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COTTON POLICY ANALYSIS FOR 2010-11 CROP

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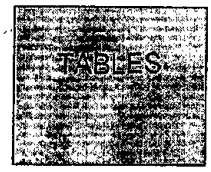
CONTENTS



LIST OF FIGURES

ANNEXES

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

Area and Production

- Punjab and Sindh contribute about 74 and 25 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 @ 1.5 per cent per annum due to 1.3 per cent improvement in yield and 0.2 per cent expansion in area.
- Cotton production for 2009-10 crop is estimated at 12.70 million bales, showing an increase of 7.45 per cent from 11.82 million bales in 2008-09.
- Cotton production has fallen short by 5 per cent against the target.

Domestic Prices

- Monthly average market prices of seed cotton for 2009-10 crop have generally remained above the export parity prices.
- The wholesale prices of seed cotton ranged from Rs 1583 to Rs 2245 per 40 kgs during the post harvest season in major producing areas of the Punjab and Rs 1640 to Rs 2276 per 40 kgs in Sindh.
- Monthly wholesale prices of seed cotton during the post harvest period averaged at Rs 1916 per 40 kgs in the Punjab and Rs 1903 in Sindh.
- Monthly average spot prices of cotton lint at Karachi have risen to Rs 4358 per 40 kgs in 2009-10 from Rs 3689 in 2008-09.

Cost of Production

- In Punjab, cost of cotton cultivation during 2010-11 season is estimated at Rs 29,421 per acre.
- The cost of production at the market/ginnery level would be Rs 1603 per 40 kgs, reflecting a rise of 19 per cent over the last year.
- In Sindh, the cost of cotton cultivation for 2009-10 crop is expected at Rs 27,126 per acre.
- The cost of production at market/ginnery level would come to Rs 1454 per 40 kgs, showing an increase of 22 per cent over the last year.

Economics of Cotton andCompeting Crops

- The economics of cotton has an edge over basmati and Irri during 2009-10 in respect of economic indicators adopted in this analysis.
- In case of indirect competition with sugarcane, the cotton combinations with wheat or sunflower lag far behind sugarcnae in both the provinces.
- In Sindh, cotton farming also excelled over IRRI papddy in terms of all the economic indicators.

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 has fluctuated from 0.52 to 0.89 tonnes while that of P fertilizer from 0.78 to 3.16 during 2000 to 2010.

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 marginally risen by 5 per cent.

Nominal and Real Market Prices

- The nominal market prices of seed cotton indicate an overall surge of 100 per cent while real market prices have slightly dropped from base year level by 4 per cent during 2000-2010.

World Production and Prices

- World cotton production at 22.22 million tonnes in 2009-10 is forecast to marginally rise to 24.09 million in 2010-11.
- The world prices of cotton have fluctuated widely dipping as low as 39 cents per pound in 2001-02 and rising as high as 72 cents per pound in 2009-10.

Export/Import Parity Prices

- Based on actual export price of Pakistani cotton during 2009-10, the export parity price of seed cotton calculates to Rs 1715 per 40 kgs and Rs 1631 during 2006-09.
- Export parity price comes to Rs 1882 per 40 kgs on the basis of Futures contract prices of New York No.2 Cotton for 2010-11.
- Based on cotton yarn prices at Karachi during 2009-10, the price of seed cotton works to Rs 1887 per 40 kgs.
- Based on actual cif (Karachi) price of imported cotton during 2009-10, the import parity price of seed cotton works to Rs 2286 per 40 kgs.
- Based on CFR Far Eastern quoted price of Orleans/Texas SLM 1-1/32", the import parity price comes to Rs 2323 per 40 kgs during 2009-10.

Economic Efficiency

- Economic efficiency of resource use in cotton production has been 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 findngs of economic efficiency analysis warrant expansion in cotton production to meet domestic requirements of textile industry as the imports are more expensive.

World Comparison

- Pakistan is the 4th largest cotton producer in terms of area and production but holds 21st position in terms of yield.

- According to the Annual Progress Report of Central Cotton Research Institute, Multan for 2008-09, mjaor cotton varieties sown in Punjab were Bt cotton, CIM-496, CIM-473 CIM-506 and MNH-786 covering around 80 per cent of cotton area.

- Among 6 competing countries, cost of production of seed cotton was estimated at Pak Rs 2450 per 40 kgs in USA while in Uzbekistan it was reported at Pak Rs 1145 per 40 kgs during 2006-07.

- The cost of production of seed cotton is estimated at Pak Rs 2265 per 40 kgs in China, Rs 1250 in India, Rs 2246 in Turkey and Rs 1344 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.

Policy Options

Based on the analysis of relevant factors covered in the main text of the Report, the likely policy options for seed cotton 2010-11 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 2009-10 (Aug-Dec)	1715	
	- During 2006-07 to 2008-09	1631	
	ii) Futures contract prices of New York No.2 cotton (average of October, December 2010 and March 2011	1882	
	iii) Fob prices of Pakistani cotton yarn (20's):		
	- During 2009-10 (Aug-Jan)	1887	
	- During 2006-07 to 2008-09	1839	
2	Import parity prices based on average:		
	i) CFR Far Eastern quotations of Orleans/Texas SLM 1-1/32"		
	- During 2009-10 (Aug-Jan)	2323	
	- During 2006-07 to 2008-09	2027	(2010-11)
	ii) Actual cif Karachi prices of imported cotton:		
	- During 2009-10 (Aug-Dec)	2286 —	4411
	- During 2006-07 to 2008-09	1898	
3	Average domestic market price of seed cotton in 2009-10 (Aug-Jan)		
	- Punjab	1916	
	- Sindh	1903	
4	Cost of production for 2010-11 crop		
	- Punjab	1721	
	- Sindh	1582	
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 proposals are made regarding intervention price and improving productivity, quality and marketing of cotton crop:

Intervention Price

- The MINFA may like to consider the intervention price of seed cotton (Base grade 3 with staple length 1-1/16″)* for 2010-11 crop, in view of upward trend in world prices and high input costs, if deem necessary.

- It provides a reference point to intervene by the public sector agency, if needed. It is to be implemented only when the market prices of seed cotton fall below the Intervention Price.

- In view of trade libralization 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.

Improving Productivity

- Public and private seed companies may be encouraged to multiply and distribute the seed of the appoved / recommended cotton varieties in sufficient quantities for cultivation.

- Private sector will be encouraged to play leading role in supply of certified Bt cotton seed through public – private partnership.

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*It is pertinent to mention that the KCA I 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″

- The government should strengthen the IPM programme of NARC for its effective implementation in the entire cotton growing area. Pest Warning System shold be further strengthened enabling the farmers to take timely action.
- 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.
- A comprehensive educational campaign should be launched to educate the growers about improved practices of cotton picking.
- There is a dire need for early introduction of Genetically Modified Cottons for control of Boll Worm and CLCV 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 / drought 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.

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 Regulartory Authority may be established to control agriculture input pries 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.

Chairman, API

June 15, 2010

COTTON POLICY ANALYSIS FOR 2010-11 CROP

INTRODUCTION

Cotton is the most important cash crop of Pakistan known as "White gold". It is annually cultivated on an area of about 3 million hectares, which account for 12 per cent of the cropped area in the country. It contributes 7 per cent of the value added in agriculture sector. Cotton farming is a significant source of income for rural labour class especially women as pickers. The cotton sticks are also used as fire wood almost round the year at village level. Hundreds of ginneries are spread all over the country especially at village/town level in remote areas and their seasonal/permanent labour depend on cotton. It's also provides raw material to oil extraction mills and the cottonseed cake is a principle source of animal feed.

2. Cotton farming is the principal source of raw material for the textile sector; factories and textile mills in the country heavily depend upon cotton employing millions of skilled and unskilled labour along the entire cotton value added chain, from weaving to textile and garment export. Accordingly, 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. The foreign exchange earned from export of cotton and its made ups constitute about 60 per cent of earnings from merchandise exports. 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 of the government particularly in textile industry.

4. 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. It has averaged around 12 million bales during the last three years. Since the production of cotton is vulnerable to a host of insect/pests, its cultivation is a risky proposition. Even in good crop years, farmers have suffered because of low prices. The sowing in cotton production and prices have adversely affected all the cotton related sub-sectors of the economy. In view of the importance of cotton, there is an urgent need to minimize incidence of these fluctuations and reverse the set back suffered in cotton production.

5. In order to ensure a reasonable production level for the domestic textile industry and safeguard the interest of the cotton growers, the Government has been analysing the Intervention Price in the past for the Base grade with staple length 1-1/16" to be implemented only when the seed cotton market price moves below the intervention price level. Such an intervention was however not needed during 2009-10 season as the market prices had remained significantly higher throughout the season.

6. In preparing this Report for seed cotton 2010-11 crop, following procedure was adopted:

- 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 Agriculture Policy Institute.

- A field survey was conducted by the API during January, 2010 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. The data of field survey was analysed and the findings were duly considered in policy analysis.

- Meeting of the API's Standing Committee on Cotton was held on 19th January, 2010 at API, Islamabad. 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. The proceedings of the meeting were issued and the viewpoints of the

committee members were duly considered in formulating the policy proposals.

7. 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 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. For improving quality of cotton, Amendment in Cotton Control Act and implementation of Cotton Standardization and Grading System are to be given priority.

8. In order to improve yields, quality and marketing of cotton, the 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 the disease/heat/drought resistant and Genetically Modified cotton varieties. Pest scouting and Early Warning system is being strengthened by the provincial governments. The private sector will be facilitated for production of Bt-cotton hybrid seeds through technical and financial assistance.

2. SOWING AND PICKING

9. 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	1st May to 15th June
Jhang, Toba Tek Sindh	1st May to 15th June
Mianwali	10th May to 15th June
Sahiwal, Pak Pattan, Okara,	1st May to 15th June
Multan, Lodhran, Vehari	1st May to end of June
Khanewal	15th May to 15th June
Bahawalpur, R.Y.Khan	1st May to 15th June
Bahawalnagar	1st May to 20th June
Muzaffargarh, Layyah, D.G.Khan, Rajanpur	1st May to end of June
Sindh	
Mirpur Khas, Tharparkar	1st March to 15th April
Hyderabad, Badin	10th April to 10th May
Sanghar	Mid April to mid May
Dadu, Khairpur, Sukkur, Ghotki	Mid May to 10th June
Nawabshah	1st May to 31st May
NWFP	
D.I.Khan	1st May to 31st May
Balochistan	
Lasbela, Dera Murad Jamali, Nasirabad	1st May to 31st May

Sources:

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

10. Picking of cotton in Sindh and in some parts of the Punjab starts in August and May continue up to February in certain cases depending upon the crop and climatic conditions.

3. PROVINCIAL SHARES IN AREA AND PRODUCTION

11. Provincial shares in area and production of cotton during 2007-08 to 2009-10 are provided in Table-2. During this period cotton production averaged at 11.76 million bales from 2.98 million hectares (7.4 million acres).

Table-2: Provincial Shares in Area and Production of Cotton: Average of 2007-08 to 2009-10

Country/ Province	Area		Production	
	000 hectares	Per cent	000 bales	Per cent
Pakistan	**2985.1**	**100.0**	**11765.6**	**100.0**
Punjab	2353.2	78.8	8724.3	74.2
Sindh	601.2	20.1	2962.0	25.2
NWFP	0.2	0.0	0.5	0.0
Balochistan	30.5	1.0	78.8	0.7

Source: Annex-I.

12. Punjab and Sindh account for 78.8 and 20.1 per cent of cotton area and 74.2 and 25.2 per cent of cotton production (Figures 1 and 2). Cotton yield in Sindh is higher than Punjab that is why its production share exceeds the area share. Combined production of NWFP and Balochistan is 0.7 per cent from 1.0 per cent area. Cotton yield in these provinces is much lower than Punjab and Sindh.

4. IMPORTANT COTTON GROWING DISTRICTS

13. 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 Rahim Yar Khan and Bahawalpur. The districts producing more than 100 thousands bales of cotton per year each are Bahawalnagar, Vehari, Lodhran, Khanewal, Multan, Muzzafargarh, Rajanpur, D.G.Khan, Sahiwal, Pakpattan, Jhang, T.T.Singh, Faisalabad, and Layyah from the Punjab province and Sanghar, Hyderabad, Ghotki, Khairpur, Mirpurkhas, Nawabshah, Naushero Feroze and Sukkur from Sindh Province. These 24 districts account for more than 96 per cent of the cotton production in the country.

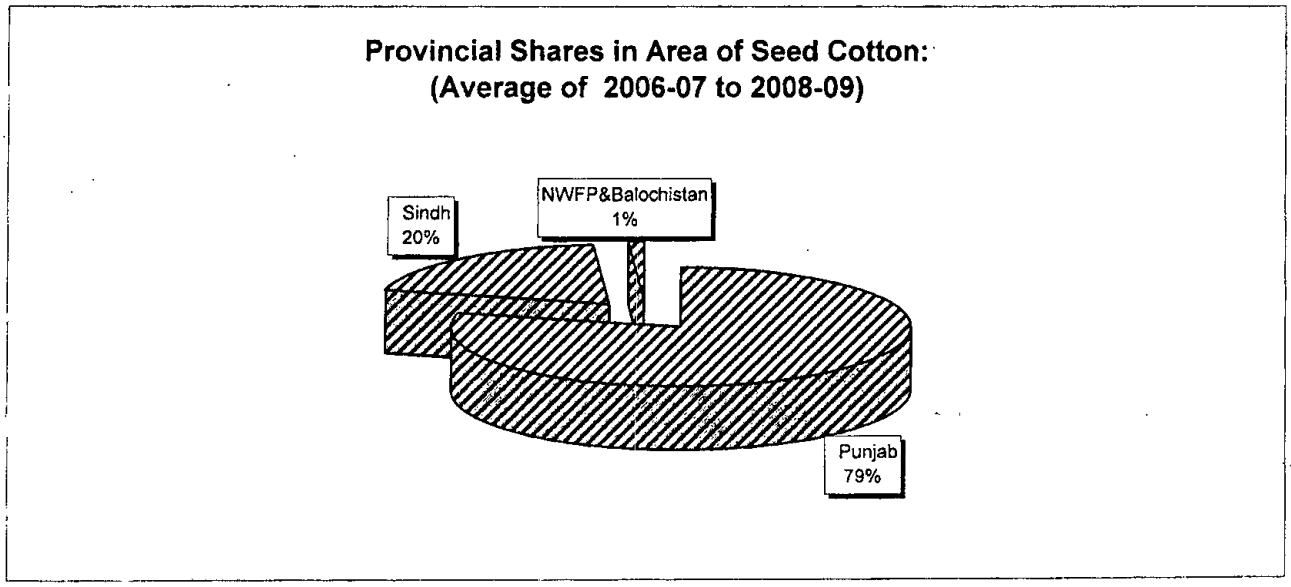


Figure-1: SHARES IN AREA

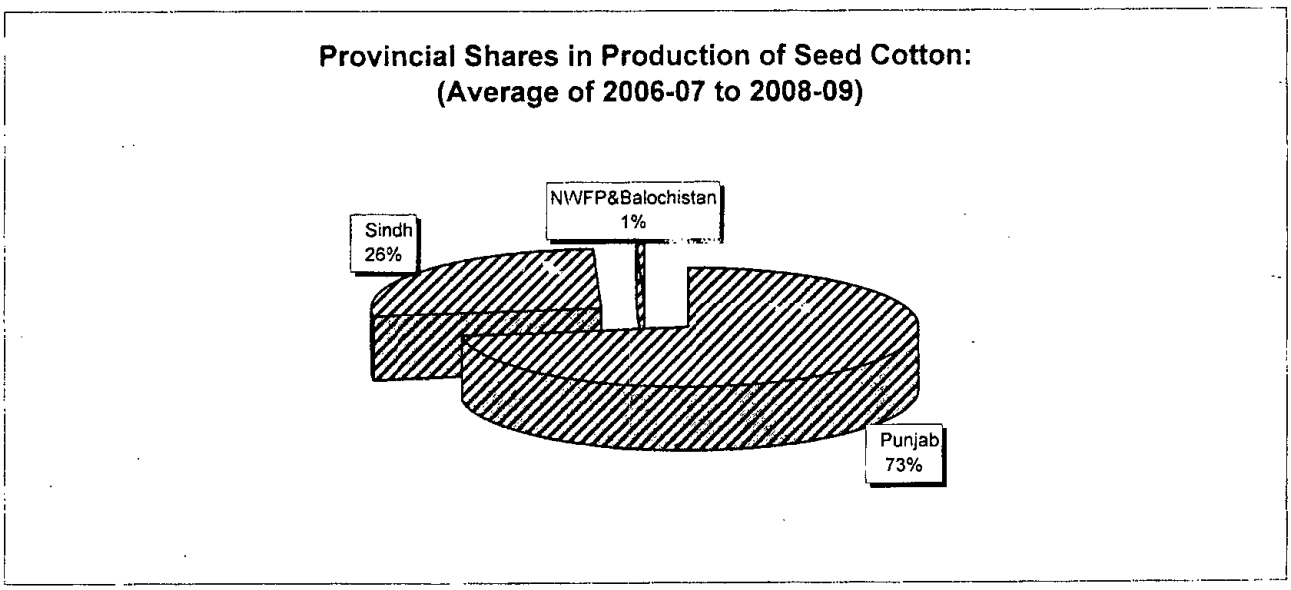


Figure-2: SHARES IN PRODUCTION

14. The districts of Rahim Yar Khan, Bahawalpur, Bahawalnagar, Vehari, Lodhran, Khanewal, Multan, Muzzafargarh, Rajanpur, Sanghar each producing more than half million bales per year altogether account for 66 per cent of the cotton in the country.

5. CHANGES IN AREA, YIELD AND PRODUCTION

15. During the period of 1999-00 to 2009-10, cotton area ranged between 2.79 and 3.19 million hectares (6.89 and 7.89 million acres) and yield between 572 and 760 kgs per hectare (231 to 308 kgs per acre). Therefore, cotton production fluctuated between 10.0 and 14.3 million bales. Long term and short term changes in area, yield and production are discussed below:

5.1 Long-term Changes: 1999-00 to 2009-10

16. During the period under reference cotton production at country level increased @ 1.5 per cent per annum due to 1.3 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: 1999-00 to 2009-10

Country/ Province	Area	Yield	Production
	---------- Per cent ----------		
Pakistan	**(+) 0.2**	**(+) 1.3**	**(+) 1.5**
Punjab	(+) 0.0	(+) 1.0	(+) 1.0
Sindh	(+) 0.8	(+) 2.3	(+) 3.1

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-II.

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

17. In the Punjab cotton production grew @ 1.0 per cent annually based upon 1.0 per cent improvement in yield. In Sindh cotton production also increased @ 3.1 per cent per annum due to 2.3 percent improvement in yield and 0.8 per cent enlargement in area.

5.2 Short-term Changes: 2008-09 to 2009-10

18. According to the Second estimates provided by provincial Agricultural Departments cotton production from 2009-10 crop at country level is worked out at 11.823 million bales, slightly higher than 11.819 million bales produced in 2008-09. The slightly decline in production is solely due to 8.4 per cent fall in yield, but the area increased by 9.3 per cent.

Table-4: Area, Yield and Production of Cotton: 2008-09 and 2009-10 Crops

Country/ Province	Area		Changes in 2009-10 over 2008-09	Yield		Changes in 2009-10 over 2008-09	Production		Changes in 2009-10 over 2008-09
	2008-09	2009-10		2008-09	2009-10		2008-09	2009-10	
	-- 000 hectares --		Per cent	--Kgs/hectare --		Per cent	-- 000 bales --		Per cent
Pakistan	**2819.9**	**3081.1**	**(+) 9.3**	**712.9**	**652.7**	**(-) 8.4**	**11819.0**	**11822.6**	**(+) 0.0**
Punjab	2223.7	2411.1	(+) **8.4**	669.4	589.8	(-) 11.9	8751.0	8360.0	(-) 4.5
Sindh	561.5	634.7	(+) 13.0	902.2	903.5	(+) 0.1	2978.3	3371.4	(+) 13.2
NWFP	0.2	0.2	(+) 0.0	425.2	425.2	(+) 0.0	0.5	0.5	(+) 0.0
Balochistan	34.5	35.1	(+) 1.7	439.8	439.5	(-) 0.1	89.2	90.7	(+) 1.7

Source: Annex-I.

19. Cotton production in the Punjab estimated at 8.360 million bales is 4.5 per cent lower than the 8.751 million bales produced in 2008-09. Decrease in production is only due to fell in yield by 11.9 per cent but the area increased by 8.4 per cent.

20. In Sindh cotton production of 3.171 million bales is 13.2 per cent higher than 2.978 million bales produced in 2008-09. Increase in production is due to rise in area by 13.0 per cent and slightly improvement in yield by 0.1 per cent.

5.3 Factors Responsible for Variation in Cotton Production

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

* **Punjab**

Area

22. Cotton area increased by 8.4 per cent over the previous year which is due to:

i) Good economic returns received from the last year produce induced the growers to shift sugarcane area to cotton crop.

ii) Less CLCV/insect pest attack on previous year crop also encouraged growers to put more area under cotton crop.

iii) Favorable weather conditions at sowing time.

* **Sindh**

23. Cotton area also increased by 13.0 per cent over the previous year is due to:

i) In the last year 2008, the growers received a good return from the seed cotton and they gave preference to bring more area under the cotton crop.

ii) Due to marketing problem faced by the sugarcane growers in the last year, they switched over the area of sugarcane towards cotton crop from which they expected more income.

Production

* **Punjab**

24. Production declined in the Punjab province which is due to the following factors:

i) Abnormal temperature prevailed during the season caused fruit shedding particularly of BT cotton having larger share.

ii) Severe attack of CLCV and attack of sucking pest/insect in the certain districts of core and non-core areas.

* **Sindh**

i) Production increased due to increase in area.

ii) Climatic conditions favoured the crop and insect pest situation also remained under control.

iii) Better market prices of seed during last year, induced and encouraged the growers for better management of their crop are also for balanced use of fertilizer.

6. TARGETS VS ACHIEVEMENTS: 2009-10 CROP

25. FCA (Federal Committee on Agriculture) had fixed cotton production target for 2009-10 crop at 13.360 million bales. As per Second Estimates of Provincial Agriculture Departments, cotton production is reported at 11.823 million bales, a shortfall of 11.5 percent. Low achievement is attributed to 3.7 per cent shortfall in area and 8.1 per cent in yield.

Table-5: Targets and Estimated Achievements of Area, Yield and Production of Seed Cotton: 2009-10 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**	**3081.1**	(-) 3.7	**710.1**	**652.7**	(-) 8.1	**13360.0**	**11822.6**	(-) 11.5
Punjab	2500.0	2411.1	(-) 3.6	680.4	589.8	(-) 13.3	10000.0	8360.0	(-) 16.4
Sindh	650.0	634.7	(-) 2.4	850.5	903.5	(+) 6.2	3250.0	3371.4	(+) 3.7
NWFP	10.0	0.2	(-) 98.0	170.1	425.2	(+)150.0	10.0	0.5	(-) 95.0
Balochistan	40.0	35.1	(-) 12.3	425.2	439.5	(+) 3.4	100.0	90.7	(-) 9.3

Sources:

1. For targets: Working paper of the 91st Meeting of FCA.
2. For achievements: Annex-I.

26. In the Punjab, production lagged behind the target by 16.4 per cent due to short area by 3.6 per cent and low yield by 13.3 per cent. Cotton production in Sindh high of target by 3.7 per cent due to improved achievement of 6.2 per cent in yield as the area is lower than the target by 2.4 per cent.

7. DOMESTIC SUPPLY, DEMAND, STOCKS AND PRICE SITUATION

7.1 Domestic Supply, Demand and Stocks

27. Domestic production of cotton lint from 2009-10 crop reported at 11.82 million bales is some as the last year's production. Adding the opening stocks of 0.56 million bales which is 76 percent less than that of 2008-09, the total supply is calculated at 12.38 million bales. Accounting for the likely consumption, imports and exports, the closing stocks of 2009-10 show a shortfall of 3.12 million tonnes. Due to this shortfall, import of cotton will increase and the prices of seed cotton in coming cotton season may firm up.

Table-6: Domestic Production, Demand and Stocks of Cotton (Lint): 2007-08 to 2009-10 (August-July)

Item	2007-08	2008-09 (estimated)	2009-10 (Provisional)
	------- Million bales * -------		
1. Opening stocks	3.66	2.31	0.56
2. Production (2nd estimate)	11.57	11.82	11.82
3. Total supply	**15.23**	**14.13**	**12.38**
4. Likely Consumption	**15.58**	**15.45**	**15.52**
5. Imports	2.95	2.34	0.69
6. Exports	0.29	0.46	0.71
7. Closing stocks	**2.31**	**0.56**	**-3.12**

* One bale = 170 kgs = 375 lb.

Sources:

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)

28. Monthly average wholesale prices of seed cotton in the main producing area markets of Punjab and Sindh during the post harvest period of 2009-10 crop are detailed in Table-7.

Table-7: Monthly Average Wholesale Prices of Seed Cotton (Phutti) in the Main Producer Area Markets During 2009-10 Crop (August-January)

Markets	Aug	Sept	Oct	Nov	Dec	Jan	Avg
	----------Rupees per 40 kgs----------						
Bahawalpur	1677	1720	1843	2018	2114	2171	1921
Khanewal	1583	1663	1809	1994	2097	2140	1881
Multan	1634	1656	1771	1954	2050	2114	1863
R.Y.Khan	1802	1690	1829	2069	2167	2234	1965
Vehari	1774	1715	1795	2016	2129	2245	1946
Average	1694	1689	1809	2010	2111	2181	**1916**
Sindh							
Mirpur Khas	1750	1730	1675	1850	2166	2150	1887
Sanghar	1713	1713	1705	1875	2119	2069	1866
Hyderabad	1725	1718	1640	1850	2156	2175	1877
Shaheed Benazirabad	1750	1700	1700	1800	2031	2103	1847
Ghotki	N.A	N.A	N.A	1850	2225	2276	2038
Average	1735	1715	1680	1845	2139	2155	**1903**

Sources:

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

29. Monthly wholesale prices of seed cotton during the post harvest period averaged at Rs 1916 per 40 kgs in the Punjab and Rs 1903 in Sindh.

7.2.2 Cotton lint

30. Monthly average spot prices of raw cotton at Karachi during 2008-09 and 2009-10 are presented in Table-8. The spot price during 2009-10 averaged at Rs 4357 per 40 kgs which is substantially higher than that of last year.

Table-8: Monthly Average Spot Prices of Raw Cotton at Karachi, 2008-09 and 2009-10 Crops (August-February)

Month	Base Grade -3, staple length 1-1/16", Micronaire Value 3.8 to 4.9 NCL (No Control Limit)	
	2008-09	2009-10
	Rupees per 40 kgs	
August	4421	3893
September	4304	3712
October	3586	3855
November	3235	4259
December	3158	4767
January	3523	4935
February	3598	5083
Average	**3689**	**4358**

Source: Karachi Cotton Association (KCA).

8. COST OF PRODUCTION OF SEED COTTON

31. In preparing the price proposals for the farm produce, the cost of production is one of the imperative factors. Its empirical estimation involves several conceptual and realistic difficulties because of wide variations in agro- climatic conditions, use level of inputs, and farm systems under which the crop is grown.

32. The cost of production estimates of seed cotton for 2010-11 crop in the Punjab and Sindh have been synthesized by adopting the input-output parameters as used in the Cotton Policy Analysis Report for 2009-10 Crop alongwith the latest inputs prices and custom hire rates of field operations. To revise the inputs prices and custom hire rates of different field operations involved in cotton cultivation, API carried out a field survey in the major growing areas of the Punjab and Sindh during January 2010. These rates were also discussed in the meeting of the API's Standing Committee on Cotton, held on 19th January 2010 in the Agriculture Policy Institute, Islamabad and supplemented with the information provided by the committee members. The detailed cost estimates of the Punjab and Sindh are given in Annex IV and V respectively, while a summary of the results is presented in Table-9.

Table-9: Average Farmers' Cost of Production of Seed Cotton: 2009-10 and 2010-11 Crops

S.No	Items	Unit	2009-10 crop	2010-11 crop	Increase in 2010-11 over 2009-10
	Punjab				
1.	Cost of cultivation	Rs/acre	24780	29421	4641
2.	Yield	Kgs/acre	696	696	-
3.	Cost of production at farm level	Rs/40 kgs	1424	1691	267
4.	Marketing cost	Rs/40 kgs	26	30	4
5.	Cost of production at market/ginnery	Rs/40 kgs	1450	1721	271
	Sindh				
1.	Cost of cultivation	Rs/acre	22195	27126	4931
2.	Yield	Kgs/acre	700	700	-
3.	Cost of production at farm level	Rs/40 kgs	1268	1550	282
4.	Marketing cost	Rs/40 kgs	28	32	4
5.	Cost of production at market/ginnery	Rs/40 kgs	1296	1582	286

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

Punjab

33. It may be seen from Table-9 that the cost of cultivating one acre of seed cotton in the Punjab, during 2010-11 is estimated at Rs 29421, including land rent. Based on the average yield of 696 kgs per acre, the cost of production works to Rs. 1691 per 40 kgs. Adding the marketing charges @ Rs. 30 per 40 kgs, the market/ginnery level cost of production comes to Rs. 1721 per 40 kgs, higher by Rs. 271 (19 per cent) than the corresponding cost of 2009-10 crop.

Sindh

34. During 2010-11 crop season, the cost of cultivating one acre of seed cotton in Sindh is expected to be Rs 27126, including land rent. Taking into account an average yield of 700 kgs per acre, the farm level cost of production of seed cotton works to Rs. 1550 per 40 kgs. Adding marketing cost @ Rs. 32 per 40 kgs, the market/ginnery level cost of production would come to Rs. 1582 per 40 kgs, representing an increase of Rs. 286 (22 per cent) over the corresponding cost of Rs. 1296 per 40 kgs in 2009-10.

35. The escalation in the cost of production of seed cotton in both provinces are primarily attributed to rises in the hiring rates of tractors, cost of supplementary irrigation and transportation on account of continuous increase in the prices of diesel. The rise in the prices of fertilizers and seed, wage rates, land rent and picking charges has also added in the cost of production of seed cotton.

Cost of major operations

36. The cost of major items in the total cost of cultivation of seed cotton during 2009-10 and 2010-11 crops is presented in Table-10 below:

Table-10: Costs of Major Operations/Inputs in the Total Cost of Cultivation of Seed Cotton: 2009-10 and 2010-11 crops

		2009-10 crop	2010-11 crop	Shares in increased cost
		Rs/acre		Per cent
	Punjab			
1.	Land preparation	1994 (8)	2650 (9)	14
2.	Seed and sowing operations	1149 (5)	1414 (5)	6
3.	Irrigation	2574 (10)	3220 (11)	14
4.	Interculture	1712 (7)	2206 (7)	10
5.	Plant protection	3000 (12)	3058 (10)	1
6.	Fertilizers including FYM	3966 (16)	4697 (16)	15
7.	Land rent	6667 (26)	8000 (27)	28
8.	Picking charges	1914 (8)	2175 (7)	5
9.	Others	2264 (9)	2576 (9)	7
10.	Gross cost	25240(100)	29996(100)	100
	Sindh			
1.	Land preparation	2390(10)	3230(12)	17
2.	Seed and sowing operations	1603 (7)	2022 (7)	8
3.	Irrigation	1856 (8)	2299 (8)	9
4.	Interculture	1742 (8)	2245 (8)	10
5.	Plant protection	2058 (9)	2100 (8)	1
6.	Fertilizers including FYM	3615 (16)	4411 (16)	16
7.	Land rent	5333 (23)	6667 (24)	26
8.	Picking charges	1823 (8)	2051 (7)	4
9.	Others	2389 (11)	2871 (10)	9
10.	Gross cost	22819(100)	27896(100)	100

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

37. In the Punjab, land rent is the most important component of the cost of cultivation of seed cotton for the 2010-11 crop, contributing 27 per cent. The other foremost constituents are: fertilizers including FYM (16 %), irrigation (11 %), plant protection (10 %), land preparation (9 %), picking charges and interculture (7 % each).

Sindh

38. The principal components of the cost of cultivation of seed cotton in Sindh during 2010-11 crop year are: land rent (24 %), fertilizer including FYM (16 %), land preparation (12 %), plant protection, irrigation and interculture (8 % each) and seed/sowing operations and picking charges (7 % aech).

Prices of major farm inputs

39. In estimating the cost of production of seed cotton for the 2009-10 and 2010-11 crops, the average market prices of the most important farm inputs used are given below:

Items	**Units**	**2009-10 crop**	**2010-11 crop**	***Per cent change***
Punjab				
1. HSD	Rs/litre	57.14	72.04	26.08
2. Power tariff	Rs/kwh	4.00	4.75	18.75
3. DAP	Rs/bag	1997	2575	28.94
4. Urea	Rs/bag	732	800	9.29
5. Seed	Rs/kg	86	100	16.28
Sindh				
1. HSD	Rs/litre	57.14	72.04	26.08
2. Power tariff	Rs/kwh	4.00	4.75	18.75
3. DAP	Rs/bag	1963	2575	31.17
4. Urea	Rs/bag	733	810	10.50
5. Seed	Rs/kg	86	105	22.09

9. ECONOMICS OF COTTON AND COMPETING CROPS

40. The farmer's priorities and decisions regarding resource allocation among the competing crops 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.

41. 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.

42. The economics of cotton and competing crops has been analyzed in terms of input-output prices paid and received by the growers during the 2009-10 crop year. The details of the analysis are provided in Annex-VI. While a summary of various economic indicators for the Punjab and Sindh is presented in Tables 11 & 12 and depicted at Figures 3 & 4:

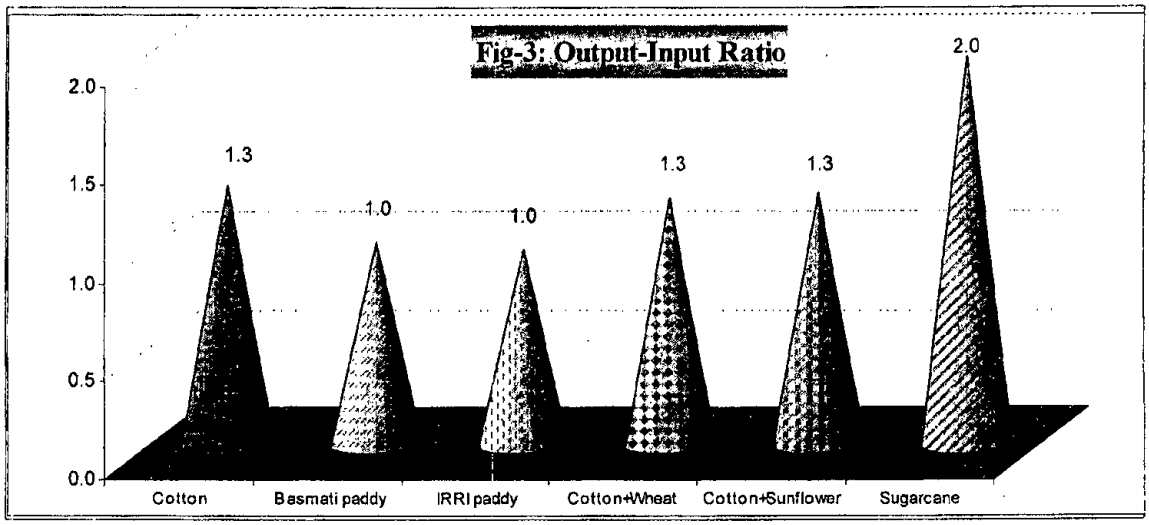
Table-11 : Economics of Cotton and Competing Crops at Prices Realized by the Growers in the Punjab: 2009-10 Crops

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	1.3	3.4	139	1516
2. Basmati paddy	1.0	2.2	130	402
3. IRRI paddy	1.0	2.2	113	329
4. Cotton+Wheat	1.3	3.3	144	1776
5. Cotton+Sunflower	1.3	3.7	136	1297
6. Sugarcane	2.0	6.2	203	1663

Source: Annex-VI

Punjab

43. Due to its lucrative market prices during the current season of Cotton crop has gained its superiority after two years gap again over basmati and IRRI paddy crops in respect of all economic indicators adopted in this analysis.



44. In case of indirect competition, sugarcane gave much better returns over the cotton + wheat and cotton + sunflower combinations in respect of all the economic criteria, mainly due to remunerative market prices of sugarcane observed during the season. The performance of cotton + wheat and cotton + sunflower combinations is equally good and significant.

Sindh

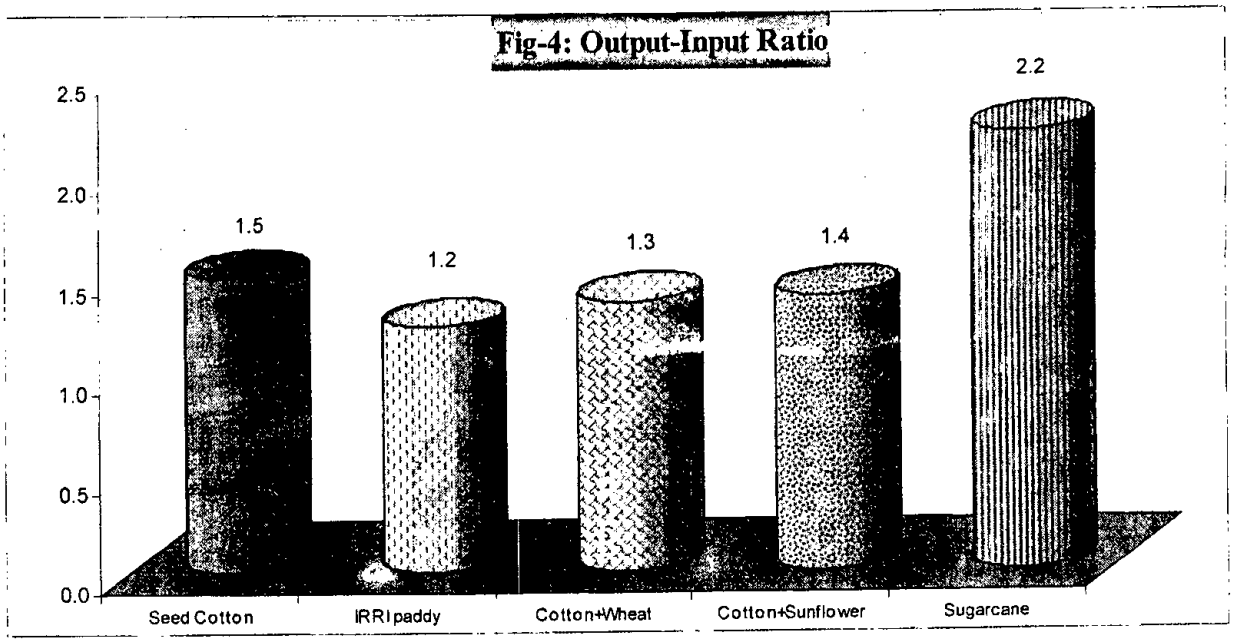
45. In Sindh too, cotton farming has maintained its superiority over IRRI paddy in terms of all the indicators adopted for analyzing the economics of the crop (Table-12).

Table-12: Economics of Cotton and Competing Crops at Prices Realized by the Growers in Sindh: 2009-10 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	1.5	4.1	139	1848
2. IRRI paddy	1.2	3.2	125	400
3. Cotton+Wheat	1.3	3.7	138	1935
4. Cotton+Sunflower	1.4	3.6	136	1424
5. Sugarcane	2.2	7.1	209	1439

Source: Annex-VI

46. In case of indirect competition, sugarcane farming has shown better returns over the cotton + wheat and cotton + sunflower combinations in respect of all the economic criteria except in terms of irrigation water where the cotton + wheat combination has edge over sugarcane.



10. ECONOMICS OF FERTILIZER USE ON COTTON CROP

47. 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)

48. 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 2009-10

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
2009-10	2.72	3.27	3.78	4.26

Sources: 1. For 2000-01 to 2008-09: Cotton Policy Analysis Report for 2009-10 crop by API.
2. For 2009-10: Annex-VII.

10.2 Parity Ratio Between Prices of Fertilizer and Seed Cotton

49. The parity ratio between prices of fertilizers and 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 2009-10 and presented in Table-14. The quantity of seed cotton needed to buy one nutrient tonne of N fertilizer has ranged between 0.52 to 0.89 tonnes. The parity ratios between prices of seed cotton and those of phosphatic fertilizer have fluctuated from 0.78 to 1.51 during the period of analysis except2008-09 where the parity ratio jumped to 3.16 because of exorbitant rise in world prices of DAP.

Table-14: Parity Ratio between the Prices of Fertilizer and Seed Cotton: 2000-01 to 2009-10

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_2O_5		Nitrogen N	Phosphorous P_2O_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
2009-10	31850	73620	61150	0.52	1.20

Notes: 1. The prices of N and P_2O_5 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 2009-10

50. The intervention price of seed cotton is reviewed by the government well before sowing time, mainly with the purpose to regulate the market 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 the purchasing power/real income of its producers. To ascertain overtime changes in the purchasing power of seed cotton, the nominal and real prices of seed cotton at intervention 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 2009-10 and discussed in the following paragraphs.

11.1 Intervention Price of Seed Cotton

51. The nominal and real intervention prices of seed cotton for 2000-01 to 2009-10 are set out in Table 15 and depicted in Figure-5.

Table-15: Nominal and Real Prices of Seed Cotton (Phutti) at Intervention Price: 2000-01 to 2009-10

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	131.64	741
2006-07	1025	141.87	722
2007-08	1050	158.90	661
2008-09	1465	191.90	763
2009-10	-	208.04	-

Note: 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. Pakistan Economic Survey 2008-09.
2. Finance Division, Economic Advisor's Wing, Islamabad.

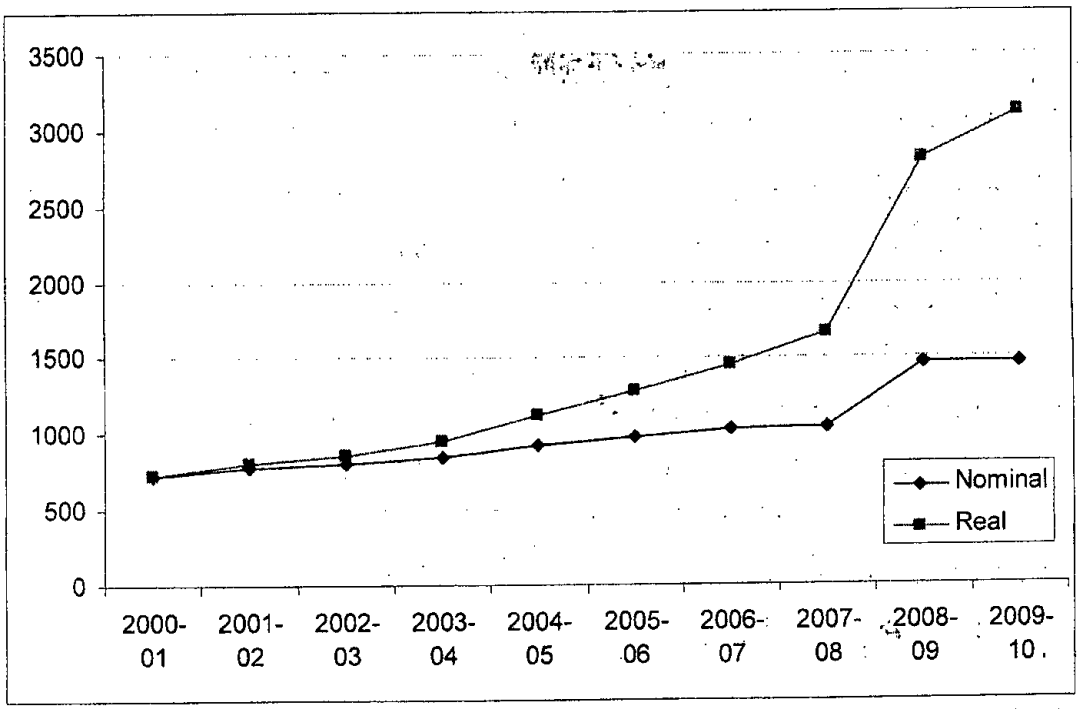


Fig- :Nominal and Real Support Prices of Seed Cotton (Phutti): 2000-01 to 2009-10

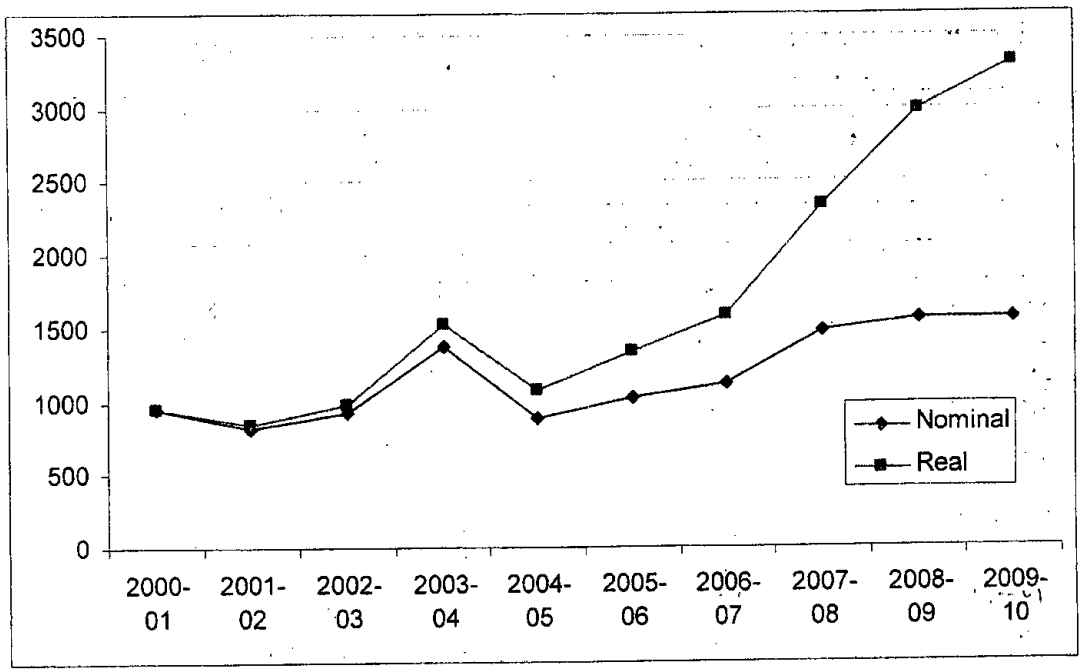


Fig- : Nominal and Real Market Prices of Seed Cotton (Phutti): 2000-01 to 2009-10

52. The nominal intervention price of seed cotton during the period 2000-01 to 2009-10 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 92 per cent. Consequently, the real intervention price of seed cotton for 2008-09 worked at Rs 763 per 40 kgs, 5.2 per cent increase over the real price of Rs 725 per 40 kgs in the base year.

53. During the whole period, the real price of the commodity peaked at Rs 763 per 40 kgs during 2008-09 and dipped to the lowest level of Rs 661 per 40 kgs in 2007-08. No intervention price for seed cotton 2009-10 crop has been fixed by the Government.

11.2 Market Prices of Seed Cotton

54. The nominal and real market prices of seed cotton for 2000-01 to 2009-10 are presented in Table- 16 below and depicted in Figure-6.

Table-16: Nominal and Real Prices of Seed Cotton (Phutti) at Market Price: 2000-01 to 2009-10

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	131.64	773
2006-07	1110	141.87	782
2007-08	1468	158.90	924
2008-09	1557	191.90	811
2009-10	1910	208.04	918

Note: Market prices are the average monthly wholesale prices of seed cotton during post-harvest period in major producing area markets of the Punjab and Sindh.

Sources:
1. From 2000-01 to 2007-08: Pakistan Economic Survey, 2008-09.
2. For 2008-09 and 2009-10: Finance Division, Economic Advisor's Wing, Islamabad.
3. Directorate of Economics and Marketing (E&M) Punjab, Lahore.
4. Agriculture Extension Department, Hyderabad.

55. The nominal market price of seed cotton averaging at Rs 957 per 40 kgs for 2000-01 crop has risen to Rs 1910 per 40 kgs in 2009-10, indicating an overall surge of 100 per cent in the main producing area markets of the Punjab and Sindh. Deflating against the cumulative increase in CPI by 108 per cent, the real market price has decreased from base-year level @ 4 per cent. 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.

56. In all the crop years except 2004-05, the market prices of seed cotton have ruled higher than the intervention price fixed by the government. The year 2003-04 was the best year for the growers in real terms as the highest real market price of Rs 1227 per 40 kgs was recorded. However, in the immediate next year of 2004-05, the market price declined to Rs 885 per 40 kgs, showing 35 per cent erosion over the last year and 4 per cent over the intervention price. After that the market prices of seed cotton showed a rising trend and remained above the fixed intervention price.

57. For 2009-10 crop, the nominal market price averaged at Rs 1910 per 40 kgs, the highest ever market price for the whole period under study. The real value of the crop improved over the last year by 13 per cent. 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. 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 forces have paid favourable returns to the farmers.

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

58. The global production of cotton during 2009-10 is estimated at 22.22 million tonnes. It is about 5 percent less than the production of 23.40 million in 2008-09. During 2010-11, the world production is expected to increase by 8 percent to the level of 24.09 million tonnes. After adding the opening stocks of 10.75 million tonnes, total supply in

2009-10 worked out to 34.56 million tonnes, 2 percent less than 2008-09 level. However, the world cotton supply is forecast to slightly increase during 2010-11.

59. The world consumption of cotton during 2009-10 estimated at 23.80 million tonnes is 0.6 percent higher than the last year level of 23.24 million. For 2010-11, cotton consumption projected at 24.16 million tonnes would be 1.5 percent higher than 2009-10.

60. The end year stocks during 2009-10 estimated at 10.75 million tonnes are about 13 percent lower than the last year of 12.34 million, which are projected to further fall to 10.68 million in 2010-11.

Table-17: World Production, Consumption, Stocks and Trade in Cotton: 2008-09 to 2010-11

S.No.	Item	2008-09 (Actual)	2009-10 (Estimated)	2010-11 (Projection)
		---------- Million tones ----------		
1.	Opening stocks	12.03	12.34	10.75
2.	Production	23.40	22.22	24.09
3.	Total supply (1+2)	35.43	34.56	34.84
4.	Likely consumption	23.24	23.80	24.16
5.	Trade imbalance and stock adjustment*	(-) 0.15	(-) 0.01	0.00
6.	Closing stocks (3-4+5)	12.34	10.75	10.68

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

61. The international prices of Afzal, Index- A and Orleans/Texas Cottons during 1999-2000 to 2009-10 are placed in Annex-VIII.

62. The prices of all three cottons were volatile and widely fluctuated with the lowest level of 38.41 US cents per lb of Afzal and 39.05 of Orleans/Texas during 2001-02. The highest prices were reported at 69.21 cents per lb of Afzal, 72.90 for Index-A cotton in 2007-08 while the highest prices of Orleans/ Texas were reported in current season at 72.03 US cent/lb. During 2009-10 (Aug-Jan) Afzal 1-1/16" were not traded in the international market while the prices of Orleans/ Texas and Index-A cotton were showing upward trend and traded at 67.06-75.25 cents/lb and 64.05-77.50 cents/lb respectively.

14. EXPORT AND IMPORT PARITY PRICES

63. 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.

64. The export and import parity prices of seed cotton have been calculated on the basis of their actual and quoted prices. Detailed calculations in this regard 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 2009-10 (Aug-Dec)	54.89	1,715
	- During 2006-07 to 2008-09	51.50	1,631
	- During 2010-11		3130
	ii) Futures contract prices of New York No.2 cotton (average of Oct- Dec 2010 and March 2011)	71.55	1,882
		US cents/kg	
	iii) Fob prices of Pakistani cotton yarn (20's):		
	- During 2009-10 (Aug-Jan)	210.00	1,887
	- During 2006-07 to 2008-09	205.00	1,839
2.	**Import parity prices based on average:**		
	i) Actual cif (Karachi) prices of imported cotton:	Rs/40 kgs	
	- During 2009-10 (Aug-Dec) for 2010-11 cif →		4411
	- During 2006-07 to 2008-09	5,370	2,286
	ii) CFR Far Eastern quoted price of Orleans/Texas SLM 1-1/32"	4,233	1,898
		US ents/lb	
	- During 2009-10 (Aug-Jan)	72.03	2,323
	- During 2006-07 to 2008-09	60.67	2,027

Sources: Annex-IX to XIII.

15. ECONOMIC EFFICIENCY IN COTTON PRODUCTION

65. 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)

66. 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)

67. 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)

68. 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.

69. 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.

70. 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.

6. COTTON YIELD AMONG COMPETING COUNTRIES

71. To compare Pakistani position with the world, the 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 .

Table-20: Area, Yield and Production of Seed Cotton: 2008

S.No.	Country	Area (Million hectare)	Yield (Tonnes/ hectare)	Production (Million tonnes)
1.	China	5.760	3.906	22.500
2.	India	9.373	1.206	11.305
3.	United States of America	3.128	2.250	7.038
4.	**Pakistan**	2.820	2.046	5.770
5.	Brazil	1.057	3.757	3.971
6.	Uzbekistan	1.452	2.560	3.716
7.	Turkey	0.495	3.678	1.820
8.	Greece	0.320	2.750	0.880
9.	Turkmenistan	0.674	1.261	0.850
10.	Syrian Arab Republic	0.193	3.691	0.711
11.	Burkina Faso	0.500	1.120	0.560
12.	Egypt	0.240	2.333	0.560
13.	Argentina	0.303	1.627	0.494
14.	Nigeria	0.427	1.152	0.492
15.	Mexico	0.100	3.664	0.365
16.	Tajikistan	0.237	1.489	0.353
17.	Tanzania, United Republic of	0.450	0.711	0.320
18.	Kazakhstan	0.175	1.818	0.318
19.	Australia	0.063	4.825	0.304
20.	Iran, Islamic Republic of	0.120	2.500	0.300
	Total of 20 top producing countries	**27.886**	**2.196**	**62.627**
	World total	**31.436**	**2.099**	**65.988**

Source: Annex-XVI

72. Globally, the cotton crop occupied an area of 31.436 million hectares during 2008 with a total production of 65.988 million tonnes. The world top 20 producing countries contribute 89 per cent of total area and 95 per cent of total production.

73. In terms of cotton area, India is on the top with 9.373 million hectares, followed by China with 5.760 million and USA with 3.128 million hectares. Pakistan lies at 4th number in this regard.

74. In terms of cotton production, China is on the top with 22.500 million tonnes, followed by India with 11.305 million and USA with 7.038 million tonnes. However, Pakistan retains 4th position in cotton production of the world as well.

75. Although Pakistan ranks 4th in terms of both area and production of cotton but lies at 21st position in terms of yield during 2008. It implies that there is a lot of potential to raise cotton productivity per hectare in Pakistan. It is an alarming situation and deserve special attention by all concerned quarters. Pakistan slightly lags behind the world average at 2.196 tonnes per hectare. However, cotton yield in Pakistan at 2.046 tonnes per hectare is much higher than India at 1.206 tonnes per hectare (Annex-XVI).

17. COTTON VARIETIES AND YIELD POTENTIAL IN PAKISTAN

76. Cotton is an important cash crop for Pakistan known as "white gold". It accounts for 7 percent of the value added in agriculture sector and about 3 per cent in the GDP. Around two-thirds of the country's export earnings are from the cotton made-ups and textiles.

77. Inspite of the world's 4th largest cotton producer and a leading exporter of yarn in the world, Pakistan ranked 21st in the world in terms of yield during 2008. As a result, Pakistan annually imports around 1.5-2.00 million bales of cotton to meet the growing

needs of local textile industry. Therefore it has become vital for Pakistan to increase its yield per acre.

78. There are several factors for low yield of cotton crop in Pakistan. These are high price of agriculture inputs like seeds, fertilizers, pesticides etc, higher intensity of insects and pests attack, shortage of quality seed, lack of advanced technologies, awareness and agro-professionalism, and adulteration in pesticides, fertilizers and seeds.

79. Seed is the most important factor playing a critical role in improving 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.

80. In Pakistan, various cotton varieties being sown in various ecological zones along with yield potential are presented at Annex-XVII. The data indicate 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.

81. According to the Annual Summary Progress Report of Central Cotton Research Institute, Multan for 2008-09, Bt cotton dominated the farmers choice for cultivation on 42.76% area as reported by Crop Reporting Service, Government of the Punjab, Lahore. However, CIM-496 still covered 23.07% area despite the presence of Bt cotton varieties in the Punjab. On overall Punjab basis, CIM varieties were planted on an area of around 36% in the Punjab province. Overall, major cotton varieties sown in the Punjab during 2008-09 are Bt cotton, CIM-496, CIM-473, CIM-506 and MNH-786 covering around 80% of area under cotton.

18. COST OF PRODUCTION OF SEED COTTON IN COMPETING COUNTRIES

82. 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 data on latest cost of production of seed cotton in competing countries is not available. Therefore, the cost of production of seed cotton for 2006-07 for China, Turkey, USA, Uzbekistan and India is reproduced. The data is updated in Pak Rupees by using the current years average exchange rates (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	156492	2265
India	1575	39.4	568.15	14.88	49237	1250
Turkey	3800	95.0	2540.01	26.74	213361	2246
USA	1846	46.2	1347.31	29.16	113174	2450
Uzbekistan	3000	75.0	1022.35	13.63	85877	1145
Pakistan	1725	43.1	689.60	16.50	59193	1344

Note: One US $ = Pak Rs 84.00.
Source: International Cotton Advisory Committee (ICAC), Washington DC, USA.

83. The cost of production of seed cotton calculated at Pak Rs 2450 per 40 kgs in USA is the highest than that of other countries while in Uzbekistan, it is reported at Rs 1145 as the lowest. The cost of production of seed cotton in India, Turkey and Pakistan is Rs 1250, 2246 and Rs 1344 per 40 kgs, respectively.

19. SUBSIDY ON COTTON PRODUCTION IN COTTON PRODUCING COUNTRIES

84. 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.

85. 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.

86. 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.

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Chairman, API

ANNEX-I

PROVINCE-WISE AREA (HECTARES),PRODUCTION AND YIELD OF COTTON IN PAKISTAN : 1999-00 TO 2009-10

YEAR	PUNJAB	SINDH	KHYBER PUKH.	BALOCHISTAN	PAKISTAN
AREA	---------- 000 hectares ----------				
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	2223.7	561.5	0.2	34.5	2819.9
2009-10	2435.8	634.7	0.04	35.1	3105.6
YIELD	---------- Kgs per hectare ----------				
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	669	902	425	440	713
2009-10	597	1087	340	440	695
PRODUCTION	---------- 000 bales ----------				
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	8751.0	2978.3	0.5	89.2	11819.0
2009-10	8552.0	4055.4	0.1	90.7	12698.2

Sources: 1- For 1999-00 to 2008-09 : Agricultural Statistics of Pakistan 2008-09,MINFA, Islamabad.
2- For 2009-10: Final estimates provided by respective Provincial Agriculture Departments.

ANNEX-II

PROVINCE-WISE AREA (ACRE),PRODUCTION AND YIELD OF COTTON IN PAKISTAN : 1999-00 TO 2009-10

YEAR	PUNJAB	SINDH	KHYBER PUKH.	BALOCHISTAN	PAKISTAN
AREA	---------- 000 acres ----------				
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	5495.0	1387.5	0.5	85.3	6968.3
2009-10	6019.1	1568.4	0.1	86.7	7674.3
YIELD	---------- Kgs per acre ----------				
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	270.88	365.10	172.08	177.96	288.49
2009-10	1475.7	2685.6	840.6	1086.1	6088.0
PRODUCTION	---------- 000 bales ----------				
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	6	107.4	12856.2
2007-08	9062.0	2536.2	0.5	56.4	11655.1
2008-09	8751.0	2978.3	0.5	89.2	11819.0
2009-10	8552.0	4055.4	0.1	90.7	12698.2

Sources: 1- For 1999-00 to 2008-09 : Agricultural Statistics of Pakistan 2008-09,MINFA, Islamabad.
2- For 2009-10: Final estimates provided by respective Provincial Agriculture Departments.

ANNEX-III

DISTRICT- WISE AREA, YIELD AND PRODUCTION OF SEED COTTON
AVERAGE OF 2007-08 TO 2009-10

Area: 000 ha
Production: 000 bales
Yield: Kgs/ha

S.No	Province/ District/ Agency	Area	Production	Share in total production	Yield
	PUNJAB				
1	R.Y.Khan	268.84	1148.37	9.52	726
2	Bahawalpur	283.81	1114.43	9.24	668
3	Bahawalnagar	222.71	891.17	7.39	680
4	Lodhran	202.07	747.77	6.20	629
5	Vehari	208.00	745.62	6.18	609
6	Khanewal	181.57	698.19	5.79	654
7	Multan	176.31	682.70	5.66	658
8	Muzaffargarh	185.61	578.41	4.80	530
9	Rajanpur	135.70	555.14	4.60	695
10	D.G.Khan	99.95	387.86	3.22	660
11	Sahiwal	79.45	257.69	2.14	551
12	Pakpattan	51.39	195.85	1.62	648
13	Jhang	60.29	174.72	1.45	493
14	T.T.Singh	45.73	137.31	1.14	510
15	Faisalabad	43.03	134.15	1.11	530
16	Layyah	41.14	125.40	1.04	518
17	Okara	26.98	82.60	0.69	521
18	Mianwali	14.71	53.96	0.45	624
19	Kasur	12.95	28.47	0.24	374
20	Bhakkar	10.38	28.22	0.23	462
21	Sargodha	7.69	15.89	0.13	352
22	M.B.Din	2.03	2.94	0.02	246
23	Khushab	0.41	0.76	0.01	315
24	Jhelum	0.41	0.43	0.00	178
25	Nankana Sahib	0.13	0.16	0.00	200
26	Chakwal	0.14	0.13	0.00	162
	Sub Total Punjab	**2361.43**	**8788.33**	**72.89**	**633**
	SINDH				
1	Sanghar	130.30	708.68	5.88	925
2	Hyderabad	83.93	517.43	4.29	1048
3	Ghotki	88.40	452.97	3.76	871
4	Khairpur	78.42	379.83	3.15	823
5	Mirpurkhas	62.55	316.89	2.63	861
6	Nawabshah	53.15	276.53	2.29	884
7	N.Feroze	38.82	202.34	1.68	886
8	Sukkur	33.25	156.84	1.30	802
9	Badin	15.79	102.76	0.85	1106
10	Dadu	10.82	47.68	0.40	749
11	Larkana	3.29	14.62	0.12	757
12	Thatta	1.23	7.58	0.06	1044
13	Tharparkar	0.94	4.46	0.04	806
14	Shikarpur	0.20	0.83	0.01	721
15	Karachi	0.09	0.37	0.00	715
16	Jacobabad	0.04	0.17	0.00	685
	Sub Total Sindh	**601.22**	**3189.99**	**26.46**	**902**
	Sub Total of Khyber Pukh.	**0.15**	**0.36**	**0.00**	**417**
	Sub Total of Balochistan	**30.50**	**78.77**	**0.65**	**439**
	Total of Pakistan	**2993.30**	**12057.45**	**100.00**	**685**

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

Sources:
1- MINFA, Islamabad
2- Respected Agriculture Provincial Departments

ANNEX-IV

AVERAGE FARMERS' COST OF PRODUCTION ESTIMATES OF SEED COTTON IN THE PUNJAB: 2009-10 AND 2010-11 CROPS

S. No.	Operations / Inputs	Average No. of oprs/units/ acre	2009-10 crop		2010-11 crop		Change in 2010-11 over 2009-10
			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	750.00	171.00	1000.00	228.00	57.00
	1.2 Rotavator	0.233	900.00	209.70	1200.00	279.60	69.90
	1.3 Ploughing	3.200	300.00	960.00	400.00	1280.00	320.00
	1.4 Planking	0.421	150.00	63.15	200.00	84.20	21.05
	1.5 Ploughing+planking	1.341	300.00	402.30	400.00	536.40	134.10
	1.6 Levelling (tractor hrs)	0.537	350.00	187.95	450.00	241.65	53.70
2	Seed and sowing operations:						
	2.1 Seed (kgs)	7.643	86.00	657.30	100.00	764.30	107.00
	2.2 Sowing:						
	2.2.1 Ploughing+planking	0.394	300.00	118.20	400.00	157.60	39.40
	2.2.2 Ridging	0.228	300.00	68.40	400.00	91.20	22.80
	2.2.3 Drilling	0.772	300.00	231.60	400.00	308.80	77.20
	2.2.4 Manual labour for sowing, bund making and gap filling (m.days)	0.369	200.00	73.80	250.00	92.25	18.45
3	Irrigation: * (Nos)						
	3.1 Canal	2.156	-	85.00	-	85.00	0.00
	3.2 Private tubewell	1.706	475.00	810.35	600.00	1023.60	213.25
	3.3 Mixed	2.739	360.00	986.04	455.00	1246.25	260.21
	3.4 Labour for irrigation and water course cleaning (m.days)	3.462	200.00	692.40	250.00	865.50	173.10
4	Interculture:						
	4.1 With tractor	2.640	300.00	792.00	400.00	1056.00	264.00
	4.2 Manual weeding/thining (m.days)	4.600	200.00	920.00	250.00	1150.00	230.00
5	Plant Protection including application (weedicides + pesticides)	5.769	520.00	2999.88	530.00	3057.57	57.69
6	Farm Yard Manure including transport and application 50%	-	-	300.00	-	400.00	100.00
7	Fertilizers: (bags)						
	7.1 DAP	0.731	1997.00	1459.81	2575.00	1882.33	422.52
	7.2 SSP	0.071	744.00	52.82	710.00	50.41	-2.41
	7.3 SOP	0.029	2035.00	59.02	2630.00	76.27	17.26
	7.4 NPK	0.046	1546.00	71.12	1980.00	91.08	19.96
	7.5 Urea	2.297	732.00	1681.40	800.00	1837.60	156.20
	7.6 CAN	0.224	693.00	155.23	685.00	153.44	-1.79
	7.7 NP	0.069	1351.00	93.22	1480.00	102.12	8.90
	7.8 Fertilizer transport and application	3.467	27.00	93.61	30.00	104.01	10.40
8	Mark up on investment @ 12 % per annum for 8 months on items 1 to 7 minus 3(1)	-	-	1144.82	-	1372.81	227.99
9	Management charges for 8 months	-	-	566.00	-	650.00	84.00
10	Land rent for 8 months	-	10000.00	6666.67	12000.00	8000.00	1333.33
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	110.00	1914.00	125.00	2175.00	261.00
14	Cutting of cotton sticks	-	-	460.00	-	460.00	0.00
15	Gross cost (item 1 to 14)	-	-	25239.78	-	29995.98	4756.20
16	Value of cotton sticks	-	-	460.00	-	575.00	115.00
17	Net cultivation cost (item 15-16)	-	-	24779.78	-	29420.98	4641.20
18	Yield per acre (kgs)	1	1	696.00	1	696.00	0
19	Cost of production at farm level: (Rs/40 kgs)						
	19.1 Including land rent	-	-	1424.13	-	1690.86	266.74
	19.2 Excluding land rent	-	-	1040.98	-	1231.09	190.11
20	Marketing expenses (Rs/40 kgs)	-	-	26.00	-	30.00	4.00
21	Cost of production at market/ginnery: (Rs/40 kgs)						
	21.1 Including land rent	-	-	1450.13	-	1720.86	270.74
	21.2 Excluding land rent	-	-	1066.98	-	1261.09	194.11

ANNEX-V

AVERAGE FARMERS' COST OF PRODUCTION ESTIMATES OF SEED COTTON IN SINDH: 2009-10 AND 2010-11 CROPS

S. No.	Operations / Inputs	Average No. of oprs/units/ acre	2009-10 crop		2010-11 crop		Change in 2010-11 over 2009-10
			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	840.00	464.52	1200.00	663.60	199.08
	1.2 Ploughing	2.071	450.00	931.95	600.00	1242.60	310.65
	1.3 Planking	0.030	225.00	6.75	300.00	9.00	2.25
	1.4 Ploughing+planking	1.333	450.00	599.85	600.00	799.80	199.95
	1.5 Levelling (tractor hrs)	0.859	450.00	386.55	600.00	515.40	128.85
2	Seed and sowing operations:						
	2.1 Seed (kgs)	10.279	86.00	883.99	105.00	1079.30	195.30
	2.2 Sowing:						
	2.2.1 Ploughing + planking	0.160	450.00	72.00	600.00	96.00	24.00
	2.2.2 Ridging	0.236	450.00	106.20	600.00	141.60	35.40
	2.2.3 Drilling	0.763	450.00	343.35	600.00	457.80	114.45
	2.2.4 Manual labour for sowing, bund making and gap filling (m. days)	0.988	200.00	197.60	250.00	247.00	49.40
3	Irrigation: * (Nos)						
	3.1 Canal	3.148	-	93.09	-	93.09	0.00
	3.2 Private tubewell	2.454	355.00	871.17	445.00	1092.03	220.86
	3.3 Mixed	0.413	300.00	123.90	375.00	154.88	30.98
	3.4 Lift irrigation	0.251	85.00	21.34	105.00	26.36	5.02
	3.5 Labour for irrigation and water course cleaning (m.days)	3.732	200.00	746.40	250.00	933.00	186.60
4	Interculture:						
	4.1 With tractor	0.524	450.00	235.80	600.00	314.40	78.60
	4.2 With bullocks	1.259	450.00	566.55	600.00	755.40	188.85
	4.3 Manual weeding/thining (m.days)	4.700	200.00	940.00	250.00	1175.00	235.00
5	Plant Protection including application (weedicides + pesticides)	4.200	490.00	2058.00	500.00	2100.00	42.00
6	Farm Yard Manure including transport and application 50 %	-	-	230.00	-	310.00	80.00
7	Fertilizers: (bags)						
	7.1 DAP	0.893	1963.00	1752.96	2575.00	2299.48	546.52
	7.2 TSP	0.009	1931.00	17.38	1540.00	13.86	-3.52
	7.3 Urea	1.834	733.00	1344.32	810.00	1485.54	141.22
	7.4 CAN	0.016	700.00	11.20	700.00	11.20	0.00
	7.5 AS	0.010	1300.00	13.00	1150.00	11.50	-1.50
	7.6 NPK	0.042	1533.00	64.39	1980.00	83.16	18.77
	7.7 NP	0.076	1373.00	104.35	1450.00	110.20	5.85
	7.8 Fertilizer transport and application	2.880	27.00	77.76	30.00	86.40	8.64
8	Mark up on investment @ 12% per annum for 8 months on items 1 to 7 minus 3(1)	-	-	1053.70	-	1297.16	243.46
9	Management charges for 8 months	-	-	566.00	-	650.00	84.00
10	Land rent for 8 months	-	8000.00	5333.33	10000.00	6666.67	1333.33
11	Land revenue including local rate, chaukidara, etc.	-	-	5.00	-	5.00	0.00
12	Land tax @ Rs 200/acre/annum for 8 months	-	200.00	133.33	200.00	133.33	0.00
13	Drainage cess @ Rs 24/acre/annum for 8 months	-	24.00	16.00	24.00	16.00	0.00
14	Payment to pickers (Rs/ 40 kgs)	15.190	120.00	1822.80	135.00	2050.65	227.85
15	Cutting of cotton sticks	-	-	615.00	-	770.00	155.00
16	Gross cost (item 1 to 15)	-	-	22809.53	-	27896.39	5086.86
17	Value of cotton sticks	-	-	615.00	-	770.00	155.00
18	Net cultivation cost (item 16-17)	-	-	22194.53	-	27126.39	4931.86
19	Yield per acre (kgs)	-	-	1700.00	-	1700.00	0.00
20	Cost of production at farm level: (Rs/40 kgs)						
	20.1 Including land rent	-	-	1268.26	-	1550.08	281.82
	20.2 Excluding land rent	-	-	963.50	-	1169.13	205.63
21	Marketing expenses (Rs/40 kgs)	-	-	28.00	-	32.00	4.00
22	Cost of production at market/ginnery: (Rs/40 kgs)						
	22.1 Including land rent	-	-	1296.26	-	1582.08	285.82
	22.2 Excluding land rent	-	-	991.50	-	1201.13	209.63

Notes for Annex- IV and V

1. The input-output parameters for estimating cost of production of Seed Cotton, 2010-11 crop, have been adopted from the Report of Cotton Policy Analysis for 2009-10 crop, API's Series No230.

2. The inputs prices, hiring rates of field operations, wage rate 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 January 2010 in the Punjab and Sindh, the 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 19th January 2010 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 widely on account of Bt varieties and local seed. The prices of seed have been increased in light of escalation in the market prices of current year over last's year.

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 11th February 2010. As market price of NPK fertilizer is not available, therefore, its average price is worked out on the basis of increase in prices of Urea, DAP and SOP fertilizers.

5. The material cost (90 per cent) of the plant protection has not been revised on account of reporting from various quarters that the rising trend in the prices of insecticides and pesticides has been arrested owing to new generic and low cost brands. However, the cost of labour component (10 per cent of the total cost) has been modified in light of new wage rate.

6. The cost of supplementary irrigation has been revised in view of the rises @ 26 per cent in the prices of diesel and 19 per cent in power tariff during June 2009 to February 2010. 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, the average increases worked out to 26 per cent in the Punjab and 25 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 at Rs. 8115 per month for a Field Assistant at the 10^{th} stages in BPS-6 as per revised scale of July 2008.

8. Land rent is the imperative constituent of the cost of production in both the provinces. However, land rent is influenced by several parameters and extensively varies from field to field. For updating the land rentals, there is no precise measure available at hand. Keeping in view the observations obtained during the field survey during January 2010 and discussion made in the meeting of the API's Standing Committee on Cotton, the land rentals have been adjusted accordingly.

Annex-VI

ECONOMICS OF SEED COTTON AND COMPETING CROPS AT PRICES REALIZED BY THE GROWERS: 2009-10 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 inches	.....Rupees 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	25240	9897	33346	23449	8106	1.3	3.4	139	1516
2	Basmati paddy	180	58	22708	10774	23334	12560	626	1.0	2.2	130	402
3	IRRI paddy	180	62	20590	9342	20377	11035	-212	1.0	2.2	113	329
4	Wheat	180	12	22889	8441	27047	18606	4158	1.2	3.2	150	2254
5	Sunflower (spring)	180	22	19366	5422	23700	18278	4334	1.2	4.4	132	1077
6	Seed cotton + wheat	420	34	48129	18338	60393	42055	12264	1.3	3.3	144	1776
7	Seed cotton + sunflower	420	44	44606	15319	57046	41727	12440	1.3	3.7	136	1297
8	Basmati paddy+wheat	360	70	45597	19215	50381	31166	4784	1.1	2.6	140	720
9	Basmati paddy+sunflower	360	80	42074	16196	47034	30838	4960	1.1	2.9	131	588
10	IRRI paddy + wheat	360	74	43479	17783	47424	29641	3946	1.1	2.7	132	641
11	IRRI paddy+sunflower	360	84	39956	14764	44077	29313	4122	1.1	3.0	122	525
12	Sugarcane	394	48	40377	12860	79827	66968	39450	2.0	6.2	203	1663
	Sindh											
1	Seed cotton	240	18	22655	8183	33273	25089	10618	1.5	4.1	139	1848
2	IRRI paddy	180	56	18338	7069	22415	15346	4077	1.2	3.2	125	400
3	Wheat	180	12	20433	7450	24768	17318	4335	1.2	3.3	138	2064
4	Sunflower (spring)	180	22	18805	5436	23700	18264	4895	1.3	4.4	132	1077
5	Seed cotton + wheat	420	30	43087	15633	58040	42407	14953	1.3	3.7	138	1935
6	Seed cotton + sunflower	420	40	41460	15633	56973	41339	15513	1.4	3.6	136	1424
7	IRRI paddy+ wheat	360	68	38770	14519	47183	32664	8412	1.2	3.2	131	694
8	IRRI paddy+sunflower	360	78	37143	12505	46115	33610	8972	1.2	3.7	128	591
9	Sugarcane	488	71	46842	14371	102201	87829	55359	2.2	7.1	209	1439

Notes for Annex - VI

1. The economic analysis presented in the above exercise is based on the input-output prices applicable for 2009-10 crops.

2. The data regarding input-output parameters have been adopted from the API's Crop Policy Analysis Reports for sugarcane, seed cotton, rice paddy and wheat, 2009-10 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 2009-10 crops. To incorporate the escalations in input prices, which occurred during the growing period of 2009-10 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 2009-10 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 average wholesale market prices of wheat during the post harvest period of 2009-10 have been adopted at Rs 917 per 40 kgs for Punjab and Rs 961 for Sindh.

   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 1000 and Rs 600 per 40 kgs, respectively.

   4.3 The wholesale market prices of seed cotton during the post-harvest months of Aug - Feb 2009-10 in the main producer area markets have averaged at Rs 1916 per 40 kgs in the Punjab. In Sindh, the corresponding prices are averaged at Rs 1903 per 40 kgs.

   4.4 The sunflower 2009-10 crop is yet to be harvested. However, it was reported by the PODB Islamabad that All Pakistan Solvent Extraction Association may purchase sunflower and canola at Rs 1600 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 150 per 40 kgs in the Punjab and Rs 160 in 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 8.75 per 40 kgs in Punjab and Rs 8.82 in Sindh for sugarcane, Rs 26 for seed cotton in Punjab and Rs 28 in Sindh, Rs 22 for rice paddy, and Rs 20 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.

ANNEX-VII

PROFITABILITY OF FERTILIZER USE ON SEED COTTON AT THE MARKET PRICE: 2009-10

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 51.44 per nutrient kg (i.e. Rs 31.85, 73.62 and Rs 68.42 per nutrient kg of N,P and K at the recommended NPK ratio of 2:1:1(a)		514.40	514.40	514.40	514.40
3	Indirect cost due to the application of additional fertilizer as detailed below(b)		159.32	185.94	212.57	239.20
	3.1	Transportation and application charges of 20 kgs of fertilizer @ Rs 27.0 per bag of fertilizer	10.80	10.80	10.80	10.80
	3.2	Picking charges for additional produce @ Rs 115 per 40 kgs	86.25	107.81	129.38	150.94
	3.3	Marketing charges for additional produce @ Rs 27.0 per 40 kgs	20.25	25.31	30.37	35.44
	3.4	Mark up on direct cost of fertilizer (item2+3.1) for 8 months @ 12 % per annum	42.02	42.02	42.02	42.02
4	Total additional cost (item 2+3)		673.72	700.34	726.97	753.60
5	Value of additional produce @ Rs 2446 per 40 kgs(c)		1834.50	2293.12	2751.75	3210.38
6	Benefit cost ratio (item 5 divided by item 4)		2.72	3.27	3.78	4.26

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 2009-10 crop taken respectively as 732.5, 1980.0 and 1539.5 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 2009-10 crop.

c) Average market prices of seed cotton for 2009-10 crop for August to January, 2009-10 has been used.

ANNEX- VIII

INTERNATIONAL PRICES OF COTTONS: 2001-02 to 2009-10

Years Aug-Jul	Sindh/ Punjab Afzal 1-1/16"	Index- A Cottons	Orleans/ Texas SLM 1-1/32"
	---------- US Cents per pound----------		
2001-02	38.41	-	39.05
2002-03	51.36	55.4	51.16
2003-04	63.10	68.3	65.85
2004-05	46.10	52.2	51.19
2005-06	54.59	56.15	54.39
2006-07	58.63	59.15	56.13
2007-08	69.21	72.90	69.83
2008-09 *	-	61.14	56.05
2009-10	-	70.07	72.03
August	-	64.25	67.06
September	-	64.05	68.06
October	-	66.80	70.92
November	-	71.80	75.25
December	-	76.00	77.00
January	-	77.50	73.88

Note:

* From 2008-09, the prices of Orleans/ Texas 1-1/32" are for CFR Eastren Quotations, Index A while Sindh/ Punjab Afzal 1-1/16" are not quoted during the year 2008-09 and 2009-10.

Source: Cotton outlook (various issues).

ANNEX- IX

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

S.No	Item	2009-10 (Aug-Dec)	2006-07 to 2008-09
		US Cents per pound	
1.	Actual average export price	54.89	51.50
		OR Rupees (a)	
	Actual average export price per 40 Kgs	4112	3858
2.	Marketing expenses (export & purchase incidentals, insurance & financial expenses) per 40 Kgs	320	320
3.	Ex- gin price of lint per 40 Kgs (item 1- item 2)	3792	3538
4.	Value of 80 kgs of cotton seed (b)	1854	1854
5.	Ginning charges for 120 kgs of seed cotton	500	500
6.	Value of 120 kgs of seed cotton (c) (items 3 +4 - item 5)	5146	4892
7.	Seed cotton price per 40 kgs (item 6 / 3)	1715	1631

Export Parity Price 2010-11/— 3130

Notes:

a) One US $ = 84.95 Pak rupees on February 09, 2010

b) Average price of cotton seed for August 09 to January, 2010 at Multan market was Rs 927 per 40 kgs.

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

Sources:

1. FBS for export prices.
2. KCA, Karachi for marketing expenses.
3. Pakistan Cotton Ginners Association, Karachi for ginning charges.
4. Directorate of Agriculture (E&M), Punjab, Lahore.

ANNEX- X

EXPORT PARITY PRICE OF SEED COTTON ON THE BASIS OF FUTURE'S CONTRACT PRICE OF NEW YORK NO. 2 COTTON (AVERAGE OF OCTOBER, DECEMBER, 2010 AND MARCH, 2011)

S.No	Item	Price calculations
		US Cents per pound
1.	Future's contract price as on January 27, 2010	71.55
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	61.55
		OR Rupees (a)
	Parity prices per 40 kgs	4611
5.	Marketing expenses (export & purchase incidentials, insurance & financial expenses per 40 kgs	320
6.	Ex- gin price of lint per 40 kgs (item 4 - item 5)	4291
7.	Value of 80 kgs of cotton seed (b)	1854
8.	Ginning charges for 120 kgs of seed cotton	500
9.	Value of 120 kgs of seed cotton (c) (items 6 + 7 - item 8)	5645
10.	Seed cotton price per 40 kgs (item 9 / 3)	1882

Notes:

a) One US $ = 84.95 Pak rupees on February 09, 2010

b) Average price of cotton seed for August 09 to January, 2010 at Multan market was Rs 927 per 40 kgs.

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

Sources:

1. Cotton Outlook of January 29, 2010 for future contract price.
2. KCA, Karachi for marketing expenses.
3. Pakistan Cotton Ginners Association, Karachi for ginning charges.
4. Directorate of Agriculture (E&M), Punjab, Lahore.

ANNEX - XI

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-Jan)	2006-07 to 2008-09
		US Cents per kg	
1.	Average fob price	210.00	205.00
		OR Rupees (a)	
		178.40	174.15
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)	156.83	152.58
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)	125.87	121.62
9.	Price of one kg cotton lint (item7/1.16)	108.50	104.84
	Price of 40 kgs cotton lint	4340.17	4193.71
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)	4308.17	4161.71
12.	Value of 80 kgs cotton seed (c)	1854.00	1854.00
13.	Ginning charges for 120 kgs of seed cotton	500.00	500.00
14.	Seed cotton price of 120 kgs (item11+12- item13) (d)	5662.17	5515.71
15.	Seed cotton price per 40 kgs (item 14/3)	1887.39	1838.57

Notes:

a) One US $ = 84.95 Pak rupees on February 09, 2010
b) 1.16 kgs of lint = 1 kg of yarn +0.16 kgs of waste.
c) Average price of cotton seed for August 09 to January, 2010 at Multan market was Rs 927 per 40 kgs.
d) 120 kgs of seed cotton = 80 kgs of cotton seed + 40 kgs of lint.

Sources:

1. Cotton Outlook varuios issues ror fob price.
2. APTMA, Karachi for items, 2, 3 and 9.
3. Annex X for items 5 and 6.
4. Pakistan Cotton Ginners Association, Karachi for ginning charges.
5. Directorate of Agriculture (E&M), Punjab, Lahore.

ANNEX- XII

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

S. No	Item	2009-10 (Aug-Dec)	2006-07 to 2008-09
		Rupees per 40 kgs	
1.	Actual average cif (Karachi) price	5370	4233
2.	Handling charges at port and transport cost from port to textile mill at Karachi @ 2.5 % of cif price	134	106
3.	Ex- gin price of lint (Item 1+ item 2)	5504	4339
4.	Value of 80 kgs of cotton seed (a)	1854	1854
5.	Ginning charges for 120 kgs of seed cotton including ginning losses	500	500
6.	Value of 120 kgs of seed cotton (item 3 +item 4 - item 5)	6858	5693
7.	Seed cotton price (item 6/ 3)	2286	1898

Note: Import Parity Price -2010/11 4111

a) Average price of cotton seed for August 09, to January, 2010 at Multan market was Rs 927 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. Directorate of Agriculture (E&M), Punjab, Lahore.

ANNEX- XIII

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	2009-10 (Aug-Jan)	2006-07 to 2008-09
		US cent per pound	
1.	CFR Far Eastren Quotated Price assumed as cif (Karachi) price	72.03	60.67
2.	Insurance, agents commission, and port handling charges @1.5% cif (Karachi)Price	1.08	0.91
3.	Landed cost at Karachi	73.11	61.58
		OR Rupees (a)	
	Landed cost at Karachi per 40 kgs	5477	4613
4.	Handling charges at port and transport cost from port to textile mills at Karachi @ 2.5 % of cif price	137	115
5.	Ex- gin price of lint (item 3 + item 4)	5614	4728
6.	Value of 80 kgs of cotton seeds (b)	1854	1854
7.	Ginning charges for 120 kgs of seed cotton including ginning losses	500	500
8.	Value of 120 kgs of seed cotton (item 5 +item 6 - item 7)	6968	6082
9.	Seed cotton price per 40 kgs (item 8/ 3)	2323	2027

Notes:

a) One US $ = 84.95 Pak rupees on February 09, 2010 by State Bank of Pakistan as on February 09, 2010.

b) Average price of cotton seed for August 09 to January, 2010 at Multan market was Rs 927 per 40 kgs.

Sources:

1. CFR(Far Eastren Quoted) price Annex - X.
2. KCA, for incidentals charges.
3. Pakistan Cotton Ginners Association, Karachi for ginning charges.
4. Directorate of Agriculture (E&M), Punjab, Lahore.

ANNEX-XIV

ECONOMIC EFFICIENCY OF RESOURCE USE IN SEED COTTON

(POLICY ANALYSIS MATRIX)

Rupees per acre

Province/Year	Gross Revenue	Traded cost	Domestic Factors Cost	Profits
	Based on Export parity prices			
PUNJAB				
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
SINDG				
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	26673	9853	13184	3638
Social Prices	24715	9993	13644	1078
Transfers	1960	-139	-461	2560

ANNEX-XV

ECONOMIC EFFICIENCY OF RESOURCE USE IN SEED COTTON

(POLICY ANALYSIS MATRIX)

Rupees per acre

Province/Year	Gross Revenue	Traded cost	Domestic Factors Cost	Profits
		Based on Import parity prices		
PUNJAB				
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
SINDG				
2005-06				
Private Prices	17950	6264	7794	3892
Social Prices	21942	5990	7421	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

Area, Yield and Production of Seed Cotton: 2008

Annex-xvi

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	Australia	0.063	4.825	0.304	45	Cameroon	0.111	1.171	0.130
2	Israel	0.011	4.327	0.048	46	Benin	0.210	1.166	0.245
3	China	5.760	3.906	22.500	47	Guinea	0.037	1.162	0.042
4	Brazil	1.057	3.757	3.971	48	Madagascar	0.013	1.154	0.015
5	Syrian Arab Republic	0.193	3.691	0.711	49	Nigeria	0.427	1.152	0.492
6	Turkey	0.495	3.678	1.820	50	Azerbaijan	0.048	1.148	0.055
7	Mexico	0.100	3.664	0.365	51	Burkina Faso	0.500	1.120	0.560
8	Lao People's Democrat	0.003	3.549	0.010	52	Afghanistan	0.050	1.110	0.056
9	Kyrgyzstan	0.033	2.908	0.095	53	Zambia	0.127	1.102	0.140
10	Greece	0.320	2.750	0.880	54	Malawi	0.070	1.099	0.077
11	Uzbekistan	1.452	2.560	3.716	55	Sudan	0.097	1.098	0.107
12	Iran, Islamic Republic o	0.120	2.500	0.300	56	C?te d'Ivoire	0.134	1.007	0.135
13	Peru	0.089	2.409	0.215	57	Angola	0.003	1.000	0.003
14	Niger	0.005	2.400	0.012	58	Bolivia	0.080	1.000	0.080
15	Egypt	0.240	2.333	0.560	59	Costa Rica	0.000	1.000	0.000
16	Bangladesh	0.017	2.294	0.039	60	Senegal	0.045	1.000	0.045
17	Botswana	0.001	2.273	0.003	61	Bulgaria	0.001	0.983	0.001
18	El Salvador	0.000	2.271	0.000	62	Mali	0.197	0.966	0.190
19	United States of Americ	3.128	2.250	7.038	63	Iraq	0.020	0.923	0.018
20	Guatemala	0.002	2.133	0.003	64	Montserrat	0.000	0.920	0.000
21	**Pakistan**	**2.820**	**2.046**	**5.770**	65	Burundi	0.005	0.902	0.005
22	Nicaragua	0.002	1.943	0.003	66	Albania	0.001	0.900	0.001
23	Korea, Democratic Peo	0.019	1.895	0.036	67	Nepal	0.000	0.900	0.000
24	South Africa	0.014	1.877	0.026	68	Ethiopia	0.085	0.824	0.070
25	Spain	0.053	1.863	0.098	69	Central African Republic	0.008	0.813	0.007
26	Kazakhstan	0.175	1.818	0.318	70	Ghana	0.025	0.800	0.020
27	Colombia	0.044	1.742	0.077	71	Paraguay	0.250	0.740	0.185
28	Honduras	0.001	1.727	0.002	72	Uganda	0.085	0.733	0.062
29	Argentina	0.303	1.627	0.494	73	Tanzania, United Republic of	0.450	0.711	0.320
30	Yemen	0.022	1.623	0.035	74	Mozambique	0.360	0.667	0.240
31	Namibia	0.004	1.500	0.006	75	Togo	0.050	0.650	0.033
32	Tunisia	0.002	1.500	0.003	76	Myanmar	0.300	0.640	0.192
33	Tajikistan	0.237	1.489	0.353	77	Algeria	0.000	0.620	0.000
34	Indonesia	0.022	1.455	0.032	78	Zimbabwe	0.400	0.600	0.240
35	Guinea-Bissau	0.004	1.375	0.006	79	Chad	0.175	0.571	0.100
36	Philippines	0.001	1.372	0.001	80	Swaziland	0.015	0.486	0.007
37	Cambodia	0.000	1.368	0.000	81	Kenya	0.087	0.440	0.038
38	Viet Nam	0.005	1.327	0.007	82	Congo, Democratic Republic of	0.060	0.417	0.025
39	Ecuador	0.003	1.315	0.004	83	Somalia	0.015	0.400	0.006
40	Turkmenistan	0.674	1.261	0.850	84	Gambia	0.001	0.393	0.001
41	Venezuela, Bolivarian F	0.014	1.241	0.018	85	Haiti	0.004	0.343	0.001
42	**India**	**9.373**	**1.206**	**11.305**	86	Saint Kitts and Nevis	0.000	0.333	0.000
43	Thailand	0.008	1.190	0.010	87	Grenada	0.000	0.247	0.000
44	Morocco	0.000	1.176	0.000	88	Antigua and Barbuda	0.001	0.136	0.000

Source : FAO