPS

S. No.	Operations / Inputs	Average No. of oprs/units/ acre	2005-06 crop		2006-07 crop		Change in 2006-07 over 2005-6
			Cost per unit	Cost per acre	Cost per unit	Cost per acre	
1	2	3	4	5 = 3 * 4	6	7 = 3 * 6	8 = 7-5
			-------Rupees------				
1.	Land preparation:						
	1.1 Deep ploughing	0.553	500.00	276.50	650.00	359.45	82.95
	1.2 Ploughing	2.071	250.00	517.75	325.00	673.08	155.33
	1.3 Planking	0.030	125.00	3.75	160.00	4.80	1.05
	1.4 Ploughing+planking	1.333	250.00	333.25	325.00	433.23	99.98
	1.5 Levelling (tractor hrs)	0.859	250.00	214.75	325.00	279.18	64.43
2.	Seed and sowing operations:						
	2.1 Seed (kgs)	10.279	50.00	513.95	50.00	513.95	0.00
	2.2 Sowing:						
	2.2.1 Ploughing + planking	0.160	250.00	40.00	325.00	52.00	12.00
	2.2.2 Ridging	0.236	250.00	59.00	325.00	76.70	17.70
	2.2.3 Drilling	0.763	250.00	190.75	325.00	247.98	57.23
	2.2.4 Manual labour for sowing, bund making and gap filling (m. days)	0.988	120.00	118.56	125.00	123.50	4.94
3.	Irrigation: * (Nos)						
	3.1 Canal	3.148	-	93.09	-	93.09	0.00
	3.2 Private tubewell	2.454	200.00	490.80	260.00	638.04	147.24
	3.3 Mixed	0.413	176.00	72.69	230.00	94.99	22.30
	3.4 Lift irrigation	0.251	43.00	10.79	56.00	14.06	3.26
	3.5 Labour for irrigation and water course cleaning (m.days)	3.732	120.00	447.84	125.00	466.50	18.66
4.	Interculture:						
	4.1 With tractor	0.524	250.00	131.00	325.00	170.30	39.30
	4.2 With bullocks	1.259	250.00	314.75	325.00	409.18	94.43
	4.3 Manual weeding/thining (m.days)	4.700	120.00	564.00	125.00	587.50	23.50
5.	Plant Protection including application (weedicides + pesticides)	4.200	450.00	1890.00	452.00	1898.40	8.40
6.	Farm Yard Manure including transport and application 50 % (trolly load)	-	-	115.00	-	135.00	20.00
7.	Fertilizers: (bags)						
	7.1 DAP	0.893	1047.00	934.97	1077.00	961.76	26.79
	7.2 TSP	0.009	822.00	7.40	818.00	7.36	-0.04
	7.3 Urea	1.834	452.00	828.97	492.00	902.33	73.36
	7.4 CAN	0.016	325.00	5.20	410.00	6.56	1.36
	7.5 AS	0.010	390.00	3.90	750.00	7.50	3.60
	7.6 NPK	0.042	877.00	36.83	1105.00	46.41	9.58
	7.7 NP	0.076	780.00	59.28	725.00	55.10	-4.18
	7.8 Fertilizer transport and application	2.880	20.00	57.60	22.00	63.36	5.76
8.	Mark up on investment @ 9 % per annum for 8 months on items 1 to 7 minus 3(1)	-	-	439.43	-	553.69	114.26
9.	Management charges for 8 months		-	368.00	-	405.00	37.00
10.	Land rent for 8 months	-	5000.00	3333.33	5500.00	3666.67	333.33
11.	Land revenue including local rate, chaukidara, etc.	-	-	5.00	-	5.00	0.00
12.	Land tax @ Rs 200/acre/annum for 8 months	-	200.00	133.33	200.00	133.33	0.00
13.	Drainage cess @ Rs 24/acre/annum for 8 months	-	24.00	16.00	24.00	16.00	0.00
14.	Payment to pickers (Rs/ 40 kgs)	15.190	80.00	1215.20	90.00	1367.10	151.90
15.	Cutting of cotton sticks	-	-	310.00	-	350.00	40.00
16.	Gross cost (item 1 to 15)	-	-	14152.67	-	15818.07	1665.41
17.	Value of cotton sticks	-	-	310.00	-	350.00	40.00
18.	Net cultivation cost (item 16-17)	-	-	13842.67	-	15468.07	1625.41
19.	Yield per acre (kgs)	-	-	700.00	-	700.00	0.00
20.	Cost of production at farm level: (Rs/40 kgs)						
	20.1 Including land rent	-	-	791.01	-	883.89	92.88
	20.2 Excluding land rent	-	-	600.53	-	674.37	73.83
21.	Marketing expenses (Rs/40 kgs)	-	-	22.00	-	24.00	2.00
22.	Cost of production at market/ginnery: (Rs/40 kgs)						
	22.1 Including land rent	-	-	813.01	-	907.89	94.88
	22.2 Excluding land rent	-	-	622.53	-	698.37	75.83

Note: Mark-up for 2005-06 crop is @ 8 per cent per annum.

Notes for Annex-IV and V:

1. The physical input-output parameters for estimating cost of production of Seed Cotton, 2006-07 Crop, have been adopted from the Support Prices Policy for Seed Cotton, 2005-06 Crop, APCom Series No 213.

2. The custom hire rates of field operations, inputs prices, labour wage rate, transportation cost and picking charges have been revised in the light of data collected through mini field survey conducted by the APCom during November 2005 in the major cotton growing areas of the Punjab and Sindh, discussion made and information provided by the Provincial Agriculture Departments and Farmers' Association in the meeting of the Standing Committee on Seed Cotton, held on 5th December 2005 at Islamabad.

3. The material cost (90 %) of plant protection has not been increased in light of the information that the increasing trend in the prices of pesticides, insecticides etc. has been arrested on account of new generic and low cost pesticides and insecticides. However, the cost of labor component (10 %) of the total cost has been revised in light of new wage rate.

4. The cost of supplementary irrigation has been revised in view of the rise @ 43 per cent in the prices of diesel during December 2004 to December 2005. Based on the ratios of electric and diesel tube-wells of 09: 91 in the Punjab and 31:69 in Sindh as reported in the Agriculture Statistics of Pakistan, 2003-04, MINFAL (Economic Wing), Islamabad, the average increases worked out to 39 per cent in the Punjab and 30 per cent in Sindh.

5. The prices of chemical fertilizers have been revised in light of the fertilizers prices published by the Federal Bureau of Statistics, Islamabad for the week ending on December 1st, 2005 and supplemented with the data obtained through the field survey as mentioned above.

6. The cost of FYM has been increased in line with increases in the price of fertilizer, diesel and wage rate.

7. The land rent is affected by several parameters and substantially varies from field to field. For updating the land rentals, there is no precise measure available at hand. However, keeping in view the observations obtained during the field survey of seed cotton and discussion made in the meeting of the APCom's Standing Committee on Seed Cotton, land rentals have been adjusted accordingly.

ANNEX - VI

ECONOMICS OF SEED COTTON AND COMPETING CROPS AT PRICES REALIZED BY THE GROWERS: 2005-06 CROPS

Province / crops / crop combination	Crop duration	Water used	Gross cost	Cost of purchased inputs	Gross revenue	Gross margin	Net income	Output-input ratio	Revenue per Rupee of purchased inputs	Revenue per Crop day	Revenue per Acre inch of water used
1	2	3	4	5	6	7=6-5	8=6-4	9=6/4	10=6/5	11=6/2	12=6/3
	Days	Acre inches	...Rupees per acre...						......Rupees......		
Punjab											
1 Seed cotton	240	22	15462	7308	17704	10396	2243	1.15	2.42	73.77	804.75
2. Sugarcane	394	48	21691	7583	27834	20251	6142	1.28	3.67	70.64	579.87
3. Basmati paddy	180	58	12540	7231	11649	4418	-891	0.93	1.61	64.72	200.85
4. IRRI paddy	180	62	10534	6041	10331	4290	-203	0.98	1.71	57.39	166.63
5. Wheat	180	12	12778	5435	12080	6645	-698	0.95	2.22	67.11	1006.67
6. Sunflower (spring)	144	22	10185	2850	10125	7275	-60	0.99	3.55	70.31	460.23
7. Seed cotton + wheat	420	34	28240	12744	29784	17041	1544	1.05	2.34	70.92	876.01
8. Seed cotton + sunflower	384	44	25647	10158	27829	17671	2183	1.09	2.74	72.47	632.49
9. Basmati paddy+wheat	360	70	25319	12666	23729	11063	-1590	0.94	1.87	65.91	338.99
10. Basmati paddy+sunflower	324	80	22725	10081	21774	11693	-951	0.96	2.16	67.20	272.18
11. IRRI paddy + wheat	360	74	23312	11477	22411	10934	-902	0.96	1.95	62.25	302.85
12. IRRI paddy+sunflower	324	84	20719	8891	20456	11565	-263	0.99	2.30	63.14	243.52
Sindh											
1 Seed cotton	240	18	14310	5602	17093	11490	2783	1.19	3.05	71.22	949.58
2. Sugarcane	488	71	27153	9478	33247	23769	6093	1.22	3.51	68.13	468.26
3. IRRI paddy	180	56	9187	4232	10208	5976	1021	1.11	2.41	56.71	182.29
4. Wheat	180	12	10622	4443	10678	6235	56	1.01	2.40	59.32	889.84
5. Sunflower (spring)	144	22	10185	2850	10125	7275	-60	0.99	3.55	70.31	460.23
6. Seed cotton + wheat	420	30	24932	10045	27771	17726	2839	1.11	2.76	66.12	925.69
7. Seed cotton + sunflower	384	40	24494	8452	27218	18765	2723	1.11	3.22	70.88	680.44
8. IRRI paddy+wheat	360	68	19810	8675	20886	12211	1076	1.05	2.41	58.02	307.15
9. IRRI paddy+sunflower	324	78	19372	7082	20333	13251	961	1.05	2.87	62.76	260.68

Notes for Annexes - VI

1. The economic analysis presented in the above exercise is based on the input-output prices applicable for 2005-06 crops.

2. The data regarding input-output parameters have been adopted from the APCom's support price policy papers for sugarcane, seed cotton, rice paddy and wheat, 2005-06 crops. However, the relevant data for sunflower and canola were adopted from the last support price policy for non-traditional oilseeds, 2000-01 crops with necessary adjustments in input prices for updating costs and incomes for the 2005-06 crops. To incorporate the escalations in input prices which occurred during the growing period of 2005-06 crops, some marginal revisions have been made as under:

    2.1 The cost of supplementary irrigation has been adjusted in view of rise in power tariff and diesel prices and ratio of electric and diesel tubewells at 10:90 in the Punjab and at 41:59 in Sindh. Accordingly, the weighted average increase in energy charges works to 9.75 per cent in Punjab and 6.40 per cent in Sindh for sugarcane, 19.60 per cent in the Punjab and 12.85 per cent in Sindh for seed cotton and 15.56 per cent in the Punjab and 11.80 per cent in Sindh for wheat.

    2.2 The cost of fertilizers has been revised in view of their prices prevailed at the time of application for the respective crops in 2005-06 season.

3. Water use has been estimated from the number of irrigations as reported in the cost of production estimates of the respective crops assuming each irrigation of 3 inches and 'rauni' of 4 inches.

4. The following prices as realized by the growers for different crops are adopted for the analysis:

    4.1 As the wheat crop is yet to be harvested, the support price of Rs 415 per 40 kgs for 2005-06 crop has been adopted for the current analysis.

    4.2 The wholesale market prices of basmati paddy and IRRI paddy during the post harvest period in major producer area markets reported by the Directorate of Agriculture (E&M), Lahore have averaged at Rs 492 and Rs 306 per 40 kgs, respectively. While, the average price of IRRI paddy in Sindh is reported at Rs 275 per 40 kgs by the Joint Director, Directorate of Agriculture Extension, Hyderabad.

    4.3 The wholesale market prices of seed cotton during the post-harvest months of Aug - Nov 2005-06 in the main producer area markets have averaged at Rs 1047 per 40 kgs in the Punjab as reported by the Directorate of Agriculture (E&M), Lahore. In Sindh, the corresponding prices are reported by the PCCC, Karachi during September and October to average at Rs 1028 per 40 kgs.

4.4 The sunflower price for 2005-06 crop is yet to be harvested. However, it was reported by the PODB Islamabad that All Pakistan Solvent Extraction Association would purchase sunflower at Rs 690 per 40 kgs during the season.

4.5 The market prices of sugarcane are not available from any agency. However, the mill-gate prices in the major cane producing areas are reported to hover around Rs 55 per 40 kgs in the Punjab and Sindh as per telephonic information from the field.

5. The market prices have been adjusted for the marketing expenses to make them effective at the farm level. These expenses amount to Rs 5.75 per 40 kgs in Punjab and Rs 5.82 in Sindh for sugarcane, Rs 20 in Punjab and Rs 22 in Sindh for seed cotton, Rs 15 for rice paddy, wheat and oilseeds.

6.	Gross income	=	(Yield per acre <u>multiplied by</u> price of principal produce at farm gate) <u>plus</u> (value of by-products per acre).
7.	Cost of purchased inputs	=	Cost incurred on seed and related items, fertilizer, supplementary irrigation including labour, canal water rate, pesticides and weedicides.
8.	Gross margin	=	Gross income <u>minus</u> cost of purchased inputs.
9.	Net income	=	Gross income <u>minus</u> gross cost.
10.	Output-input ratio	=	Gross income <u>divided by</u> gross cost
11.	Revenue per rupee of purchased inputs cost	=	Gross income <u>divided by</u> cost of purchased inputs
12.	Revenue per crop day	=	Gross income <u>divided by</u> crop duration in days.
13.	Revenue per acre-inch water used	=	Gross income <u>divided by</u> irrigation water of used in acre inches.

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ANNEX-VII

PROFITABILITY OF FERTILIZER USE ON SEED COTTON AT THE MARKET PRICE: 2005-06

S.No	Item	Seed Cotton Nutrient Ratio of			
		3.00:1	3.75:1	4.50:1	5.25:1
		------Kgs------			
1	Yield increase due to use of additional 10 nutrient kgs of fertilizer per acre	30.00	37.50	45.00	52.50
		----------Rupees----------			
2.	Direct cost of 10 kgs of NPK fertilizer at the weighted average price of Rs 29.1 per nutrient kg (i.e. Rs 19.7, 37.9 and 38.9 per nutrient kg of N, P and K at the recommended NPK ratio of 2:1:1 (a)	291.0	291.0	291.0	291.0
3	Indirect cost due to the application of additional fertilizer as detailed below (b)	95.6	113.5	131.5	149.5
	3.1 Transportation and application charges of 19.15 kgs of fertilizer @ Rs 20.0 per bag of fertilizer	7.7	7.7	7.7	7.7
	3.2 Picking charges for additional produce @ Rs 75.0 per 40 kgs	56.3	70.3	84.4	98.4
	3.3 Marketing charges for additional produce @ Rs 21.0 per 40 kgs	15.8	19.7	23.6	27.6
	3.4 Mark up on direct cost of fertilizer (item 2+3.1) for 8 months @ 8% per annum	15.8	15.8	15.8	15.8
4	Total additional cost (item 2+3)	386.6	404.5	422.5	440.5
5	Value of additional produce @ Rs 1003 per 40 kgs (c)	752.2	940.3	1128.4	1316.4
6	Benefit cost ratio (item 5 divided by item 4)	1.95	2.32	2.67	2.99

Notes:

(a) The prices of N, P and K have been worked out from average of the prices of Urea, DAP, SOP and NPK used in COP estimates of the Punjab and Sindh for 2005-06 crop taken respectively as Rs 453.50,1050,946 and 877 per bag of 50 kgs each.

(b) The rates of indirect cost items are the average of the rates used in the COP estimates of the Punjab and Sindh for 2005-06 Crop.

(c) Average of the market price of 2005-06 crop for different varieties exclusive of "Desi" varieties for the period September, 2005 to November, 2005 have been used.

ANNEX- VIII

CIF NORTH EUROPE PRICES OF VARIOUS COTTONS: 1995-96 to 2005-06

Years Aug-Jul	Sindh/ Punjab Afzal 1-1/32"	Index- B Cottons	Orleans/ Texas SLM 1-1/32"	Difference between Sindh/ Punjab Afzal 1-1/32" and	
				Index- B Cottons	Orleans/Texas SLM 1-1/32"
		US Cents per pound			
1995-96	82.17	81.19	88.02	0.98	-5.85
1996-97	75.83	74.85	77.22	0.98	-1.39
1997-98	72.28	71.00	72.16	1.28	0.12
1998-99	51.28 *	54.30	67.46	-3.02	-16.18
1999-00	47.23	49.55	50.19	-2.32	-2.96
2000-01	56.78	53.70	53.57	3.08	3.21
2001-02	38.41	38.95	39.05	-0.54	-0.64
2002-03	51.36	51.42	51.16	-0.06	0.20
2003-04	60.00 *	63.17	65.85	-3.17	-2.68
2004-05	46.10	51.19	51.19	-5.09	0.00
2005-06	52.95	53.89	55.08	-0.93	-1.19
August	N.Q	52.45	52.81	-	-
September	50.50	52.65	54.80	-2.15	-2.15
October	53.92	55.75	58.00	-1.83	-2.25
November	54.44	54.70	54.70	-0.26	0.00

Note * Not quoted during the year, however, interpolated from the historical differential data.

Sources:

1. For 1995-96: Support Price Policy for Seed Cotton, 1997-98 Crop.
2. For 1996-97: Reuters.
3. For 1997-98: (i) Cotton Outlook (various issues) for Sindh/Punjab Afzal 1-1/32"
   (ii) Index - B Cottons
4. For 1999-00 to 2005-06 Cotton Outlook (various issues).
5. For Orleans Texas SLM 1-1/32" from 1992- 93 to 2005-06 Cotton Outlook (various issues).

ANNEX-IX

PRICE OF SEED COTTON AS WORKED BACK FROM COTTON YARN (21's) PRICE AT KARACHI (AUGUST TO NOVEMBER 2005)

		Rupees
1	Average price of cotton yarn (21's) per bundle of 4.54 kgs	463
2	Average price of cotton yarn (21's) per kg	102
3	Recovery from sale of 0.16 kgs of cotton waste	2
4	Conversion charges from lint to yarn per kg	33
5	Value of 1.16 kgs of lint (item 2 + 3 minus item 4) (a)	71
6	Value of one kg of lint (item 5 divided by 1.16)	61
7	Value of 40 kgs lint (item6 into 40 kgs)	2448
8	Storage and transport cost from gin to mill per 40 kgs	40
9	Ex-gin price of 40 kgs lint (item 7 minus 8)	2408
10	Value of 80 kgs of cotton seed (b)	782
11	Ginning charges for 120 kgs seed cotton	350
12	Seed cotton price for 120 kgs (item 11+12 minus item 13) (c)	2840
13	Seed cotton price per 40 kgs (item 14 divided by 3)	947

Notes:

(a) 1.16 kgs of lint = 1 kg of yarn + 0.16 kgs of waste

(b) Average price of cotton seed for the period August 05, to 19th December, 2005 at Multan market was Rs 391 per 40 kgs.

(c) 120 kgs of seed cotton = 80 kgs of cotton seed + 40 kgs of lint

Sources:

1. Karachi Cotton Association (KCA), Karachi.
2. Pakistan Central Cotton Committee (PCCC), Karachi.
3. Pakistan Cotton Ginner's Association (PCGA), Karachi
4. All Pakistan Textile Mills Association (APTMA), Karachi.

EXPORT PARITY PRICE OF SEED COTTON AS WORKED BACK FROM ACTUAL AVERAGE EXPORT PRICE OF PAKISTANI COTTON

S.No	Item	2004-05	2000-01 to 2004-05
		US Cents per pound	
1.	Actual average export price	44.40	45.40
		OR Rupees (a)	
	Actual average export price per 40 Kgs	2341	2393
2.	Marketing expenses (export & purchase incidentals, insurance & financial expenses) per 40 Kgs	170	170
3.	Ex- gin price of lint per 40 Kgs (item 1- item 2).	2171	2223
4.	Value of 80 kgs of cotton seed (b)	782	782
5.	Ginning charges for 120 kgs of seed cotton	350	350
6.	Value of 120 kgs of seed cotton (c) (items 3 +4 - item 5)	2603	2655
7.	Seed cotton price per 40 kgs (item 6 / 3)	868	885

Notes:
a) Buying exchange rate one US $ = 59.78 Pak rupees, announced by State Bank of Pakistan as on December 23, 2005.

b) Average price of cotton seed for the period August 05, to 19th December, 2005 at Multan market was Rs 391 per 40 kgs.

c) 120 kgs of seed cotton = 80 kgs of cotton seed + 40 kgs of lint.

Sources:
1. FBS , for export prices.
2. KCA, Karachi for marketing expenses.
3. Pakistan Cotton Ginners Association, Karachi for ginning charges.
4. Pakistan Central Cotton Committee, Karachi for cotton seed price.

ANNEX - XI

EXPORT PARITY PRICE OF SEED COTTON AS WORKED BACK FROM THE CIF NORTH EUROPE QUOTATIONS OF INDEX B COTTONS AND PAKISTANI AFZAL 1-1/32"

S.No	Item	Index B Cottons		Afzal 1-1/32"	
		2005-06 Aug - Nov	2000-01 to 2004-05	2005-06 Aug - Nov	2000-01 to 2004-05
		------------ US Cents per pound			------------
1	Average cif North Europe quotations	53.89	51.69	52.95	50.53
2.	Freight charges	4.50	4.50	4.50	4.50
3.	Export price (item 1 - item 2)	49.39	47.19	48.45	46.03
4.	Insurance, agents commission, and port handling charges @ 4% of export price	1.98	1.89	1.94	1.84
5.	Net export price (item 3 - item 4)	47.41	45.30	46.51	44.19
		OR ---------------	Rupees (a)		----------------
		2500	2388	2452	2329
6.	Marketing expenses (export & purchase incidentals, insurance & financial expenses) per 40 kgs	175	175	175	175
7.	Ex- gin price of lint per 40 kgs (item 5 - item 6)	2325	2213	2277	2154
8.	Value of 80 kgs of cotton seed (b)	782	782	782	782
9.	Ginning charges for 120 kgs of seed cotton	350	350	350	350
10.	Value of 120 kgs of seed cotton (c) (items 7 + 8 - item 9)	2757	2645	2709	2586
11.	Seed cotton price per 40 kgs (item 10 / 3)	919	882	903	862

Notes:

a) Buying exchange rate one US $ = 59.78 Pak rupees, announced by State Bank of Pakistan as on December 23, 2005.

b) Average price of cotton seed for the period August 05, to 19th December, 2005 at Multan market was Rs 391 per 40 kgs.

c) 120 kgs of seed cotton = 80 kgs of cotton seed + 40 kgs of lint.

Sources:

1. Cif quotations calculated from Annex- VIII.
2. KCA, Karachi for marketing expenses.
3. Pakistan Cotton Ginners Association, Karachi for ginning charges.
4. Pakistan Central Cotton Committee Karachi, for cotton seed price.

ANNEX- XII

EXPORT PARITY PRICE OF SEED COTTON AS WORKED BACK FROM THE FUTURE'S CONTRACT PRICE OF NEW YORK NO. 2 COTTON (AVERAGE OF OCTOBER, 2006 AND DECEMBER, 2006)

S.No	Item	Price calculations
		US Cents per pound
1.	Future's contract price as on December 14, 05	56.65
2.	Grade and staple discount	4.60
3.	Discount on account of inland transportation and certification of stocks	6.00
4.	Parity price of Afzal 1-1/32" at Karachi	46.05
		OR Rupees (a)
	Parity prices per 40 kgs	2428
5.	Marketing expenses (export & purchase incidentials, insurance & financial expenses per 40 kgs	170
6.	Ex- gin price of lint per 40 kgs (item 4 - item 5)	2258
7.	Value of 80 kgs of cotton seed (b)	782
8.	Ginning charges for 120 kgs of seed cotton	350
9.	Value of 120 kgs of seed cotton (c) (items 6 + 7 - item 8)	2690
10.	Seed cotton price per 40 kgs (item 9 / 3)	897

Notes:

a) Buying exchange rate one US $ = 59.78 Pak rupees, announced by State Bank of Pakistan as on December 23, 2005.

b) Average price of cotton seed for the period August 05, to 19th December, 2005 at Multan market was Rs 391 per 40 kgs.

c) 120 kgs of seed cotton = 80 kgs of cotton seed + 40 kgs of lint.

Sources:

1. Cotton Outlook of Dec, 3, 2004 for future contract price.
2. KCA, Karachi for marketing expenses.
3. Pakistan Cotton Ginners Association, Karachi for ginning charges.
4. Pakistan Central Cotton Committee, Karachi for cotton seed price.

ANNEX - XIII

EXPORT PARITY PRICE OF SEED COTTON AS WORKED BACK FROM THE AVERAGE FOB PRICE OF PAKISTANI COTTON YARN (20'S)

S.No	Item	2005-06 Aug - Nov	2000-01 to 2004-05
		US Cents per kg	
1.	Average fob price	177.00	178.00
		OR Rupees	(a)
		106	106
2.	Fob expenses per kg (transport cost, wharfage, port handling & forwarding, adhesive & EDS)	2	2
3.	Export packing cost per kg	1	1
4.	Sales tax	13	13
5.	Value of 1 kg yarn (item 1 - (items 2 + 3)	89	90
6.	Recovery from 0.16 kgs cotton waste	2	2
7.	Conversion charges of lint into yarn per kg	33	33
8.	Value of 1.16 kgs cotton lint (b) (items 4 +5 -item 6)	58	59
9.	Price of one kg cotton lint (item7/1.16)	50	51
	OR		
	Price of 40 kgs cotton lint	2014	2032
10.	Transport cost from ginnery to mill, local tax(per 40kgs)	40	40
11.	Ex-gin price of 40 kgs lint (item 8 - item 9)	1974	1992
12.	Value of 80 kgs cotton seed (c)	782	782
13.	Ginning charges for 120 kgs of seed cotton	350	350
14.	Seed cotton price of 120 kgs (item10+11- item12) (d)	2406	2424
	OR		
15.	Seed cotton price per 40 kgs (item 13/3)	802	808

Notes:

a) Buying exchange rate' one US $ = 59.78 Pak rupees, announced by State Bank of Pakistan as on December 23, 2005.

b) 1.16 kgs of lint = 1 kg of yarn +0.16 kgs of waste.

c) Average price of cotton seed for the period August 05, to 19th December, 2005 at Multan market was Rs 391 per 40 kgs.

d) 120 kgs of seed cotton = 80 kgs of cotton seed + 40 kgs of lint.

Sources:

1. Cotton Outlook varuios issues for fob price.
2. APTMA, Karachi for items, 2, 3 and 9.
3. Annex X for items 5 and 6.
4. Pakistan Cotton Ginners Association, Karachi for ginning charges.
5. Pakistan Central Cotton Committee Karachi, for cotton seed price.

ANNEX- XIV

IMPORT PARITY PRICE OF SEED COTTON AS WORKED BACK FROM THE AVERAGE QUOTED CIF NORTH EUROPE PRICE OF ORLEANS/ TEXAS SLM 1-1/32"

S. No	Item	2005-06 (Aug-Nov)	2000-01 to 2004-05
		US cent per pound	
1.	Average cif North Europe quotations	55.08	52.16
2.	Freight charges	4.50	4.50
3.	Forwarding charges @ 1.5% cif (North Europe Quotations)	0.83	0.78
4.	Cif (Karachi) price	60.41	57.44
5.	Insurance, agents commission, and port handling charges @ 1.5% of cif (Karachi) price	0.91	0.86
6.	Landed cost at Karachi	61.31	58.30
		OR Rupees per 40 kgs (a)	
7.	Net cif (Karachi) price	3243	3084
8.	Handling charges at port and transport cost from port to textile mills at Karachi @ 2.5 % of cif price	81	77
9.	Ex- gin price of lint (item 7 + item 8)	3324	3161
10.	Value of 80 kgs of cotton seeds (b)	782	782
11.	Ginning charges for 120 kgs of seed cotton including ginning losses	350	350
12.	Value of 120 kgs of seed cotton (item 9 +item 10 - item 11)	3756	3593
13.	Seed cotton price per 40 kgs (item 12/ 3)	1252	1198

Notes:

a) Buying exchange rate one US $ = 59.98 Pak rupees, announced by State Bank of Pakistan as on December 23, 2005.

b) Average price of cotton seed for the period August 2005 to 19th December 2005 at Multan was Rs 391 per 40 kgs.

Sources:

1. Cif (Noth Europe) price Annex - VIII.
2. KCA, for incidentals charges.
3. Pakistan Cotton Ginners Association, Karachi for ginning charges.
4. Pakistan Central Cotton Committee, Karachi for cotton seed price

ANNEX- XV

IMPORT PARITY PRICE OF SEED COTTON AS WORKED BACK FROM THE ACTUAL AVERAGE CIF (KARACHI) PRICE OF IMPORTED COTTON

S. No	Item	2004-05	2000-01 to 2004-05
		Rupees per 40 kgs	
1.	Actual average cif (Karachi) price	3252	3254
2.	Handling charges at port and transport cost from port to textile mill at Karachi @ 2.5 % of cif price	81	81
3.	Ex- gin price of lint (Item 1+ item 2)	3333	3335
4.	Value of 80 kgs of cotton seed (a)	782	782
5.	Ginning charges for 120 kgs of seed cotton including ginning losses	350	350
6.	Value of 120 kgs of seed cotton (item 3 +item 4 - item 5)	3765	3767
7.	Seed cotton price (item 6/ 3)	1255	1256

Note: a) Average price of cotton seed for the period August 2005 to 19th December 2005 at Multan was Rs 391 per 40 kgs.

Sources:
1. FBS, for cif (Karachi price).
2. KCA, for incidentals charges.
3. Pakistan Cotton Ginners Association, Karachi for ginning charges.
4. Pakistan Central Cotton Committee, Karachi for cotton seed price

ANNEX-XVI

ECONOMIC EFFICIENCY OF RESOURCE USE IN SEEDCOTTON IN PUNJAB

(POLICY ANALYSIS MATRIX)

Rupees per acre

Province/Year	Gross Revenue	Traded cost	Domestic Factors Cost	Profits
	Based on Export parity prices			
2002-03				
Private Prices	15043	5780	7089	2174
Social Prices	15278	4766	6529	3983
Transfers	-235	1014	560	-1809
2003-04				
Private Prices	21751	6383	7215	8154
Social Prices	17861	5192	6646	6022
Transfers	3891	1190	569	2131
2004-05				
Private Prices	15549	6978	7726	846
Social Prices	16141	5773	7156	3212
Transfers	-592	1205	571	-2367
2005-06				
Private Prices	17704	7341	7818	2545
Social Prices	16156	6025	7354	2777
Transfers	1549	1317	464	-232
Average				
Private Prices	15972	5949	6899	3124
Social Prices	14812	5027	6383	3402
Transfers	1160	923	516	-278
	Based on Import parity prices			
2002-03				
Private Prices	15043	5780	7089	2174
Social Prices	20074	4881	6540	8653
Transfers	-5031	899	549	-6479
2003-04				
Private Prices	21751	6383	7215	8154
Social Prices	23764	5290	6655	11819
Transfers	-2012	1093	560	-3665
2004-05				
Private Prices	15549	6978	7726	846
Social Prices	20978	5893	7022	8063
Transfers	-5429	1084	704	-7217
2005-06				
Private Prices	17704	7341	7818	2545
Social Prices	21567	6148	7365	8054
Transfers	-3863	1194	453	-5509
Average				
Private Prices	17476	6380	7343	3753
Social Prices	21619	5351	6739	9530
Transfers	-4143	1030	604	-5777

ANNEX-XVII

ECONOMIC EFFICIENCY OF RESOURCE USE IN SEEDCOTTON IN SINDH
(POLICY ANALYSIS MATRIX)

Rupees per acre

Province/Year	Gross Revenue	Traded cost	Domestic Factors Cost	Profits
	Based on Export parity prices			
2002-03				
Private Prices	12860	4585	6017	2259
Social Prices	13839	3814	5616	4408
Transfers	-979	771	401	-2150
2003-04				
Private Prices	17167	4823	6111	6233
Social Prices	16158	3949	5722	6487
Transfers	1009	874	389	-254
2004-05				
Private Prices	13728	5807	6269	1652
Social Prices	14214	4802	5699	3714
Transfers	-486	1006	570	-2061
2005-06				
Private Prices	17093	6264	7794	3034
Social Prices	16358	5129	7424	3805
Transfers	735	1135	370	-770
Average				
Private Prices	13700	4895	5968	2837
Social Prices	13254	4144	5573	3536
Transfers	447	751	395	-699
	Based on Import parity prices			
2002-03				
Private Prices	12860	4585	6017	2259
Social Prices	18146	3814	5616	8716
Transfers	-5286	771	401	-6457
2003-04				
Private Prices	17167	4823	6111	6233
Social Prices	21459	3949	5722	11788
Transfers	-4292	874	389	-5555
2004-05				
Private Prices	13728	5807	6269	1652
Social Prices	18437	4802	5699	7937
Transfers	-4709	1006	570	-6284
2005-06				
Private Prices	17093	6264	7794	3034
Social Prices	21800	5129	7424	9247
Transfers	-4708	1135	370	-6213
Average				
Private Prices	14588	5072	6132	3384
Social Prices	19350	4188	5679	9483
Transfers	-4763	883	453	-6099

ANNEX-XVIII

REQUIREMENT AND SUPPLY OF CERTIFIED COTTON SEED BY THE PUBLIC AND PRIVATE SECTORS IN PUNJAB: 1996-97 TO 2005-06

Crop Year	Seed Certified at				Total	Total Requirement	Area covered with certified seed
	NSC standard (a)		Relaxed standard (b)				
	Public	Private	Public	Private			
	---------- Thousand tonnes ----------						Per cent
1996-97	4.50	4.12	-	-	8.62	50.80	17.0
1997-98	7.20	7.50	0.24	5.68	20.62	46.97	43.9
1998-99	0.24	2.65	4.03	8.20	15.12	45.66	33.1
1999-00	0.24	2.88	3.97	6.35	13.44	46.59	28.8
2000-01	3.14	27.85	1.73	-	32.72	47.73	68.6
2001-02	3.30	16.83	-	-	20.13	50.53	39.8
2002-03	5.74	27.98	-	-	33.72	44.17	76.3
2003-04	3.82	23.24	-	-	27.06	47.74	56.7
2004-05	5.35	24.63	-	-	29.98	50.68	59.2
2005-06	4.37	25.92	-	-	30.29	49.20	61.6

Notes:

(a) National Seed Council (NSC) standards has minimum 70 percent germination and 98 per cent purity, and maximum 0.2 per cent off-types.

(b) The relaxed standard varied form year to year depending on the climatic and other specific conditions pertaining to each year.

(c) The total seed requirement for each year has been calculated @ 20 kgs/ha.

Sources:

i) Federal Seed Certification and Registration Department (FSC&RD), MINFAL, Islamabad.

ii) Working Paper for 83rd meeting of FCA

ANNEX-XIX

REQUIREMENT AND SUPPLY OF CERTIFIED COTTON SEED BY THE PUBLIC AND PRIVATE SECTORS IN PUNJAB: 1996-97 TO 2005-06

Crop Year	Seed Certified at				Total	Total Requirement	Area covered with certified seed
	NSC standard (a)		Relaxed standard (b)				
	Public	Private	Public	Private			
	---------- Thousand tonnes ----------						Per cent
1996-97	4.50	4.12	-	-	8.62	50.80	17.0
1997-98	7.20	7.50	0.24	5.68	20.62	46.97	43.9
1998-99	0.24	2.65	4.03	8.20	15.12	45.66	33.1
1999-00	0.24	2.88	3.97	6.35	13.44	46.59	28.8
2000-01	3.14	27.85	1.73	-	32.72	47.73	68.6
2001-02	3.30	16.83	-	-	20.13	50.53	39.8
2002-03	5.74	27.98	-	-	33.72	44.17	76.3
2003-04	3.82	23.24	-	-	27.06	47.74	56.7
2004-05	5.35	24.63	-	-	29.98	50.68	59.2
2005-06	4.37	25.92	-	-	30.29	49.20	61.6

Notes:
(a) National Seed Council (NSC) standards has minimum 70 percent germination and 98 per cent purity, and maximum 0.2 per cent off-types.
(b) The relaxed standard varied form year to year depending on the climatic and other specific conditions pertaining to each year.
(c) The total seed requirement for each year has been calculated @ 20 kgs/ha.

Sources:
i) Federal Seed Certification and Registration Department (FSC&RD), MINFAL, Islamabad.
ii) Working Paper for 83rd meeting of FCA