

**COTTON POLICY ANALYSIS
FOR
2009-10 CROP**

**AGRICULTURE POLICY INSTITUTE
MINISTRY OF FOOD AND AGRICULTURE
GOVERNMENT OF PAKISTAN
ISLAMABAD**

June, 2009

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ABBREVIATIONS

AARI	:	Ayub Agricultural Research Institute
ALMA	:	Agricultural and Livestock Marketing Adviser
API	:	Agriculture Policy Institute
APTMA	:	All Pakistan Textile Mills Association
BCR	:	Benefit Cost Ratio
BPS	:	Basic Pay Scale
CFR	:	Cost and Freight
CIF	:	Cost, Insurance and Freight
CLCV	:	Cotton Leaf Curl Virus
COP	:	Cost of Production
CPI	:	Consumer Price Index
CRI	:	Cotton Research Institute
DAP	:	Di. Ammonium Phosphate
DRC	:	Domestic Resource Cost
ECC	:	Economic Coordination Committee
E&M	:	Economics & Marketing
EPC	:	Effective Protection Coefficient
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
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
ITMF	:	International Textile Mills Forum
KCA	:	Karachi Cotton Association
MINFA	:	Ministry of Food and Agriculture
MOC	:	Ministry of Commerce
NARC	:	National Agricultural Research Centre
NCL	:	No Control Limit
NIAB	:	Nuclear Institute of Agriculture and Biology
NPC	:	Nominal Protection Coefficient
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

SUMMARY OF FINDINGS AND RECOMMENDATIONS

Findings

i) Area and Production

- Punjab and Sindh contribute about 78 and 21 per cent in cotton production while the share of both NWFP and Balochistan is less than one.
- During the last decade, cotton production has increased @ 2.8 per cent per annum due to 2.6 per cent improvement in yield and 0.2 per cent expansion in area.
- Cotton production for 2008-09 crop was estimated at 12.10 million bales, showing an increase of 3.8 per cent from 11.66 million bales in 2007-08.
- Cotton production had thus fallen short by 14 per cent against the target.

ii) Domestic Prices

- Monthly average market prices of seed cotton for 2008-09 crop had generally remained above the export parity prices.
- The wholesale prices of seed cotton ranged from Rs 1,407 to Rs 1,686 per 40 kgs during the post harvest season in major producing areas of the Punjab and Rs 1,322 to Rs 1,896 per 40 kgs in Sindh.
- Monthly average spot prices of cotton lint at Karachi had increased to Rs 3,667 per 40 kgs in 2008-09 from Rs 3,233 in 2007-08.

iii) Cost of Production

- In Punjab, cost of cotton cultivation during 2009-10 season is estimated at Rs 24,780 per acre.
- The cost of production at the market/ginnery level worked out to be Rs 1,450 per 40 kgs, reflecting a rise of 13.5 per cent over the last year.
- In Sindh, the cost of cotton cultivation for 2009-10 crop is expected at Rs 22,195 per acre.
- The cost of production at market/ginnery level would come to Rs 1,296 per 40 kgs, showing an increase of 8 per cent over the last year.

iv) Economics of Cotton and Competing Crops

- The economics of cotton production has lost its edge over basmati rice during 2008-09 as reflected by the economic indicators.
- In case of indirect competition with sugarcane, the cotton+wheat and cotton+sunflower combinations have given lesser gains to the farmer against sugarcane.
- In terms of irrigation water, cotton+wheat combination has out competed sugarcane in the Punjab.
- In Sindh, cotton farming has shown a mix of favourable and losing positions over IRRI paddy.
- Cotton could not retain its economic edge over IRRI paddy in terms of output-input ratio and crop duration in Sindh.

v) Economics of Fertilizer Use on Cotton Crop

- Benefit Cost Ratio refers to the ratio between value of additional produce obtained by using a certain dose of fertilizer and additional costs incurred. In view of high prices of fertilizers, these ratios have moved against cotton crop during 2008-09.
- The quantity of seed cotton needed to buy one nutrient tonne of N fertilizer have fluctuated from 0.58 to 0.89 tonnes while that of P fertilizer from 0.78 to 3.16 during 2000 to 2009.

x) Economic Efficiency

- Economic efficiency of resource use in cotton production is evaluated by estimating the Nominal Protection Coefficient (NPC), Effective Protection Coefficient (EPC) and Domestic Resource Cost (DRC).
- The NPCs have been below one under both export/import scenario during 2005-06 to 2008-09.
- The EPCs are also below one. However, lower EPCs imply that the magnitude of taxation has been higher than the estimation through NPCs.
- DRC indicates the opportunity cost of domestic resources employed per unit of value added in production of a commodity.
- The DRCs have been much less than one during the period under analysis. It implies a Comparative Advantage in domestic cotton production.
- The findings of economic efficiency analysis warrant expansion in cotton production to meet domestic requirements of textile industry as the imports are more expensive.

xi) World Comparison

- Pakistan is the 4th largest cotton producer in terms of area and production but holds 24th position in terms of yield.
- According to the Annual Progress Report of CCRI, Multan for 2006-07, major cotton varieties in Punjab were CIM-496, CIM-499, CIM-506, Bt and BM-36 covering around 86 per cent of cotton area.
- Among 6 competing countries, cost of production of seed cotton calculates to Pak Rs 2,346 per 40 kgs in USA while in Uzbekistan it is reported at Pak Rs 1,097 per 40 kgs during 2006-07.
- The cost of production of seed cotton is estimated at Pak Rs 2,169 per 40 kgs in China, 1,797 in India, 2,151 in Turkey and 1,255 in Pakistan.
- The highest subsidy on cotton production is provided by USA and Turkey at Pak Rs 652 per 40 kgs. The subsidy provided by Brazil and China is calculated at Pak Rs 543 and 22 per 40 kgs, respectively.

vi) **Nominal and Real Intervention Prices**

- The nominal intervention prices of seed cotton have experienced overall rise of 102 per cent during 2000 to 2009 while real prices have shown an increase of 13 per cent

vii) **Nominal and Real Market Prices**

- The nominal market prices of seed cotton indicate an overall surge of 63 per cent but real market prices have dropped from base year level @ 9 per cent during 2000-2009.

viii) **World Production and Prices**

- World cotton production at 23.59 million tonnes in 2008-09 is forecast to marginally decline to 23.40 million in 2009-10.
- The world prices of cotton have fluctuated widely dipping as low as 39 cents per pound in 2001-02 and rising as high as 69 cents per pound in 2007-08.

ix) **Export/Import Parity Prices**

- Based on cotton yarn prices at Karachi during 2008-09, the prices of seed cotton works out to be Rs 1,599 per 40 kgs.
- Based on actual export price of Pakistani cotton during 2008-09, the export parity price of seed cotton comes to Rs 1,413 per 40 kgs and Rs 1,489 during 2003-04 to 2007-08.
- Export parity price comes to Rs 1,354 per 40 kgs on the basis of future contract prices of New York No.2 Cotton for 2009-10.
- Based on actual cif (Karachi) prices of imported cotton during 2008-09, the import parity price of seed cotton works back to Rs 2,154 per 40 kgs.
- Based on CFR Far Eastern quoted price of Orleans/Texas SLM 1-1/32", the import parity price comes to Rs 1,725 per 40 kgs during 2008-09.

xii) Price Options

Based on the analysis of relevant factors covered in the main text of the Report, the likely price options for seed cotton of 2009-10 crop are presented below:

S.No.	Base	Worked back price of seed cotton at ginnery level	
		Rupees/40 kgs	
1	Export parity prices based on average:		
	i) Actual export price of Pakistani cotton		
	- During 2008-09 (Aug-Mar)		1413
	- During 2003-04 to 2007-08		1489
	ii) Futures contract prices of New York No.2 cotton (average of October, December 2009 and March 2010)		1354
	iii) Fob prices of Pakistani cotton yarn (20's):		
	- During 2008-09 (Aug-April)		1599
	- During 2003-04 to 2007-08		1608
2	Import parity prices based on average:		
	i) CFR Far Eastern quotations of Orleans/Texas SLM 1-1/32"		
	- During 2008-09 (Aug-March)		1725
	- During 2003-04 to 2007-08		1891
	ii) Actual cif Karachi prices of imported cotton:		
	- During 2008-09 (Aug-Mar)		2154
	- During 2003-04 to 2007-08		1562
3	Average domestic market price of seed cotton in 2008-09 (August-March)		
	- Punjab		1557
	- Sindh		1525
4	Cost of production for 2009-10 crop		
	- Punjab		1450
	- Sindh		1296
5	Cost of domestic resources involved in:		
		At exchange rate Pak rupee 80 = one US \$	
		Punjab	Sindh
	i) Producing cotton for import substitution based on 2008-09 prices of cotton	43	40
	ii) Producing cotton for export based on 2008-09 prices of cotton	84	75

Recommendations

In view of the field information, consultation with the stakeholders in the API's Standing Committee meeting on cotton and analysis of relevant factors, following recommendations are made regarding intervention price and improving productivity, quality and marketing of cotton crop:

i) Intervention Price

- The MINFA may like to consider the intervention price of seed cotton (Base grade 3 with staple length 1-1/16")* for 2009-10 crop, in view of the world prices trend and high input costs, if deem necessary.
- The intervention price would be a Minimum Guaranteed Price. However, it provides some margin over cost of production to incentivize the growing community for their participation in the Productivity Enhancement Programme of the Government through balanced use of inputs, better management and optimal technology adoption.
- It provides a reference point to intervene by the public sector agency, if needed.
- In view of trade liberalization and active role of private sector, the actual incentive to cotton growers should come through the market forces.
- The government policy of encouraging the role of private sector in cotton marketing and trade may be continued.
- The TCP should be designated as the implementing agency for seed cotton through buying lint at the price determined on the basis of intervention price of seed cotton.

ii) Improving Productivity

- Public and private seed companies may be encouraged to multiply and distribute the seed of the approved / recommended cotton varieties for cultivation in sufficient quantities.
- The government should strengthen the IPM programme of NARC for its effective implementation in the entire cotton growing area. Pest Warning System should be further strengthened enabling the farmers to take timely action.

* It is pertinent to mention that the KCA in consultation with all the stakeholders have revised the base staple from 1-1/32" to 1-1/16" in view of the overall improvement in staple length of domestic cotton production. The daily spot rates are thus being issued by the KCA for Base Grade 1-1/16".

- To ensure quality control of pesticides, Provincial Agriculture Departments should devise a mechanism for quick disposal of adulteration cases.
- There is a need to encourage Pest Scouting and Soil Testing to assess the need of appropriate pesticides and fertilizers.
- There is a need to launch an educational campaign to educate the growers about improved practices of cotton picking.
- There is a dire need for early introduction of Genetically Modified Cottons for Boll Worm and CLCV control by using both locally developed and imported technologies.
- The cotton production potential existing in the NWFP and Balochistan may be tapped through cotton supporting activities. There is also a need to ensure optimum plant population for higher yield.
- NIBGE in collaboration with Cotton Research Institutes should work hard on heat resistance to avoid excessive boll shedding and increasing boll weight.
- The Government should emphasize the strategy to control the Mealy Bug through management practices and biological control.
- EM technology, Bio-fertilizer and other technologies of fertilizer may be tested for balanced fertilizer use to reduce cost of production.

iii) **Improving Quality and Marketing**

- A Ginning Research Institute may be established at Multan to deal with the issues of cotton ginning and related matters.
- In order to check the underweighment and undue deduction in cotton marketing, a supervisory committee consisting of representatives of provincial agriculture departments, local market committees, growers and cotton dealers may be constituted.
- Like other commodities, a Regulatory Authority may be established to control agriculture input prices and quality.
- The recent amendment in Cotton Control Act for qualitative improvement may be religiously implemented.
- Cotton Standardization and Grading System may be implemented in accordance with the provisions of the Pakistan Cotton Standardization Ordinance, 2002.

June 15, 2009

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COTTON POLICY ANALYSIS FOR 2009-10 CROP

INTRODUCTION

Cotton is the most important cash crop of Pakistan cultivated on an area of about three million hectares accounting for 14 per cent of the cropped area in the country. It contributes 7.5 per cent of the value added in agriculture and is the principal source of raw material for the textile sector besides employing millions of people along the entire cotton value added chain, from weaving to textile and garment export. 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. It is also used in feeding livestock.

2. In view of dynamic nature and multifaceted role of cotton in the country through exports and providing livelihood to millions of farmers, traders and workmen, it has always received priority and preference by the government. Being cognizant of the growing demand from the domestic textile industry and the latent production potential, the Ministry of Food and Agriculture has prepared a long term Cotton Vision for sustained growth in cotton sector and the possible improvement in the quality of raw cotton with envisaged target of 20.70 million bales by 2015.

3. Pakistan produced an all time record cotton crop of 14.3 million bales in 2004-05 followed by second largest crop of 13 million in 2005-06 and 2006-07. This production level could not be maintained in subsequent years due to weather, insect pests and economic reasons. However, in view of the economic importance of cotton, the necessity of urgent ameliorative measures for higher and sustained growth in its production can not be over emphasized.

4. Realizing that the economic measures and incentives are integral part of cotton production enhancement programme, the Government has been announcing the Intervention Price in the past to safeguard the growers' interest. For the year 2008-09, it was fixed at Rs 1,465

per 40 kgs for the Base grade with staple length 1-1/32". The market prices however remained higher to the advantage of the growing community. The mechanism thus helped in stabilizing the prices and ensuring reasonable supply to industry.

5. In order to assist the MINFA, Agricultural Policy Institute has been preparing report on cotton crop each season. Accordingly, report for current cotton crop (2009-10) is prepared using the following approach:

- The data on different aspects of cotton production, input prices, trade situation, ginning and marketing were collected from the primary and secondary sources and analysed by the Institute.
- A field survey was conducted by the API during Jan - Feb, 2009 in major cotton producing areas of the country. Interviews and discussions were held with the growers, local leaders and officials of the Provincial Departments of Agriculture, cotton ginners and traders, etc.
- Meeting of the API's Standing Committee on Cotton was held on 30th March, 2009. It was attended by the representatives of growers associations, chambers of agriculture, KCA, TCP, progressive growers, cotton experts and officials of Federal and Provincial Governments concerned with cotton production and marketing. Issues relating to cotton production, consumption, marketing and price situation both national and international were discussed in the meeting.

6. Under the WTO regime, the cotton trade has become increasingly quality conscious. Even the local manufacturers of textiles demand standardized cotton for producing quality goods. In future, these challenges are expected to become serious. There are also challenges of CLCV, Mealy bug and wide spread cultivation of unapproved varieties including Bt. cotton in domestic production. Thus, it is very essential for Pakistan to prepare its cotton production and marketing strategies to face the emerging issues in the domestic and global markets. In order to improve yields and quality to match the spinners' demand, MINFA is planning to take several steps. These include introduction of cotton in other potential areas and bridging the yield gap through adequate supply of certified seed, balanced use of fertilizer and optimal plant population. Measures are also being taken to develop disease/heat resistant varieties and Genetically Modified cotton varieties. For improving quality of cotton, Amendment in Cotton Control Act and implementation of Cotton Standardization and Grading System are being given priority.

2. SOWING AND PICKING

7. In major cotton growing districts of the Punjab and Sindh, sowing is generally recommended from 1st May to end June in the Punjab, 1 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	1 st May to 15 th June
Jhang, Toba Tek Sindh	1 st May to 15 th June
Mianwali	10 th May to 15 th June
Sahiwal, Pak Pattan, Okara,	1 st May to 15 th June
Multan, Lodhran, Vehari	1 st May to end of June
Khanewal	15 th May to 15 th June
Bahawalpur, R.Y.Khan	1 st May to 15 th June
Bahawalnagar	1 st May to 20 th June
Muzaffargarh, Layyah, D.G.Khan, Rajanpur	1 st May to end of June
Sindh	
Mirpur Khas, Tharparkar	1 st March to 15 th April
Hyderabad, Badin	10 th April to 10 th May
Sanghar	Mid April to mid May
Dadu, Khairpur, Sukkur, Ghotki	Mid May to 10 th June
Nawabshah	1 st May to 31 st May
NWFP	
D.I.Khan	1 st May to 31 st May
Balochistan	
Lasbela, Dera Murad Jamali, Nasirabad	1 st May to 31 st May

Sources:

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

3. PROVINCIAL SHARES IN AREA AND PRODUCTION

8. Provincial shares in area and production of cotton during 2006-07 to 2008-09 are provided in Table-2. During this period cotton production averaged at 12.2 million bales from 3.0 million hectares (7.4 million acres).

Table-2: Provincial Shares in Area and Production of Cotton: Average of 2006-07 to 2008-09

Country/ Province	Area		Production	
	000 hectares	Per cent	000 bales	Per cent
Pakistan	2991.0	100.0	12205.0	100.0
Punjab	2378.4	79.5	9522.7	78.0
Sindh	579.7	19.4	2597.5	21.3
NWFP & Balochistan	32.9	1.1	84.8	0.7

Source: Annex-I.

9. Punjab and Sindh account for 79.5 and 19.4 per cent of cotton area and 78.0 and 21.3 per cent of cotton production (Figures 1 and 2). Cotton yield in Sindh is higher than Punjab that is why its production share exceeds area share. Combined production of NWFP and Balochistan is 0.7 per cent from 1.1 per cent area. Cotton yield in these provinces is much lower than Punjab and Sindh.

4. IMPORTANT COTTON GROWING DISTRICTS

10. District-wise data on area and production of cotton are given in Annex-III. The districts producing more than one million bales of cotton per annum each are Bahawalpur and Rahim Yar Khan. The districts producing more than 100 thousands bales of cotton per year each are Bahawalnagar, Lodhran, Vehari, Khanewal, Multan, Muzafargarh, Rajanpur, D.G.Khan, Sahiwal, Pakpattan, Jhang, T.T.Singh, Faisalabad, and Layyah from the Punjab province and Sanghar, Ghotki, Hyderabad, Khairpur, Mirpurkhas, Nawabshah, Naushero Feroze and Sukkur from Sindh Province. These 24 districts account for more than 97 per cent of the cotton production in the country.

**Provincial Shares in Area of Seed Cotton:
(Average of 2006-07 to 2008-09).**

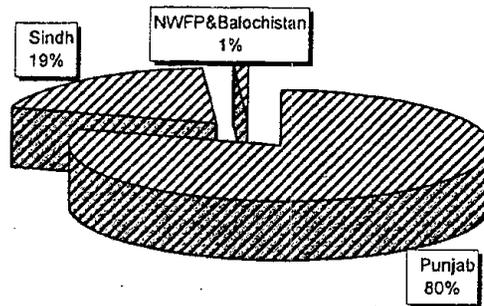


Figure-1: SHARES IN AREA

**Provincial Shares in Production of Seed Cotton:
(Average of 2006-07 to 2008-09)**

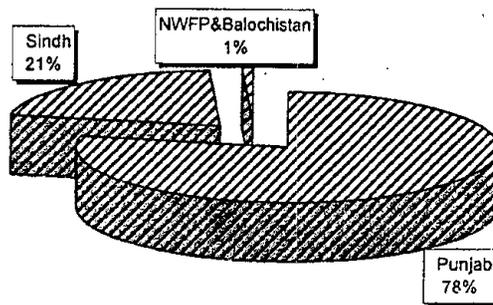


Figure-2: SHARES IN PRODUCTION

11. The districts of Bahawalpur, Rahim Yar Khan, Bahawalnagar, Lodhran, Vehari, Khanewal, Multan, Muzzafargarh, Rajanpur each producing more than half million bales per year altogether account for 64 per cent of the cotton in the country.

5. CHANGES IN AREA, YIELD AND PRODUCTION

12. During the period of 1998-99 to 2008-09, cotton area ranged between 2.79 and 3.19 million hectares (6.90 and 7.89 million acres) and yield between 512 and 760 kgs per hectare (207 to 308 kgs per acre). Therefore, cotton production fluctuated between 8.8 and 14.3 million bales. Long term and short term changes in area, yield and production are discussed below:

5.1 Long-term Changes: 1998-99 to 2008-09

13. During the period under reference cotton production at country level increased @ 2.8 per cent per annum due to 2.6 per cent improvement in yield and 0.2 per cent expansion in area (Table-3).

Table-3: Average Annual Growth Rates of Area, Yield and Production of Cotton: 1998-99 to 2008-09

Country/ Province	Area	Yield	Production
	----- Per cent -----		
Pakistan	(+) 0.2	(+) 2.6	(+) 2.8
Punjab	(+) 0.2	(+) 2.7	(+) 2.9
Sindh	(+) 0.0	(+) 2.3	(+) 2.2

Source: Annex-I.

Notes:

1. 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.
2. Country growth rates are inclusive of NWFP and Balochistan provinces.

14. In the Punjab cotton production grew @ 2.9 per cent annually based upon 2.7 per cent improvement in yield and 0.2 per cent enlargement in area. In Sindh cotton production also increased @ 2.2 per cent per annum due to 2.3 percent improvement in yield.

5.2 Short-term Changes: 2007-08 Vs 2008-09

15. According to the Second estimates provided by provincial Agricultural Departments cotton production from 2008-09 crop at country level is worked out at 12.10 million bales, 3.8 per cent higher than 11.66 million bales produced in 2007-08. The increase in production is solely due to 11.5 per cent rise in yield, as the area fell by 6.9 per cent (Table-4).

Table-4: Area, Yield and Production of Cotton: 2007-08 and 2008-09 Crops

Country/ Province	Area		Changes in 2008-09 over 2007-08	Yield		Changes in 2008-09 over 2007-08	Production		Changes in 2008-09 over 2007-08
	2007-08	2008-09		2007-08	2008-09		2007-08	2008-09	
	-- 000 hectares --		Per cent	--Kgs/hectare --		Per cent	-- 000 bales --		Per cent
Pakistan	3054.3	2843.8	(-) 6.9	649	724	(+)11.5	11655.1	12103.7	(+) 3.8
Punjab	2424.8	2247.6	(-) 7.3	636	693	(+) 9.0	9062.0	9156.0	(+) 1.0
Sindh	607.4	561.5	(-) 7.6	710	866	(+)21.9	2536.2	2858.0	(+) 12.7
NWFP	0.2	0.2	(+) 0.0	425	425	(+) 0.0	0.5	0.5	(+) 0.0
Balochistan	21.9	34.5	(+) 57.5	438	440	(+) 0.4	56.4	89.2	(+) 58.2

Source: Annex-I.

16. Cotton production in the Punjab estimated at 9.2 million bales is 1.0 per cent higher than the 9.1 million bales produced in 2007-08. Increase in production is only due to improvement in yield by 9.0 per cent as the area decreased by 7.3 per cent.

17. In Sindh cotton production of 2.8 million bales is 12.7 per cent higher than 2.5 million bales produced in 2007-08. Increase in production is due to improvement in yield by 21.9 per cent, despite of area decline by 7.6 per cent.

6. TARGETS VS ACHIEVEMENTS: 2008-09 CROP

18. FCA (Federal Committee on Agriculture) had fixed cotton production target for 2008-09 crop at 14.1 million bales. As per Second Estimates of Provincial Agriculture Departments, cotton production is reported at 12.1 million bales, a shortfall of 14.2 percent. Low achievement is attributed to 11.1 per cent shortfall in area and 3.5 per cent in yield (Table-5).

Table-5: Targets and Estimated Achievements of Area, Yield and Production of Seed Cotton: 2008-09 Crop

Country/ Province	Area		Deviation from the target	Yield		Deviation from the target	Production		Deviation from the target
	Target	Achieve- Ment		Target	Achieve- ment		Target	Achieve- ment	
	--- 000 ha ---		Per cent	Kgs/ha		Per cent	-- 000 bales --	Per cent	
Pakistan	3200.0	2843.8	(-) 11.1	750	724	(-) 3.5	14110.0	12103.7	(-) 14.2
Punjab	2520.0	2247.6	(-) 10.8	743	693	(-) 6.7	11000.0	9156.0	(-) 16.8
Sindh	630.0	561.5	(-) 10.9	810	866	(+) 6.9	3000.0	2858.0	(-) 4.7
NWFP	10.0	0.2	(-) 98.0	170	425	(+) 150.0	10.0	0.5	(-) 95.0
Balochistan	40.0	34.5	(-) 13.8	425	440	(+) 3.4	100.0	89.2	(-) 10.8

Sources:

1. For targets: Working paper of the 89th Meeting of FCA.
2. For achievements: Annex-I.

19. In the Punjab, production lagged behind the target by 16.8 per cent due to short area by 10.8 per cent and low yield by 6.7 per cent. Cotton production in Sindh also fell short of target by 4.7 per cent due to low achievement of 10.9 per cent in area as the yield is higher than the target by 6.9 per cent.

6.1 Factors Responsible for Low Production of Cotton

20. Provincial Agricultural Departments have provided following reasons for changes in area, yield and production.

Area

* Punjab

21. Cotton area declined by 7.3 per cent which is due to:

- i) Discouragement of growers due to severe attack of mealy bug and CLCV during last year.
- ii) Shifting of cotton area to rice crop because of higher returns.
- iii) Sunflower cultivation restricted growers to put more area under cotton because of late harvest of the crop particularly in the districts of Multan, Lodhran, Khanewal, Vehari, Muzaffargarh, Rajanpur & Bahawalpur.
- iv) Shortage of water at the time of sowing also reduced the cotton area.

* Sindh

- i) During the sowing period, Sindh witnessed acute shortage of irrigation water due to which cotton sowing operations suffered.
- ii) Due to attack of mealy bug on cotton crop during last year, growers were discouraged.
- iii) More paddy sowing due to expected higher returns

Production

* Punjab

22. Production increased in the Punjab province which is due to the following factors:

- i) Higher yield over the last year.
- ii) Plant population and boll weight are on higher side as compared to the last year.
- iii) Bt cotton has been sown in non core area covering more share which boosted up the average yields of cotton crop.
- iv) Less attack of CLCV and timely control of mealy bug by better management.

* Sindh

- i) Production increased due to increase in yield
- ii) Less attack of mealy bug, sucking complex and ball worm in comparison to last year.
- iii) Weather condition also favoured the crop
- iv) More irrigation water in July, August and September than last year.
- v) More certified seed supplied by Sindh Seed Corporation this year.

7. DOMESTIC SUPPLY, DEMAND, STOCKS AND PRICE SITUATION

7.1 Domestic Supply, Demand and Stocks

23. Domestic production of cotton lint from 2008-09 crop reported at 12.1 million bales is about 4 percent higher than the last year's production of 11.66 million bales, while it is about 6 percent less than the production from 2006-07 crop. Adding the opening stocks of 5.24 million bales which is 40 percent more than that of 2007-08, the total supply is calculated at 17.34 million bales. Accounting for the likely consumption, imports and exports as detailed in Table-6, the closing stocks of 2008-09 is calculated at 3.28 million bales are 37 percent less than those of 2007-08. This short fall in closing stocks may firm the prices of seed cotton in coming cotton season.

Table-6: Domestic Production, Demand and Stocks of Cotton (Lint): 2006-07 to 2008-09 (August-July)

Item	2006-07	2007-08 (estimated)	2008-09 (Provisional)
----- Million bales (a) -----			
1. Opening stocks	3.66	3.75	5.24
2. Production	12.86	11.66	12.10(b)
3. Total supply	16.52	15.41	17.34
4. Likely Consumption	15.49	14.83	15.00
5. Imports	3.01	5.00	1.499 (c)
6. Exports	0.29	0.34	0.45 (c)
7. Closing stocks	3.75	5.24	3.38

Notes:

- a) One bale = 170 kgs = 375 lb.
- b) 2nd estimates.
- c) During August 08 to March 09.

Source:

- a) PCCC, Karachi.
- b) Provincial Agriculture Departments for production.
- c) FBS, Karachi for import and export.

7.2 Domestic Price Situation

7.2.1 Seed cotton (phutti)

24. Monthly average wholesale prices of seed cotton in the main producing area markets of Punjab and Sindh during the post harvest period of 2008-09 crop are detailed in Table-7.

Table-7: Monthly Average Wholesale Prices of Seed Cotton (Phutti) in the Main Producer Area Markets During 2008-09 Crop (August-March)

Markets	Sept	Oct	Nov	Dec	Jan	Feb	March	Avg
-----Rupees per 40 kgs-----								
Punjab								
Bahawalpur	1605	1485	1434	1529	1611	1599	1425	1527
Khanewal	1631	1485	1466	1546	1626	1605	1575	1562
Multan	1578	1446	1407	1510	1591	1570	1554	1522
R.Y.Khan	1650	1521	1478	1578	1686	1649	1587	1593
Vehari	1625	1515	1450	1554	1674	1654	1589	1580
Average	1618	1490	1447	1543	1638	1616	1546	1557
Sindh								
Sanghar	1895	1663	1468	1455	1610	1640	1544	1563
Mirpur khas	1896	1681	1472	1413	1558	1696	1688	1585
Nawabshah	1894	1584	1385	1340	1473	1500	-	1526
N.S Feroze	1873	1641	1419	1322	1408	1500	-	1457
Ghotki	1800	1563	1453	1455	1529	1650	-	1494
Average	1872	1626	1439	1397	1516	1597	1616	1525

Sources:

1. Directorate of Agriculture (E&M), Punjab, Lahore.
2. D.G. Agriculture Extension, Hyderabad, Sindh.

25. Monthly wholesale prices of seed cotton during the post harvest period averaged at Rs 1557 per 40 kgs in the Punjab and Rs 1525 in Sindh are 6.3 and 4.1 per cent higher than its support price of Rs 1465 per 40 kgs.

7.2.2 Cotton lint

26. Monthly average spot prices of raw cotton at Karachi during 2007-08 and 2008-09 are presented in Table-8. The spot price during 2008-09 averaged at Rs 3667 per 40 kgs is substantially higher than that of previous year.

Table-8: Monthly Average Spot Prices of Raw Cotton at Karachi, 2007-08 and 2008-09 Crops (August-April)

Month	Base Grade -3, staple length 1-1/32", Micronaire Value between 3.8 to 4.9 NCL (No Control Limit)	
	2007-08	2008-09
	Rupees per 40 kgs	
August	3223	4421
September	3014	4304
October	3067	3586
November	3353	3235
December	3232	3158
January	3404	3523
February	3371	3598
March	3542	3464
April	2894	3715
Average	3233	3667

Note: Prices include expenses from up- country @ Rs 50 per 40 kgs.

Source: Karachi Cotton Association (KCA).

8. COST OF PRODUCTION OF SEED COTTON

27. The cost of production of seed cotton for the 2009-10 crop in the Punjab and Sindh have been updated by adopting the input-output parameters as used in calculation of the COP estimates for the 2008-09 crop in conjunction with the latest prices of various inputs and custom hire rates of cultural operations. These rates were obtained through mini field survey conducted by the API in the major producing areas during February 2009 in Sindh and March 2009 in the Punjab. The inputs prices and custom hire rates were discussed in the meeting of the API's Standing Committee on Seed Cotton, held on 30th March 2009 at Islamabad and supplemented with the information provided by the representatives of the Provincial Agricultural Departments and Farmers' Associations. The detailed cost of production estimates are presented in Annex IV and V, while summary of the results is placed in Table-9.

Table-9: Average Farmers' Cost of Production of Seed Cotton: 2008-09 and 2009-10 Crops

S.No	Items	Unit	2008-09 crop	2009-10 crop	Increase in 2009-10 over 2008-09
Punjab					
1.	Cost of cultivation	Rs/acre	21787	24780	2993
2.	Yield	Kgs/acre	696	696	-
3.	Cost of production at farm level	Rs/40 kgs	1252	1424	172
4.	Marketing cost	Rs/40 kgs	25	26	1
5.	Cost of production at market/ ginnery	Rs/40 kgs	1277	1450	173
Sindh					
1.	Cost of cultivation	Rs/acre	20543	22195	1652
2.	Yield	Kgs/acre	700	700	-
3.	Cost of production at farm level	Rs/40 kgs	1174	1268	94
4.	Marketing cost	Rs/40 kgs	27	28	1
5.	Cost of production at market/ ginnery	Rs/40 kgs	1201	1296	95

Note: The figures have been rounded off.

Source: Annex-IV and V.

Punjab

28. Growing one acre of seed cotton in the Punjab, during 2009-10 crop year, is likely to cost to Rs. 24780 including land rent. Based on the average yield of 696 kgs per acre, Ex-farm level cost of production would work out to Rs 1424 per 40 kgs. Accounting for marketing cost @ Rs 26 per 40 kgs, the cost of produce at the market/ginnery level would come to Rs 1450 per 40 kgs, reflecting an increase of Rs 173 or 14 per cent over the corresponding cost of Rs 1277 per 40 kgs of last year.

Sindh

29. The cost of cultivation of seed cotton in Sindh during 2009-10 crop year is expected at Rs 22195 per acre, inclusive of land rent. Based on the average yield of 700 kgs per acre, the farm level cost of production would be Rs 1268 per 40 kgs. Taking into account marketing cost @ Rs 28 per 40 kgs, the market/ginnery level cost of the produce would come to Rs 1296 per 40 kgs, showing an increase of Rs 95 or 8 per cent over the cost estimated at Rs 1201 of the previous year.

30. The major causes of increase in the cost of production of seed cotton for the 2009-10 crop year in the Punjab and Sindh are escalating in cost of cultural operations, wage rates, tube-well irrigation. The rise in land rentals has also added substantially to increase in cost of production. However, hold back prices of some phosphoric fertilizers i.e. DAP and NP has partially offset the impact of rising prices of inputs and custom rates of field operations on cost of cultivation of seed cotton.

8.1 Cost of Major Operations

31. The cost of major operations and inputs in overall cost of cultivation of seed cotton during 2008-09 and 2009-10 crop is given in the Table-10 below:

Table-10: Costs of Major Operations/Inputs in the Total Cost of Cultivation of Seed Cotton: 2008-09 and 2009-10 Crops

S.No.	Province/Items	2008-09 crop	2009-10 crop	Shares in increased cost
		Rs/acre		Per cent
Punjab				
1.	Land preparation	1666 (8)	1994 (8)	10.55
2.	Seed and sowing operations	1015 (5)	1149 (5)	4.31
3.	Irrigation	2331 (11)	2574 (10)	7.82
4.	Interculture	1350 (6)	1712 (7)	11.65
5.	Plant protection	2885 (13)	3000 (12)	3.71
6.	Fertilizers including FYM	4763 (22)	3966 (16)	(-) 25.65
7.	Land rent	4333 (20)	6667 (26)	75.09
8.	Picking charges	1740 (8)	1914 (8)	5.60
9.	Others	2049 (9)	2264 (9)	6.91
10.	Gross cost	22132(100)	25240(100)	100.00
Sindh				
1.	Land preparation	2126(10)	2390(10)	14.60
2.	Seed and sowing operations	1434 (7)	1603 (7)	9.36
3.	Irrigation	1600 (8)	1856 (8)	14.16
4.	Interculture	1418 (7)	1742 (8)	17.94
5.	Plant protection	1953 (9)	2058 (9)	5.81
6.	Fertilizers including FYM	4335 (21)	3615 (16)	(-) 39.85
7.	Land rent	4333 (21)	5333 (23)	55.35
8.	Picking charges	1671 (8)	1823 (8)	8.41
9.	Others	2132 (10)	2389 (11)	14.22
10.	Gross cost	21003 (100)	22810 (100)	100.00

- Notes: 1. Rounding off of figures may result in slight differences.
 2. Figures in parenthesis are percent shares in total cost of cultivation per acre.
 3. Others include mark-up, management charges, land revenue, land tax, drainage cess and cutting of sticks.

Punjab

32. Land rent is the major constituent of the cost of cultivation of seed cotton for the 2009-10 crop in the Punjab, accounting for 26 per cent. The other principal components are: fertilizers including FYM (16 %), plant protection (12 %), irrigation (10 %), picking charges and land preparation (8 % each) and interculture (7 %).

Sindh

33. The major components of the cost of cultivation of seed cotton during 2009-10 Crop in Sindh are: land rent (23 %), fertilizer including FYM (16 %), land preparation (10 %), plant protection (9 %), picking charges, irrigation and interculture (8 % each).

8.2 Prices of Major Farm Inputs

34. The average market prices of the most important farm inputs used in approximation the cost of production of seed cotton for the 2008-09 and 2009-10 crops and changes therein are given below:

Items	Units	2008-09 crop	2009-10 crop	Per cent change
Punjab				
1. HSD	Rs/litre	55.14	57.14	3.63
2. Power tariff	Rs/kwh	3.28	4.00	21.95
3. DAP	Rs/bag	3167	1997	(-) 36.94
4. Urea	Rs/bag	700	732	4.57
5. Seed	Rs/kg	80	86	7.50
Sindh				
1. HSD	Rs/litre	55.14	57.14	3.63
2. Power tariff	Rs/kwh	3.28	4.00	21.95
3. DAP	Rs/bag	2967	1963	(-) 33.83
4. Urea	Rs/bag	623	733	17.66
5. Seed	Rs/kg	80	86	7.50

9. ECONOMICS OF COTTON AND COMPETING CROPS

35. Farmer's priorities and decisions regarding resource allocation among the competing enterprises are 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, both by individual as well as the whole farming community.

36. 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.

37. The economics of cotton and competing crops has been analyzed in terms of input-output prices paid and received by the growers during the 2008-09 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 Tables 11 & 12 and depicted at Figures 3 & 4:

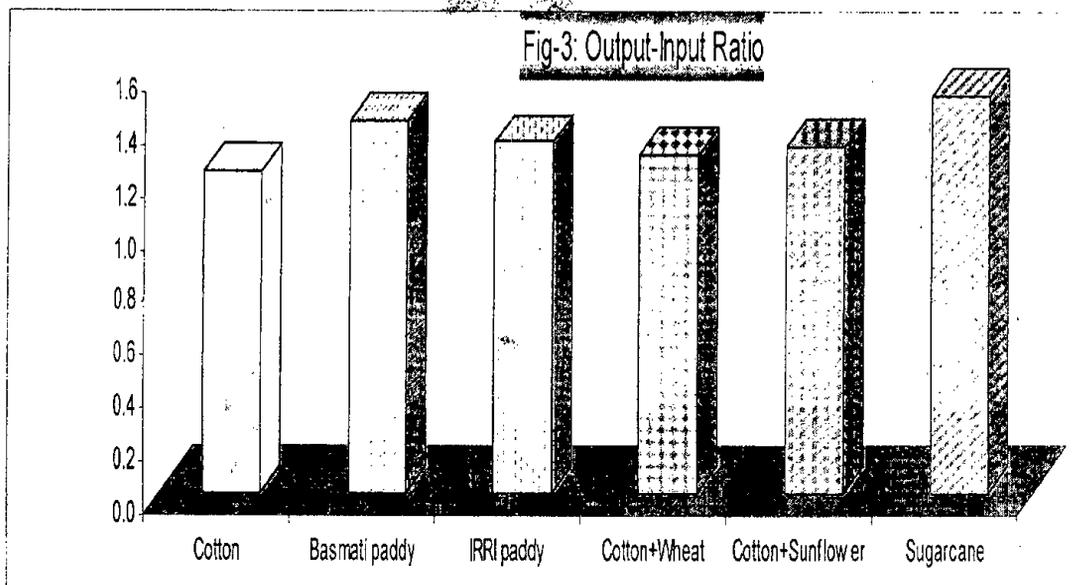
Table-11 : Economics of Cotton and Competing Crops at Prices Realized by the Growers in the Punjab: 2008-09 Crops

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 -----				
1. Cotton	1.2	2.6	113	1227
2. Basmati paddy	1.4	2.5	151	469
3. IRRI paddy	1.3	2.3	124	361
4. Cotton+Wheat	1.3	2.8	131	1612
5. Cotton+Sunflower	1.3	3.5	110	1051
6. Sugarcane	1.5	3.9	133	1092

Source: Annex-VI

Punjab

38. Cotton crop has, for the last two year, lost its superiority over basmati paddy in



respect of certain economic indicators adopted in this analysis, like, output-input ratio and gross revenue per unit of crop duration. However, its position against rice paddy is better in terms of revenue per unit of purchased inputs and significantly better in terms of irrigation water.

39. In case of indirect competition with sugarcane, the cotton + wheat and cotton + sunflower combinations have given lesser gains to the farmer against sugarcane with respect to all the economic criteria, mainly due to lucrative market prices of sugarcane observed during the season. Only in terms of irrigation water, cotton + wheat combination has out-competed the sugarcane.

Sindh

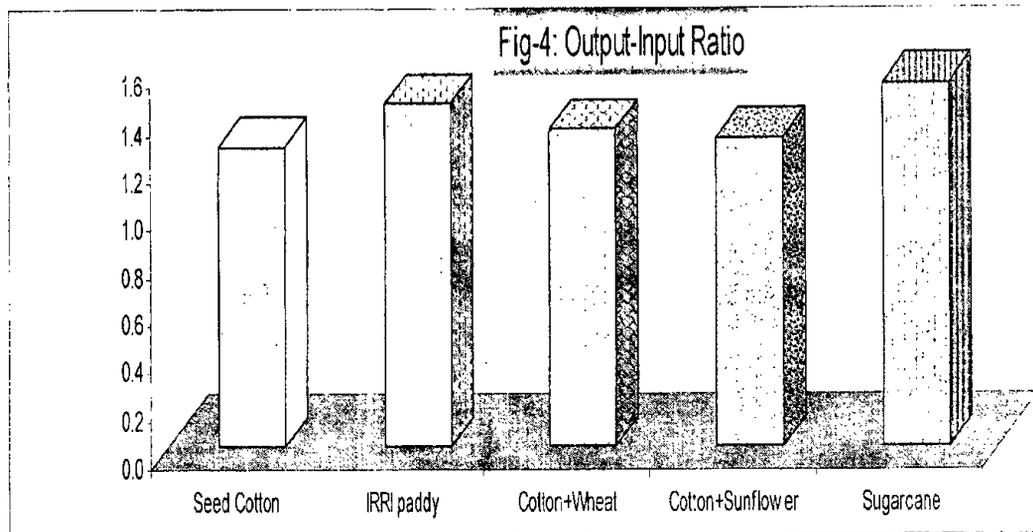
40. In Sindh, cotton farming has shown a mix of favourable and losing positions over IRRI paddy in terms of all the indicators adopted for analyzing the economics of the crop. Cotton could not retain its economic edge over IRRI paddy in terms of output-input ratio and crop duration. However, its position was relatively better in terms of purchased inputs and a quite significant in terms of irrigation water (Table-12).

Table-12: Economics of Cotton and Competing Crops at Prices Realized by the Growers in Sindh: 2008-09 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 -----		
1. Seed Cotton	1.3	3.1	111	1482
2. IRRI paddy	1.4	3.0	121	388
3. Cotton+Wheat	1.3	3.1	122	1707
4. Cotton+Sunflower	1.3	2.8	109	1148
5. Sugarcane	1.5	4.3	128	882

Source: Annex-VI

41. In case of indirect competition with sugarcane, the cotton + wheat and cotton + sunflower combinations gave better returns over the sugarcane in terms of irrigation water. However, cotton with its combinations failed to compete in terms of overall investment (Fig-4), purchased inputs and crop duration.



10. ECONOMICS OF FERTILIZER USE ON COTTON CROP

42. The economics of fertilizer use on cotton crop has been analyzed through estimating (i) Benefit Cost Ratio of fertilizer use and (ii) Parity Ratio between the prices of fertilizers and seed cotton.

10.1 Benefit Cost Ratio (BCR)

43. BCR refers to the ratio between value of additional produce which can be obtained by using a certain dose of fertilizers and the additional costs incurred therein. The BCR greater than one means that benefits are higher than the costs entailed in the process and vice versa. To account for the variation in cotton-fertilizer response under different conditions, the BCRs have been computed at 4 different response levels. The results of the exercise are set out in Table-13.

Table-13: Benefit Cost Ratio (BCR) of Fertilizer Use on Cotton: 2000-01 to 2008-09

Year	Response Ratios (Seed Cotton: Nutrient) of			
	3.00:1	3.75:1	4.50:1	5.25:1
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
2006-07	1.53	1.84	2.13	2.41
2007-08	2.72	3.22	3.68	4.10
2008-09	1.24	1.51	1.77	2.02

Sources:

1. For 2008-09: Annex-VII.
2. For 2000-01 to 2007-08: Cotton Policy Analysis Report for 2008-09 crop by API

10.2 Parity Ratio Between Prices of Fertilizer and Seed Cotton

44. The parity ratio between prices of fertilizers and those of seed cotton refers to the quantity of seed cotton required to purchase a certain quantity of chemical fertilizers. In view of fluctuating prices, the ratio has been calculated for 2000-01 to 2008-09 and given in Table-14. The quantity of seed cotton needed to buy one nutrient tonne of N fertilizer has fluctuated between 0.58 to 0.89 tonnes. The parity ratios between prices of seed cotton and those of phosphatic fertilizer have fluctuated from 0.78 to 3.16 during the period of analysis.

Table-14: Parity Ratio between the Prices of Fertilizer and Seed Cotton: 2000-01 to 2008-09

Crop Year	Sale Prices of		Market Prices of Seed Cotton	Quantity of Seed Cotton needed to buy one nutrient tonne of	
	Nitrogen N	Phosphorous P ₂ O ₅		Nitrogen N	Phosphorous P ₂ O ₅
	-----Rupees per tonne-----			-----Tonnes-----	
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
2006-07	21600	39000	27400	0.79	1.42
2007-08	22850	28390	36400	0.63	0.78
2008-09	28760	120000	38000	0.76	3.16

- Notes:**
1. The prices of N and P₂O₅ have been worked out from Urea and DAP which were used in estimating the cost of production of seed cotton for the respective crop year by API.
 2. Market price of seed cotton is the average price prevailed in the producer area markets of the Punjab and Sindh.

11. NOMINAL AND REAL PRICES OF SEED COTTON AT INTERVENTION AND MARKET PRICES: 2000-01 TO 2008-09

45. The intervention price of seed cotton is reviewed by the government well before sowing time, mainly with the purpose to regulate the crop in the light of prevailing situation and the economic priorities. Fluctuation in the prices of a commodity in relation to general price level in the economy influences its purchasing power/real income for its producers. To ascertain over time changes in the purchasing power of seed cotton, the nominal and real prices of seed cotton at support and market prices are being deflated by the Consumer Price Index (CPI), the most common measure of inflation in the economy. In this context, the analysis has been made for the period 2000-01 to 2008-09 and the outcome is set out in Table-15 & 16 and also shown in Figures 5 and 6.

Table-15: Nominal and Real Prices of Seed Cotton (Phutti) at Intervention Price: 2000-01 to 2008-09

Crop year	Nominal Intervention price	Consumer price Index(CPI)	Real Intervention Price
	Rs per 40 kgs	2000-01=100	Rs per 40 kgs
1	2	3	4=(2/3)x100
2000-01	725	100.00	725
2001-02	780	103.54	753
2002-03	800	106.75	749
2003-04	850	111.63	761
2004-05	925	121.98	758
2005-06	975	131.18	743
2006-07	1025	141.87	722
2007-08	1050	155.74	674
2008-09	1465	178.04	823

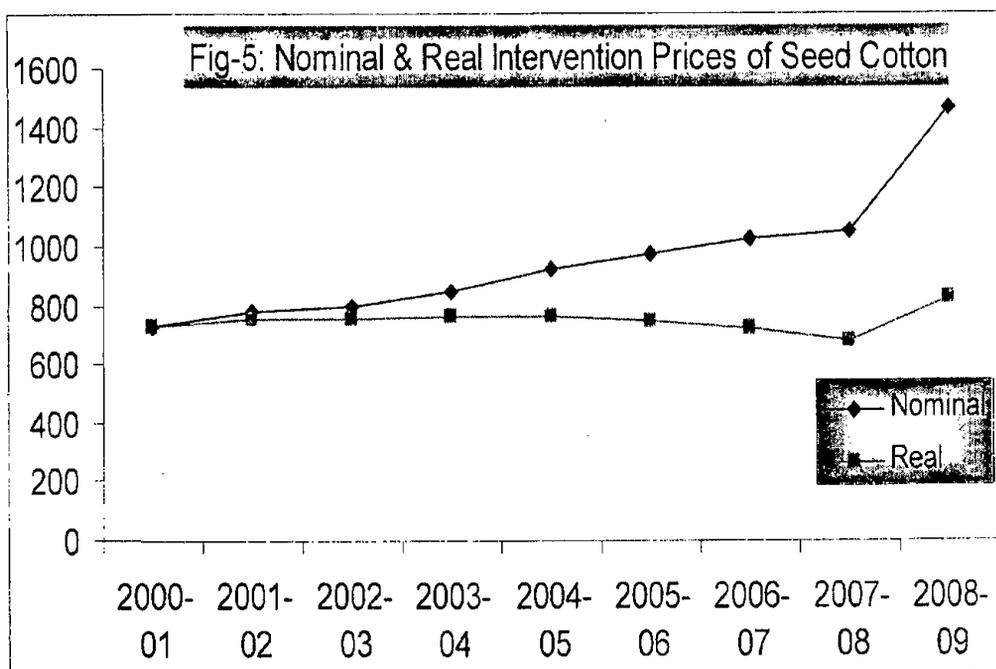
- Notes: 1. For 2008-09, Economic Survey of Pakistan.
 2. The Intervention price of seed cotton relates to the group of most commonly grown varieties like, Niab-78, CIM-496, CIM-473, CIM-506, CIM-499, CRIS-9, CRIS-134, S-467, Shahbaz and Haridost etc.

- Sources: 1. Directorate of Economics and Marketing (E&M) Punjab, Lahore.
 2. Agricultural Policy Institute (API).

11.1 Intervention Price of Seed Cotton

46. The nominal and real intervention prices of seed cotton for 2000-01 to 2008-09 are set out in Table 15 and depicted in Figures 5.

47. The nominal intervention price of seed cotton during the period 2000-01 to 2008-09 indicates a cumulative increase of 102 per cent, from Rs 725 per 40 kgs in 2000-01 to Rs 1465 in 2008-09. During the same period, the cumulative CPI has spiraled by 78 per cent.



Consequently, the real intervention price of seed cotton for 2008-09 worked at Rs 823 per 40 kgs, 13.5 per cent increase over the real price of Rs 725 per 40 kgs, the base-year price.

48. During the whole period, the real price of the commodity peaked at Rs 761 and dipped to the lowest level of Rs. 674 per 40 kgs. However, as a result of remunerative price announced in 2008-09, it jumped to Rs 823 per 40 kgs in 2008-09.

11.2 Market Prices of Seed Cotton

49. The nominal and real market prices of seed cotton for 2000-01 to 2008-09 are presented in Table- 16 and also depicted in Figure-6.

Table-16: Nominal and Real Prices of Seed Cotton (Phutti) at Market Price: 2000-01 to 2008-09

Crop year	Nominal Market price	Consumer price Index(CPI)	Real Market Price
	Rs per 40 kgs	2000-01=100	Rs per 40 kgs
1	2	3	4=(2/3)x100
2000-01	957	100.00	957
2001-02	813	103.54	785
2002-03	921	106.75	863
2003-04	1370	111.63	1227
2004-05	885	121.98	726
2005-06	1017	131.18	775
2006-07	1110	141.87	782
2007-08	1468	155.74	943
2008-09	1557	178.04	875

- Notes: 1. For 2008-09, Economic Survey of Pakistan.
 2. For 2008-09, market prices are the average monthly wholesale prices of seed cotton during post-harvest period in major producing area markets.

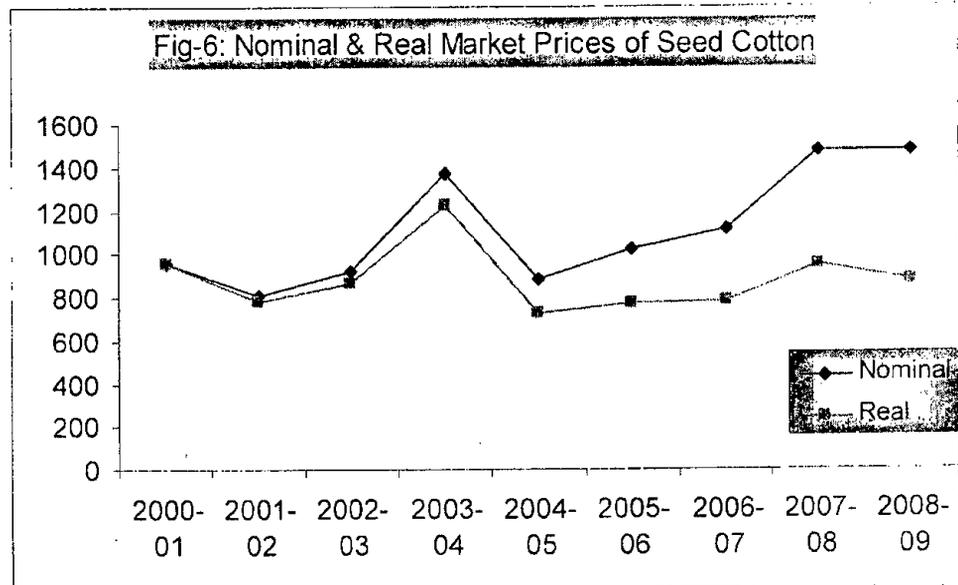
- Sources: 1. Directorate of Economics and Marketing (E&M) Punjab, Lahore.
 2. Agricultural Policy Institute (API).

50. The nominal market price of seed cotton averaging at Rs 957 per 40 kgs for the 2000-01 crop has risen to Rs 1557 per 40 kgs in 2008-09, indicating an overall surge of 63 per cent in the main producing area markets during Aug – Feb 2008-09. Deflating against the cumulative increase in CPI by 78%, the real market price has dropped from base-year level by 9%. In the meanwhile, the real market price has experienced fluctuations, touching the lowest level of Rs 726 per 40 kgs in 2004-05 and the highest of Rs 1227 per 40 kgs in 2003-04 crop.

51. In all the crop years except 2004-05, the market prices of seed cotton have ruled higher than indicative price fixed by the government. The year 2003-04 was the best year for the growers in terms of nominal and real market prices of the crop as the second highest market price of Rs 1370 and the highest real market price of Rs 1227 per 40 kgs were recorded. However, the immediate next year of 2004-05, market price declined to Rs 885 per 40 kgs, showing 35 per cent erosion over the last year and 4 per cent over the indicative price.

52. For 2008-09 crop, the nominal market prices averaged at Rs 1557 per 40 kgs, the highest ever market price for the whole period under study. The real value of the crop dropped, over the last year by 7% as well as the base year level price by 9%. It may be noted that the real value of seed cotton remained much lower against the base year during the period under review except 2003-04 crop year.

53. Fig-6 illustrates that during the entire period under review except 2003-04 crop year, the real value of seed cotton remained much lower against



the base year. This indicates that over the years, cotton farmers have lost in terms of real economic returns from the crop. However, the comparative analysis of real value of both the intervention and market prices reveals that market prices have been giving comparatively favourable returns to the farmer.

12. WORLD SUPPLY, DEMAND, STOCKS, TRADE AND PRICE SITUATION

54. The Global production of cotton during 2008-09 estimated at 23.59 million tonnes (Table-17) is about 10 percent less than the production of 26.21 million in 2007-08. While during 2009-10, the further decline of about 1 percent in world cotton production is expected as it is projected at 23.40 million tonnes. After adding the opening stocks of 12.41 million tonnes, total supply in 2008-09 worked out at 36 million tonnes is 7.5 per cent less than that of 2007-08. However, an increase of 1.2 percent in World Cotton Supply during 2009-10 is projected.

55. The world consumption of cotton during 2008-09 estimated at 22.88 million tonnes is 13 percent less than the last year's level of 26.32 million. For 2009-10, cotton consumption projected at 23.12 million tonnes would be 1 percent, more than that in 2008-09.

56. The end year stocks during 2008-09 estimated at 13.04 million tones are about 5 percent greater than last year's 12.41 million. For 2009-10, stocks are projected to increase to 13.31 million which shows an increase of 2.1 percent over the previous year.

Table-17: World Production, Consumption, Stocks and Trade in Cotton: 2006-07 to 2008-09

S.No.	Item	2007-08	2008-09	2009-10
		(Actual)	(Estimated)	(Projection)
----- Million tones -----				
1.	Opening stocks	12.71	12.41	13.04
2.	Production	26.21	23.59	23.40
3.	Total supply (1+2)	38.92	36.00	36.44
4.	Likely consumption	26.32	22.88	23.12
5.	Trade imbalance and stock adjustment*	(-) 0.19	(-) 0.08	(-)0.01
6.	Closing stocks (3-4+5)	12.41	13.04	13.31

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, February 17, 2009.

13. INTERNATIONAL PRICES

57. The international prices of Afzal, Index-A and Orleans/Texas Cottons during 2000-01 to 2008-09 are placed in Annex-VIII.

58. The prices of all three cottons were volatile and widely fluctuated with lowest prices of 38.41 US cents per lb. of Afzal and 39.05 of Orleans/Texas during 2001-02. the highest prices were reported in 2007-08 at 69.21 cents per lb of Afzal, 72.90 of Index-A and 69.83 of Orleans/Texas. Since 2006-07, the cotton producer have benefited due to healthy prices of raw cotton in the international markets.

14. EXPORT AND IMPORT PARITY PRICES

59. 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.

60. The export and import parity prices of seed cotton have been calculated on the basis of their actual and 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-IX to XIII and summarized in Table-18.

Table-18: 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 2008-09 (Aug-March)	47.85	14,13
	- During 2003-04 to 2007-08	51.06	1,489
	ii) Futures contract prices of New York No.2 cotton (average of October - December 09 and March 2010)	55.34	1,354
		US cents/kg	
iii) Fob prices of Pakistani cotton yarn (20's):			
	- During 2008-09 (Aug-April)	199.00	1,599
	- During 2003-04 to 2007-08	200.00	1,608
2. Import parity prices based on average:			
i) Actual cif (Karachi) prices of imported cotton:		Rs/40 kgs	
	- During 2008-09 (Aug-March)	5,199	2,154
	- During 2003-04 to 2007-08	3,465	1,562
		US cents/lb	
ii) CFR Far Eastern quoted price of Orleans/Texas SLM 1-1/32"			
	- During 2008-09 (Aug-April)	54.73	1,725
	- During 2003-04 to 2007-08	61.50	1,891

Sources: Annex-IX to XIII.

15. ECONOMIC EFFICIENCY IN COTTON PRODUCTION

61. The economic efficiency of resource use in cotton production in Pakistan has been evaluated by estimating the Nominal Protection Coefficient (NPC), Effective Protection Coefficient (EPC), and Domestic Resource Cost Coefficient (DRC). As Pakistan exports as well as imports cotton, analysis has been carried out under both the scenario for 2005-06 to 2008-09. The estimation of these indicators is mainly based on cost of production data as used in the API's Policy Reports for cotton crop. Details of the analysis are presented in Annex-XIV to XV while the summary of results is given in Table-19:

Table- 19: Economic Efficiency Coefficients for Seed Cotton: 2005-06 to 2008-09

Year/ Province	Exporting Scenario				Importing Scenario			
	NPC	EPC	DRC	Cost* Rs/US\$	NPC	EPC	DRC	Cost* Rs/US\$
Punjab								
2005-06	0.90	0.80	0.62	37.43	0.83	0.72	0.56	33.36
2006-07	0.97	0.92	0.74	44.40	0.90	0.81	0.65	39.05
2007-08	0.97	0.94	0.71	46.75	0.92	0.86	0.65	42.83
2008-09	1.10	1.17	1.03	83.57	0.72	0.59	0.52	42.50
Sindh								
2005-06	0.88	0.82	0.52	31.15	0.82	0.73	0.47	28.20
2006-07	0.96	0.92	0.66	39.73	0.88	0.82	0.59	35.40
2007-08	0.95	0.94	0.65	42.66	0.90	0.87	0.60	39.40
2008-09	1.08	1.14	0.93	75.07	0.70	0.61	0.49	39.69

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

15.1 Nominal Protection Coefficient (NPC)

62. NPC is estimated by dividing domestic prices with border prices. It measures the impact of output pricing policies without taking into consideration the distortions in input markets. The NPCs have been below one under both exporting/importing scenarios during the period. This implies that the domestic producers have been implicitly taxed. However, in 2008-09 exports of Pakistani cotton did not fetch better prices that led to NPC above unity. The magnitude implicit taxation has remained much higher under the

importing scenario. The findings warrant expansion in cotton production to meet the domestic requirements of textile industry as the imports are expensive.

15.2 Effective Protection Coefficient (EPC)

63. Effective protection coefficient is the ratio between the value added in producing a commodity at private prices and at social prices. Unlike the NPC, 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 certain commodity. The results of EPCs are in line with those of NPCs. However, lower EPCs imply that the magnitude of taxation has been higher than that estimated through NPCs.

15.3 Domestic Resource Cost (DRC)

64. Domestic resource cost coefficients (DRCs) indicate the opportunity cost of domestic resources employed 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 the denominator is the value addition calculated at social prices. DRC coefficient less than one indicates a Comparative Advantage in domestic production as the cost of domestic production is lower than the economic cost of imports.

65. The DRCs have been much less than one during the period under analysis under both the export/import scenario. Thus, Pakistan enjoys a Comparative Advantage in cotton production. The DRCs ranging from 0.62 to 1.03 under exporting condition imply that cost of domestic resources involved in earning one US dollar through cotton export has been 29 to 38 percent less than the respective exchange rate during 2005-06 to 2007-08. In 2008-09 better prices of domestic factors DRCs marginally rose above unity that implies disadvantageous production of cotton. Accordingly, increasing cotton production either for export or substituting the imports is an economic proposition.

66. The DRCs under importing scenario are much lower than the coefficients estimated under exporting situation. The cost of domestic factors involved in saving one unit of foreign exchange through increased cotton production is only 35-42 percent of its market price. Thus expansion in production of cotton for import substitution is highly cost effective. Substituting manual labour for traded inputs particularly plant protection may increase the profitability of this crop.

16. COTTON YIELD AMONG COMPETING COUNTRIES

67. To compare Pakistani position with the world, area, yield and production of major cotton producing countries are detailed in Annex-XVI, while a summary of these factors is presented in Table-20. In respect of yield per hectare, following 24 countries rank as under:

68. Global cotton during 2007 occupied an area of 33.815 million hectares with a total production of 72.504 million tonnes. The world top 24 producing countries contribute 53 per cent of total area and 77 per cent of total production.

69. In terms of cotton area, India is on the top with 9.300 million hectares, followed by China with 5.433 million and USA with 4.244 million hectares. Pakistan lies at 4th number in this regard. In terms of cotton production, China is on the top with 22.872 million tonnes, followed by USA with 12 million and India with 9.480 million tonnes. However, Pakistan retains 4th position in cotton production of the world. Although Pakistan ranks 4th in terms of both area and production of cotton but lies at 24th position in terms of yield. It implies that there is lot of potential to raise cotton productivity per hectare in Pakistan.

Table-20: Area, Yield and Production of Seed Cotton Among Competing Countries: 2007

S.No.	Country	Area (Million hectare)	Yield (Tonnes/ hectare)	Production (Million tonnes)
1.	Australia	0.144	4.597	0.662
2.	Syrian Arab Republic	0.250	4.400	1.100
3.	Israel	0.011	4.327	0.048
4.	China	5.433	4.210	22.872
5.	Mexico	0.120	3.750	0.450
6.	Brazil	1.110	3.472	3.854
7.	Turkey	0.735	3.401	2.500
8.	Greece	0.300	3.333	1.000
9.	United States of America	4.246	2.826	12.000
10.	Kyrgyzstan	0.035	2.741	0.095
11.	Lao People's Democratic Republic	0.003	2.692	0.007
12.	Bangladesh	0.016	2.531	0.041
13.	Iran, Islamic Republic of	0.120	2.500	0.300
14.	Egypt	0.240	2.333	0.560
15.	Uzbekistan	1.450	2.276	3.300
16.	Botswana	0.001	2.273	0.003
17.	Peru	0.095	2.245	0.213
18.	Kazakistan	0.200	2.210	0.442
19.	El Salvador	0.002	2.200	0.003
20.	South Africa	0.019	2.162	0.040
21.	Guatemala	0.002	2.133	0.003
22.	Georgia	0.000	2.000	0.000
23.	Korea, Democratic People's Republic of	0.019	2.000	0.038
24.	Pakistan	3.260	1.994	6.500
	Total of 24 top producing countries	17.809	3.146	56.031
	World total	33.815	2.144	72.504

Source: Annex-XVI

17. COTTON VARIETIES AND YIELD POTENTIAL IN PAKISTAN

70. Cotton is an important cash crop for Pakistan known as "white gold". It accounts for 8.2 percent of the value added in agriculture and about 3.2 percent to GDP; around two thirds of the country's export earnings are from the cotton made-up and textiles.

71. Beside being the world's 3rd -largest cotton producer and a leading exporter of yarn in the world, our yield per acre ranks 24th in the world. As a result Pakistan annually imports around 1.5-2.00 million bales of cotton to meet the growing demand of local textile mills. Therefore it has become vital for Pakistan to increase its yield per acre.

72. There are many reasons for low yield of cotton crop in Pakistan - high price of agriculture inputs (seeds, fertilizers, pesticides etc), higher intensity of insects and pests attack, shortage of good quality and varieties of seeds, deficiency of water for irrigation, lack of advance technologies, awareness and agro-professionalism, and adulterations in pesticides, fertilizers and seeds.

73. Seed is the most important factor playing a critical role in increasing agricultural productivity. Seed together with environment, determines the upper limit of the productivity. It has been learnt that today all major cotton producing countries are benefiting from the cultivation of Bt Cotton and it is expected that within two years more than half the world's cotton would be grown from genetically modified crops.

74. In Pakistan, various cotton varieties being sown in various ecological zones along with yield potential are addendum at Annex-XVII. The data disclose that in the country about one hundred varieties are grown-up. Among these, 78 are upland varieties, 3 are hybrid and 12 are Desi varieties. The yield potential of these varieties ranges from 600 kgs to 3900 kgs per hectare or 243 to 1578 kgs (6 to 39 maunds of 40 kgs) per acre.

75. According to the Annual Progress Report of 2006-07, CRI, Multan, the major cotton varieties sown in the Punjab during 2006-07 were CIM-496, CIM-499, CIM-506, Bt, BM-36 and others, covering an approximately 86 per cent area under cotton against total area of the country.

18. COST OF PRODUCTION OF SEED COTTON IN COMPETING COUNTRIES

76. The cost of production is the most important part of the multiple criteria used for making price policy proposals. It varies farm to farm and country to country particularly due to used level of farm inputs and technologies. Here we are discussing the cost of production of seed cotton in Pakistan and in other competing countries i.e. China, India, Turkey, USA and Uzbekistan. The cost of production of seed cotton during 2006-07 is given Table-21.

Table-21: Cost of Production of Seed Cotton in Competing Countries During 2006-07

Country	Average yield per hectare		Cost of production of seed cotton			
	Kgs	40 Kgs	US \$/ha	US \$/40 kgs	Pak Rs/ha	Pak Rs/40 kgs
China	276.3	69.1	1863.00	26.96	149878	2169
India	1575	39.4	686.15	14.88	47156	1797
Turkey	3800	95.0	2540.01	26.74	204344	2151
USA	1846	46.2	1347.31	29.16	108391	2346
Uzbekistan	3000	75.0	1022.35	13.63	82248	1097
Pakistan	1725	43.1	672.75	15.60	54123	1255

Note: One US \$ = Pak Rs 80.45.

Source: International Cotton Advisory Committee (ICAC), Washington DC, USA.

77. The cost of production of seed cotton calculated at Pak Rs 2346 per 40 kgs in USA is the highest than that of other countries while in Uzbekistan, it is reported at Rs 1097 as the lowest. The cost of production of seed cotton in India, Turkey and Pakistan is Rs 1797, 2151 and Rs 1255 per 40 kgs, respectively.

19. SUBSIDY ON COTTON PRODUCTION IN COTTON PRODUCING COUNTRIES

78. The subsidy on cotton production provided to cotton growers in cotton producing countries is given in Table-22.

Table-22: Subsidy on Production of Seed Cotton in Cotton Producing Countries During 2006-07

Country	Production	Subsidy on production of seed cotton		
	Thousand tonnes	US \$ in million	US \$/40 kgs	Pak Rs/40 kgs
Brazil	1603	337	8.82	543
China	8078	70	0.35	22
India	-	-	-	-
Turkey	675	185	10.58	652
USA	4182	1078	10.58	652
Uzbekistan	-	-	-	-
Pakistan	1966	-	-	-

Note: One US \$ = Pak Rs 68.

Source: International Cotton Advisory Committee (ICAC), Washington DC, USA.

79. The highest subsidy on cotton production to farmers is provided by the Turkey and USA i.e. US \$ 10.58 (Pak Rs 652) per 40 kgs. The subsidy provided to cotton growers of Brazil and China is calculated at Pak Rs 543 and 22 per 40 kgs. While, no subsidy is given to Pakistani cotton growers. The data on subsidy for India and Uzbekistan is not available.

80. During 2006-07, Turkey governments provided about 30 per cent of cost of production to its cotton growers in the shape of subsidy. In USA, the amount of subsidy was 28 per cent of the cost of production of seed cotton during 2006-07.

20. ACKNOWLEDGEMENTS

81. The assistance and cooperation of the following staff members is appreciated in preparation of the Report on Cotton Policy Analysis for 2009-10 Crop:

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1.	Mr. Abdul Rauf Chaudhry (Coordinator)	Chief
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**PROVINCE-WISE AREA (HECTARES), PRODUCTION AND YIELD OF COTTON
IN PAKISTAN : 1998-99 TO 2008-09**

YEAR	PUNJAB	SINDH	NWFP	BALUCH	PAKISTAN
AREA ----- 000 hectares -----					
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	2426.0	637.1	2.1	37.8	3103.0
2006-07	2462.9	570.1	0.3	41.6	3074.9
2007-08	2424.8	607.4	0.2	21.9	3054.3
2008-09	2247.6	561.5	0.2	34.5	2843.8
YIELD ----- Kgs per hectare -----					
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	720	707	421	440	714
2006-07	715	716	340	439	711
2007-08	636	710	425	438	649
2008-09	693	866	425	440	724
PRODUCTION ----- 000 bales -----					
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	10268.0	2648.0	5.2	97.7	13018.9
2006-07	10350.0	2398.2	0.6	107.4	12856.2
2007-08	9062.0	2536.2	0.5	56.4	11655.1
2008-09	9156.0	2858.0	0.5	89.2	12103.7

Sources:

- 1- For 1998-99 to 2007-08 : Agricultural Statistics of Pakistan 2007-08. MINFAL Islamabad
2- For 2008-09: 2nd estimates provided by respective Provincial Agriculture Departments.

**PROVINCE-WISE AREA (ACRES), PRODUCTION AND YIELD OF COTTON
IN PAKISTAN : 1998-99 TO 2008-09**

YEAR	PUNJAB	SINDH	NWFP	BALUCH	PAKISTAN
AREA ----- 000 acres -----					
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	5994.9	1574.3	5.2	93.4	7667.8
2006-07	6086.1	1408.8	0.7	102.8	7598.4
2007-08	5991.9	1500.9	0.5	54.1	7547.5
2008-09	5554.0	1387.5	0.5	85.3	7027.3
YIELD ----- Kgs per acre -----					
1998-99	199.85	233.09	120.46	200.64	207.01
1999-00	260.16	258.31	137.66	199.61	259.35
2000-01	246.32	281.47	137.66	200.53	252.33
2001-02	219.21	307.22	176.38	203.26	234.44
2002-03	238.88	305.95	166.65	219.65	251.58
2003-04	222.11	274.98	172.08	172.34	231.36
2004-05	304.73	326.95	170.44	174.95	307.55
2005-06	291.33	286.09	170.44	177.91	288.79
2006-07	289.26	289.55	137.66	177.70	287.79
2007-08	257.24	287.41	172.08	177.27	262.66
2008-09	280.40	350.35	172.08	177.96	292.96
PRODUCTION ----- 000 bales -----					
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	10268.0	2648.0	5.2	97.7	13018.9
2006-07	10350.0	2398.2	0.6	107.4	12856.2
2007-08	9062.0	2536.2	0.5	56.4	11655.1
2008-09	9156.0	2858.0	0.5	89.2	12103.7

Sources: 1- For 1998-99 to 2007-08 : Agricultural Statistics of Pakistan 2007-08, MINFAL, Islamabad.
2- For 2008-09: 2nd estimates provided by respective Provincial Agriculture Departments

**DISTRICT- WISE AREA, YIELD AND PRODUCTION OF SEED COTTON
AVERAGE OF 2006-07 TO 2008-09**

ANNEX-III

Area: 000 ha

Production: 000 bales

Yield: Kgs/ha

S.No	Province/ District/ Agency	Area	Production	Share in total production	Yield
------	----------------------------------	------	------------	---------------------------------	-------

PUNJAB

1	Bahawalpur	282.06	1224.10	10.03	738
2	R.Y.Khan	278.69	1218.47	9.98	743
3	Bahawalnagar	218.12	880.79	7.22	686
4	Lodhran	206.65	869.16	7.12	715
5	Vehari	224.19	786.12	6.44	596
6	Khanewal	185.61	784.78	6.43	719
7	Multan	184.40	765.49	6.27	706
8	Muzaffargarh	197.48	713.29	5.84	614
9	Rajanpur	137.45	627.04	5.14	776
10	D.G.Khan	103.46	476.71	3.91	783
11	Sahiwal	81.21	270.78	2.22	567
12	Pakpattan	49.91	196.09	1.61	668
13	Jhang	50.85	165.55	1.36	553
14	T.T.Singh	41.55	135.55	1.11	555
15	Faisalabad	41.14	132.15	1.08	546
16	Layyah	35.88	119.21	0.98	565
17	Okara	21.18	62.58	0.51	502
18	Mianwali	9.45	35.97	0.29	647
19	Kasur	11.47	24.24	0.20	359
20	Bhakkar	5.93	16.64	0.14	477
21	Sargodha	8.09	12.96	0.11	272
22	M.B.Din	2.03	3.14	0.03	263
23	Nankana Sahib	0.40	0.51	0.00	217
24	Khushab	0.41	0.51	0.00	210
25	Jhelum	0.41	0.44	0.00	184
26	Chakwal	0.41	0.40	0.00	167

Sub Total Punjab	2378.43	9522.67	78.02	681
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SINDH

1	Sanghar	119.57	494.30	4.05	703
2	Ghotki	94.32	437.60	3.59	789
3	Hyderabad	76.08	378.00	3.10	845
4	Khairpur	76.79	344.21	2.82	762
5	Mirpurkhas	60.08	247.92	2.03	702
6	Nawabshah	53.90	244.51	2.00	771
7	N.Feroze	37.52	174.75	1.43	792
8	Sukkur	32.74	143.40	1.17	745
9	Badin	12.62	65.98	0.54	889
10	Dadu	10.64	44.39	0.36	709
11	Larkana	3.40	14.21	0.12	710
12	Tharparkar	0.90	3.32	0.03	630
13	Thatta	0.72	3.29	0.03	778
14	Shikarpur	0.24	0.92	0.01	658
15	Jacobabad	0.12	0.49	0.00	714
16	Karachi	0.05	0.19	0.00	627

Sub Total Sindh	579.67	2597.47	21.28	762
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Sub Total of NWFP	0.23	0.53	0.00	389
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Sub Total of Balochistan	32.67	84.33	0.69	439
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Total of Pakistan	2991.00	12205.00	100.00	694
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Notes:

1. Data have been arranged in descending order of production.
2. Percentage shares are calculated on the basis of country total.

Sources:

- 1- MINFAL, Islamabad
- 2- Respective Provincial Agriculture Departments

**AVERAGE FARMERS' COST OF PRODUCTION ESTIMATES OF SEED COTTON
IN THE PUNJAB: 2008-09 AND 2009-10 CROPS**

S. No.	Operations / Inputs	Average No. of oprs/units/acre	2008-09 crop		2009-10 crop		Change in 2009-10 over 2008-09
			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	0.228	625.00	142.50	750.00	171.00	28.50
	1.2 Rotavator	0.233	750.00	174.75	900.00	209.70	34.95
	1.3 Ploughing	3.200	250.00	800.00	300.00	960.00	160.00
	1.4 Planking	0.421	125.00	52.63	150.00	63.15	10.53
	1.5 Ploughing+planking	1.341	250.00	335.25	300.00	402.30	67.05
	1.6 Levelling (tractor hrs)	0.537	300.00	161.10	350.00	187.95	26.85
2	Seed and sowing operations:						
	2.1 Seed (kgs)	7.643	80.00	611.44	86.00	657.30	45.86
	2.2 Sowing:						
	2.2.1 Ploughing+planking	0.394	250.00	98.50	300.00	118.20	19.70
	2.2.2 Ridging	0.228	250.00	57.00	300.00	68.40	11.40
	2.2.3 Drilling	0.772	250.00	193.00	300.00	231.60	38.60
	2.2.4 Manual labour for sowing, bund making and gap filling (m.days)	0.369	150.00	55.35	200.00	73.80	18.45
3	Irrigation: * (Nos)						
	3.1 Canal	2.156	-	85.00	-	85.00	0.00
	3.2 Private tubewell	1.706	450.00	767.70	475.00	810.35	42.65
	3.3 Mixed	2.739	350.00	958.65	360.00	986.04	27.39
	3.4 Labour for irrigation and water course cleaning (m.days)	3.462	150.00	519.30	200.00	692.40	173.10
4	Interculture:						
	4.1 With tractor	2.640	250.00	660.00	300.00	792.00	132.00
	4.2 Manual weeding/thinning (m.days)	4.600	150.00	690.00	200.00	920.00	230.00
5	Plant Protection including application (weedicides + pesticides)	5.769	500.00	2884.50	520.00	2999.88	115.38
6	Farm Yard Manure including transport and application 50%	-	-	250.00	-	300.00	50.00
7	Fertilizers: (bags)						
	7.1 DAP	0.731	3167.00	2315.08	1997.00	1459.81	-855.27
	7.2 SSP	0.071	860.00	61.06	744.00	52.82	-8.24
	7.3 SOP	0.029	2228.00	64.61	2035.00	59.02	-5.60
	7.4 NPK	0.046	2071.00	95.27	1546.00	71.12	-24.15
	7.5 Urea	2.297	700.00	1607.90	732.00	1681.40	73.50
	7.6 CAN	0.224	641.00	143.58	693.00	155.23	11.65
	7.7 NP	0.069	2018.00	139.24	1351.00	93.22	-46.02
	7.8 Fertilizer transport and application	3.467	25.00	86.68	27.00	93.61	6.93
8	Mark up on investment @ 12 % per annum for 8 months on items 1 to 7 minus 3(1)	-	-	1114.01	-	1144.82	30.82
9	Management charges for 8 months	-	-	497.00	-	566.00	69.00
10	Land rent for 8 months	-	6500.00	4333.33	10000.00	6666.67	2333.33
11	Average weighted land tax @ Rs 132/acre/annum for 8 months	-	132.00	88.00	132.00	88.00	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	100.00	1740.00	110.00	1914.00	174.00
14	Cutting of cotton sticks	-	-	345.00	-	460.00	115.00
15	Gross cost (item 1 to 14)	-	-	22132.42	-	25239.78	3107.36
16	Value of cotton sticks	-	-	345.00	-	460.00	115.00
17	Net cultivation cost (item 15-16)	-	-	21787.42	-	24779.78	2992.36
18	Yield per acre (kgs)	-	-	696.00	-	696.00	0.00
19	Cost of production at farm level: (Rs/40 kgs)						
	19.1 Including land rent	-	-	1252.15	-	1424.13	171.97
	19.2 Excluding land rent	-	-	1003.11	-	1040.98	37.88
20	Marketing expenses (Rs/40 kgs)	-	-	25.00	-	26.00	1.00
21	Cost of production at market/ginnery: (Rs/40 kgs)						
	21.1 Including land rent	-	-	1277.15	-	1450.13	172.97
	21.2 Excluding land rent	-	-	1028.11	-	1066.98	38.88

**AVERAGE FARMERS' COST OF PRODUCTION ESTIMATES OF SEED COTTON
IN SINDH: 2008-09 AND 2009-10 CROPS**

S. No.	Operations / Inputs	Average No. of ops/units/acre	2008-09 crop		2009-10 crop		Change in 2009-10 over 2008-09
			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	750.00	414.75	840.00	464.52	49.77
	1.2 Ploughing	2.071	400.00	828.40	450.00	931.95	103.55
	1.3 Planking	0.030	200.00	6.00	225.00	6.75	0.75
	1.4 Ploughing+planking	1.333	400.00	533.20	450.00	599.85	66.65
	1.5 Levelling (tractor hrs)	0.859	400.00	343.60	450.00	386.55	42.95
2	Seed and sowing operations:						
	2.1 Seed (kgs)	10.279	80.00	822.32	86.00	883.99	61.67
	2.2 Sowing:						
	2.2.1 Ploughing + planking	0.160	400.00	64.00	450.00	72.00	8.00
	2.2.2 Ridging	0.236	400.00	94.40	450.00	106.20	11.80
	2.2.3 Drilling	0.763	400.00	305.20	450.00	343.35	38.15
	2.2.4 Manual labour for sowing, bund making and gap filling (m. days)	0.988	150.00	148.20	200.00	197.60	49.40
3	Irrigation: (Nos)						
	3.1 Canal	3.148	-	93.09	-	93.09	0.00
	3.2 Private tubewell	2.454	330.00	809.82	355.00	871.17	61.35
	3.3 Mixed	0.413	290.00	119.77	300.00	123.90	4.13
	3.4 Lift irrigation	0.251	70.00	17.57	85.00	21.34	3.77
	3.5 Labour for irrigation and water course cleaning (m.days)	3.732	150.00	559.80	200.00	746.40	186.60
4	Interculture:						
	4.1 With tractor	0.524	400.00	209.60	450.00	235.80	26.20
	4.2 With bullocks	1.259	400.00	503.60	450.00	566.55	62.95
	4.3 Manual weeding/thinning (m.days)	4.700	150.00	705.00	200.00	940.00	235.00
5	Plant Protection including application (weedicides + pesticides)	4.200	465.00	1953.00	490.00	2058.00	105.00
6	Farm Yard Manure including transport and application 50 %	-	-	190.00	-	230.00	40.00
7	Fertilizers: (bags).						
	7.1 DAP	0.893	2967.00	2649.53	1963.00	1752.96	-896.57
	7.2 TSP	0.009	2392.00	21.53	1931.00	17.38	-4.15
	7.3 Urea	1.834	623.00	1142.58	733.00	1344.32	201.74
	7.4 CAN	0.016	550.00	8.80	700.00	11.20	2.40
	7.5 AS	0.010	1250.00	12.50	1300.00	13.00	0.50
	7.6 NPK	0.042	1982.00	83.24	1533.00	64.39	-18.86
	7.7 NP	0.076	2040.00	155.04	1373.00	104.35	-50.69
	7.8 Fertilizer transport and application	2.860	25.00	72.00	27.00	77.76	5.76
8	Mark up on investment @ 12% per annum for 8 months on items 1 to 7 minus 3(1)	-	-	1021.88	-	1053.70	31.83
9	Management charges for 8 months	-	-	496.00	-	566.00	70.00
10	Land rent for 8 months	-	6500.00	4333.33	8000.00	5333.33	1000.00
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	110.00	1670.90	120.00	1822.80	151.90
15	Cutting of cotton sticks	-	-	460.00	-	615.00	155.00
16	Gross cost (item 1 to 15)	-	-	21002.99	-	22899.53	1896.54
17	Value of cotton sticks	-	-	460.00	-	615.00	155.00
18	Net cultivation cost (item 16-17)	-	-	20542.99	-	22194.53	1651.54
19	Yield per acre (kgs)	-	-	700.00	-	700.00	0.00
20	Cost of production at farm level: (Rs/40 kgs)	-	-	1173.89	-	1268.26	94.37
	20.1 Including land rent	-	-	928.27	-	963.50	37.23
	20.2 Excluding land rent	-	-	27.00	-	28.00	1.00
21	Marketing expenses (Rs/40 kgs)	-	-	-	-	-	-
22	Cost of production at market/ginnery: (Rs/40 kgs)	-	-	200.89	-	296.26	95.37
	22.1 Including land rent	-	-	953.27	-	991.50	38.23
	22.2 Excluding land rent	-	-	-	-	-	-

Notes for Annex-IV and V

1. The input-output parameters for estimating cost of production of Seed Cotton, 2009-10 crop, have been adopted from the Price Policy Report of Seed Cotton, 2008-09 crop, API's Series No 226.
2. The inputs prices, custom hire rates of field operations, labour wage rates and picking charges have been revised in the light of data collected through mini field survey conducted by the API in the major cotton producing areas during February 2009 in Sindh and March 2009 in the Punjab, 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 30th March 2009 at Islamabad.
3. The seed prices as reported by the growers in the field survey and representatives of the cotton growers in the Standing Committee meeting vary very widely on account of Bt varieties and local seed. The prices of seed have been adjusted accordingly.
4. 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 16th April 2009. However, price of NPK fertilizer have been worked out from prices of Urea, DAP and SOP fertilizers
5. In light of information received from various quarters indicates that the increasing trend in the prices of insecticides and pesticides has been arrested on account of new generic and low cost brands, the material cost (90 per cent) of the plant protection has not been revised. However, the cost of labour component (10 per cent of the total cost) has been reworked in light of new wage rate.
6. The cost of supplementary irrigation has been revised in view of the rises @ 3.63 per cent in the prices of diesel and 21.95 per cent in power tariff during June 2008 to April 2009. Based on the ratios of electric and diesel tube-wells of 09: 91 in the Punjab and 23:77 in Sindh as reported in the Agriculture Statistics of Pakistan, 2007-08, MINFA ((Economic, Trade and Investment Wing), Islamabad, the average increases worked out to 5.56 per cent in the Punjab and 3.49 per cent in Sindh.
7. The management charges for a manager looking after a 25 acre farm and devoting one-fourth of his time to the managerial activities have been worked out at Rs 7078 per month for a Field Assistant at the 10th stages in BPS-6 as per revised scale of July 2008.
8. 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 API's Standing Committee on Seed Cotton, land rentals have been adjusted according.

**ECONOMICS OF SEED COTTON AND COMPETING CROPS AT
PRICES REALIZED BY THE GROWERS: 2008-09 CROPS**

S #	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	Crop day	Acre inch of water used
		Days	Acre inchesRupees per acre.....						Ratio Rupees.....	
1	2	3	4	5	6	7=6-5	8=6-4	9=6/4	10=6/5	11=6/2	12=6/3	

Punjab

1	Seed cotton	240	22	22064	10277	27002	16725	4937	1.2	2.6	113	1227
2	Basmati paddy	180	58	19197	11060	27214	16154	8017	1.4	2.5	151	469
3	IRRI paddy	180	62	16728	9646	22390	12744	5662	1.3	2.3	124	361
4	Wheat	180	12	20312	9038	27816	18779	7505	1.4	3.1	155	2318
5	Sunflower (spring)	180	22	12805	3070	19230	16161	6425	1.5	6.3	107	874
6	Seed cotton + wheat	420	34	42376	19315	54818	35504	12442	1.3	2.8	131	1612
7	Seed cotton + sunflower	420	44	34870	13347	46232	32885	11362	1.3	3.5	110	1051
8	Basmati paddy+wheat	360	70	39508	20097	55030	34933	15522	1.4	2.7	153	786
9	Basmati paddy+sunflower	360	80	32002	14129	46444	32315	14442	1.5	3.3	129	581
10	IRRI paddy + wheat	360	74	37040	18683	50207	31523	13167	1.4	2.7	139	678
11	IRRI paddy+sunflower	360	84	29533	12715	41620	28905	12087	1.4	3.3	116	495
12	Sugarcane	394	48	34509	13387	52418	39031	17908	1.5	3.9	133	1092

Sindh

1	Seed cotton	240	18	21185	8690	26675	17985	5490	1.3	3.1	111	1482
2	IRRI paddy	180	56	15125	7341	21733	14392	6608	1.4	3.0	121	388
3	Wheat	180	12	17385	7754	24550	16796	7165	1.4	3.2	136	2046
4	Sunflower (spring)	180	22	14434	4187	19230	15044	4796	1.3	4.6	107	874
5	Seed cotton + wheat	420	30	38570	16443	51225	34782	12655	1.3	3.1	122	1707
6	Seed cotton + sunflower	420	40	35620	16443	45905	29462	10285	1.3	2.8	109	1148
7	IRRI paddy+ wheat	360	68	32510	15095	46283	31188	13773	1.4	3.1	129	681
8	IRRI paddy+sunflower	360	78	29560	11528	40963	29435	11403	1.4	3.6	114	525
9	Sugarcane	488	71	41166	14404	62654	48250	21487	1.5	4.3	128	882

Notes for Annex - VI

1. The economic analysis presented in the above exercise is based on the input-output prices applicable for 2008-09 crops.
2. The data regarding input-output parameters have been adopted from the API's price policy papers for sugarcane, seed cotton, rice paddy and wheat, 2008-09 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 2008-09 crops. To incorporate the escalations in input prices, which occurred during the growing period of 2008-09 crops, some marginal revisions have been made as under:
 - 2.1 The cost of supplementary irrigation has been adjusted in accordance with the variation in the electric charges; @ 22 % for sugarcane, seed cotton, & rice paddy and 8.23% for wheat. Similarly, diesel rates have also been adjusted @ 34% for sugarcane, 7% for seed cotton, 17.85 % for rice paddy and 11 % for wheat crop.
 - 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 2008-09 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 The support price of Rs 950 per 40 kgs as announced by the government for 2008-09 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 have averaged at Rs 1183 and Rs 664 per 40 kgs, respectively. While, the average price of IRRI paddy in Sindh is reported at Rs 585 per 40 kgs.
 - 4.3 The wholesale market prices of seed cotton during the post-harvest months of Aug - Feb 2008-09 in the main producer area markets have averaged at Rs 1557 per 40 kgs in the Punjab. In Sindh, the corresponding prices are averaged at Rs 1525 per 40 kgs.
 - 4.4 The sunflower 2008-09 crop is yet to be harvested. However, it was reported by the POEB Islamabad that All Pakistan Solvent Extraction Association may purchase sunflower and canola at Rs 1300 per 40 kgs during the season.

- 4.5 The market prices of sugarcane at mill-gate in the major cane producing areas are reported to hover around Rs 100 per 40 kgs in the Punjab and Sindh.
5. The market prices have been adjusted for the marketing expenses to make them effective at the farm level. These expenses amount to Rs 7.25 per 40 kgs in Punjab and Rs 7.32 in Sindh for sugarcane, Rs 25 for seed cotton in Punjab and Rs 27 in Sindh, Rs 20 for rice paddy, and Rs 18 for wheat and oilseeds.
6. Gross income = (Yield per acre multiplied by price of principal produce at farm gate) plus (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 minus cost of purchased inputs.
9. Net income = Gross income minus gross cost.
10. Output-input ratio = Gross income divided by gross cost
11. Revenue per rupee of purchased inputs cost = Gross income divided by cost of purchased inputs
12. Revenue per crop day = Gross income divided by crop duration in days.
13. Revenue per acre-inch of water used = Gross income divided by irrigation water used in acre inches.

**PROFITABILITY OF FERTILIZER USE ON SEED COTTON
AT THE MARKET PRICE: 2008-09**

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 74.74 per nutrient kg (i.e. Rs 28.76, 122.09 and Rs 119.35 per nutrient kg of N,P and K at the recommended NPK ratio of 2:1:1(a)	747.40	747.40	747.40	747.40
3	Indirect cost due to the application of additional fertilizer as detailed below(b)	168.84	193.38	217.96	242.52
	3.1 Transportation and application charges of 20 kgs of fertilizer @ Rs 25.0 per bag of fertilizer	10.00	10.00	10.00	10.00
	3.2 Picking charges for additional produce @ Rs 105.0 per 40 kgs	78.75	98.44	118.12	137.81
	3.3 Marketing charges for additional produce @ Rs 26.0 per 40 kgs	19.50	24.35	29.25	34.12
	3.4 Mark up on direct cost of fertilizer (item2+3.1) for 8 months @ 12 % per annum	60.59	60.59	60.59	60.59
4	Total additional cost (item 2+3)	916.24	940.78	965.36	989.92
5	Value of additional produce @ Rs 1520 per 40 kgs(c)	1140.00	1425.00	1710.00	1995.00
6	Benefit cost ratio (item 5 divided by item 4)	1.24	1.51	1.77	2.02

Notes:

- a) The prices of N,P and K have been worked out from average prices of Urea, DAP and NPK used in COP estimates of the Punjab and Sindh for 2008-09 crop taken respectively as 661.5, 3060.0 and 2026.5 and 900.0 per bag of 50 kgs.
- b) The rates of indirect cost items are the average of the rates used in the COP estimates of the Punjab and Sindh for 2008-09 crop.
- c) Average of the market price of 2008-09 crop for different varieties exclusive of "Desi" varieties for the period August to February, 2009 have been used.

CFR FAR EASTREN PRICES OF VARIOUS COTTONS: 2000-01 TO 2008-09

Years Aug-Jul	Sindh/ Punjab Afzal 1-1/32"	Index- A Cottons	Orleans/ Texas SLM 1-1/32"	Difference between Sindh/ Punjab Afzal 1-1/32" and	
				Index- A Cottons	Orleans/Texas SLM 1-1/32"
----- US Cents per pound-----					
2000-01	56.78	-	53.57	-	3.21
2001-02	38.41	-	39.05	-	-0.64
2002-03	51.36	55.4	51.16	-4.04	0.2
2003-04	63.10 *	68.3	65.85	-0.07	-2.75
2004-05	46.10	52.2	51.19	-6.1	-5.09
2005-06	54.59	56.15	54.39	-1.56	0.20
2006-07	58.63	59.15	56.13	-0.52	2.50
2007-08	69.21	72.90	69.83	-3.69	-0.62
2008-09 *	-	60.62	54.73	-	-
August	-	78.05	N.Q	-	-
September	-	73.60	63.35	-	-
October	-	62.30	58.00	-	-
November	-	54.95	49.25	-	-
December	-	55.45	54.19	-	-
January	-	57.70	54.50	-	-
February	-	55.20	51.81	-	-
March	-	51.50	47.52	-	-
April	-	56.80	54.19	-	-

Source: Cotton outlook (various issues).

EXPORT PARITY PRICE OF SEED COTTON ON THE BASIS OF ACTUAL
AVERAGE EXPORT PRICE OF PAKISTANI COTTON

S.No	Item	2008-09 (Aug-March)	2003-04 to 2007-08
1.	Actual average export price	US Cents per pound 47.85	51.06
		OR Rupees	(a)
	Actual average export price per 40 Kgs	3386	3613
2.	Marketing expenses (export & purchase incidentals, insurance & financial expenses) per 40 Kgs	280	280
3.	Ex- gin price of lint per 40 Kgs (item 1- item 2)	3106	3333
4.	Value of 80 kgs of cotton seed (b)	1484	1484
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)	4240	4467
7.	Seed cotton price per 40 kgs (item 6 / 3)	1413	1489

Notes:

- Buying exchange rate one US \$ = 80.25 Pak rupees, announced by State Bank of Pakistan as on May 05, 2009.
- Average price of cotton seed for the period August 08, to February, 2009 at Multan market was Rs 742 per 40 kgs.
- 120 kgs of seed cotton = 80 kgs of cotton seed + 40 kgs of lint.

Sources:

- FBS , for export prices.
- KCA, Karachi for marketing expenses.
- Pakistan Cotton Ginners Association, Karachi for ginning charges.
- Pakistan Central Cotton Committee, Karachi for cotton seed price.

EXPORT PARITY PRICE OF SEED COTTON ON THE BASIS OF FUTURE'S
CONTRACT PRICE OF NEW YORK NO. 2 COTTON (AVERAGE OF
OCTOBER, DECEMBER, 2009 AND MARCH, 2010)

S.No	Item	Price calculations
		US Cents per pound
1.	Future's contract price as on April 22, 09	55.34
2.	Grade and staple discount	4.5
3.	Discount on account of inland transportation and certification of stocks	5.5
4.	Parity price of Afzal 1-1/32" at Karachi	45.34
		OR Rupees (a)
	Parity prices per 40 kgs	3209
5.	Marketing expenses (export & purchase incidentals, insurance & financial expenses per 40 kgs	280
6.	Ex- gin price of lint per 40 kgs (item 4 - item 5)	2929
7.	Value of 80 kgs of cotton seed (b)	1484
8.	Ginning charges for 120 kgs of seed cotton	350
9.	Value of 120 kgs of seed cotton (c) (items 6 + 7 - item 8)	4063
10.	Seed cotton price per 40 kgs (item 9 / 3)	1354

Notes:

- a) Buying exchange rate one US \$ = 80.25 Pak rupees, announced by State Bank of Pakistan as on May 05, 2009.
- b) Average price of cotton seed for the period August 08, to February, 2009 at Multan market was Rs 742 per 40 kgs.
- c) 120 kgs of seed cotton = 80 kgs of cotton seed + 40 kgs of lint.

Sources:

1. Cotton Outlook of April 11, 2008 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.

EXPORT PARITY PRICE OF SEED COTTON ON THE BASIS OF AVERAGE
FOB PRICE OF PAKISTANI COTTON YARN (20'S)

S.No	Item	2008-09 (Aug-April)	2003-04 to 2007-08
		US Cents per kg	
1.	Average fob price	199.00	200.00
		OR	Rupees (a)
		159.70	160.50
2.	Fob expenses per kg (transport cost, wharfage, port handling & forwarding, adhesive & EDS)	2.69	2.69
3.	Export packing cost per kg	3.88	3.88
4.	Sales tax @ 15% of item-5	15.00	15.00
5.	Value of 1 kg yarn (item 1 - (items 2+3+4)	138.13	138.93
6.	Recovery from 0.16 kgs cotton waste	5.62	5.62
7.	Conversion charges of lint into yarn per kg	36.58	36.58
8.	Value of 1.16 kgs cotton lint (b) (items 5 +6 -item 7)	107.17	107.97
9.	Price of one kg cotton lint (item7/1.16)	92.39	93.08
	Price of 40 kgs cotton lint	3695.43	3723.10
10.	Transport cost from ginnery to mill, local tax(per 40kgs)	32.00	32.00
11.	Ex-gin price of 40 kgs lint (item 9 - item 10)	3663.43	3691.10
12.	Value of 80 kgs cotton seed (c)	1484.00	1484.00
13.	Ginning charges for 120 kgs of seed cotton	350.00	350.00
14.	Seed cotton price of 120 kgs (item11+12- item13) (d)	4797.43	4825.10
15.	Seed cotton price per 40 kgs (item 14/3)	1599.14	1608.37

Notes:

- a) Buying exchange rate one US \$ = 80.25 Pak rupees, announced by State Bank of Pakistan as on May 05, 2009.
- 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 08, to February, 2009 at Multan market was Rs 742 per 40 kgs.
- d) 120 kgs of seed cotton = 80 kgs of cotton seed + 40 kgs of lint.

Sources:

1. Cotton Outlook various issues for fob price.
2. APTMA, Karachi for items, 2, 3 and 9.
3. **Annex-VIII 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- XII

IMPORT PARITY PRICE OF SEED COTTON ON THE BASIS OF ACTUAL AVERAGE
CIF (KARACHI) PRICE OF IMPORTED COTTON

S. No	Item	2008-09 (Aug-March)	2003-04 to 2007-08
		Rupees per 40 kgs	
1.	Actual average cif (Karachi) price	5199	3465
2.	Handling charges at port and transport cost from port to textile mill at Karachi @ 2.5 % of cif price	130	87
3.	Ex- gin price of lint (Item 1+ item 2)	5329	3552
4.	Value of 80 kgs of cotton seed (a)	1484	1484
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)	6463	4686
7.	Seed cotton price (item 6/ 3)	2154	1562

Note:

- a) Average price of cotton seed for the period August 08, to February, 2009 at Multan market was Rs 742 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

IMPORT PARITY PRICE OF SEED COTTON ON THE BASIS OF AVERAGE QUOTED
CFR EASTREN QUOTED PRICE OF ORLEANS/ TEXAS SLM 1-1/32"

S. No	Item	2008-09 (Aug-April)	2003-04 to 2007-08
		US cent per pound	
1.	CFR Far Eastren Quotated Price assumed as CFR (Karachi) price	54.73	61.50
2.	Insurance, agents commission, and port handling charges @1.5% CFR (Karachi)Price	0.82	0.92
3.	Landed cost at Karachi	55.55	62.42
		OR Rupees per 40 kgs (a)	
		3941	4429
4.	Handling charges at port and transport cost from port to textile mills at Karachi @ 2.5 % of cif price	99	111
5.	Ex- gin price of lint (item 3 + item 4)	4040	4539
6.	Value of 80 kgs of cotton seeds (b)	1484	1484
7.	Ginning charges for 120 kgs of seed cotton including ginning losses	350	350
8.	Value of 120 kgs of seed cotton (item 5 +item 6 - item 7)	5174	5673
9.	Seed cotton price per 40 kgs (item 8/ 3)	1725	1891

Notes:

- a) Selling exchange rate one US \$ = 80.45 Pak rupees, announced by State Bank of Pakistan as on May 05, 2009.
- b) Average price of cotton seed for the period August 08, to February, 2009 at Multan market was Rs 742 per 40 kgs.

Sources:

1. CFR(Far Eastren Quoted) 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-XIV
ECONOMIC EFFICIENCY OF RESOURCE USE IN SEEDCOTTON
 [Based on export parity prices]
 (POLICY ANALYSIS MATRIX)

Province/Year	Gross Revenue	Traded cost	Domestic Factors Cost	Profits
PUNJAB				
Rupees per acre				
2005-06				
Private Prices	18070	7341	7818	2910
Social Prices	20079	6727	8329	5023
Transfers	-2009	614	-511	-2113
2006-07				
Private Prices	19912	8311	8711	2891
Social Prices	20479	7934	9283	3262
Transfers	-567	377	-573	-371
2007-08				
Private Prices	25721	8413	12636	4673
Social Prices	26389	8032	13004	5353
Transfers	-668	381	-368	-680
2008-09				
Private Prices	26967	11383	13346	2237
Social Prices	24461	11118	13766	-423
Transfers	2506	266	-420	2660
SINDH				
2005-06				
Private Prices	17950	6264	7794	3892
Social Prices	20303	5990	7431	6882
Transfers	-2353	274	363	-2990
2006-07				
Private Prices	19845	6806	8836	4202
Social Prices	20695	6507	9395	4794
Transfers	-850	300	-558	-592
2007-08				
Private Prices	25443	6926	12307	6210
Social Prices	26639	6967	12716	6956
Transfers	-1197	-41	-409	-747
2008-09				
Private Prices	26675	9853	13184	3638
Social Prices	24715	9993	13644	1078
Transfers	1960	-139	-461	2560

ANNEX-XV

ECONOMIC EFFICIENCY OF RESOURCE USE IN SEEDCOTTON
Based on Import parity prices
(POLICY ANALYSIS MATRIX)

Province/Year	Gross Revenue	Traded cost	Domestic Factors Cost	Profits
PUNJAB	Rupees per acre			
2005-06				
Private Prices	18070	7341	7818	2910
Social Prices	21708	6727	8329	6652
Transfers	-3638	614	-511	-3742
2006-07				
Private Prices	19912	8311	8711	2891
Social Prices	22199	7934	9283	4982
Transfers	-2287	377	-573	-2091
2007-08				
Private Prices	25721	8413	12636	4673
Social Prices	28071	8032	13004	7035
Transfers	-2350	381	-368	-2362
2008-09				
Private Prices	26967	11383	13346	2237
Social Prices	37355	11118	13766	12471
Transfers	-10388	266	-420	-10233
SINDH				
2005-06				
Private Prices	17950	6264	7794	3892
Social Prices	21942	5990	7431	8520
Transfers	-3992	274	363	-4628
2006-07				
Private Prices	19845	6806	8836	4202
Social Prices	22425	6507	9395	6524
Transfers	-2580	300	-558	-2321
2007-08				
Private Prices	25443	6926	12307	6210
Social Prices	28331	6967	12716	8648
Transfers	-2888	-41	-409	-2438
2008-09				
Private Prices	26675	9853	13184	3638
Social Prices	37683	9993	13644	14046
Transfers	-11008	-139	-461	-10408

WORLD-WIDE AREA, YIELD AND PRODUCTION OF
SEED COTTON: 2007

S.No.	Country	Area (million hect.)	Yield (tonnes/hect.)	Production (million tonnes)	S.No.	Country	Area (million hect.)	Yield (tonnes/hect.)	Production (million tonnes)
1	China	5.433	4.210	22.872	46	Bangladesh	0.016	2.531	0.041
2	United States of America	4.246	2.826	12.000	47	South Africa	0.019	2.162	0.040
3	India	9.300	1.019	9.480	48	Korea, Democratic People's Repu	0.019	2.000	0.038
4	Pakistan	3.260	1.994	6.500	49	Viet Nam	0.023	1.350	0.031
5	Brazil	1.110	3.472	3.854	50	Congo, Democratic Republic	0.070	0.429	0.030
6	Uzbekistan	1.450	2.276	3.300	51	Indonesia	0.021	1.429	0.030
7	Turkey	0.735	3.401	2.500	52	Yemen	0.020	1.199	0.024
8	Syrian Arab Republic	0.250	4.400	1.100	53	Ghana	0.025	0.800	0.020
9	Greece	0.300	3.333	1.000	54	Iraq	0.020	0.923	0.018
10	Turkmenistan	0.642	1.474	0.946	55	Venezuela, Bolivarian Republic of	0.015	0.981	0.015
11	Burkina Faso	0.700	0.986	0.690	56	Kenya	0.038	0.395	0.015
12	Australia	0.144	4.597	0.662	57	Madagascar	0.012	0.820	0.010
13	Nigeria	0.695	0.820	0.570	58	Niger	0.008	1.333	0.010
14	Egypt	0.240	2.333	0.560	59	Thailand	0.008	1.190	0.010
15	Mexico	0.120	3.750	0.450	60	Swaziland	0.015	0.486	0.007
16	Kazakhstan	0.200	2.210	0.442	61	Lao People's Democratic Republic	0.003	2.692	0.007
17	Tajikistan	0.250	1.679	0.420	62	Somalia	0.015	0.400	0.006
18	Argentina	0.305	1.372	0.418	63	Guinea-Bissau	0.004	1.375	0.006
19	Mali	0.480	0.865	0.415	64	Namibia	0.004	1.486	0.006
20	Benin	0.285	1.100	0.314	65	Burundi	0.005	0.902	0.006
21	Iran, Islamic Republic of	0.120	2.500	0.300	66	Ecuador	0.003	1.315	0.004
22	Côte d'Ivoire	0.226	1.283	0.290	67	Nicaragua	0.002	1.943	0.003
23	Chad	0.350	0.743	0.260	68	El Salvador	0.002	2.200	0.003
24	Sudan	0.160	1.500	0.240	69	Guatemala	0.002	2.133	0.003
25	Zimbabwe	0.398	0.590	0.235	70	Tunisia	0.002	1.500	0.003
26	Cameroon	0.203	1.108	0.225	71	Angola	0.003	1.000	0.003
27	Peru	0.095	2.245	0.213	72	Botswana	0.001	2.273	0.003
28	Tanzania, United Republic of	0.250	0.840	0.210	73	Philippines	0.002	1.000	0.002
29	Myanmar	0.122	1.557	0.190	74	Honduras	0.001	1.727	0.002
30	Paraguay	0.250	0.740	0.185	75	Haiti	0.004	0.378	0.001
31	Zambia	0.125	1.280	0.160	76	Central African Republic	0.004	0.250	0.001
32	Colombia	0.075	1.733	0.130	77	Albania	0.001	0.900	0.001
33	Spain	0.065	1.938	0.125	78	Bulgaria	0.001	0.988	0.001
34	Mozambique	0.170	0.735	0.125	79	Gambia	0.001	0.393	0.001
35	Kyrgyzstan	0.035	2.741	0.095	80	Costa Rica	0.000	1.000	0.000
36	Azerbaijan	0.076	1.191	0.090	81	Cambodia	0.000	1.368	0.000
37	Togo	0.065	1.292	0.084	82	Georgia	0.000	2.000	0.000
38	Bolivia	0.080	1.000	0.080	83	Morocco	0.000	0.667	0.000
39	Uganda	0.155	0.484	0.075	84	Antigua and Barbuda	0.001	0.136	0.000
40	Ethiopia	0.075	0.867	0.065	85	Algeria	0.000	0.620	0.000
41	Afghanistan	0.050	1.110	0.056	86	Grenada	0.000	0.247	0.000
42	Senegal	0.043	1.158	0.050	87	Montserrat	0.000	0.920	0.000
43	Israel	0.011	4.327	0.048	88	Nepal	0.000	0.800	0.000
44	Guinea	0.036	1.167	0.042	89	Saint Kitts and Nevis	0.000	0.333	0.000
45	Malawi	0.049	0.857	0.042	90	Uruguay	0.000	0.000	0.000

Source: FAO.

COTTON VARIETIES AND YIELD POTENTIAL IN PAKISTAN

S. No	Name of variety	Yield (Kgs/hect.)	S. No	Name of variety	Yield (Kgs/hect.)
Upland					
1	S 12, CRS, Multan	3900	49	BH 160 CRS, Bahawalpur	2500
2	SLS 1, CRS, Sahiwal	3500	50	Marvi, CRI, Sakrand	2500
3	NIAB 78, NIAB, Faisalabad	3500	51	Shahbaz 95 ARI, Tandojam	2500
4	MNH 93, CRS, Multan	3500	52	B 557, CRI, Faisalabad	2500
5	MNH 147, CRS, Multan	3300	53	Shaheen, CRS, Ghotki	2200
6	FH 682, CRI, Faisalabad	3200	54	SLH 41, CRS, Sahiwal	2200
7	CRIS 9, CRI, Sakrand	3100	55	MS 84, CRS, Multan	2100
8	BH 36, CRS, Bahawalpur	3100	56	k 68/9, crs, Ghotki	2000
9	CIM 70, CCRI, Multan	3100	57	Qalandari, CRS, Tandojam	2000
10	CIM 496 CCRI, Multan	3000	58	149 F, CRS, Multan	2000
11	CRIS 467 CRI, Sakrand	3000	59	Sarmast, CRS, Tandojam	1800
12	CIM 707 CCRI, Multan	3000	60	Ms 40, CRs, Multan	1700
13	CIM 506 CCRI, Multan	3000	61	MS 39, CRS, Multan	1650
14	CIM 499 CCRI, Multan	3000	62	AC 134, CRI, Faisalabad	1600
15	FH 1000, Faisalabad	3000	63	Lasani 11, CRI, Faisalabad	1600
16	NIAB 999, NIAB, Faisalabad	3000	64	M 100, CRS, Tandojam	1500
17	CIM 473, CCRI, Multan	3000	65	362 F, CRI, Faisalabad	1500
18	BH 118 CRI, Bahawalpur	3000	66	BS 1 CRSS, Khanpur	1200
19	CIM 482, CCRI, Multan	3000	67	238 F, CRI, Faisalabad	1000
20	FH 900, CRI, Faisalabad	3000	68	268 F, CRI, Faisalabad	1000
21	FH 901, CRI, Faisalabd	3000	69	216 F, CRI, Faisalabad	1000
22	CIM 443, CRSI, Multan	3000	70	LSS, CRI, Faisalabad	1000
23	CIM 446, CRSI, Multan	3000	71	289F/K25, BCGA, Khanewal	1000
24	FVH 53, CRS, Vehari	3000	72	289F, CRI, Faisalabad	950
25	Chandi 95, NIA Tandojam	3000	73	199 F, CRS, Multan	900
26	CIM 448, CCRI, Multan	3000	74	124 F, CRI, Faisalabad	900
27	CIM 1100, CCRI, Multan	3000	75	M 4, CRS, Tandojam	900
28	Karishma, NIAB, Faisalabad	3000	76	289 F/43, CRI, Faisalabad	900
29	MNH 329, CRS, Multan	3000	77	4F, CRI, Faisalabad	800
30	RH 112, CRS, R. Y. Khan	3000	78	3F, CRI, Faisalabad	600
31	S 14, CRS, Multan	3000	Hybrid		
32	CIM 240, CCRI, Multan	3000	1	H151, Aiseemi, Multan	3500
33	NIAB 26N, NIAB, Faisalabad	3000	2	H115, Aiseemi, Multan	3500
34	Reshmi 90, CRS, Tandojam	3000	3	H160, Aiseemi, Multan	3500
35	CIM 109, CCRI, Multan	3000	Desi		
36	Gohar 87, CRS, Bahawalpur	3000	1	FDH 170, CRI, Faisalabad	2500
37	RH 1, CRS, R. Y. Khan	3000	2	FDH 228, CRI, Faisalabad	2000
38	fh 87, CRI, Faisalabad	3000	3	Rohi, CRI, Bahwalpur	2000
39	MNH 129, CRS, Multan	3000	4	Ravi, CRI, Faisalabad	1900
40	Rehmani, CRS, Tandojam	3000	5	SKD 10/19, CRI, Sakrand	1700
41	MNH 552, CRS, Multan	2900	6	D 9, CRI, Faisalabad	1400
42	MNH 554, CRS, Multan	2800	7	TD 1, CRS, Tandojam	1000
43	FH 634, CRI, Faisalabad	2800	8	231 R, CRI, Multan	1000
44	Gomal 93, CRS, D. I. Khan	2800	9	119S, CRI, Multan	800
45	NIAB 86, NIAB, Faisalabad	2800	10	SNR, CRS, Tandojam	800
46	CRIS 134, CRI, Sakrand	2700	11	39 M, CRI, Faisalabad	650
47	NIAB 111 NIAB, Faisalabad	2600	11	15 M, CRI, Faisalabad	600
48	Sohani NIA, Tandojam	2500	12	SNR, CRS, Tandojam	800

Source: A booklet titled as " Cotton Varieties of Pakistan", FSC & RD, Islamabad

