POST HARVEST PROFILE OF COTTON

C O N T E N T S

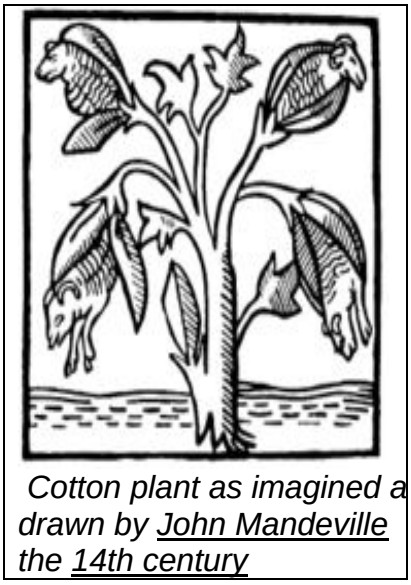
POST HARVEST PROFILE OF COTTON

1.0 INTRODUCTION :

Cotton often referred as ***"White gold"*** , has been in cultivation in India for more than five thousand years. It is one of the oldest fibers and the time when it was first utilized is not known accurately. It is a **soft fiber** that grows around the seeds of the cotton plant (*Gossypium* spp.), a shrub native to the tropical and subtropical regions of both the Old World and the New World. The fiber is most often spun into thread and used to make a soft, breathable textile, which is the most widely used natural-fiber cloth in clothing today. The English name descends from the Arabic word *al qutun*, (whence also came the Spanish word *algodón*) meaning cotton fiber. Wild species of cotton generally occure in frost-free areas of subtropical & tropical regions. Freezing temperature kills the protoplast of all cultivated and most wild species. Cotton is sun loving plants but not a water loving plant. Water requirment of plant depends on weather conditions, but a successful cotton harvest requires at least 75 cm of rain or irrigation on an average. Although cotton is cultivated in both the hemisphere, most of it, is cultivated in the northern Hemisphere. It is primarily grown between 37^0 N and 32^0S; however, its cultivation has been extended to 45^0N in china.

1.1 ORIGIN:

The earliest known reference to cotton is in India. The Arabic word ***Qutun or Kutun*** has given rise to the English word **"Cotton"**. Similarly, it is ***Katoen*** in Dutch, ***coton*** in French ***cottone*** in Italian, and ***algodon*** in spanish. The botanical term ***Gossypium*** seems to have risen from the word ***"Gossypines"*** in Tylos for cotton (Watt, 1907). The sanskrit words ***kurpasa*** or ***kurpusum*** denoting cotton and cotton cloth are mentioned in the sacred writing of manu (3000 B.C.) and the word kapas have been derived from them. Cotton has been grown in India/Pakistan for more than 6,000 years since the pre-Harappan period, and it is later referred to in the Rig-Veda, composed in 3000 BC. The earliest civilization to spin and weave cotton was perhaps that of the Indus valley. For many centuries, the cotton plant was known outside India through "***travellers***" tales. Two thousand years later, the famous Greek historian **Herodotus** wrote about Indian cotton: ***"There are trees which grow wild there, the fruit of which is a wool exceeding in beauty and goodness that of sheep. The Indians make their clothes of this tree wool".***



Cotton plant as imagined a drawn by John Mandeville the 14th century

BOTANICAL DESCRIPTION:

Scientific classification

Kingdom : Plantae

Division : Magnoliophyta

Class : Magnoliopsida

Order : Malvales

Family : Malvaceae

Tribe : Gossypieae

Genus : ***Gossypium*** L.

Gossypium is a genus of 39-40 species of shrubs in the family Malvaceae. Cotton shrubs can grow up to 3 m (10 ft) high. The leaves are broad and lobed, with three to five (or rarely seven) lobes. The seeds are contained in a capsule called a **boll**, each seed surrounded by downy fibers called **lint**. The most commonly cultivated species of cotton in the world include *Gossypium hirsutum* and *Gossypium barbadense* (also referred to as "New World" species). *Gossypium hirsutum* originated in Mexico. It is the most important cotton crop, accounting for more than 97% of world fibre production. *Gossypium barbadense*, of Peruvian origin, accounts for about 3% of world fibre. It includes cotton fibres of the highest quality, such as the Jumel variety (from the Barbados), among the finest cotton fibres in terms of quality and fiber length. Two additional cultivated species are *Gossypium arboreum* (which originated in the Indo-Pakistan subcontinent) and *Gossypium herbaceum* (from southern Africa), which are also called "Old World" or "Asiatic cottons". These two varieties of cotton with short staple-length fibre have no commercial value.

BT COTTON:

India ranks number one in the world accounting for 20 percent of the total area planted under cotton. However, even with highest area under cotton, nine million hectares, India ranks only third position with only 13 percent in production of cotton. India's average yield is only 319 kg/ha lint as compared to world average of 603 kg/ha. Cotton is highly susceptible to insects; especially to the larvae of lepidopteron pests, which is impacting cotton production and 50 percent of the total insecticides consumed in the country are used only for cotton crop. The total loss due to damage to cotton crop is estimated to be more than Rs.1200 crores. The chemical control to suppress these insect pest are proving ineffective as these pests have developed high level of resistance for most of such chemical used for the control of bollworm complex. Such a high level of resistance requires repeated application of insecticides leading to heavy expenditure, crop failures, and viscous cycle of debt for farmers. Therefore, it has been argued that adoption of Bt cotton could help in protecting the crop against potentially the most damaging bollworms and thus reduce the risk of crop failures.

Bt cotton, a transgenic plant, produces an insect controlling protein Cry1A(c), the gene for which has been derived from the naturally occurring bacterium, Bacillus thuringiensis sub sp. kurstaki (B.t.k.). The cotton hybrids containing Bt gene produces its own toxin for bollworm attack, thus significantly reducing chemical insecticide use and providing a major benefit to cotton growers and the environment.

Bt cotton contains the following three genes inserted via genetic engineering techniques:

- The *Cry1Ac* gene, which encodes for an insecticidal protein, Cry1Ac, derived from the common soil microbe *Bacillus thuringiensis* subsp. k*urstaki (B.t.k.).*
- The *nptII* gene, which encodes the selectable marker enzyme neomycin phosphotransferase II (NPTII), was used to identify transformed cells that contained the Cry1Ac protein. It served no other purpose and has no pesticide properties. The *nptII* gene is derived from the prokaryotic transposon Tn5.
- The *aad* gene which encodes the bacterial selectable marker enzyme 3"(9)-O-aminoglycoside adenyltransferase (AAD) allowed for the selection of bacteria containing the PV-GHBK04 plasmid on media containing spectinomycin or streptomycin. The *aad* gene was isolated from transposon Tn7.

Table: 1

PROJECTION OF BT COTTON PLANTING AREA IN INDIA (HECTARES)

Hybrids	**2002/03**		**2003/04**		**2004/05**	
	Area	**%[a]**	**Area**	**%[a]**	**Area**	**%[a]**
MECH-12	292	0.01	80,000	1.66	80,000	1.66
MECH-162	25,274	0.52	160,000	3.33	160,000	3.33
MECH-184	12,472	0.25	28,000	0.58	40,000	0.83
New hybrids[b]	—	—	40,000	0.83	280,000	5.83
Total	38,038	0.78	92,000	6.40	560,000	11.65

[a] % = percentage of area under hybrid cotton. Percentages are based on the present total of 4.8 million hectares of hybrid cotton area in India.

[b] New hybrids will be made available only on the approval of the Ministry of Environment and Forests. Figures for new hybrids also include the sales figures of the hybrids developed by the sublicensees.

Source:- AgBioForum 7(1/2)

ORGANIC COTTON :

Organic cotton pertains sustaining cotton production along with conservation of natural habitats and resources with no pollution to soil, water and environment.There are certain *G. herbaceum* bowls in Gujarat where *G. herbaceum* cultivation has not been exposed to ravages of modern agriculture. Population of natural predators and parasites have been build up which may support the organic cotton cultivation in these areas.

G. herbaceum cotton varieties are biotic tolerant like immune to CLCV and bacterial blight resistant to sucking pests and comparatively tolerant to bollworm complex. It is mostly cultivated in rainfed cotton area and found abiotic tolerant like salinity/sodicity, drought/water stress and wind. This characteristics of *G. herbaceum* favour the cultivation of organic cotton. Organic cotton can be produced with little efforts from these bowls of Gujarat. Organic cotton is produced unknowingly in this area. We have the technocrats for the production of organic cotton and other agricultural commodities and made available to users on demand as per their requirements.

Fig. 1

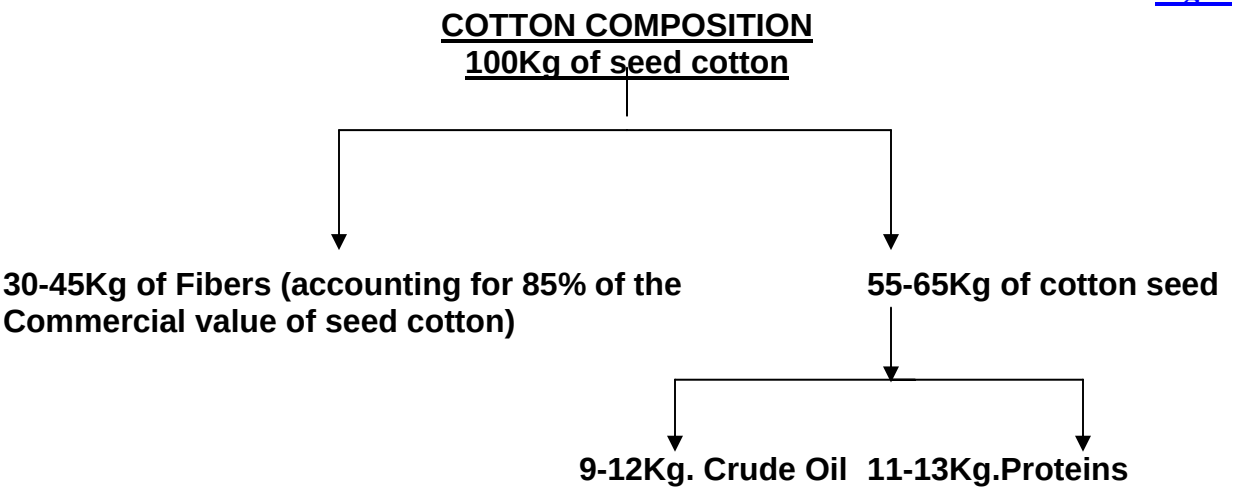


Table-2

COTTONSEED COMPOSITION

	Whole seed	Oil meal (deoiled and partially peeled)	Oilcake expeller (partially peeled)	Hull
Dry matter (%)	92	90	93	92
Proteins (%) MS	22 (19-25)	42 (35-53)	40 (28-49)	5 (3-7)
Rough cellulose (%) MS	28 (23-37)	18 (11-23)	15 (11-23)	53 (49-62)
Fatty matter (%) MS	20 (10-28)	3 (0,4-6)	7 (4-11)	3 (0,6-5)
Ashes (%) MS	4	7	7	3
Calcium (%) MS	0,2	0,3	0,2	0,15
Phosphorus (%) MS	0,6	1,3	1,2	0,19

Source: Institute National Agronomique (INA)

1.2 IMPORTANCE:

The first literature on cotton trade is found in the beginning of Christian Era; but, they refer to the perennial cottons. The marvelously woven handloom fabrics and apparels of India were not only used in India, but also in Egypt, Greece and Rome. In Rome, Indian Muslins and Chintzes were the rage of fashionable women. From India, cotton spread in the 13th Century A.D. to China, where silk was the normal wear. Then, the cultivation of cotton spread to Persia, Arabia, Egypt, Africa and South Europe. Later on, cotton cultivation was discovered by Columbus in West Indies of the New World and still later, by others, in Mexico, Yucatan and Brazil. Cotton is one of the finest natural fibers available for man for his clothing. Cotton trade has developed into a big industry, since the use of cotton for manufacture of cloth.

India's cotton-processing sector gradually declined during British expansion in India and the establishment of colonial rule during the late eighteenth and early nineteenth centuries. This was largely due to the East India Company's de-industrialization of India, which forced the closing of cotton processing and manufacturing workshops in India, to ensure that Indian markets supplied only raw materials and were obliged to purchase manufactured textiles from Britain.

One of the unique features of the Indian Cotton is, its diversity. Systematic efforts in cotton breeding commenced in India during the first decade of the last century with the establishment of Department of Agriculture in some states. The vigour and excellence of cotton research in India exemplified by the development of hybrid cotton like long and extra long staple cotton, some of which rivals the best in the world. At the time of independence India had only short and medium staple cotton, while the industry consumed a large quantity of long staple cotton which had to be imported, but with the scientific approach of purification, selection and hybridization processes, outstanding fiber properties and some of them are best in the world today.

In spite of the advances in cotton production, it has to propagate the cause at the national & international level by joining the forces and harmonizing of the interest of the producers, users & other concerned. Encouraged by the results obtained in the field of oilseeds by adopting a mission mode approach during the 1990s and with a view to improve the quality of cotton, increase per hectare productivity, increase the income of cotton growers by reducing the cost of cultivation, to improve the processing facilities etc., the Government of India has launched **Technology Mission On Cotton** in February 2000 with Four Mini Missions for achieving the above objects.

MINI MISSION I

With the Indian Council of Agricultural Research (ICAR) as the Nodal Agency, this Mini Mission has the following objectives:

- Development of short duration, high yielding, disease and pest resistant varieties/hybrids with appropriate fibre parameters to meet the need of the textile industry.

- Development of integrated water and nutrient management practices for cotton and cotton based cropping system.
- Development and validation of Integrated Pest Management Technology for different cotton growing areas of India to improve yield and reduce the cost of cultivation to ensure better net return to the cotton growers.

MINI MISSION II

- Technology transfer through demonstration and training. Supply of delinted certified seed by setting up of delinting units. Accelerating Integrated Pest Management activities. Providing adequate and timely information input to the farmers periodically.

MINI MISSION III

- Improvement of marketing infrastructure through setting up new market yards and activation/improvement of existing market yards.

MINI MISSION IV

- Modernization and technological upgradation of existing ginning and pressing factories so as to improve the processing of cotton.

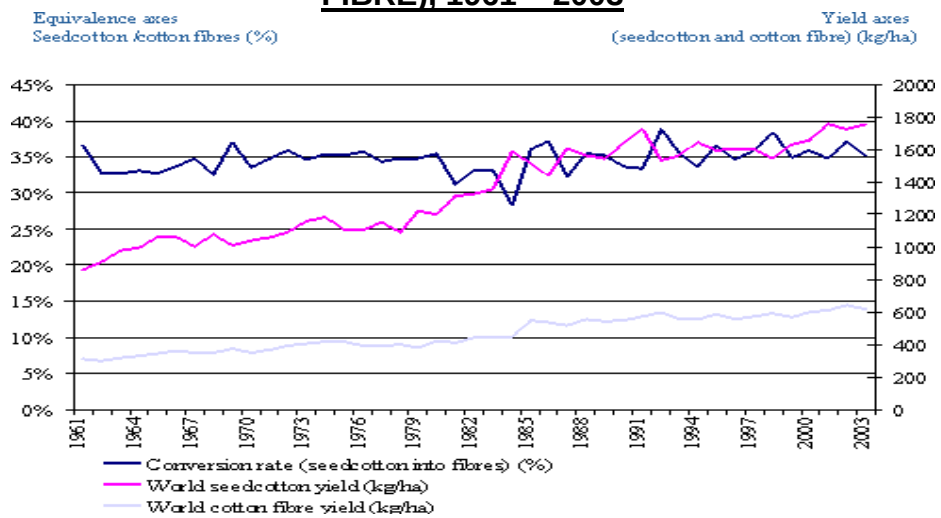
2.0 PRODUCTION:

2.1 MAJOR COTTON PRODUCING COUNTRIES IN THE WORLD:

Cotton remains by far the most important natural fibre of the 20th century. Still in the early 2000s, cotton represents 38 percent of the fibre market. In a development context, cotton is crucially important for income and employment providing by its production and processing. Much of the growth of cotton production since the end of the Second World War (WWII) was due to improved yield.The production was increased to many fold. The production roses to 643Kgs. per hectare in 2003 as compared to 209Kgs in 1946. The cultivated land increased by only 32 percent over the period from 1946-2003 (i.e from 22.3 million hector to 30 million hector according to international cotton Advisory committee(ICAC). Despite the fact that production is spread out all over the world (in 2004, cotton was grown in about 100 countries). China,

Fig-2

WORLD COTTON YIELDS (SEED COTTON AND COTTON FIBRE), 1961 – 2003



Source: UNCTAD secretariat the International Cotton Advisory Committee (ICAC) for cotton fibre)

USA, India, and Pakistan account for approximately two thirds of world output. Uzbekistan and Egypt, if added would account for three fourths of world cotton production. This concentration in cotton production has to be put into perspective by considering the impact of domestic policy reforms in the largest cotton producing countries, as well as climatic and sanitary contingencies.

Fig:-3

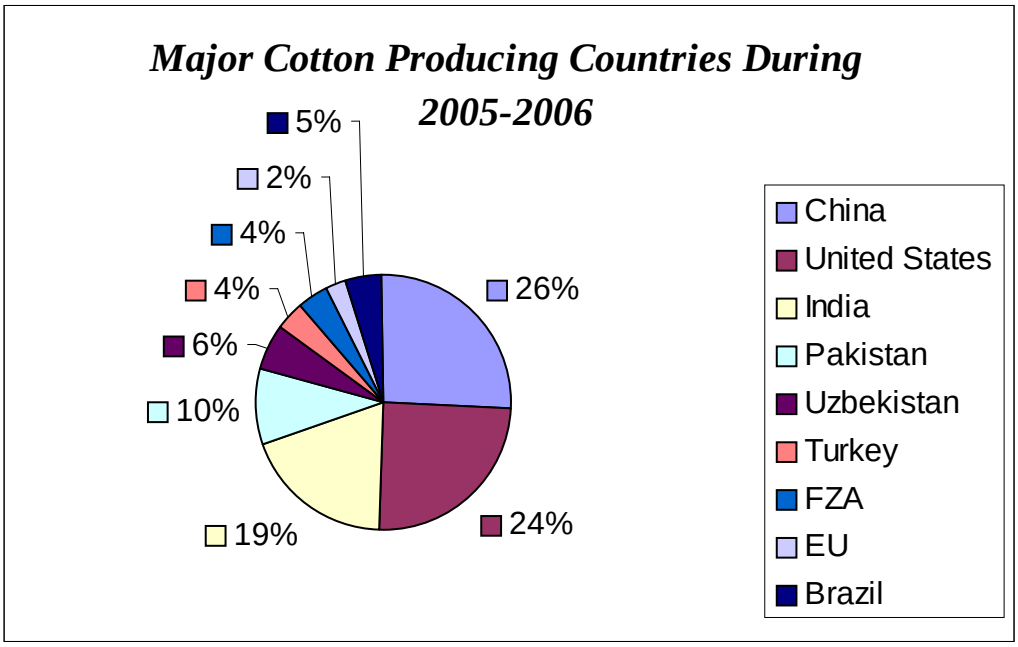
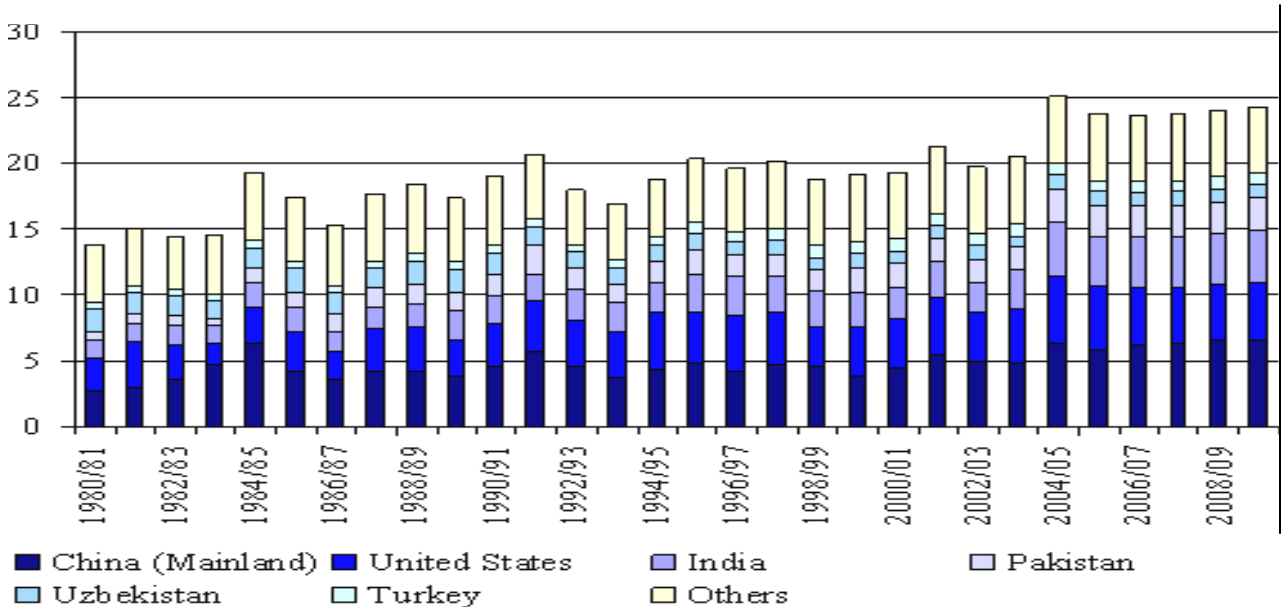


Fig:-4

WORLD COTTON PRODUCTION

Cotton production (million tonnes), by main countries, 1980/81 – 2009/10



Source: UNCTAD secretariat, based on: "Cotton: World Statistics – International Cotton Advisory Committee (ICAC)"

Increased global demand for cotton should induce higher production in the next decade. World cotton production is projected to increase by1.5 percent annually in the current decade to reach 23.1 million tonnes by 2010. Developing countries would continue to account for the largest share of world cotton production. Production from developing countries is expected to reach 16.2 million tonnes by 2010, about 70 percent of world production. Asia will continue to be the major cotton producing region in the world. This region is expected to produce about 11.2 million tonnes by 2010, about 44 percent of world output. However, competition for land from other crops, especially food crops, is a major constraint. China is expected to produce 6.1 million tonnes by 2010, with an annual growth of 3 percent. India is expected to reach 3 million tonnes by 2010 with an annual growth of 1.8 percent, and Pakistan would produce 2 million tonnes with annual growth of 1percent.

2.2 MAJOR COTTON PRODUCING STATES IN INDIA:

Cotton, the ***'white gold'*** or the ***"King of Fibres",,*** enjoys a predominant position amongst all cash crops in India. In India, cotton occupies an area of nearly 7.39 million hectares, with a production of 2.38 million metric tones (2002–03), ranking third in the world. The lint productivity of cotton is 322 kg/ ha, which is the lowest and far below that of the world average of 627 kg/ha. During the last fifty years, production of cotton rose from 30 lakh bales (1 bale = 170 kg) in 1950–51 to 140 lakh bales in 2002–03. During the same period the area under cultivation increased from 58.91 lakh hectares to 73.9 lakh hectares. Significant increase in the area under cultivation of cotton was observed over a period of fifty years. Major cotton-producing states in India are Andhra Pradesh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu and Uttar Pradesh. The cotton production in the country has touched an all time high during 2004-05 with a record production of 243.0 lakh bales (1 bale = 170 kg). The productivity of cotton has also shown significant growth with 463 kg/ha during 2004-05 compared to 399 kg/ha during 2003-04 when the production was 179 lakh bales. Gujarat (73 lakh bales), Maharashtra (52 lakh bales) and Andhra Pradesh (32.50 lakh bales) are the leading cotton producing states in the country. In terms of productivity Tamil Nadu (658 kg/ha) is the leading state followed by Gujarat (651 kg/ha) and Punjab (551 kg/ha).

Fig:-5

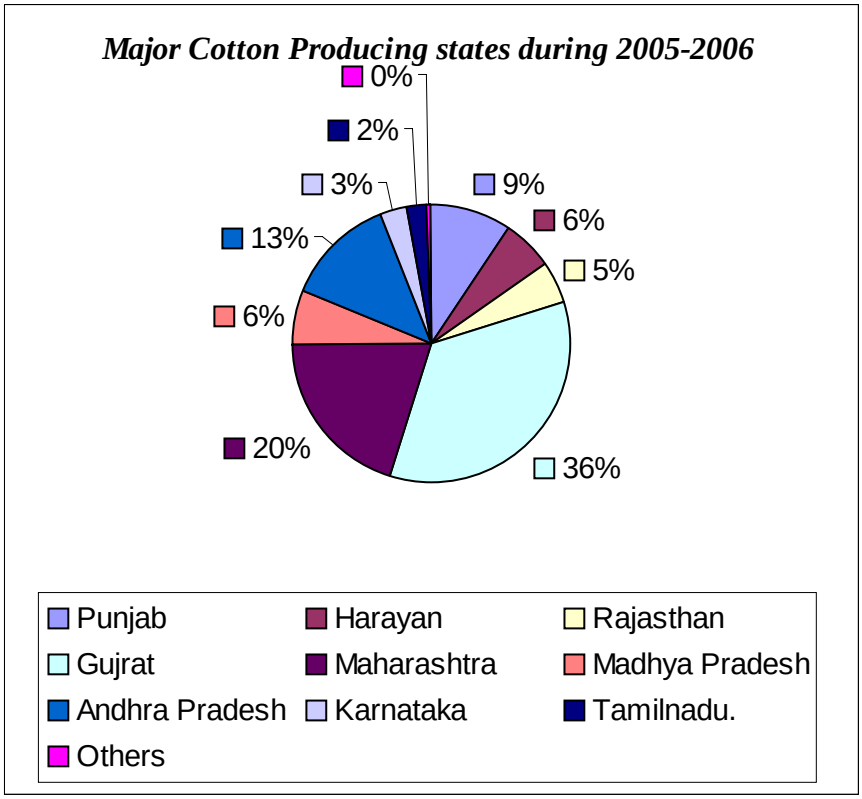


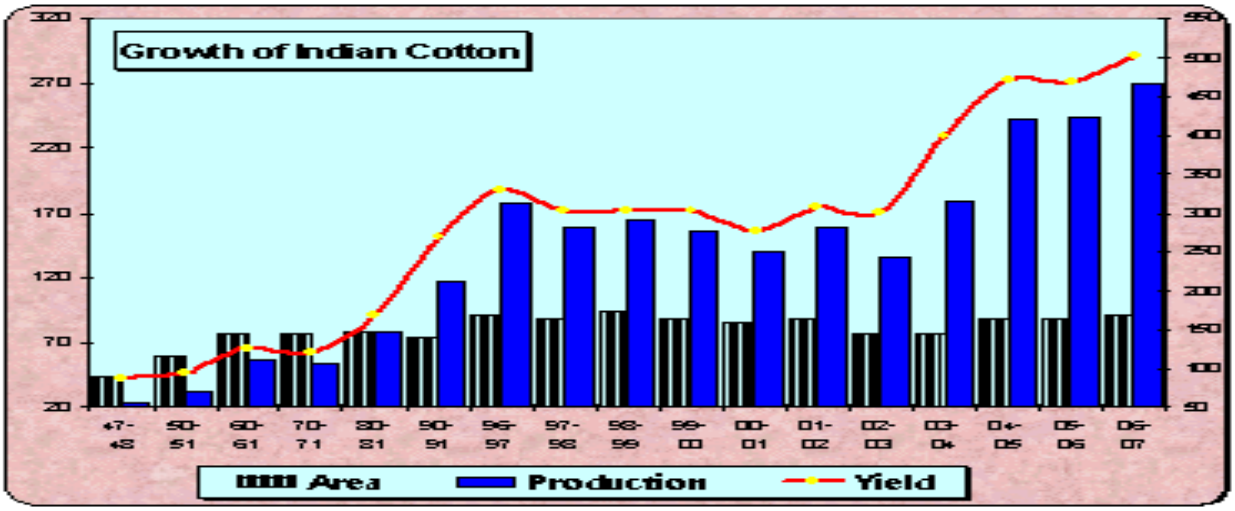
Table:- 3

GROWTH OF COTTON IN INDIA

Area, Production and productivity of cotton in India			
Year	Area in lakh hectares	Production in lakh bales of 170 kgs	Yield kgs per hectare
1980-81	78.24	78.60	170
1990-91	74.39	117.00	267
1991-92	76.93	119.00	263
1992-93	75.41	138.00	311
1993-94	74.40	121.50	278
1994-95	78.61	138.50	300
1995-96	90.63	170.20	319
1996-97	91.66	177.90	330
1997-98	89.04	158.00	302
1998-99	92.87	165.00	302
1999-00	87.31	156.00	304
2000-01	85.76	140.00	278
2001-02	87.30	158.00	308
2002-03	76.67	136.00	302
2003-04	76.30	179.00	399
2004-05	87.86	243.00	470
2005-06	86.77	241.00	472
2006-07	91.58	280.00	520
Source : Cotton Advisory Board , Cotton Corporation of India			

Fig:-6

GROWTH OF COTTON IN INDIA



Source :- The Cotton Corporation Of India.

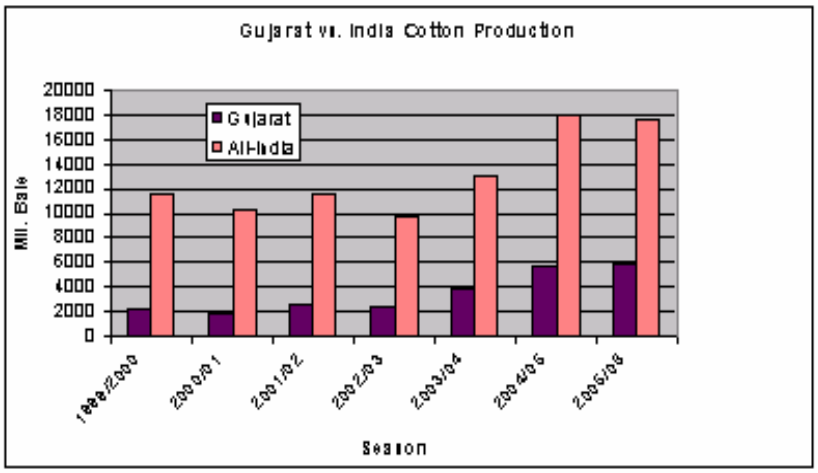
Table:-4

AREA, PRODUCTION AND PRODUCTIVITY OF COTTON (STATE-WISE)

Area in lakh hectares/ Production in lakh bales of 170 kgs/ Yield kgs per hectare															
Year	**2001-02**			**2002-03**			**2003-04**			**2004-05**			**2005-06**		
State	Area	Prod	Yield	Area	Prod	Yield	Area	Prod	Yield	Area	Prod	Yield	Area	Prod	Yield
Punjab	6.00	9.25	262	4.49	7.50	284	4.52	10.35	389	5.09	16.50	551	5.57	20.00	610
Haryana	6.10	5.50	153	5.19	8.75	287	5.26	11.50	372	6.21	15.50	424	5.83	12.00	350
Rajasthan	3.47	7.00	343	3.86	5.00	220	3.44	9.15	452	4.38	11.00	427	4.71	9.00	325
Gujarat	16.87	32.50	328	16.34	30.50	317	16.47	50.00	516	19.06	73.00	651	19.06	89.00	794
Maharashtra	29.80	34.25	195	28.00	26.00	158	27.66	31.00	191	28.40	52.00	311	28.75	35.00	207
Madhya Pradesh	6.23	20.00	546	5.45	18.00	561	5.91	19.65	565	5.76	16.00	472	6.20	19.00	521
Andhra Pradesh	10.02	26.75	454	8.03	19.75	418	8.37	27.40	557	11.78	32.50	469	10.33	33.00	543
Karnataka	5.91	7.00	201	3.93	5.00	216	3.13	4.20	228	5.21	8.00	261	4.13	6.00	247
Tamil Nadu	2.00	5.00	425	0.85	3.00	600	1.03	3.75	619	1.29	5.50	725	1.40	5.00	607
Others	0.90	0.75	142	0.53	1.00	321	0.51	1.00	333	0.68	1.00	250	0.79	1.00	215
TOTAL		148.00			124.50			168.00			231.00			229.00	
Loose lint		10.00			11.50			11.00			12.00			12.00	
GRAND TOTAL	**87.30**	**158.00**	**308**	**76.67**	**136.00**	**302**	**76.30**	**179.00**	**399**	**87.86**	**243.00**	**470**	**86.77**	**241.00**	**472**
Source : Cotton Corporation of India															

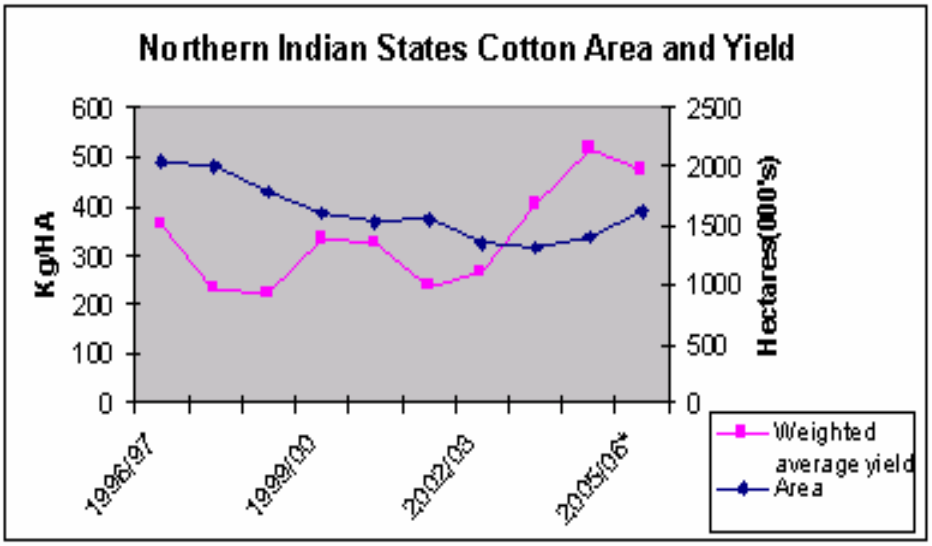
Gujarat has rapidly emerged as India's largest cotton producing state. The adoption of Bt cotton by farmers in this state (and others) is believed to be the dominant contributing factor of the rapid rise with increased use of irrigation. Along with Gujarat, the Northern Zone states of Punjab, Haryana, and Rajasthan also produce higher yielding cotton. The Government of India approved the use of Bt cotton seed in the Northern states for the first time in 2005. A majority of the crops in this region are irrigated and along with the planting of approved and unapproved Bt cotton seed, yields will likely continue to improve. After trending downward rather significantly, planted area in the Northern zone started increasing in 2004/05. To the extent that farmers increase area under cultivation with approved and unapproved varieties of Bt cotton, cost savings will be realized and yields can be expected to grow in the coming years. The majority of the crops in the North are already irrigated, so any improvement in seed technology will only enhance production in these areas. With favourable weather, low pest profile and good technology, the production is also expected to increase further.

Fig:-7



Source : USDA, FAS, Commodity Intelligence Report.

Fig:-8

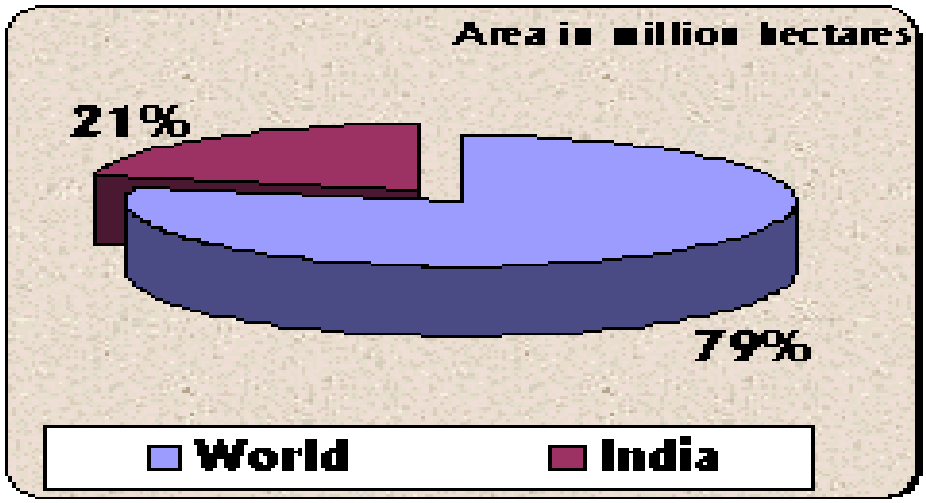


Source : USDA, FAS, Commodity Intelligence Report.

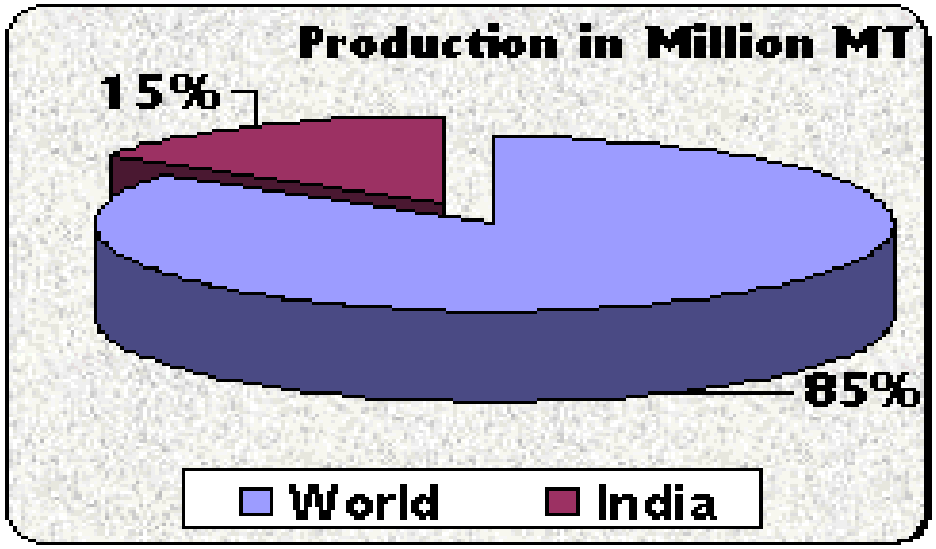
Fig:-9

INDIAS SHARE IN WORLD PRODUCTION

	WORLD	INDIA	INDIA'S SHARE
AREA IN MILLION HECTARES	34.21	9.13	21%



	WORLD	INDIA	INDIA'S SHARE
PRODUCTION IN MILLION MT	25.07	4.59	15%



Source :- The cotton corporation of India

Fig:-10

MAJOR COTTON PRODUCING STATES

2.3 ZONE-WISE MAJOR COMMERCIAL VARIETIES:

Sl. No.	States	G. Hirsutum	G. Arboreum	Hybrids
		NORTH ZONE		
1.	**Punjab**	F-286,LH-886	LD-230	FATEH
		F-414, LH-900	LD-327	LHH-144
		F-505, LH-1134	LD-491	LDH-11
		F-846, F-1084		J-34
		F-1378, LH-1556		G-27
2.	**Haryana**	H-777, HS-45	DS-1	DHANALAKSHMI
		HS-6, H-1098	DS-5	OMSHANKAR
		H-974 G-27, J-34	HD-107 F-141	(CSHH-29) (Entire Northern Zone)
3.	**Rajasthan**	G-AGETI, HS-6	RG-8, H-123, RG18	RAJHH-16 (MARUVIKAS)
		RST-9, B-NARMA RS-875, RG-810, RH-2013		
4.	**Western UP**	VIKAS	LOHIT - SHAMLI	
		CENTRAL ZONE		
5.	**Madhya Pradesh**	KHANDWA-3	MALJARI	JKHY-1, JK-4
		VIKRAM	H-4, H-8, H-6	JKHY-2
		KC-94-2	AJIT, RCH-118 BT.	JAWAHAR TAPTI-1
6.	**Maharashtra**	PKV-081	PA-183	PKVHY-2
		DHY-286	AKH-4	PKVHY-3
		LRA-5166	JYOTI	NHH-44, H=-=6, BT.BRAHMA
		LRK-516	AKA-5	NHB-12, MCH-11
		CNH-36	EKNATH AKA-8401	CICRHH-1 DCH-32
		AROGYA	ROHINI	PKVHY-4
		RAJAT	Y-1	PHA-46
7.	**Gujarat**	G-COT-12	G-COT-15	H-6, H-8
		LRK-516	G-COT-13	H-6, H-8
		G-COT-14, G.COT-100 CNH-36, MECH-1 G-COT-16	G-COT-19 G-COT-21	DH-9 G.COT-4 G.COT-6
		SOUTHERN ZONE		
8.	**Andhra Pradesh**	LRA-5166, BUNNY	SRISAILAM	JKHY-1
		NH-920, RCH-2	MAHANANDI	DCH-32
		LK-861, MCV-5	NA-1315	SAVITHA
		L-389, MECH-1 & II	JK-DURGA	HB-224
		KANCHANA		TCHB-213, DDH-2
9.	**Karnataka**	SHARDA	G-22	DCH-32
		JK-119	AK-235	DH3-105
		ABHADITA	RALCHUR-51	DH3-105
		SAHANA	DB-3-12	DHH-11,HB-224
10.	**Tamilnadu**	MCU-5	K-10	SAVITA
		MCU-5-VT	K-11	SURYA
		MCU-7 MCU-9 LRA-5166 LRK-516 SURABHI	KC-2 SVPR-2 SVPR-3 ANJALI	SRUTHI, GUNNY DCH-32 TCHB-312, MECH-84 BT HB-224 RCH-2

3.0 POST HARVEST MANAGEMENT:

3.1 POST HARVEST LOSSES/CARE:

Normally, the Post Harvest Losses of Cotton is very minimum as the content are hand picked. However following care should be taken while harvesting cotton.

3.2 HARVESTING CARE :

a) Seed cotton should be collected from fully opened bolls only.

b) The practice of collecting half open bolls, drying them and then removing the seed cotton should be discouraged; as such a practice results in lower grade and quality of fiber.

c) Picking should be avoided in hot mid-day, as there is a possibility of collecting dried leaf-bits, etc. It is advisable not to do picking when the weather condition is wet. Picking should be done early in the morning & Evening.

Fig:-11

Cotton Harvesting

d) It is preferable to keep seed cotton from last picking separately for marketing, as this is generally lower in quality.

e) Before transport to the market, seed cotton should be heaped on a cloth or gunny or paper spread in a corner. It is advisable that care should be taken that seed cotton should not come into direct contact with the soil to avoid increase of trash content.

f) After picking, the seed cotton should be allowed to dry in the shade. The excessive exposure to sun should be avoided as it lowers the grade due to yellowing.

g) The seed cotton should be fully covered to protect it from sun and rain as well as to avoid contamination by wind during transport to the market,. This will also prevent loss of seed cotton either due to pilferage or due to being blown away by wind.

3.2.1 POST HARVEST EQUIPMENTS:-

Some Modern, developed Harvesting equipments (Used in Developed countries like U.S.A):-

Fig:-12

COTTON PICKER

COTTON STRIPPER

3.3 GRADING:

In order to gain the confidence and to establish a rational relationship between the quality of a produce and its price, it is necessary to devote some attention to the proper preparation shifting and sorting of a material according to certain attributes before it is taken to the market. This is sought to be achieved by grading the produce in conformity with certain accepted quality standards viz. shape, size, form, weight, and other physical and technical characteristics. The produce brought to the market is very often contaminated with dust, stones and other foreign matter added either deliberately or by accident. Sometimes the produce is immature or not properly dried or contains shriveled grains or damaged and rotten material. Such a produce brings a lower price to the farmers. Care should be exercised while assembling the produce of different farmers so that the good material is not mixed with the inferior material brought in by some farmers.

It is important to have a grading system which accurately describes products in a uniform and meaningful manner. Grades and standards contribute to operational and pricing efficiency by providing buyers and sellers with a system of communicating price and product information.

A) Cotton Grading In India :

The East India Cotton Association (E.I.C.A.) maintains official standards for each of the commercially grown varieties as per the schedule during each season. The standards are prepared after a survey of the crop is undertaken by Sworn Surveyors of the E.I.C.A. for length and uniformity. Representative samples collected by them are evaluated in the laboratories of the E.I.C.A. and the Central Institute for Research on Cotton Technology (CIRCOT) for staple length, uniformity ratio, and micronire value. These readings are compared with those of the Surveyors and are then selected for preparing standards. These are then examined by the Standards Committee of the EICA, after its approval it become official standards. The trade is subsequently apprised of the same. The EICA maintains official standards of different staple length ranging from 20 mm to 42 mm. Each description or variety has six grades.

Viz :- 1. Extra Superfine, 2. Superfine, 3. Fine, 4. Fully good, 5.Good to fully good and 6.Good.

Table:-5

STAPLE LENGTH CLASSIFICATION

Sr. No.	CATEGORY	LENGTH IN MM	LENGTH IN INCHES
1.	Short staple	19.5 mm and below	¾ inches & below
2.	Medium	20.0mm to 21.5 mm	25/32 inches to 27/32 inches
3.	Superior	22.0mm to 24.0 mm	7/8 inches to 15/16 inches
4.	Long staple	24.5mm to 26.5 mm	31/32 inches to 11/32 inches
5.	Superior	27.0mm to 29.5 mm	11/16 inches to 15/32 inches
6.	Extra long	30.0 mm & above	13/16 inches & longer

Source : **Training Manual in Kapas Grading, Cotton Classing Center, Nagpur**

The basic grade of each description or variety is 'fine' as over 50% of the crop of the given variety would be equal to this grade. In preparing these standards, the parameters considered are colour, luster, leaf, stains and character, i.e. ginning preparation, nippiness etc. The official standards are prepared in duplicate every year where ever suitable cotton is available. Of these, one set known as the working set, is used for the purpose of arbitration or for demonstration to visitors. The other is the 'reference set', which is kept in a separate air conditioned room of the E.I.C.A. These sets remain in force until fresh ones are prepared. Thus, grading of cotton is usually done by expert graders by matching the sample against certain prepared standards as stated above.

3.3.1 GRADE SPECIFICATIONS:

(i) Grading under Agmark:

The grading of cotton has been taken up under Agmark since 1939, as per provisions of the Agricultural Produce (Grading and Marking) Act. 1937 and the cotton Grading & Marking Rules, 1939 (as amended 1971) (Annexure I, II and III). The Grading and Marking

Cotton is one of the major commercial crops grown in India. The major cotton growing States are Punjab, Haryana, Rajasthan, Madhya Pradesh, Gujarat, Maharashtra, Andhra Pradesh, Tamil Nadu and Karnataka. Quality of cotton vary from area to area and variety to variety. Hence it is essential that quality of cotton is determined before putting bales in the market in such a way that the seller may be able to understand the quality he is offering. The buyer may be able to understand what is offered and be able to appraise proper market value. With a view to fulfill this need the Directorate of Marketing & Inspection formulated a pilot scheme for grading of Kapas called Cotton Classing Centers which was sanctioned for setting up of first classing unit at Surat (Gujarat)during the 4th Plan (1968-69) where Cotton Cooperatives are well organised and cotton is generally sold in the form of lint. Encouraged by the success of this pioneer scheme, the Government established 5 more Cotton Classing Centres at Abohar (Punjab), Khandwa (Madhya Pradesh), Nagpur (Maharashtra), Rraichur (Karnataka) and Tirupur (TamilNadu.).

The main objectives of the cotton classing scheme are as follows :

1. To provide facilities of the Classing of cotton pressed in bales belonging to growers, their Co-operative societies and others and to issue to certificate to that effect.
2. To analyse cotton samples for various quality factors like Staple length, micronire value, Strength and Trash content, etc, from the cotton grown in different region with a view to frame National Grade standards.

To conduct short training programme relating to grading of seed cotton and medium term programme in Grading of Cotton (lint) for improving and updating technical know-how of the in-service State Marketing Personnel, middle level worker of NAFED, NTC,CCI, co-operative societies, Market committees, spinning mills,etc.

The cotton classing certificates issued by cotton classing center (DMI) incorporates the aforesaid cotton fibre properties. The certificates are beneficial to users as indicated below:-.

a) The certificate offers third party guarantee (issued by government agency) for the quality of cotton offered for sale
b) The certificate facilitates the price determination commensurate with quality of cotton offered for sale.
c) The intending purchaser by referring to the classification certificate, assess the spinning quality of ginned cotton and accordingly undertake sale operations.

The services rendered is free of cost in respect of cotton samples received from the cotton farmers , co-operatives, NAFED and state Marketing Federations. A nominal sum of Rs.40/- per sample is charged for autonomous organization or Government undertaking, Research institutions and private packers. The samples are analysed and the test reports issued for the following para- meters.

1. Variety (as declared by the seller)
2. Span length (2.5 & 50%)
3. Mean length (MM & INCH)
4. Uniformity Ratio
5. Maturity co-efficient
6. Strength of fibres
7. Trash
8. Micronaire (Finenes)

The analysis report issued for cotton (Kapas & lint) helps to know the qualities of their cotton enabling them to quote appropriate price for their produce. The report also helps the buyer to chose the lots according to his qualitative demand without going through the lot to assess its quality which is tiresome and time consuming. It is also helpful to spinning mills to know the spinnibility of cotton and to plan their spinning programme accordingly.

Progress Of Grading :

Kapas (seed cotton/raw cotton) and cotton grading activities may be classified under three broad heads-viz :

(i) Grading under Agmark (ii) Grading at producers level.
(iii) Grading (Classing) of cotton at commercial level.

3.3.2 Grading at Producers level :

The grading under Agmark, being largely consumer oriented, has little impact on the marketing of farm produce brought for sale by the producers in the assembling markets. Therefore, a grading service to the farmer before sale of his produce, with a view to advise him about the quality and to help him in getting a price commensurate with quality was introduced during IIIrd Five Year Plan in the year 1962-63. The procedure involved in grading at producer level is different from that of Agmark grading, as packing, sealing and affixation of labels is not done in this case. The grading service under this scheme is free and voluntary, as such no grading and labeling charges are realized from the producers. This service has been introduced in regulated markets, cooperative marketing societies and ware houses. The scheme was formulated by the Directorate of Marketing and Inspection (DMI) and implemented with the help of State Marketing Departments. The grade standards are prepared by the D.M.I. In the beginning, the State Marketing Department. were provided subsidy by the Govt. of India for implementing the scheme towards salary of graders, and cost of laboratory equipments. Training facilities for the Graders and Supervisors were also provided by D.M.I. Special financial assistance was discontinued in 1964. The enforcement of the scheme is the responsibility of State Marketing Department., while technical guidance is provided by the D.M.I.

3.3.3 Grading (Classing) of Cotton at Commercial level :

There is need to make a scientific classification of cotton, which is based on scientific instruments such as Ginning instruments, Shirley Analyser, Digital Fibrograph,, Micaronaire instrument and High volume Testing Machine. By visual examination of cotton, there is much variation from man to man. But in case of instruments, there is not much variation in results of quality parameters of cotton as the quality parameters are evaluated in standard uniform conditions.

B Cotton Standards Around The World:

The USDA has taken a leadership role in efforts to bring standardization and acceptance of its HVI (High Volume Instruments) cotton classification system into the international arena where cotton is an important product in global textile import and export markets. The International Organization for Standardization (ISO) maintains two standards

for cotton fibers: one for the measurement of micron ire (ISO 2403: 1972, Textiles — Cotton fibres — Determination of micronaire value) and another for equipment and artificial lighting guideline for cotton classing rooms (ISO 4911: 1980 Textiles — Cotton fibres — Equipment and artificial lighting for cotton classing rooms) but does not have any cotton fiber classification standards.

ASTM — with industry support from USDA, Cotton Incorporated, testing equipment manufacturers, and the U.S. Departments of Commerce, Customs, and Homeland Security — maintains the basic cotton fiber test method and HVI standards. Additional cotton classification standards are planned for development within ASTM's Subcommittee D13.11. USDA's expertise and experience in cotton classification was noted by the International Cotton Advisory Committee's Expert Panel on Commercial Standardization of Instrument Testing of Cotton when they recommended USDA's classification system as the model to be used by other countries' cotton classification process in 2004.

China's upland cotton production is consumed by that country's own textile industry. Even though its cotton planting area has increased to the level that it is now the largest producer of cotton in the world, it has become an importer of cotton during the last two years. China's cotton classification system is currently based on individual instrument measurements and visual color grades. In 2003, the Chinese government made the decision to move toward full cotton classification using HVI systems. The Chinese Fiber Inspection Bureau has been given the task of implementing such a system by 2010.

3.4 ADULTERANTS (CONTAMINATION OF COTTON):

Cotton generally contains impurities of two kinds, viz. (1) stained and immature locks and leafy material (2) Trash in the form of hulls, stalks and leafy bits and sand. Contamination of cotton is a more serious problem than high trash contents in cotton. Trash can be easily removed in a blow room but not other contaminants, which have to be picked up either manually or with the help of machines and results in additional avoidable cost. Indian Cotton Textile Industry has been facing this problem of cotton contamination for decades.

In the entire chain of cotton supply, cotton farmer occupies important position. He decides which variety to be sown, he takes care of cotton crop, But he is not fully aware of what care has to be taken while picking, storing of cotton and transporting of cotton to market yard. Problems of cotton contamination start at this level and cause serious difficulties to spinning mills in maintaining high standards of quality of yarn.

It is a sad story that the contaminants in cotton does not stop at farmer's level, but continues when seed cotton is brought to market yard and then to Ginning & Pressing Factories for processing. Contamination of cotton is totally unintentional but causes serious problems to Indian Cotton Textile Industry. It is really shameful that Indian Cotton is placed in the category of most contaminated cottons. The problem can be tackled in a big way if we succeed in creating awareness at various levels. The ICMF-CDRA makes efforts to educate cotton farmers regarding proper methods of cotton picking, storing and transportation to market yards.

With the exposure of Indian Cotton Textile Industry to the overseas markets in a big way, the problem has assumed serious dimension. Under the Quota Free Regime under WTO, where simple rule is survival of the fittest, we will have to gear up to tackle this problem quickly and effectively. Considering the gravity of the problem, the Govt. of India have taken a strong initiative in modernizing over 270 ginning & pressing factories. Additional number of ginning & pressing factories are to be modernized in the near future. This has created an infrastructure to provide clean and contamination free cotton.

It is, however, necessary to see that at least the modernized ginning & pressing Units take special care –

i) For proper Upkeep of the machinery to ensure supply of clean and contamination free cotton.
ii) To create an environment of cleanliness in the factory so as to ensure that no contaminants are added after the cotton is delivered at the ginning & pressing Factories.
iii) To ensure that the Factories use proper packing material like - high quality cloth of prescribed specifications and new iron hoops and use labels for marking to avoid contamination by ink, rusted hoops etc.
iv) The factory owner should make special efforts to educate farmers to adopt proper methods of picking, storing and transportation of cotton to avoid contamination in cotton.

Cotton Contamination by Threads of White Polythene Fertilizer Bags:

Cotton farmers generally use empty fertilizer bags which are white in color, for storing and transportation of Seed Cotton. In this process, loose threads of white polythene fertilizer bags get into seed cotton. Since these threads are white in color, it becomes very difficult to remove them manually or by machine. These threads cause serious problems to Spinning Mills which are required to pay huge claims to overseas buyers of cotton yarn.

3.5 PACKAGING:

To supply high quality of cotton efficiently and economically to the end users some general guidance to be followed for reducing the contaminations during packaging.

Packaging Protects Cotton Bales from:

- Contamination
- Dampness
- Fiber Loss

They are wrapped completely in cotton, jute, plastic fabric, or sometimes in plastic films perforated so as to regulate bale moisture content. Once the bag is sealed from all the side this cotton is protected from outside elements.

Cotton Bale Packing Materials:

- Woven Cotton Bags
- Warp Knitted Cotton Bags
- Polyethylene Film Bags
- Polypropylene Bags
- Polyethylene Woven Bags
- Jute Bags
- Shrink Wrap (Not Common)

Packaging Standards:

All Packing material must be clean, in sound condition, and of sufficient strength to adequately protect the cotton. The material must not have salt or other corrosive material added and must not contain sisal or other hard fiber or any other material that will contaminate or adversely affect cotton.. Packing which has been cut to obtain samples must be patched prior to shipment from warehouse using an industry recommended material and technique, so that the bale is fully covered.

Standardized Bale Sizes and Packaging

Panel: Rectangular sheet of fabric; refers to top sheet in bag and panel combination of new jute, cotton, or woven polypropylene for use on gin universal or gin standard density bales.

Spiral-Sewn Bag: Sewn bag from burlap, cotton or polypropylene. Fabric is sewn on a bias resulting in a tube with the seam spiraling around the bale circumference. After application, bale ties are under packaging.

Gusseted Bag: Sewn bag from polypropylene. Fabric is seamed resulting in a tube with the seam running parallel to the edges of the tube. Opposite edges of the tube are folded inwardly to form two V-shaped sections between the front and back faces of the tube. The bottom seam of the bag
is sewn through 4 layers of fabric in the gusset areas. The gussets create a rectangular-shaped mouth for filling and a rectangular bottom in the filled bag. After application, bale ties are under bagging.

Polyethylene Bags: Pre-formed Tubes., sealed at one end and supplied in rolls. Least labour intensive. The top of the bag is Heat-sealed.

Bag and Panel Combination: Bale cover fabrication applied on the gin press and used in combination with a top panel. After application, bagging is under bale ties.

3.6 TRANSPORTAION :

Transport is vital for the economic and industrial development of a country, since every commodity produced requires transport at its production and distribution stages. Quick, cheap and convenient means of transport are essential for increasing production and trade.

Fig:-13

(A) Mode Of Transport

Movement of cotton from the farm to the ultimate consumer is accomplished in four stages : (i) from the fields to the grower's house; (ii) from the grower's house to the nearby Primary market/ secondary market; (iii) from Primary market/ secondary market to terminal market (iv) Terminal markets to textile mill. For the transport of kapas from the farm to the grower's house and then to the markets, various modes of transport – head-loads, pack animals and bullock carts – are made use of.

Head-loads. After harvesting Kapas is packed in gunny bags or tied in pieces of cloth or Hessian and is carried in head-loads from the fields to the houses of growers. This transport is attended to by labourers employed for harvesting of kapas and no expenses are incurred by the growers. In villages, cotton is purchased in small lots by village merchants. In such cases, the produce is carried in head-loads from the seller's premises to the buyer's.

Carts. In all the States, bullock carts are the most common means of transport in villages and in secondary markets. The majority of the growers have their own carts and they use them for transporting the produce from the fields to their houses and from their houses to the nearby assembling markets. The extensive use of carts for the transport of produce from villages to assembling markets in preference to motor lorries is due to : (i) the produce to be carried by an individual grower is small; (ii) in a good number of cases, the roads that connect the villages and the market towns are katcha; and (iii) the carts are readily available and are found cheaper to transport small loads over short distances. The carts are used for distances of 30 to 40 km. from villages to markets.

In secondary markets, carts are used for transporting the kapas from the market place to the ginnery and the lint from the ginnery to the pressing factory or to local textile mill.

Pack Animals. The transport of cotton by pack animals, like camels and donkeys, is in evidence in the villages of the Punjab, Rajasthan and Uttar Pradesh.

Tractor Trailers. Big growers make use of their tractor trailers for transporting kapas from the field to their houses and from villages to secondary markets. These trailers are used for distances ranging from 10 to 15 km.

Motor Trucks. A very small volume of kapas traffic is moved from villages to markets by lorries. Generally, the motor trucks are used for transporting the produce assembled in villages by cotton merchants, over distances ranging from 30 to 40 km. In certain villages, where facilities for ginning are available, the lint is also carried to markets, to a certain extent, by lorries.

Railway Transport. Railways form an important mode of transport for moving full-pressed bales from pressing centers to terminal markets or consuming centers. In some cases, unpressed lint packed in borahs or bojas is also transported by rail. Generally, railways are made use of when the distance involved is over 150 km.

Steamers. The full-pressed bales from the different market centres are first dispatched to the ports by rail and from there they are dispatched by steamers.

Fig:-14

MODE OF TRANSPORT

a) **HEAD LOAD**

d) **TRUCK**

b) **TRACTOR TROLLEY**

e) **RAILWAYS**

c) **BULLOCK CARTS**

f) **WATER/SEA TRANSPORT**

3.7 STORAGE:

Though cotton is not a perishable commodity, it is liable to damage during storage at various stages. It loses in weight, colour and quality and is not free from ravages of rats and danger of fire. When kapas is left exposed to wind, rain, dust, etc., for along time, a marked deterioration in the grade of cotton takes place; cotton which has a bright luster and creamy white colour turns dull and develops bluish tint. Presence of wet and insect inflicted kapas in the heaps causes stains. Bad storage also weakens the fibre strength. This damage is termed as country damage. At the same time it can be kept for a long time, if kept in a proper place, protected from weathering agents, though there may be slight deterioration in colour and some slight weakening of the fibres due to long storage. Deterioration can be averted by sun-drying of cotton before storage and having good ventilation in storage houses.

Cotton in India is not generally stored for more than a year. A considerable portion of the annual produce is consumed by the textile industry of this country and some part of it is exported to foreign countries, while the remainder is carried over to the next year and stored in godowns at the principal trading centers. This stored cotton is apt to deteriorate in grade, colour and quality, the extent of deterioration depending upon a number of factors, chief among them being the condition and period of storage, the variety of cotton, the atmospheric conditions – especially humidity, rainfall, etc. – prevailing during this period, ventilation and incidence of pests in the godowns, etc. The spinning performance of baled-cotton stored in the open is poor in comparison with that of baled-cotton stored in sheds.

In villages and in secondary markets, cotton is stored only for short periods and, as such, under normal conditions, there is no effect on quality, or loss in quantity. However, if the storage conditions are not congenial, some deterioration in colour and loss in quantity occur. In textile mill, where the period of storage is usually longer, it is reported that lint suffers a loss in weight, especially in hot season.

3.7.1 STORAGE STRUCTURE:

Cotton is generally stored as kapas in the villages and being a bulky commodity requires much space. In villages there are no separate godowns but growers utilize a portion of their own dwelling houses to store the produce. The big growers usually have separate rooms in their houses which are used as store houses. In North Gujarat, the produce is also stored in the form of cotton bolls, called kapas, in the open compound. In some places in Andhra Pradesh and of Maharashtra State growers get a portion of their produce ginned on hand-gins. In such cases the lint obtained is packed into gunny bags or in cloth and then stored. Small quantities of lint retained by the growers for domestic consumption are also kept in a piece of cloth.

Kapas is stored in loose heaps usually in a portion of the house, which is protected against rain and winds. The flooring in most of the houses is Katcha, and is smeared with

cow-dung and mud before kapas is stored. In southern states, in order to protect kapas against dampness, a fine layer of sand or sometimes mats made out of palm leaves are spread over this coated flooring. On the top layer of the heap, some dead weights are placed to compress the volume of kapas. In villages of Madhya Pradesh, such heaps are covered with cloth. In Mewar tract of Rajasthan, some rectangular or round pits are dug in the ground by some growers and kapas is stored there in loose condition. It is considered safe from damage and retains natural colour and quality. In Rajasthan, small store rooms, locally known as bukharis, are specially constructed by growers in their houses. In some States containers are also used for storing cotton. In Nagpur tract (Maharashtra), kapas is stored in big round bins which are made out of tur (arhar) stalks, bamboos or palm leaves. In Tammilnadu, sometimes gunny borahs, locally known as thattoo or malagu, are used for storing kapas. In some places in South India, kapas is stored in bamboo receptacles. In Bhilwara in Rajasthan, mud pots, which are locally known as kothas, are also used.

In Maharashtra, Gujarat, Punjab, Rajasthan and Uttar Pradesh, the produce is stored for one to two weeks till sufficient quantity is collected to make a cart-load. In Andhra Pradesh, Tamilnadu, Karnataka, the produce is stored usually till all the pickings is over and is disposed of generally in one lot, and sometimes in more than one lot, when money is required by growers to meet their urgent financial requirements. In certain centres such as Salem, kapas is sold immediately after each picking and is not stored at all. After all the pickings are completed, a few big growers keep the produce for about one to two months more than the usual period of storage with a view to taking the benefit of the favorable market prices.

In Primary Markets. Generally, the growers or the middleman after taking kapas to the market sells it on the same day. In case he does not sell it on the same day, he deposits the produce with the commission agent or a gin-owner, who provides him with storage facilities. Rent and insurance charges are recovered if the produce is stored for a long time. In some States, there are ginneries in the villages also. Some of these have sheds with katcha floors and roofs of corrugated sheets in their premises, for storing kapas as well as ginned cotton.

In Secondary Markets. In the secondary markets, the kapas, till it is disposed of, is temporarily kept in the godowns of the commission agents or left in the open space in front of the commission agents' shops, or in the ginneries. The period varies from one day to even two weeks. It was, however, noticed that in Guntur in Andhra Pradesh, a few sellers store their produce for one to two months in the godowns of gin-owners who are also the cotton merchants.

The storage for long periods is done in godowns owned by local merchants, ginning and pressing factories and co-operative societies. In some markets, textile mills have also their own godowns. In some markets, brokers also maintain small godowns for storing the produce of their clients. Warehousing facilities are being provided at important market centres by the State and the Central Warehousing Corporation However, the percentage of cotton stored in these warehouses is very less.

The godowns provided in the ginning factories are of different types as described below

Closed Type : This type of godowns is closed on all four sides with pacca walls with a door way on one side. The flooring in most cases is covered with a layer of sand or sometimes with stone slabs. In Rajasthan, the Punjab and some centres of Maharashtra, lint, either loose or in containers, is stored in this type of godowns for short periods. Generally, each ginnery has one or two godowns of this type.

Open Type : This type of godown is covered only on one side and is kept open on all the other three sides. The flooring is usually left unpaved. Both kapas and lint packed in containers are stored.

Open Sheds : These are pacca sheds with galvanized iron sheet roofings and open on all four sides. The flooring is covered mostly with sand. In Andhra Pradesh, such sheds are found only in a few factories and are used for storing kapas in loose condition and sometimes for cotton seed. In Tamilnadu, they are used for storing borahs of kapas.

In Maharashtra, in a few ginneries, existence of some katcha godowns is noticed. Here the godowns are constructed with some sort of roofings, mud floorings and covered on all sides with bricks or bamboo walls. During the peak season, when the arrivals of cotton are heavy in market, kapas and lint are stored for about a month in open compounds of ginneries. In Maharashtra , certain factories have platforms one foot above the ground level in open compounds for storing kapas before ginning.

Terminal Markets: In all the terminal markets, most of the godowns for storing cotton are pacca masonry structures with paved floors.

Consumers' Premises: In all the States, the textile mills have built their own godowns. These godowns have pacca rooffings, paved floorings and are well ventilated.

3.7.2 STORAGE FACILITIES:

Storage of kappas offers many problems such as large space required, difficulties in handling due to its bulky nature - large storage space is required both at the farmer's level as well as at the market. Due to the lack of sufficient space, the farmer will be forced to bring his produce to the market. The produce needs to be dried before packed. Improper drying due to lack of proper yard at hill village will generally result in to the discoloration of the fibres. Even at the market level, the conventional packing of kapas in bales gives rise to problems such as requirement of large space and possible fire hazards. The market is forced to store the bales in open yards, invariably resulting into the deterioration of the quality of fibres. The State Warehousing Corporation, Cotton Corporation of India, and State Agricultural Cooperative Marketing Federation collect, maintain storage of Cotton (lint) along with other agricultural commodities dealt by them.

Fig:-15

COTTON STORAGAE FACILITIES

Table:-6

Market Yards Sanctioned for Development with Technology Mission on Cotton (TMC) Assistance (Progress upto October, 2006)

State	Total
Punjab	14
Haryana	17
Rajasthan	14
Madhya Pradesh	23
Gujarat	39
Andhra Pradesh	45
Karnataka	13
Tamil Nadu	4
Orissa	5
Maharashtra	42
Total	**216**

Source : Texmin.nic.in/tmc.mm3

3.7.3 PLEDGE FINANCE SYSTEM:

Micro level studies indicate that about 54 per cent of marketable surplus was generated by small and marginal farmers. Non-availability of adequate storage facilities coupled with immediate need of money compel's the farmer to sell the produce immediately after harvest. Pledge finance is crucial as it enables producer to hold an inventory of graded produce under favourable storage conditions without selling it during the glut period.

According to NABARD, the pledge financing is to the tune of about Rs.1200 crores at present, whereas estimated requirement is Rs.7000 crores by the end of Xth Five Year Plan. At present, Commercial and Co-operative Banks are providing limited credit for marketing of crops as their emphasis is on providing credit for crop production. As per Reserve Bank of India guidelines, the finance against pledge / hypothecation should be provided to the extent of 75 per cent of the value of stored produce, subject to maximum limit of Rs. 1 lakh. The credit is provided for a period not exceeding six months with some stipulated terms and conditions. However, there is no bar for extending pledge finance for a period of 12 months. There is no margin for credit upto Rs.10,000/-, whereas the margins are decided by the individual banks in case advance is above Rs.10,000/-

In some states, District Central Co-operative Banks **(DCCBs)** are directly financing individual farmers on the basis of pledge. In states like – Andhra Pradesh, Tamil Nadu, Bihar, Uttar Pradesh, Rajasthan and Haryana, the scheme of pledge finance is being operated by the Market Committees (APMCs). The pledge finance scheme for agricultural produce provided by the Agricultural Produce Market Committees in different states is given in Table No.

Benefits of the Pledge Finance

- ★ **Prevent distress sale by producers.**
- ★ **Promotes cleaning, drying and grading at farm gate.**
- ★ **Promotes proper storage facilities.**
- ★ **Facilities better price realization by farmers.**
- ★ **Avoids glut conditions in market.**

Table No:-7

Pledge Finance of Agricultural Produce – Grant of Advance by the Market Committees in different States / U.T(s)

Sl.No.	Name of State/Union Territory	Details of Pledge finance advance to Producers
1.	2.	3.
1.	**Andhra Pradesh**	A Scheme under Andhra Pradesh (Agril.Produce & Live Stock) Markets Act, 1966 provides advances against pledge to the producers. The advance is given to the extent of 75 per cent of the value of the produce pledged with the Market Committee subject to maximum limit of Rs.10,000/-. The pledge stocks may be sold within 90 days. The advance is free of interest for the first 30 days. Interest @ 6 per cent per annum shall be charged from the 31st day till the date of disposal. The market committee shall not charge any godown rent for the first 7 days. From the 8th day, the charges shall be as prescribed in bye-laws subject to a maximum of 90 days.
2.	**Tamil Nadu**	The scheme for providing short term advance to small farmers, marginal farmers and other farmers against pledge of Agricultural Produce is being implemented in the State. For small and marginal farmers, the loan amount may be 75 per cent of the produce value subject to a maximum of Rs.10,000/- and for "other farmers", the loan amount may be 50 per cent of the produce value, subject to the maximum ceiling of Rs.10,000/-. The advantage is provided for a maximum period of 6 months – First month shall be interest free and for the remaining 5 months, simple interest at the rate of 12 per cent per annum shall be charged uniformly. The amount ear-marked to short term advance to each Rural Godown is Rs.5,00,000/- (Rupees Five Lakhs only)
3.	**Uttar Pradesh**	A scheme of pledge-finance is being operated through Market Committees. According to the scheme, advance is given to the extent of 75 per cent of the value of the produce pledged with the market committee subject to maximum limit of Rs.5000/- and Rs.2500/- to small and marginal farmers respectively. The advance shall be free of interest for the first 30 days. Interest 6 per cent per annum shall be charged from 31st day till the date of disposal. The Market Committee shall not charge any godown rent for the first 7 days. From the 8th day, the charges shall be 10 paise per bag per month or part thereof. The pledged stocks may be sold in 90 days.

1.	2.	3.
4.	**Karnataka**	The Government of Karnataka has made a new provision in K.A.P.M. R Act, 1966 to- Provide short-term advances as may be prescribed to producer-sellers in the market area on pledge of notified agricultural produce in favour of the market committee. The above provision came into force on 17.06.1986. However, the scheme for granting and regulating advances is not yet in operation, for want of separate Rules. The scheme of providing transport facility is in operation in the Karnataka State. Only transportation charges are being collected from producers on no profit no loss basis by the Market Committee in providing transport facility.
5.	**Bihar**	The scheme for providing short term advance to small and marginal farmers against pledge of agricultural produce in Insured Godown of the Market Committee is being implemented in the State. Market Committees give short term advances through State Bank of India at 60 per cent of the value of the produce stored upto a maximum of Rs.5000 per individual. The advance is provided for a period of 180 days. Interest @ 13.5 per cent shall be charged. The market committee reserves the right to sell the pledged produce after 180 days through open auction.
6.	**Rajasthan**	The advance to the extent of 60 per cent of the value of the produce pledged with the Krishi Upaj Mandi Samities may be paid subject to a maximum limit of Rs.15000/-. The advance shall attract concessional rate of interest of 9 per cent for the first 60 days and 12 per cent for the next 90 days. Maximum duration of storage allowed under pledge scheme will be of 150 days (5 months). The pledger will be liable to pay the warehousing charges for the period his goods are stored in the godowns. The Krishi Upaj Mandi Samities will have the right to sell the produce after five months from the date of storage of the stocks and thereafter through open auction. The Government of Rajasthan also operate schemes for ***'Pay-back'***, fee collection to small and marginal farmers and for free transport facility to small and marginal farmers for agricultural produce.
8.	**Haryana**	The Scheme regarding pledge of agriculture produce is being implemented by Haryana Government through Central Bank of India and Punjab National Bank. The Government is also thinking to associate the Cooperative Banks for granting advances to the farmers against warehouse receipts of Haryana Warehousing Corporation. The Haryana State Agriculture Marketing Board is not directly participating in the scheme.
9.	**Punjab**	As regards schemes for granting loan, to the farmers against their produce, the matter has been linked up with the mechanization of mandi operations. The scheme for partial mechanization of mandi operation is in vogue in 8 mandies on pilot project basis. Its extension alongwith provision of storage facility and grant of loans against such storage will depend upon successful operation of mechanization programme.

In case of cotton, the time/place of production and consumption of cotton, between these two points cotton changes hands many times a fact which necessitates finance for the performance of various marketing functions such as transport, processing, grading packaging and storage. The financial function of marketing involves the use of capital to meet the financial requirements of the agencies engaged in various marketing activities right from the producer upto the ultimate consumer.

Besides, traditional private money lenders, institutional agencies are also coming forward to provide finance both for production and marketing purposes.

Cotton trading in the country is being done by two sectors, namely, public sector like state agencies, co-operative Federations, central Govt. agency like Cotton Corporation of India and private traders are engaged in cotton trade and around 20 to 30 percent of cotton transaction is handled by public sector agencies. Around 80 percent of the crop still used to be handled by the private trade and hence they face shortage of marketing credit. Public sector Banks, RBI/NABARD should be liberal in providing credit facilities to the organized sector.

3.8 COTTON'S, INSECTS, PEST AND DISEASES AND ITS CONTROL:

A) COTTON INSECTS:

Cotton insects are the principal cause of yield losses. Estimates indicate that the yield losses due to insect infections would amount to almost 15% of world annual production. More than 1300 different species of insect pests attack the crop. Although numerous pest species attack cotton plants, most of the major pest species can be organized into 5 specific groups. These groups includes:-

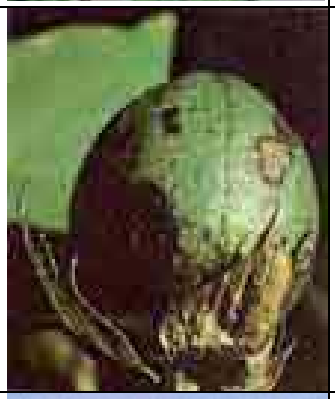
1. Helicoverpa bollworms
2. Other Bollwarms
3. Sucking Pests
4. Weeds
5. Diseases

SR. NO.	NAME OF THE PEST	FIGURE OF PEST	DAMAGE	CONTROL MEASURES
1.	2.	3.	4.	5.
1.	**American Bollworm (*Helicoverpa armigera*)**		The larvae feed on the leaves initially and then bore in to the square/bolls/pods and seeds with its head thrust into the boll/pods, leaving the rest of the body outside entry holes are large and circular at the base of the boll/pod.	Spray HNPV @ 250 Ltr/ha from 35th to 60th day of crop stage. The best time to control bollworm is when the larvae is up to 3 days old. Apply Bt.K.I @ 1 kg/ha. Use baited sex pheromone traps. Use the following insecticide Endosulphon 35 EC Quinalphos 25 EC Carbaryl @ 50 WP 400-500 ml Cypermethrin 10 EC 600-800 ml Neem seed kernel extract (NSKE) @ 5% Neem oil 1%
2.	**Pink Bollworm (*Pectinophora gossypiella*)**		The damage is caused by the caterpillars by feeding on the flower buds, panicles and bolls. The holes of entry close down by excreta of larvae which are feeding inside the seed kernels. They cut window holes in the two adjoining seeds thereby forming "double seeds" and finally damage them. The attacked buds and immature bolls drop off. Lint is destroyed, ginning percentage and oil content are impaired.	1) Hot water treatment of the seeds up to 60oC kill the hibernating larvae. 2) Treat the seeds with aluminium phosphide. 3) Use of tolerant varieties (Khandwa-2, JKH-1, Abdhita, Sujay and Desi cotton). 4) Apply bacterial formulations Bt.K @1 kg/ha. Application of insecticides like chloropyriphos 20 EC or endosulphon 35 EC or triazophos 40 EC @ 2.5 Ltr/ ha spray.

1.	2.	3.	4.	5.
3.	**White Fly (*Bemisia tabaci*)**		The nymph(s) and adult(s) feed on the cell sap, reduce the vitality of the plant The vein becomes translucent and in many cases, it drops off prematurely. Sooty mold contaminates the lint.	1) Avoid late sowing and adopt crop rotation Use resistant varieties such as Supriya and Kanchana (LK -861) and in endemic areas cultivars DCH-32 and MPCH-1 having less nitrogen contents in leaves. 2) Apply insecticide monochrotophos 36 WSC or quinalphos 25 EC/methyl demeton 25 EC at fortnightly intervals. 3) Apply Neem oil+Teepol @ 3 - 3.5 litres + 500 mlt/ha. Apply fish oil resin soap @ 14 - 15 kg/ha. 4) Use Nirma ® washing powder @0.1% as foliar spray.
4.	**Aphids (*Aphis gossypii*)**		Both adults and nymphs suck sap from the tender leaves, twigs and buds, and weaken the plants. The leaves curl up. Each aphid makes several punctures and excrete honeydew which encourages development of sooty mold on the twigs and leaves, and this leaves a blackened look of the plants.	1) Avoid late sowing and excessive use of Nitrogen fertilizers. 2) Destroy infested shoots during early stages. 3) Spray chemicals dimethoate 30 EC or phosphamidon 100 EC or methyl demeton 25 EC @ 500-750 mlt/ha when the population reach ETL.
5.	**Jassids (*Amrasca biguttula biguttula*)**		Both adults and nymphs suck sap from underside of the leaves and devitalise the plants. Leaves turn pale, red rust, drop downwards and dry up when infestation is severe.	1)Sow the crop early. 2) Do not use high doses of "N" fertilizers. 3) Spray methyl demeton 25 EC or phosphamidon 100 EC or dimethoate 30 EC @ 500-750 mlt/ha when ETL has reached (50-100 nymphs per 50 random leaves
6.	**Thrips (*Thrips tabaci*)**		Leaves of seedlings become wrinkled and distorted with white shiny patches, older crop presents rusty appearance from a distance	1) Avoid late sowing.

B) COTTON DISEASES:

Cotton diseases can be devastating, sometimes causing total crop loss. Diseases can kill plants outright, or weaken them so that they are less resistant to drought and insect attack. All stages of the standing crop are susceptible, as is the stored product. In general, cotton crops are less affected by diseases in the Asia Pacific region than in the Americas, although disease resistance breeding is similarly less developed in Asia Pacific countries.

SR. NO.	NAME OF THE DISEASE	FIGURE OF DISEASE (INFESTED PART)	DAMAGE	CONTROL MEASURES
1.	2.	3.	4.	5.
1.	**ALTERNARIA LEAF SPOT *(Alternaria macrospora* and *Alternaria alternata)***		Affected leaves become dry and fall off. The disease may cause cankers on the stem. The infection spreads to the bolls and finally fall off	(1) The plant residues should be removed from the field. (2) Carbendazim, Mancozeb 2.5 gm, Copper Oxychloride 3gm in one litre of water should be sprayed for 3-4 times in every 15 days gap.
2.	**ANTHRACNOSE BOLL ROT,** (Colletotrichum gossypii)		Fungus invades the lint and seed. Lint becomes yellow or brown and gets clumped into a mass of fibre. Badly affected seeds are light, brown, poorly developed and usually do not germinate.	1) Avoid water logging. 2) Acid delinting and treating the seeds with Captan or Carbendazim or Benomyl @ 3-4gm/kg of seed. 3) Spraying with Carbendazim or Benomyl or Mancozeb or Captan @1gm in one lit of water con trols the disease.
3.	**BLACK ROOT ROT,** (Thielaviopsis basicola)		It causes stunted cotton growth early in the season and, in effect, 'steals time' from the crop. This damage to the outer layers of the root reduces the plant's capacity to absorb nutrients. Infection also reduces colonisation of the roots by VAM (beneficial fungi).	Delay planting until soil temperatures are at least above 16°Cavoid over-watering on heavy clay soils rotate fields with non-host crops such as cereals.

4.	**BLIGHT** (Xanthomonas campestris pv. Malvacearum)		As disease progresses, leaf petioles and stems may become infected resulting in premature defoliation Black cankers may girdle the stem or branches causing the portions to die above the canker. Bolls may become infected causing boll rot which results in rotted seed and discolored lint.	1) Use blight resistance varities *Preventative Actions for Bacterial Blight of Cotton:* Plant high-quality, disease free, acid delinted seed. Plant blight-resistant varieties if available.
5.	**FUSARIUM BOLL ROT** *(*Fusarium *spp.)*		Under the optimal conditions for disease development, all the affected plants succumb and shed before the stem dries- out and dies.	1) Seed treatment with Carbendazim @ 2 g/kg seeds should be given. 2) Use of potassium fertilizers should be encouraged. 3) Resistant varieties such as DB-312 , AKA-5 , Sanjay , Virnar, Daulat, Jyoti, Jayadhar, Vijalpa, Sujaya, Digvijay, G cot-11, G cot-13 , PA-32 should be preferred over others.

4.0 MARKET PRACTICES & CONSTRAINTS:

Cotton Markets In India may be classified into :–

a) Primary wholesale markets: These markets are periodically held, either once or twice a week. The agricultural produce comes from neighbouring villages. These markets deal in the sale of fruits, vegetables, food grains, all household requisites etc. for e.g. Village market.

b) Secondary wholesale market: These are also known as mandis. These are situated generally at district or taluka headquaters. Small merchants purchase from primary wholesale market and sale in this markets. Some cultivators directly sell their produce in these markets. Each market comprises area with a 10-20 miles radius. For e.g. District and taluka market.

c) Terminal markets: These are the markets in which the produce is either finally dispose off , direct to consumer or processors or assemble for shipment to foreign countries. These markets are the parts where warehouses and storages are available and cover a wide area e.g. Mumbai, Ajadpur (New Delhi) Markets

Market Practices:-

Before cotton lint reaches the ultimate consumer, namely, textile mills, it is generally moved from the primary markets to the secondary market, from secondary markets to the terminal markets. As regards the market practices are concerned, Kapas is sold by the producers to village merchants, itinerant traders, agents of Cooperative Marketing Federations, agents of textile mills and owners of ginning and pressing factories. Normally intermediaries are not involved in the sale operation at village level.

So far as the business in the wholesale market is concerned, it is conducted in accordance with the local traditional customs and practices evolved years back. In some markets where trade associations have been formed, business is conducted in accordance with the bye-laws framed for the purpose. Where the markets are regulated and are managed by the market committees, business is conducted according to bye-laws framed by the market committees and approved by the State Govt. In the whole sale markets normally raw cotton is sold and producer, village traders, itineral traders bring the produce in the market yard. Before negotiations begin, the buyers generally go round and inspect the goods. Where the open auction system is in vogue the auctions are conducted during fixed hours and buyers go from shop to shop and bid for various lots.

In the terminal markets, normally, cotton lint is sold and buyers in such markets inspect the lint quality and prices are negotiated as per the quality of lint. Large number of buyers and sellers are assembled in the market. In Mumbai Sewri cotton market located in the port area, is one of the biggest terminal markets in the country.

As regards the method of sale of kapas is concerned, there are many systems in vogue, namely open agreement sale system, open auction system, secret system, cover system, party price method, forward sale system , fardi system, Anamathu sale system (the practice has been discontinued)

In these above stated markets, there are various functionaries connected with the marketing of cotton, both assembling and distribution, comprising commission agents, brokers, traders, weigh men, and hammals etc.

4.1 IMPORTANT MARKETS:

The following are the major assembling markets for cotton producing states in the country.

Table No:-8

Major Markets For Cotton Producing States.

Name of State	Name of the markets
Andhra Pradesh	Guntur, Adilabad, Warangal, Khammam, ,Nirmal
Gujarat	Keshod, Bardoli, JetpurPavi, Gondal, Balasienor, Rajkot, Babra, Amreli, Sabarkantha, Visnagar, Vijapur, Halvad, Unai, Manavadar, Bevla,Mansa.
Haryana	Hisar, Fatehabad, Sirsa, Bhiwani, Rohtak, Panipat, Jind, Kaithal, Gurgoan
Karnataka	Bailhogal, Bellary, Bijapur, Gadaj, Haliyal, Hubli, Kottur, Jamkhand, Raichur, Ranebennur, Savadatti, Shimoga, Yellapur
Madhya Pradesh	Badwani, Betul, Chindwara, Dhar, Dewas, Harda, Jhabua, Khandwa, Khargone, Ratlam, Shajapur
Maharashtra	Nagpur, Narkhed,Nanded, Yatmal, Hinganghat, Wardha, Pulgaon,Akola, Amaravati, Murtizapur,Aurangabad, Dhule, Jalgaon
Orissa	Roygoda, Karaput, Kalahandi, Navaranpur, Bolangir, Dhenkenal, Ganjam
Punjab	Bhatinda, Ferojpur, Sangur, Muktsar, Faridkot, Mansa.
Rajasthan	Hanumangarh, Pili Banga, Sriganga– nagar, Palampur, Sangriya, Suratgarh, Sri Vijayanagar, Shadulshakar, Rawatsar, Kherthal, Bijaynagar, Rajsighnagar.
Tamilnadu	Cuddallore, Billupuram, Vellore, Thiruvannamalai, Salem, Dharampuri, Coimbatore, Erode, Tiruchilapalli, Thanjavur, Pudukottai, Dindigul, Madurai, Theni, Virudhanagar, Tirunelveli

Source:- Sub-office, Directorate of Marketing and Inspection

4.1.1 Arrivals In Major Cotton Producing State:-

Arrivals of kapas are recorded in all the APMC's and published annually by the State Agricultural Marketing Board/Directorates, alongwith other notified commodities. At the national level, the Directorate of cotton Development collect data on arrivals of kapas and cotton from selected markets spread over important cotton growing states and also from the concerned ginneries of the states. These data are published in Bulletin on cotton annually. Similarly, the C.C.I. and E.I.C.S., Mumbai also publish data on arrivals alongwith other data in their respective cotton annual bulletins.

Table:- 9

Arrivals of Cotton in Markets of Major Producing State in India.

Sl. No.	Name of the State	Arrivals (Qtls./Bales)		
		2002-2003	2003-2004	2004-2005
1.	Andh Pradesh	71,59,176	76,30,510	94,13,719
2.	Gujrat	33,69,493	40,71,500	54,28,000
3.	Haryana	---	---	---
4.	Karnataka	19,42,34,600	18,50,15,800	20,31,63,700
5.	Madhya Pradesh	7,31,57,550	6,99,88,140	7,16,04,810
6.	Maharashtra	47,320	-	21,93,982
7.	Punjab	24,35,915	35,07,477	1,30,32,680
8.	Rajasthan	10,54,421	18,02,004	28,97,466
9.	Tamil Nadu	29,76,753	40,43,512	44,21,744

Source:- Sub-office, Directorate of Marketing and Inspection

4.1.2 Despatches:-

Cotton is mostly dispatched to the markets of the same states or to the markets of adjoining states.

Table No.:-10

Despatches from major cotton producing states

Sl. No.	Name of the State	Name of the States where commodity dispatched
1.	Andhra Pradesh	Tamil Nadu, Maharashtra, Gujrat, Madhya Pradesh, Punjab, Uttar Pradesh.
2.	Gujrat.	Maharashtra, Rajasthan,Madhya Pradesh
3.	Haryana	N.A.
4.	Karnataka.	Tamil Nadu. Maharashtra, Andhra Pradesh, Gujrat
5.	Madhya Pradesh	Gujrat, Maharashtra.
6.	Maharashtra.	Gujarat, Madhya Pradesh, Andhra Pradesh, Punjab, South India,
7.	Punjab.	N.A.
8.	Rajasthan.	N.A.
9.	Tamil Nadu.	N.A.

Source:- Sub-office, Directorate of Marketing and Inspection

4.2 DISTRUBUTION:

Assembling and distributing system of marketing are closely related. The producers deals with the movement of cotton from farm to the assembling centers like primary markets, then to secondary markets and to the terminal markets. The following are the agency which are engaged in the distribution of cotton at various stages of marketing.

a) Producer
b) Village merchant
c) Itinerant traders
d) The agent of corporation marketing federation
e) Agent of textile mills owner
f) Ginning factories

4.2.1 Inter-state Movements:

Table No:-11

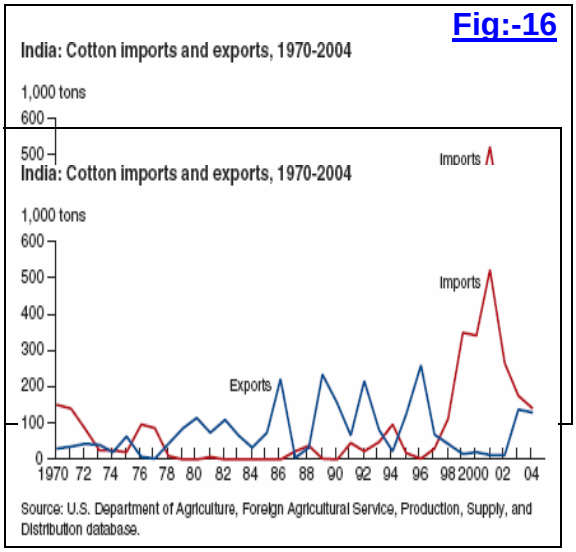
Inter-State Movement Of Cotton By Rail, River And Air

Sl. No.	Name of the State	Quantity Dispatched (Qtls./Bales)		
		2002-2003	2003-2004	2004-2005
1.	Andhra Pradesh	4011423	5341321	6589604
2.	Gujrat.	26,95,595	32,57,200	51,04,000
3.	Haryana.	N.A	N.A	N.A
4.	Karnataka.	94772	100458	119874
5.	Madhya Pradesh	N.A.	N.A.	N.A.
6.	Maharashtra.	34,165	72,514	8,50,485
7.	Punjab.	N.A.	N.A.	N.A.
8.	Rajasthan.	N.A.	N.A.	N.A.
9.	Tamil Nadu.	N.A.	N.A.	N.A.

Source:- Sub-office, Directorate of Marketing and Inspection

4.3 EXPORTS & IMPORTS :

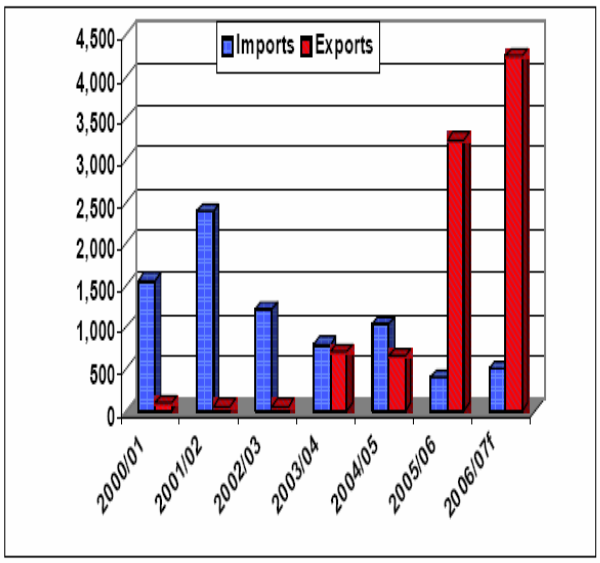
Fig:-16



India has traditionally been a net cotton exporter, but emerged as a significant net importer in 1998.Increased import demand has been associated with a combination of steady growth in domestic consumption, rising exports of cotton-based textiles, and a period of stagnating cotton production during 1997-2002. Cotton imports were liberalized in 1991, when the import monopoly of the Cotton Corporation of India was terminated and imports were placed on Open General License, allowing unrestricted imports by private traders. Export-oriented textile units, which are exempt from the import duty, account for most, if not all, of India's cotton imports.

Much of the growth in India's cotton trade can be attributed to increased cotton production in the latest three crops. Average production in 2004/05-2006/07 is estimated 60 percent above the average of the three previous years. The increase in production is due largely to higher yields, because of better cultivation practices including a dramatic increase in Bt cotton acreage. Higher yields have supported grower returns compared to alternative crops and helped boost area. Exports in 2005/06 were raised from 750,000 bales to 32,50,000 bales and during 2006/07 exports was 42,50,000 bales. Increasing exports to China supported the large increase in India's trade. Chinese imports of Indian cotton surged from a total 210,000 bales in marketing year 2004/05, to 22,50,000 bales through June of 2005/06. India has been China's second leading supplier of cotton, behind the United States and surpassing Uzbekistan. India's exports to other markets, including Taiwan, Thailand and Turkey, have also shown a significant increase.

Fig:-17



Source : USDA, FAS, Circular Series, FC-08-08,August, 2006

4.3.1 Sanitary And Phyto Sanitary Requirement:

The Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) took effect with establishment of the World Trade Organization on January 1, 1995. The SPS Agreement concerns the application of food safety and animal and plant health regulations of member countries. SPS measures include all relevant laws, decrees, regulations, requirements, and production methods that are designed to:

- Protect animal and plant life or health from risk arising from entry, establishment, or spread of pests or disease-causing organisms;
- Protect human and animal life or health from risks arising from additives, contaminants, toxins, or disease-causing organisms in food, beverage, or feed;
- Protect human life and health from risks arising from diseases carried by animals, plants, or products;
- Prevent or limit damage from the entry, establishment, or spread of pests.

4.3.2 Procedure for Export:

Until cotton season 2000-01, the quantities for exports used to be decided by the Government of India, after taking into account the overall cotton situation in periodical meetings of the Cotton Advisory Board and on its recommendations, the quotas were released in installments in favour of various exporting agencies, including the CCI, State Federations and Private Trade.

Since cotton season 2001-02, exports of cotton have been placed under OGL. The intervening period also witnessed a fall in the exports of cotton owing to a number of factors both at National and International level. Nevertheless, in tune with the Government Policy, CCI had fulfilled all export commitments every year, as an instrument of price stabilization. While fulfilling its export commitments, CCI dovetails its purchases to the benefit of cotton growers by covering such varieties whose prices were under pressure, irrespective of profit margins. Apart from this, CCI has fascinated the overseas buyers the most, through supply of quality cotton with least trash & contamination and timely shipments. As a result, most of the international buyers prefer to buy cotton from CCI than from other agencies. While utilizing the export quotas or in fulfilling its export commitments, CCI has always pursued the following objectives:

- To ensure a remunerative price to the cotton growers.
- To bring about stability in the domestic market.
- To install confidence in the international market about India's continued presence as a regular exporter and CCI as a reliable shipper of quality..

For making all shipment strictly within the schedules, CCI has constructed a most modern godown complex at Kalamboli, near JNPT Port at Navi Mumbai. After confirmation of approval, the contracted cotton is transported to this godown complex which has sufficient infrastructure of handling the containers inside the premises.

Export Sales are confirmed through daily offers from overseas buyers against global tender for staple cotton. The "daily sale quotes" are available on CCI's website http://www.cotcorp.gov.in and offers from buyers are considered by a High Level Committee and replied on the same day both for confirmed sales and Counters.

PROCEDURE FOR DAILY OFFERS AGAINST GLOBAL TENDER

Interested Overseas Buyer Or Their Agents May Submit The Bids For Export Of Staple Cotton On The Following Terms And Conditions		
1.	**2.**	**3.**
1.	DATE & TIME	Offers to reach by 1700 hrs (ist) every day from monday to friday (working days only) and the offers to remain valid till 2000 hrs (ist) the same day. Acceptance / counters shall be e-mailed or faxed or shall be intimated over telephone. Buyer shall have to revert to the counter preferably by 1300 hrs (ist), the next day". For the information of our buyers, it is informed that an indian cotton bale is of approx. 170 kgs i.e. around 6 bales = 1 m. T.
2	VARIETIES OFFERED:	Varieties / grades as mentioned in the daily quotes displayed on CCI's website – www.cotcorp.gov.in
3	PRICE	In US cents per lb / fob net - Mumbai / Navi Mumbai
4	SHIPMENT	Permissible shipment period of 60 days from the date of contract.

1.	2.	3.
5	WEIGHMENT/COUNTRY DAMAGE INSPECTION	Bale-to-bale 100 % weighment at the port of shipment vis-a-vis country damage inspection as certified by an independent internationally recognised controller.
6	PAYMENT	By irrevocable confirmed l/c of first class bank in us $ payable in Mumbai (india). As an alternate the buyer can avail the option of making advance payment and avail of the benefit of additional shipment period in proportion to the early remittance from the last date of shipment.
7	QUALITY INSPECTION	Quality inspection at spot shall be final and the buyer should fully satisfy itself before completing selection.
8	ARBITRATION	By East India cotton association, Mumbai (India)
9	GENERAL	All other terms as per standard contract of the cotton corporation of India limited given at our website: www.cotcorp.com
10	OFFERS TO REACH	The cotton corporation of India limited, Kapas Bhavan, plot no 3 a, sector 10, P. B. No. 60, cbd Belapur ,Navi Mumbai – 400 614 India, Fax Nos. 022 - 2757 60 30 / 2757 9219 e-mail - dgmit@cotcorp.com , web site – www.cotcorp.com
11	OFFERS TO INCLUDE	Buyers may submit their bids directly, however, if through an authorized agent then authorisation letter of the principals as per the proforma given on the website. Www.cotcorp.com which may preferably be sent in advance or along with the offer/s.
12	PORT OF SHIPMENT	All export sales are for any port of destination except Bangladesh.

Table:-12

COUNTRYWISE EXPORT SALES BY CCI		
COUNTRY	**Season 2004-05**	**SEASON 2005-06**
China	183220	115088
Thialand	16270	24858
Indonesia	7800	5400
Vietnam	1800	14386
Hongkong	-	26700
Bangladesh	52669	29582
Pakistan	-	3000
Malasyia	1800	-
Singapore	744	592
Turkey	450	300
Srilanka	294	-
Italy	142	-
Total	**265189**	**219906***

Source :- Cotton corporation of India

Table:-13

EXPORT OF COTTON

Quantity in bales

YEAR	QUANTITY	VALUE RS.Crores
1994-95	22,715	17.38
1995-96	2,83,499	262.45
1996-97	4,41,768	408.25
1997-98	52,980	54.52
1998-99	13,352	13.33
1999-00	6,574	6.80
2000-01	5,913	7.32
2001-02	23,388	20.23
2002-03	4,320	4.29
2003-04	60,963	65.76
2004-05	2,65,189	198.90
2005-06	3,12,343	251.78

Source :- Cotton corporation of India

4.4 MARKETING CONSTRAINTS:-

a) Existing of too many varieties under cultivation.
b) Careless picking of kapas resulting in the produce being contaminated.
c) Poor development of co-operative marketing of cotton except in the states of Gujarat and Maharashtra.
d) Determination of market price not in relation to all the important quality factors of cotton.
e) Ineffective enforcement of various cotton acts in different states.
g) Inefficient crop forecasting which is important for market development.
g) Lack of market information at the lower level.
h) Delay in declaration of minimum support price by the Govt.
i) Inadequate finance at the disposal of co-operative and Govt. agencies.
j) Delay in releasing export quotas to the Govt. and Co-operative agencies and unutilized quotas for inefficient organizations.
k) Import of raw cotton under open general license with low import duties at the cost of the local farmers.

5.0 MARKETING CHANNELS, COST AND MARGINS:

Farmers producing agricultural produce are scattered in remote villages while consumers are in semi-urban and urban areas. This produce has to reach consumers for its final use and consumption. There are different agencies and functionaries through which this produce passes and reaches the consumer. A market channel or channel of distribution is therefore defined as a path traced in the direct or indirect transfer of title of a product as it moves from a producer to an ultimate consumer or industrial user. Thus, a channel of distribution of a product is the route taken by the ownership of goods as they move from the producer to the consumer or industrial user.

Cotton is an important cash crop providing raw material to textile industry. There is also a Semi-Govt. agency operating in cotton marketing alongwith private traders. The important states growing cotton are Gujarat, Maharashtra, Andhra Pradesh, Karnataka, etc.

5.1 MARKETING CHANNELS:

These channels have great influence on marketing costs such as transport, commission charges, etc. and market margins received by the intermediaries such as trader, commission agent, wholesaler and retailer. Finally this decides the price to be paid by the consumer and share of it received by the farmer producer. That channel is considered as good or efficient which makes the produce available to the consumer at the cheapest price also ensures the highest share to the producer.

It has been estimated that about 80 per cent of the marketed surplus of kapas and lint is handled by the private marketing channels and the remaining 20 per cent by the institutional marketing channels including co-operatives and cotton corporation of India. The most prevalent institutional channels are.

1. Channel-I : Producer → Village trader → itinerant trader → Wholesaler (in regulated market) → Miller → Consumer.
2. Channel-II : Producer → Village trader/merchant → Commission Agent →Miller → Consumer.
3. Channel-III : Producer → Village merchant → Itinerant trader → Miller → Consumer.
4. Channel-IV : Producer → Village trader → Wholesaler (in unregulated market) → Lint market → Commission Agent → Miller →Consumer.
5. Channel-V : Producer → Cooperative Society → Cooperative Ginning and Pressing Factory → Terminal Market → Miller → Consumer.
6. Channel-VI : Producer → Cooperative Marketing Federation → Terminal Market → Consumer.
7. Channel-VII : Producer → State Govt. Agencies → Central Govt. Procurement Agencies (CCI) → Miller → Consumer.

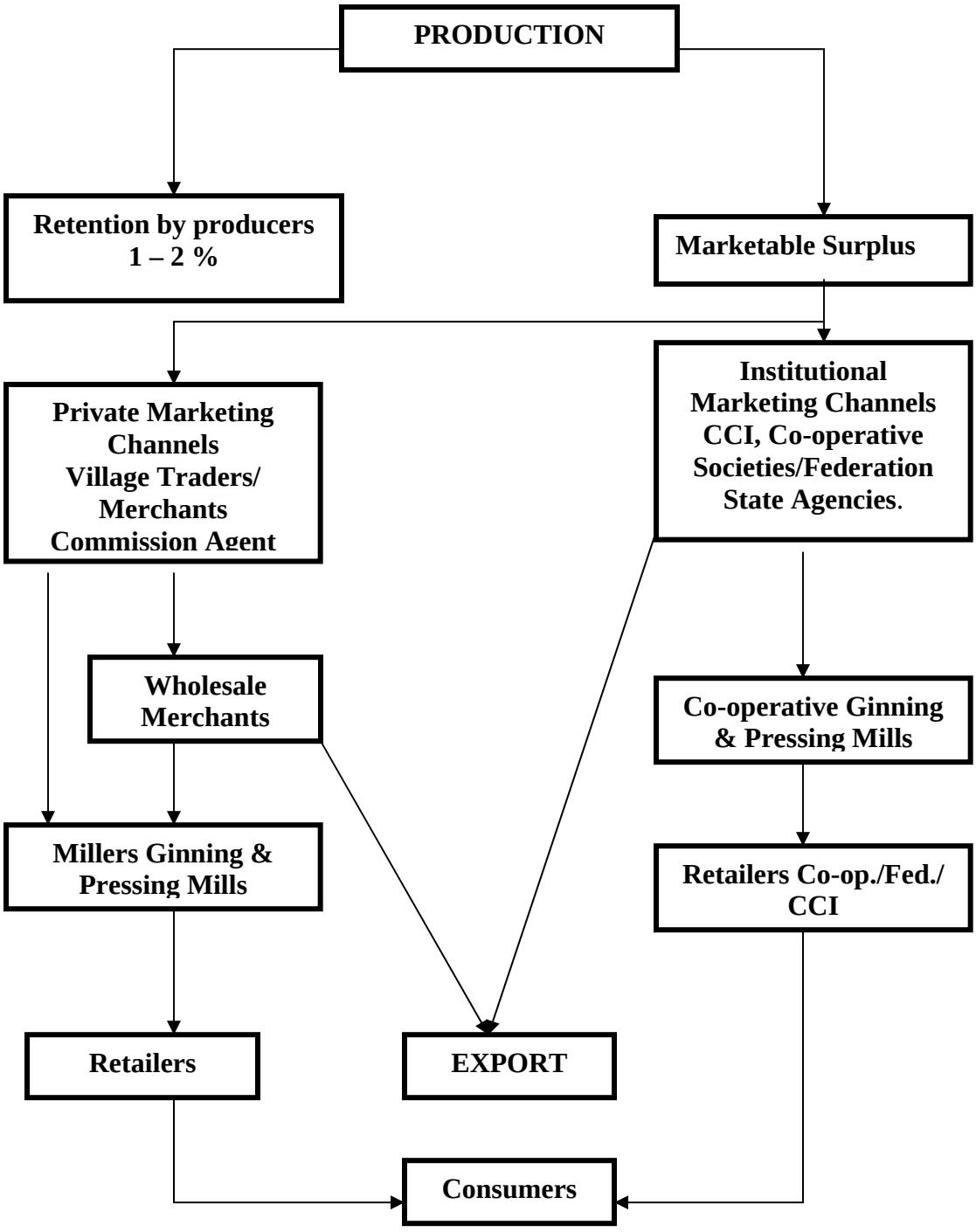
During the course of survey, it was observed that the following three channels are also in existence in addition to above.

I : Producer → Trader → CCI → Miller → Consumer.
II : Producer → CCI → Miller → Consumer.
III : Producer → Miller → Consumer.

Among the above channel, No. 7 is the most common institutional channel followed by channel No.6.

Fig:-18

COTTON MARKETING SYSTEM



Schematic Diagram Showing Marketing Channels In Assembling And Distribution of Cotton.

Criteria for selection of channels :

There are many marketing channels involved in marketing of cotton. The following are the criteria for the selection of efficient marketing channels.

- ✓ The channel, which ensures reasonable return to producer, is considered to be good or efficient.
- ✓ Transportation cost in that channel.
- ✓ Commission charges and market margins received by the intermediaries, such as trader, commission agent, wholesaler and retailer.
- ✓ Financial resources.
- ✓ The shorter channel with minimum market cost should be selected

5.2 MARKET COSTS AND MARGINS:

MARKETING COSTS:

Marketing costs are the actual expenses incurred in bringing goods and services from the producer to the consumers. The marketing costs normally include;

- handling charges at local points
- assembling charges
- transport and storage costs
- handling charges by wholesaler and retailer
- expenses on secondary services like financing, risk taking and market intelligence, and
- profit margins taken by different agencies.

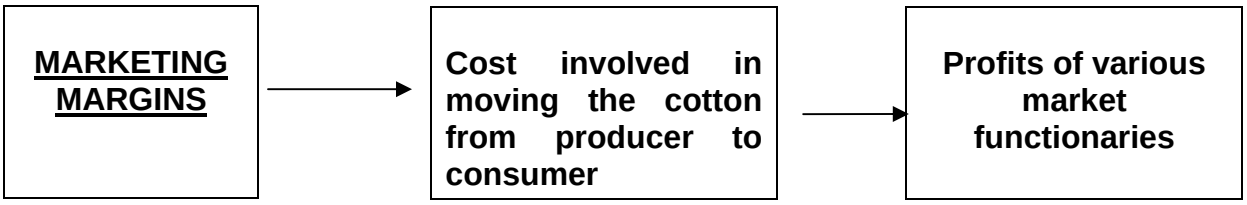
I Market Costs: On an average the total marketing cost incurred by different agencies/functionaries was at Rs.52.75 per quintal. Among various components, transportation cost was the highest (Rs. 28.00) followed by commission (Rs.14.00) and the market fee (Rs. 11.82)

II Producer's Share: Producer's Share in consumer's price is the measure of marketing efficiency. It is seen that Channels I to IV were commonly used by the majority of cotton growers and producer's shares were 85 to 87%. In Channel IV, although CCI was involved, the produce was sold to it by traders and not by farmers. Therefore, producer's share in this channel was quite low. But in channel V, producer's delivered their cotton directly to CCI and hence they got the highest price and also the highest share. In channel VI, since the producers supplied their cotton directly to the Miller eliminating the intermediaries, they got better price and greater share. CCI is a Public Corporation established for the benefit of farmers. Therefore, selling cotton to CCI directly is definitely beneficial to cotton growers.

MARKETING MARGINS :

Margin refers to the difference between the price paid and received by a specific marketing agency such as a single retailer, or by any type of marketing agency, i.e. retailers or wholesalers or by any combination of marketing agencies in the marketing system as a whole.

Total marketing margin includes cost involved in moving the cotton from producer to consumer and profits of various market functionaries.



The absolute value of the total marketing margin varies from market to market, channel to channel and time to time.

A. **Market fee :** It is charged either on the basis of weight or on the basis of the value of the produce. It is usually collected from the buyers. The market fee differs from state to state.

B. **Commission :** The charges are usually made in cash and vary from market to market.

C. **Taxes :** Different taxes are charged in different markets such as toll tax, terminal tax, sales tax, octroi etc. These taxes leviable on cotton differ from market to market in the same state as also from state to state. These taxes are usually payable by the seller.

D. **Miscellaneous charges :** In addition, some other charges are also levied. These include handling, weighing, loading, unloading, cleaning, charity contribution in cash and kind, etc. These charges may be payable either by the seller or by the buyers.

Table:-14

Market Fee, Commission charges, Taxes and Miscellaneous charges in important APMC Markets of the Cotton Growing States.

Sl. No.	Name of the State	Market Fee	Commi-ssion Charges	Sales Tax	Oct-roi	License Fee Rs./per annum	Other Charges Rs./per unit
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	**Andhra Pradesh**	1%	2%	4%	Nil	(1) Grade 'A'- Rs. 3000/- whose turnover is above 1 crore. (2) Grade 'B' – Rs.2000/- whose turnover is between 50 lakhs to 1 crore.(3) Grade 'C' – Rs.1000/- whose turnover is less than 50 lakhs. (The license is valid for 5 years and paid by the Traders/Agents)	1) Weighing -0.50 to 0.70 paise 2) Unloading 0.50 to 0.70 paise 3) Cleaning 0.75 to 1.00 paise 4) Loading 0.50 to 0.70 paise (for Bora of weighing one Quintal)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2.	**Gujarat.**	0.5%	1%	Nil	Nil	100 – 125	2 – 5 per 20 begs.
3.	**Haryana**	2%	2.5%	4% VAT = 2%	Nil	i) Processing Unit Rs.100/- ii) Wholesaler Rs.60/-	Unloading 0.90/- Dressing = 0.75 Weighment & Filling 1.84 Stiching by Machine = 0.75 Manually = 0.35
4.	**Karnataka**	1.50%	2.00%	4%	Nil	**1)**Commission Agent-200. **2)** Trader - 200 **3)** Exporter - 200 – 200 **4)** Importer – 100 – 200. **5)** Ginner – 100 – 200. **6)** Processor – 100 – 200. **7)** Stockiest – 100 – 200. **8)** Vehicles – 100 – 200. **9)** Warehouse Man–100 – 200**.** **10)** Presser - 100 **11)** Crusher – 100 **12)** Weighman – 10 – 25 **13)** Retail Trader – 25 **14)** Hamalis – 5 – 10 **15)** Cartmen - 5 – 10 **16)** Graders - 100. **17)** Temporary Trader 25 – 50 **18)** Broker - 100.	---
5.	**Madhya Pradesh.**	2%	N.A.	Nil	Nil	Rs.1000/-	--
6.	**Mahara-shtra**.	---	---	---	---	---	---
7.	**Punjab**	2%	2.5%	4% + Vat =2%	Nil	Rs.300/- Per 3 years (by Marketing Board)	**(1)** Unloading 0.94 **(2)** Dressing 0.75 **(3)** Weighing & filling 1.84. **(4)** Stiching by – **i)** Machine 0.75 **(ii)** Manual 0.35
8.	**Rajasthan** .	1.6%	2.00%	---	Nil	(1) Trader – 200/- (2) Commission Agent - 300/- (3)‘ A’class Broker - 300/-	As per decided by KUMS in their Bye-lows.
9	**Tamil Nadu**	1%	Rs.3/- Qtl. OR 6% of the value of produce.	4%	Nil	Rs.300/- 3 years OR Rs.75/- per year OR Rs.25/- year according to turn over : (Rs.300/- 3 years above Rs.5 lakh/year Rs.75/- year below 5 lakh /year Rs.25/- year below 2 lakh/ year)	Rs.2.5/- Qtl. OR Rs/- per Rs.1000/-

Source:- Sub office, Directorate of Marketing & Inspection

6.0 MARKETING INFORMATION AND EXTENSION:

Marketing information plays a pivotal role in planning production and marketing of the produce by the farmers. It is also necessary for the market participants in arriving at optimal trading decisions. Availability and dissemination of accurate and complete marketing information is the basic necessity for achieving both operational and pricing efficiency in the marketing system.

6.1 INFORMATION TECHNOLOGY IN AGRICULTURE RESEARCH AND DEVELOPMENT:

The computer technology pervaded all walks of human life and has become an essential tool for information. Information technology includes computer programming, data base management systems, internet, electronic banking, smart card, geographic information system, computer modeling and expert systems to accelerate agricultural research and development. Information technology generates useful data bases, information packages on demand, availability, price, quality and time frame of supply. Inter Ministerial Task Force in its report in May, 2002 recommended extensive promotion of Information Technology in Agricultural Marketing.

Directorate of Marketing & Inspection, under Ministry of Agriculture has initiated provision of information in its web-site during 9th plan. Selected A.P.M.Cs are provided with computer, accessories and software to disseminate the market information in respect of arrivals and prices on daily basis. Post Harvest Profiles of various agricultural commodities are already available on website for the benefit of farmers and other market functionaries.

Some private corporates are also using this technology for mutual benefit of farmers and organization. ITC's e-chaupals had made visible impact in production, price realization and availability of raw material so far, more than 200 E-chaupals are operating. Establishment of ***"Agriclinic or Agribusiness Centre and Kisan Cell"*** are for immediate redressal of problems of farmers on phone. Kisan call centres have already become operative and are providing guidance to needy farmers.

6.2 MARKET EXTENSION:

Marketing extension is a vital factor in enlightening the farmers about proper market & solving their problems. It envisages educating the farmers, traders and consumers for bringing desired changes in their knowledge, skill, attitude and behavior. In the present global agricultural scenario, the farmers need to be educated to accept modern market oriented farming by taking care of productivity, quality and market demand. The farmers should keep pace with the changing technology, economic reforms, consumer awareness and new policies as import and export of agricultural commodities. Under the WTO agreement liberalization and globalization of market paved the way for major changes in agricultural market. The market extension function should disseminate the complete, accurate and latest marketing information such as market demand, post harvest management, availability of market finance facilities, etc, to the grass root level.

For increasing cotton production, productivity and improving the quality of cotton, vis-à-vis increase the income of cotton growers and ensuing abundant supply of quality cotton to the Textile Mills, the Government of India had undertaken various developmental activities in the form of Extension Activities. With the launching of Technology Mission on Cotton (TMC) in February 2000, many of these activities have been covered under Mini Mission I & II of the TMC. Still the CCI continues with some of the Developmental Activities like **Cotton Crop Surveillance, Integrated Pest Management and Integrated Cotton Cultivation (Contract Farming)** to supplement the efforts of the Government of India and the State Agriculture Departments in various cotton growing States.

6.3 FARMERS' INFORMATION CENTRES:

In order to enable the farming community to get information relating to crop management starting from soil, climatic conditions, rainfall, suitability of seeds, technical advise on crop management, market information in particular and nearby mandis, other States in the Country as also in the World, State/Central Government Policies, sources of loan, their procedures, insurance schemes etc,. in local languages, the CCI has decided to set up 100 **Farmers' Information Centres** at various market yards of the country equipped with modern IT facilities with a Kiosk, digital display board/television, Computer with Printer, Internet and Telephone connection as well as Interactive Voice Response System (IVRS) facility.

The following are the sources of marketing information available in the country.

Source	Activities for marketing information and Extension
1.	**2.**
Directorate of Marketing and Inspection (DMI), NH-IV, CGO Complex, Faridabad. **Website: www.agmarknet.nic.in**	➢ Provides information through nationwide Marketing Information Network (**"AGMARKNET"** portal). ➢ Marketing extension through training to educate producers, graders, consumers etc. ➢ Marketing research survey. ➢ Publication of reports, pamphlets, leaflets, Agricultural Marketing journal, Agmark standards etc.
Central Warehousing Corporation (CWC), 4/1 Siri Institutional Area Opp. Siri fort New Delhi-110016 Website : www.fieo.com/cwc/	➢ Farmers Extension Service Scheme (FESS) was launched by CWC in the year 1978-79 with the following objectives : ➢ To educate farmers about the benefit of scientific storage and use of public warehouses. ➢ To impart training to the farmers on the techniques of scientific storage and preservation of foodgrains. ➢ To assist farmers in getting loans from the banks against pledge of warehouse receipt. ➢ Demonstration of spraying and fumigation methods to control insects.
Director General of Commercial Intelligence & Statistics (DGCIS), 1, Council House Street Kolkata –1	➢ Collection, compilation and dissemination of marketing related data i.e. export-import data, inter-state movement of foodgrains etc.

1.	2.
Directorate of Economics and Statistics, Shastri Bhavan,New Delhi Website: www.agricoop.nic.in	➢ Compilation of agricultural data for development and planning. ➢ Dissemination of market intelligence through publication and internet.
Agriculture Produce Marketing Committee (APMC)	➢ Provides market information on arrivals, prevailing prices, despatches etc ➢ Provides market information of adjoining / other market committees. ➢ Arranges training, tours, exhibitions etc.
Federation of Indian Export Organisations (FIEO), PHQ House(3 Floor) Opp. Asian Games , New Delhi-110016	➢ Provides information to its members about latest developments in export and import. ➢ Organises seminars, workshops, presentation, tours, buyer-seller meets, sponsoring participation in international trade fair, exhibitions and providing advisory services with specialized divisions. ➢ Provides useful information on India's export and import with diverse database.
State Agricultural Marketing Boards, At different State capital	➢ Provides marketing related information to co-ordinate all the market committees in the state. ➢ Arrange training, seminars, workshops and exhibitions on subjects related to agricultural marketing.
Kisan Call Centers (New Delhi, Mumbai, Chennai, Kolkata, Hyderabad, Banglore, Chandigarh and Luknow)	➢ Provides expert advise to the farmers. ➢ These centers will operate through toll free telecom lines throughout the country. ➢ A country wide common four digit number 1551 has been allocated to these centers.
Mass Media Support to Agriculture Extension	➢ Mass media support to agriculture extension has been augmented with three new initiatives. ➢ The first component establishes a cable satellite channel for national broadcast using the existing facilities available with Inira Gandhi National Open University (IGNOU). ➢ The second component is use of low and high power transmitters of Doordarshan for providing areas specific telecast. Initially, 12 locations chosen to launch broadcasting are Jalpaiguri (West Bengal), Indore (Madhya Pradesh), Sambhalpur (Orissa), Shillong (Meghalaya), Hissar (Haryana), Muzzafarpur (Bihar), Dibrugarh (Assam), Varanasi (Uttar Pradesh), Vijaywada (Andhra Pradesh), Gulbarga (Karnataka), Rajkot (Gujarat), Daltonganj (Jharkhand). ➢ The third component of the mass media is use of FM transmitter network of All India Radio (AIR) to provide area specific broadcasting through 96 FM stations.

1.	2.
Agriculture-Clinics and Agri-Business by Agriculture Graduates	➢ A central sector scheme "Establishment of Agriculture-Clinics and Agri-business Managed by Agriculture graduates" is being implemented since 2001-02. ➢ The aim is to provide opportunity to all eligible agriculture graduated, to support agriculture development through economically viable ventures. ➢ The scheme is being jointly implemented by NABARD, National Institute of Agricultural Extension Management (MANAGE) and Small Farmers' Agri-business Consortium (SFAC) in association with about 66 reputed training institutes in the country.
Different websites on Agricultural Marketing Information	www.agmaknet.nic.in www.agricoop.nic.in www.fciweb.nic.in www.apeda.com www.nic.in/eximpol www.fmc.gov.in www.nmce.com www.icar.org.in www.fao.org www.agrisurf.com www.agriculturalinformation.com www.agriwatch.com www.kisan.net www.agnic.org www.isapindia.org www.indiaagronet.com

7.0 ALTERNATIVE SYSTEMS OF MARKETING :

7.1 DIRECT MARKETING :

Direct marketing involves sale of cotton by producer to the consumer / miller directly without any middleman. It enables producers and millers and other bulk buyers to economize transportation cost and improve price realization. Direct marketing by farmers to the end users has been experimented in the country through ***Apni Mandi*** in Punjab and Haryana. However, these markets at present are being run at the expenses of the State exchequer as a promotional measure to encourage marketing by small and marginal farmers.

Multinational companies are entering into contracts with producers for buying their produce, this is direct marketing. Millers are also directly negotiating with producers and buying their cotton at their farm gates by paying immediately.

Benefits of Direct Marketing

- **It increases price realization of the producer.**
- **It minimizes marketing cost, transportation cost.**
- **It encourages distributional efficiency.**
- **It satisfies the consumer through better quality of produce at reasonable price.**
- **It encourages direct interaction between producers and consumers.**
- **It encourages the farmers for retail sale of their produce, thus their involvement in marketing process and help in discovering the demand of markets for future market oriented planning.**

7.2 CONTRACT FARMING :

Contract farming is an agreement between buyer and producer for the purchase of produce at mutually agreed price under forward agreement. In such arrangement, the purchaser, may be exporter or processing unit, generally provides inputs, technical know-how and financial support. Thus sharing the risk by both the, buyers and sellers. ***"It is an approach that can contribute to increased income to farmers, avoidance of risk of adverse price fluctuation, and higher profitability to sponsors"***. Contract marketing ensures continuous supply of quality produce at mutually contracted price to contracting agencies, as well as ensures timely marketing of the produce. Contract marketing is beneficial to both the parties i.e. farmers and the contracting agencies.

However, there are instances where one party backs out leaving the other. Generally the small / marginal farmers are left high and dry. It caters to the need of large farmers ignoring the small and marginal farmers in the absence of any legal binding.

During National Seminar on Role of Private Sector in Agricultural Marketing -3rd September, 2001, a number of recommendations were made. Some of the pre-requisite for success are;

- Review of ***"Land Ceiling Act" and "Leasing of Land"*** – Land reforms should facilitate aggregation of land for economic cultivation and agri-practices.
- State Govts. should come out with a detailed policy on contract farming so as to attract multinational companies or big Corporates. The policy may provide financial benefits in form of exemption of taxes, import of inputs, exemption from market fee.
- Legal framework with tripartite arrangement between farmer, buyer and Govt. or Quasi judicial system of contract enforcement.
- Fast track sanitary and phyto-sanitary clearance.
- Inclusion of small and marginal producers.
- Risk consideration.

Directorate of Marketing and Inspection (DMI), Ministry of Agriculture, Govt.of India has already drafted Model Agreement for contract farming. A model agreement for contract farming has been incorporated in Agricultural Produce Marketing (Development and Regulation) Act, 2003 (Annexure No.III).

Benefits :

- **Sharing and minimizing the price risk due to future fluctuations.**
- **It promotes use of quality seeds, inputs and new technology resulting in to assured quality produce.**
- **It ensures regular and timely payments through bank tie up, assured quality supply to buyers / processors.**
- **It minimizes malpractices by elimination of middlemen.**
- **It strengthens mutual relationship between producers, sellers and buyers.**

As a supplement to various measures for increasing the yield per hectare and improve the quality of cotton produced in the country, the concept of Integrated Cotton Cultivation is gaining momentum whereby farmers shall stand to benefit through higher productivity and end-user textile mills through supply of quality cotton. The concept of contract farming involves producing quality cotton to suit the needs of the textile industry through the linkage among all concerned. The CCI as a facilitator between the cotton growers and end-user textile mills has already signed several MOUs with farmers associations in the last 2 to 3 years, as detailed below.

Table:-15

Year	Area in hectare	No. of Farmers
2002-03	2996	3157
2003-04	3768	1476
2004-05	5496	3448

Source:- Cotton Cooperation of India

7.3 CO-OPERATIVE MARKETING :

"Cooperative marketing" is the system of marketing in which a group of producers join together and register them under respective State Cooperative Societies Act to market their produce jointly. The members also deal in a number of cooperative marketing activities i.e. processing of produce, grading, packing, storage, transport, finance, etc. The cooperative marketing means selling of the member's produce directly in the market, which fetches best prices. It helps the member to produce better quality of produce, which has good demand in the market. It also provides clean handling, fair trade practices and protect against manipulations / malpractices. The main objectives of cooperative marketing are to ensure remunerative prices to the producers, reduction in the cost of marketing, reduces the

monopoly of traders and improve the marketing system. The cooperative marketing structure in the different states consists of ;

1. **PMS** (Primary Marketing Society) at the Mandi level
2. **SCMF** (State Cooperative Marketing Federation) at the State level
3. **NAFED** (National Agricultural Cooperative Marketing Federation of India Ltd.) is at the National Level.

Benefits :

- **Remunerative price to producers.**
- **Reduction in cost of marketing**
- **Reduction in commission charges.**
- **Effective use of infra-structure.**
- **Credit facilities**.

7.4 FORWARD AND FUTURE MARKETS :

Forward and future markets are important tools of price stabilization and risk management. Extension of future markets to all major agro-commodities was reflected in the National Agricultural Policy of Government of India announced in the year 2002 and the budget speech of the Finance Minister (2002-2003)

Commodity future markets in the country are regulated under Forward Contracts (Regulation) Act, 1952. The Forward Markets Commission under provisions of Section-3 of the Act performs advisory, monitoring, supervisory and regulatory functions in futures and forward trading. The exchanges are owned by the associations registered under the Act. At present, about 25 commodity exchanges are operating.

Broadly, three types of derivative transactions are being transacted **(i) Forward Contracts (a) Non-Transferable Specific Delivery Contract (NTSD) and (b) Transferable Specific Delivery Contract (TSD)**. The exchanges are specifically allowed for NTSD, forward contracts are not permitted. If the exchange is allowed for hedge contracts can not undertake NTSD / TSD, unless it is specifically permitted. Thus, there is compartmentalization between commodity exchanges and financial derivative exchanges. **(ii) Ready Delivery Contract -** In such cases, quality, quantity, place of delivery and time are standardized. Only, rate is negotiable. Delivery of goods and payment thereof is completed within eleven days of contract. Such contracts are outside the Act. **(iii) Option in Goods –** An agreement for the purchase of sale or a right to buy or sale. Options in goods are totally prohibited under the Act.

Commodity futures trading in the country suffer certain limitations viz.,

- **Limited and closed nature of members. In most of the agricultural commodity exchanges, less than 10 per cent of the registered members are actually actively trading.**

- **Absence of many hedgers, other national exchange i.e. Multi-Commodity Exchange (MCX) Mumbai and National Commodity and Derivatives Exchange (NCDEX) became operative from October and December, 2003, respectively.**
- **Absence of legal framework for warehouse receipt system with full negotiability and transferability**.

Benefits of Forward Marketing:

- **Price discovery mechanism –** Producer can get an idea of future pricing and thus select suitable beneficial commodities.
- **Price Risk Management –** It helps the exporter in quoting a realistic price and facility of hedging or insurance to producer or dealers
- **Price Stabilization –** In times of violent price fluctuation, future markets help in price stabilization.

8.0 INSTITUTIONAL FACILITIES :

8.1 Marketing Related Schemes of Government and Public Sector Organizations:

Name of the Scheme/ Implementing Organization	Facilities provided / Salient features / Objectives
1.	**2.**
East India Cotton Association Cotton Exchange Bldg., 2nd Floor,Opp. Cotton Green Rly. Stn.,Cotton Green, Mumbai - 400 033. Tel. No: +91-22-2370 4401/02/03 Fax No:+91-22-2370 0337 Email: eica@eica.in	➢ provide and maintain suitable buildings or rooms or a Cotton Exchange in the city of Bombay or elsewhere in India ➢ provide forms of contracts and regulate the marketing, etc. of the contracts ➢ adjust by arbitration or otherwise controversies between persons engaged in the cotton trade ➢ establish just and equitable principles in the said trade ➢ maintain uniformity of control of the said trade ➢ fix and adopt standards or classifications of cotton ➢ acquire, preserve or disseminate useful information connected with the cotton interests and …..generally, to control, promote and regulate the cotton trade in the Presidency of Bombay or elsewhere in India
The Cotton Cooperation Of India 'Kapas Bhavan', Plot No. 3-A, Sector 10, Post Box No. 60 Cbd Belapur Navi Mumbai - 400 614 (Maharashtra) **Tel:-** 022-2757 9217, 2757 1368, **Fax:-** 27576030,27579219, **E.Mail:-** www.cotcorp.gov.in	➢ To undertake price support operations, whenever the market prices of kapas touch the support prices announced by the Government of India, without any quantitative limit; ➢ To undertake commercial operations only at CCI's own risk; ➢ To purchase cotton to fulfill the export commitments; ➢ To act as implementing agency for Mini Missions III & IV of TMC**.**

1.	2.
Gramin Bhandaran Yojana (Rural Godown Scheme) Directorate of Marketing and Inspection, Head Office, NH-IV, Faridabad.	➢ It is a capital investment subsidy scheme for construction/renovation/expansion of rural godown. The scheme is implemented by DMI in collaboration with NABARD and NCDC. The objectives of the scheme are to create scientific storage capacity with allied facilities in rural areas. ➢ To prevent distress sale immediately after harvest. ➢ To promote grading and quality control and improve marketability. ➢ To promote pledge financing and marketing credit to strengthen agricultural marketing in the country by introduction of a national system of warehouse receipt in respect of agricultural commodities stored in such godowns. ➢ The entrepreneur will be free to construct godown at any place and of any size except for restrictions that it would be outside the limits of Municipal Corporation area and be of a minimum capacity of 50 M.T. ➢ The scheme provides credit linked back-ended capital investment subsidy @ 25 percent of the project cost with a ceiling of Rs.37.50 lakh per project. For the projects in North-Eastern states and hilly areas with altitude of more than 1000 m. above mean sea level and SC/ST entrepreneurs, maximum subsidy admissible is Rs.50.00 lakh @ 33 percent of the project cost.
Agmark Grading and Standardization **Directorate of Marketing and Inspection, Head Office, NH-IV, Faridabad.**	➢ Promotion of grading of agricultural and allied commodities under Agricultural Produce (Grading & Marking) Act, 1937 and rules made there under. ➢ Agmark specifications for agricultural commodities have been framed, based on their intrinsic quality. Food safety factors are being incorporated in the standards to compete in world trade. Standards are being harmonized with international standards keeping in view the WTO requirements. Certification of agricultural commodities is carried out for the benefit of producer and consumer. ➢ Cotton classing center
Agricultural Marketing Information Network Directorate of Marketing and Inspection, Head Office, NH-IV, Faridabad.	➢ To establish a nationwide information network for speedy collection and dissemination of market data for its efficient and timely utilization. ➢ To ensure flow of regular and reliable data to the producers, traders and consumers to derive maximum advantage out of their sales and purchases. ➢ To increase efficiency in marketing by effective improvement in the existing market information system, also to help better future planning. ➢ The scheme includes providing connectivity to the markets State Agricultural Marketing Department (SAMD) / Boards. These concerned nodes are being provided with on computer and its peripherals. The SAMD/Boards/Markets collect desired market information and pass on to respective state authorities and Head Office of the DMI for forward dissemination. National Agriculture Policy has proposed for coverage of another 2000 nodes during the Tenth Plan.

1.	2.
Price Support Scheme (PSS) Food Corporation of India, Barakhamba Lane, Cannaught Place, New Delhi-110 001	➢ Nodal agency of Government of India to undertake procurement of wheat under price support scheme. ➢ Provides regular marketing support to the farmers to sustain and improve the production of wheat. ➢ Scheme was operative in Punjab and Haryana at nodal point of clusters of wheat producing villages.
National Co-operative Development Corporation, Hauz Khas, New Delhi – 110016	➢ To correct regional imbalances and to provide needed momentum to the pace of development of various programmes of Co-operative Agricultural Marketing Processing, Storage etc. in under/least developed states/UTs by providing financial assistance on liberal terms to augment the income of farmers and weaker sections of the community. ➢ The scheme provides for distribution of agricultural inputs, development of agro-processing including storage, marketing of food grains and plantation/horticulture produce, development of weaker and tribal sections, cooperatives, in dairy, poultry and fisheries.

8.2 INSTITUTIONAL CREDIT FACILITIES :

Adequate and timely availability of finance to producer, specially the small and marginal farmers, is an important impediment. Generally, farmers depend on money lenders, whose interest rates are very high. Therefore, institutional credit at reasonable / subsidized rates is vital for their well being. Accordingly, National Agricultural Policy had taken note of it. The Task Force on Agricultural Credit has estimated Rs.736570 crores for five years during Xth Five Year Plan. Another important feature of policy is timely and adequate credit flow to small and marginal farmers.

The credit is offered for short, medium and long term periods. During the year 2002-2003, the target shares for rural credit were through cooperatives to the tune of 43 per cent, Commercial Banks 50 per cent and Regional Rural Banks 7 per cent. The Commercial Banks are also expanding their branches and facilities in rural areas due to RBI directions.

SHORT TERM AND MEDIUM TERM LOANS

Sl. No.	Name of Scheme	Eligibility	Objective / Facilities
1.	2.	3.	4.
1.	**Crop Loan**	All categories of farmers	➢ To meet cultivation expenses for various crops as short term loan. ➢ This loan is extended in the form of direct finance to farmers with a repayment period not exceeding 18 months.
2.	**Produce Marketing Loan**	All categories of farmers	➢ This loan is given to help farmers to store produce on their own to avoid distress sale. ➢ This loan also facilitates immediate renewal of crop loans for next crop. ➢ The repayment period of the loan does not exceed 6 months.

1.	2.	3.	4.
3.	**Kisan Credit Card Scheme (KCCS)**	All Agriculture clients having good track record for the last two years.	➢ This card provides running account facilities to farmers to meet their production and contingency needs. ➢ Procedures are simplified for obtaining crop loans, as and when need arises. Money can be drawn by using conventional withdrawl slips. ➢ Credit limit depends on operational land holdings, cropping pattern, etc. subject to minimum Rs.3000/- ➢ The Kisan Credit Card is valid for 3 years subject to annual review. ➢ It also covers personal insurance against death or permanent disability for which a maximum amount Rs.50,000 and Rs.25,000 respectively is given.
4.	**National Agricultural Insurance Scheme (NAIS)**	Scheme is available to all farmers loanee and non-loanee both, irrespective of the size of their holding.	➢ To provide insurance coverage and financial support to the farmers in the event of failure of any of the notified crop as a result of natural calamities , pests and diseases attack. ➢ To encourage the farmers to adopt progressive farming practices like, high value in-puts and high technology. ➢ To help stabilization of farm incomes, particularly in disaster years. ➢ General Insurance Corporation of India (GIC) is the implementing Agency. ➢ Sum insured may extend to the value of threshold yield of the area insured. ➢ Covers all food crops (cereals, millets and pluses), oilseeds and annual commercial/horticultural crops. ➢ Provides subsidy of 50 percent in premium of small and marginal farmers.

LONG TERM LOAN

Sl. No.	Name of Scheme	Eligibility	Objective / Facilities
1.	**Agricultural Term Loan**	**All categories of farmers are eligible, provided they have necessary experience in the activity and required area.**	➢ The banks extend this loan to farmers to create assets facilitating crop production/income generation. ➢ Activities covered under this scheme are land development, minor irrigation, farm mechanization, plantation and horticulture, dairying, poultry, sericulture, dry land, waste land development schemes, etc. ➢ This loan is offered in the form of direct finance to farmers with a repayment span of minimum 3 years and maximum 15 years. ➢ Government of India had directed hike of 30 per cent quantum of farm credit over previous year for 2004-2005.

8.3 Organizations / Agencies Providing Marketing Services :

Sl. No.	Name of the Organization / Agencies	Services Provided
1.	2.	3.
1.	**Directorate of Marketing and Inspection (DMI) NH-4, CGO Complex, Faridabad – 121 001** **Website :** www.agmarknet.nic.in	☞ To integrate development of marketing of agricultural and allied produce in the country. ☞ Promotion of standardization and grading of agricultural and allied produce. ☞ Market development through Regulation, Planning and Designing of physical market. ☞ Liaison between the Central and State Governments through its regional offices (11) and sub-offices (37) spread all over the country. ☞ Human resource development through various training programmes for better marketing. ☞ Assisting State authorities in dissemination of market informations (MRIN)
2.	**Food Corporation of India (FCI), Barakhamaba Lane, Cannaught Place, New Delhi-110001** **Website :** www.fciweb.nic.in	☞ Procurement of foodgrains for effective price support operations for safeguarding the interest of the farmers. ☞ Distribution of foodgrains throughout the country for Public Distribution System, especially to Below Poverty Line (BPL) population. ☞ Maintains satisfactory level of operational/buffer stocks of foodgrains to ensure National Food Security.
3.	**Central Warehousing Corporation (CWC) 4/1 Siri Institutional Area, Opp.Siri Fort New Delhi-110016** **Website :** www.fieo.com/cwc/	☞ Provides scientific storage and handling facilities. ☞ Offers consultancy services/training for the construction of warehousing infrastructure to different agencies. ☞ Import and export warehousing facilities. ☞ Provides disinfestations services.
4.	**Agricultural and Processed Food Products Export Development Authority (APEDA) NCUI Building 3, Siri Institutional Area August Kranti Marg, New Delhi-110016** **Website :** www.apeda.com	☞ Development of scheduled agriculture products related industries for export. ☞ Provides financial assistance to these industries for conducting surveys, sensibility studies, relief and subsidy schemes. ☞ Registration of exporters for schedule products on payment of nominal. ☞ Adapting standards and specification for the purpose of export of scheduled products. ☞ Carrying out inspection of meat and meat products for ensuring the quality of products.

1.	2.	3.
5	**National Co-operative Development Corporation (NCDC) 4, Siri Institutional Area, New Delhi-110016** **Website :** www.ncdc.nic.in	☞ Planning, Promoting and Financing Programmes for production, processing, marketing, storage, export and import of agricultural produce. ☞ Financial support to Primary, Regional, State and National level co-operative marketing societies is provided towards; i) Margin Money and Working Capital Finance to augment business operations of agricultural produce. ii) Strengthening the share capital base and iii) Purchase of transport vehicles.
6.	**Director General of Foreign Trade (DGFT) Udyog Bhavan, New Delhi Website :www.nic.in/eximpol**	☞ Provides guidelines / procedure for export and import of various commodities. ☞ Allot import-export code number (IEC No.) to the exporters of Agricultural commodities.
7.	**State Agricultural Marketing Boards (SAMBs), At State Capitals and Marketing Directorates**	☞ Implementation of the regulation of markets in the state. ☞ Provide infrastructural facilities for the marketing of notified agricultural produce. ☞ Provide grading service in the markets. ☞ Co-ordinate all the market committees for providing information services. ☞ Provide aid to financially weak or needy market committees in the form of loans and grants. ☞ Eliminate malpractices in the marketing system. ☞ Arrange seminars, workshops or exhibitions. ☞ Some of the SAMBs are also promoting agro-business.

9.0 UTILIZATION:

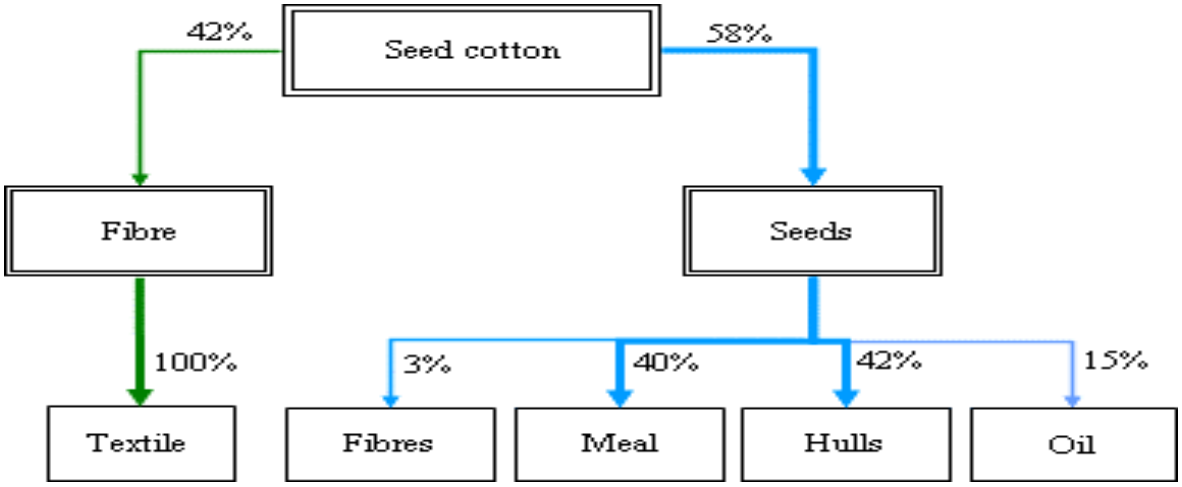
9.1 PROCESSING & USES:

The major end uses for cotton fibre include wearing apparel, home furnishings, and other industrial uses (such as medical supplies).

Cotton is used to make a number of textile products viz. terrycloth, bath towels and robes; denim, used to make blue jeans; twill. Socks, underwear, and most T-shirts are made from cotton. Bed sheets are often made from cotton. Cotton is also used to make yarn used in crochet and knitting. Fabric can also be made from recycled or recovered cotton that would otherwise be thrown away during the spinning, weaving or cutting process. While many fabrics are made completely of cotton, some materials blend cotton with other fibers, including rayon and synthetic fibers such as polyester. In addition to the textile industry, cotton is used in fishnets, coffee filters, tents, gunpowder, cotton paper and in bookbinding.

Fig:-19

PRODUCTS DERIVED FROM COTTON FIBRE

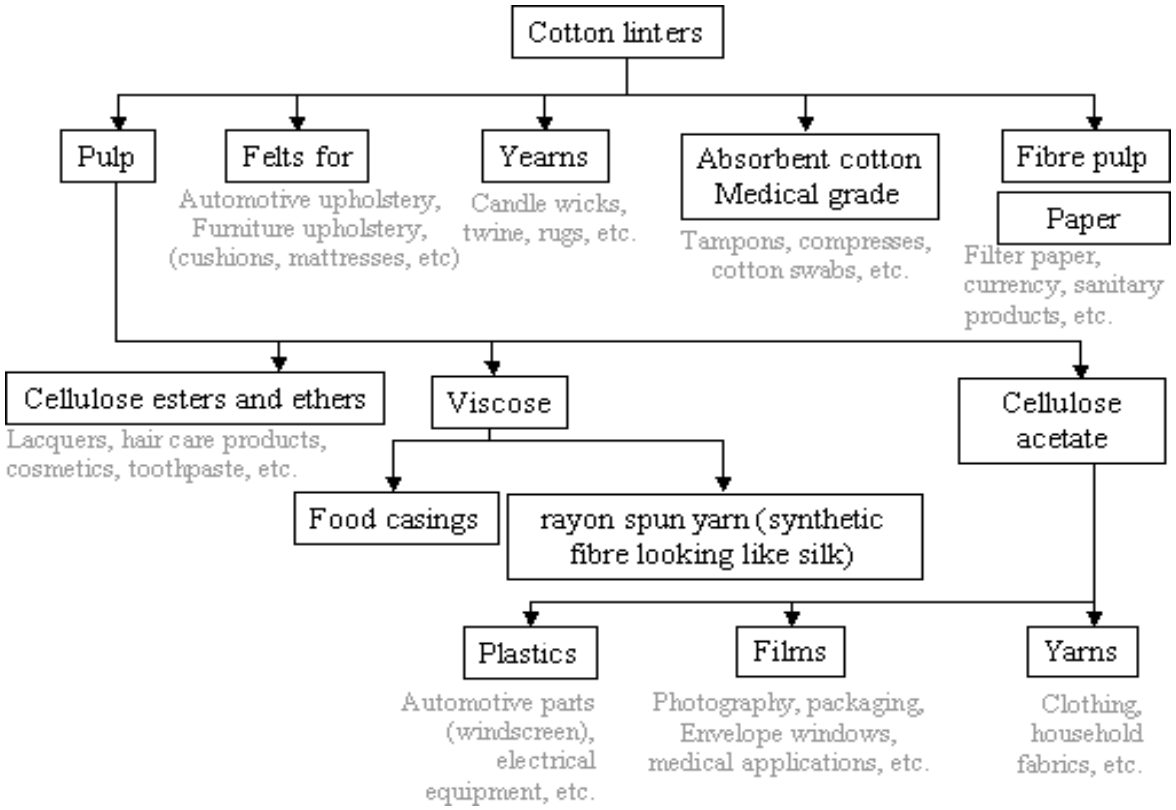


Source : UNCTAD secretariat, drawing upon "Etude relative au mécanisme de formation des prix de cession du coton-graine et des intrants agricoles au Bénin" (Anna Croles-Rees and Bio Goura Soulé Lares, 2001)

Cotton also finds specialty applications in medical and hygienic uses. Most notably, the fibre is used to manufacture hydrophilic cotton (cotton wool), compress, gauze bandages, tampons or sanitary towels, and cotton swabs. In this field, the most suitable cotton variety is the species *Gossypium herbaceum* with short-staple thick fibres The cottonseed which remains after the cotton is ginned is used to produce cottonseed oil, which after refining can be consumed by humans like any other vegetable oil. The cottonseed meal that is left is generally fed to livestock. In the past, cotton seeds were used as an abortifacient, that is, a folk remedy to provoke abortion. Linters are traditionally used in the manufacture of paper and as a raw material in the manufacture of cellulose.

Fig:-20

MAJOR USES OF COTTON FIBRES

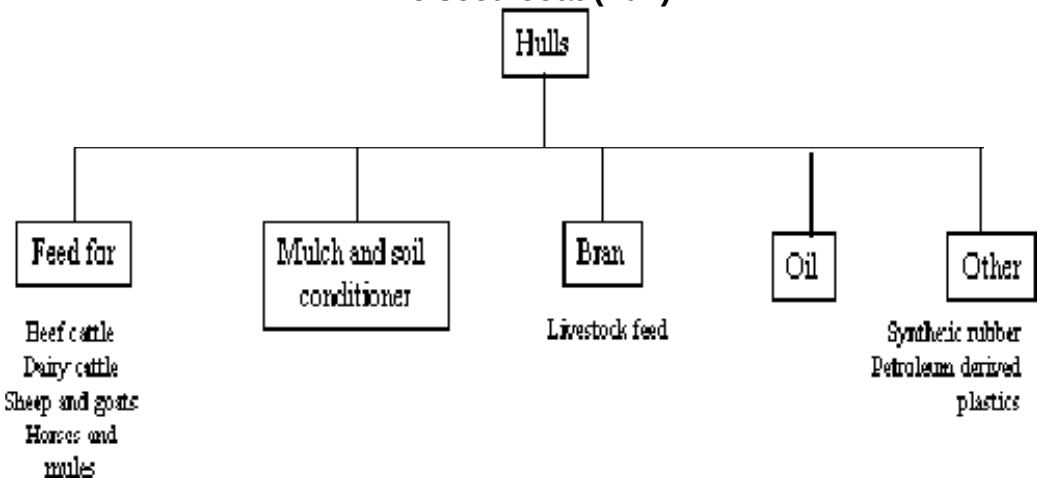


Source : Adapted from: "Cotton Facts", International Cotton Advisory Committee (ICAC), 2003

Fig:-21

USES OF COTTONSEEDS

The seed coat (hull)



Source : Adapted from "Cotton Facts", ICAC (2003)

10. DO'S & DON'TS:

DO	DON'TS
1) Seed Cotton should be collected from fully opened bolls only.	1) The practice of collecting half open bolls, drying them & removing the seed cotton should be discouraged.
2) Picking should be done early in the morning & evening.	2) Picking should be avoided in hot mid day & when the weather condition is wet.
3) Keep the seed cotton from last picking separately for marketing.	3) Cotton of different picking should not be mixed as this generally lowers the quality.
4) Seed cotton should be heaped on a cloth or gunny or paper spread before transportation to market.	4) Seed cotton should not come into direct contact with the soil to avoid increase its trash content.
5) Seed cotton should be dried in shed.	5) Never expose seed cotton to excess sun as it lowers the grade due to yellowing.
6) Get the market information regularly from www.agmarknet.nic.in Website, news paper, T.V. concerned APMC office before marketing.	6) Never market the produce without collecting market information regarding price trend etc.
7) Avail the facility of future trading & forward contract to avoid price risk.	7) Never sale the produce at fluctuating price in a glut situation.
8) Select the shortest & efficient marketing channels to get higher share in marketing.	8) Never select a longer marketing channel.
9) Use proper packaging material.	9) Use of un proper packaging material causes loss during transport & storage.
10) Follow the export rules & regulation properly during export.	10) Do not keep any lacunae in export procedure.

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www.fieo.com

ANNEXURE - I

COTTON GRADING AND MARKING RULES

1. **Short title and application.-** (1) These rules may be called the Cotton Grading & Marking Rules, 1971.

(2) They shall apply to the varieties of cotton which are grown in India and which are specified in Schedule I.

2. **Definitions :-** In these rules:

(1) "Schedule" means a schedule annexed to these rules;

(2) False or fraudulent packing' means packing of a bale of Cotton;

(a) In such a manner as to contain in different parts of the bale, cotton of different growths or varieties, or cotton of materially different staples, or cotton of different crops; or

(b) in such a manner as to contain in any part of the bale any by-products such as waste, fly, or other by–products of a cotton mill available after raw cotton is passed through the blow room ; or

(c) in such a manner as to contain in any part of the bale any concealed substance other than raw cotton; or

(d) in such a manner as to contain interiorly cotton decidedly inferior to that upon the exterior and not readily detectable on the customary examination.

3. **Grade Designation and quality** .- (1) The grade designations of the varieties of Cotton specified in Schedule I shall be as specified in column I of Schedule II and the special characteristics and the general characteristics indicated by the grade designations shall be specified in column 2 and 3 respectively of Schedule II.

(2) The grade designation referred to in sub-rule (1) shall be applied only to cotton in full pressed bales.

4. **Grade Designation marks .** -(1) The grade designation mark shall consist of a label specifying the grade designation and bearing a design consisting of an outline map of India with the work" AGMARK" and the figure of the rising sun with the words" produce of India" and "¦ÉÉ®úiÉÒªÉ =i{ÉÉnù" resembling that set out in Schedule III.

(2) The design and grade designation shall be of the following colour :-

Grade designation	Color of designation and Lettering of label
Agmark Certified	Red
Pedigreed Agmark Certified	Black

5. **Method of Marking:-** (1) The grade designation marks shall be placed against one or the other of the flat sides of bale, shall be fixed to the hessian cloth wrapper and shall be held securely in position by at least 3 hoops.

(2) The grade designation mark shall clearly show the date of pressing, variety of cotton and place of growth (Block/District/State.)

(3) The affixing of the grade designation mark on an end hessian or an unlashed side of a bale shall not be deemed to fulfil the requirements of this rule.

6. **Method of packing.-**(1) The cotton shall be packed in bales in the manner customary in the trade.

(2) There shall be no false or fraudulent packing of the bales.

SCHEDULE I

(See rules 1 (2) and 3)

List of varieties of cotton approved for Grading under Agmark

1. A. 51-9 (Narmada)
2. Adonicum
3. AK-235
4. AK-277
5. Andrews (Extra long stapples)
6. Badnawar I (C.T.I. 4-27)
7. Buri 147
8. Buri 0394
9. C. Indore-I
10. C. Indore-2
11. Coconandas-2
12. Deviraj (170-C02)
13. Ganganagar I
14. Gaorani 6
15. Gaorani 12
16. Gaorani 22
17. Gaorani46
18. Gujrat-67
19. H. 14
20. Hybrid-4
21. Jayadhar
22. K-2
23. K-5
24. K-6
25. Kalyan
26. Laxmi
27. LL. 54
28. L.S : S.
29. M.A. 5.
30. Maljari
31. M.C.U. 1
32. M.C.U. 2
33. M.C.U. 3 (9030-G)
34. N-14
35.Parbhani American I
36. Raniben.
37. Sanjay
38. Selection 69
39. Sulti-Vijalpa.
40. Suyodhar.
41. V. 797
42. Vijay & Digvijay
43. Virnar (including Jarila)
44. Western I
45. 35/1
46. 134-Co2-M
47. 170-Co2
48. 216 –F
49. 231-R
50. 320-F
51. Bharathi *
52. Buri-1007
53. Digvijai
54. G-27
55. Hampi
56. H-420
57. Khandwa-I
58. Khandwa-II
59. J.34
60. Krishna
61. MCU-4
62. MCU-5
63. Mysore-14
64. Pramukh
65. PRS 72
66. Raichur-51
67. Sea Island Andrews
68. Sujata
69. Varalakshmi
70. Y I
71. Sujay 3943
72. SRT-I
73. DHY 286
74. AKH-4
75. Mysore Vijaya
76. Bhagya
77. MCU –6
78. K-7
79. K-8
80. Suvin
81. CBS-156
82. H. 655
83. H-777
84. Pramukh
85. SH-131
86. Lohit
87. Shyamlee

SCHEDULE-II

(See Rules 3)

Grade designations and definition of quality of Cotton

Grade Designation	Definition of quality (for the varieties of Cotton included in Schedule I)	General characteristics
Agmark Certified Pedigreed (Red Label)	(a) Shall be the product derived from (seed cotton indicated in Schedule I grown on a Government farm or by a registered seed grower licensed by the appropriate Government department or by other agency to be recognized by the Agricultural Marketing Adviser to the government of India for the purpose and which had been derived from pure seed supplied by a Government Department or by any other agency to be assigned by the Agricultural Marketing Adviser to the Government of India for the purpose and crop of which shall have been inspected and recognized wherever necessary and duly certified by the appropriate Government Department or by any other agency to be recognized by the Agricultural Marketing Adviser to the Government of India, for the purpose as being at least 98% pure: and (b) Shall have been ginned and pressed under direct supervision of the appropriate Government Department or by any other agency to be recognized by the Agricultural Marketing Adviser to the Government of India for the purpose.	kapas (a) Shall consist of lint (in full pressed bales obtained by machine ginning of the kapas:- (b) shall be clean and reasonably free from any leaf, seed, stain or other imperfections; (c) shall be dry and free from a trace added moist
Agmark Certified (Black Label)	(a) Shall be the product derived from kapas (seed cotton) indicated in Schedule I grown on a Government farm or by a registered seed grower licensed by the appropriate Government Department or by any other agency to be recognized by the Agricultural Marketing Adviser to the Government of India for the purpose and which had been derived from pure seed supplied by a Govt. seed department or by any other agency to be recognized by the Agricultural Marketing Adviser to the Government of India for the purpose and the crop of which shall have been inspected in the field and duly certified by the appropriate Govt. department or by any other agency to be recognized by the Agricultural Marketing Adviser to the Government of India, for the purpose as being at least 98% pure; and (b) shall have been ginned and pressed under the direct supervision of the appropriate Government Department or by any other agency to be recognized by the Agricultural Marketing Adviser to the Government of India for the Purpose.	(a) Shall consist of lint (in full pressed bales) obtained by machine ginning of kapas. (b) Shall be clean and reasonably free from leaf, seed, stain or imperfection. (C) Shall be dry and free from any trace of added moisture.

ANNEXURE - II

COTTON SEEDS GRADING AND MARKING RULES

1. Short title, application and commencement :-

(1) These rules may be called and Cotton Seeds Grading and Marking Rules, 1982.

(2) They shall apply to cotton seeds produced in India.

(3) They shall come into force on the date of their publication in the Official Gazette.

2. Definitions :- In these rules, unless the context otherwise requires :-

(1) "Agricultural Marketing Adviser" means the Agricultural Marketing Adviser to the Government of India.

(2) "Schedule" means a Schedule appended to these rules;

(3) "Authorised packer" means a person or a body of persons who has been granted a Certificate of Authorisation by the Agricultural Marketing Adviser for getting the commodity graded and Agmarked in accordance with grade standards and procedure prescribed under the rules;

(4) "Certificate" means Certificate of Authorisation.

3. Grade designation :- The grade designation to indicate quality of the cotton seeds shall be as set out in column I of Schedule I.

4. Definition of quality :- The quality indicated by the grade designation shall be as set out against each grade designation in column 2 to 8 of Schedule I.

5. Grade designation mark :- The grade designation mark shall consist of a label specifying the grade designation and bearing a design consisting of an outline map of India with the word "AGMARK" and figure of the rising sun with the words "Produce of India" and "¦ÉÉ®úiÉÒªÉ =i{ÉÉnù" resembling the mark as set out in Schedule-II.

6. Method of marking :-(1)The grade designation mark shall be securely affixed to each package in a manner approved by the Agricultural Marketing Adviser.

(2) In addition to the grade designation, the following particulars shall also be clearly marked on the label:-

(a) Date of packing;

(b) Lot number;

(c) Net weight; and

(d) Any other particulars, as may be specified by the Agricultural Marketing Adviser from time to time.

(3) The authorised packer may, after obtaining the prior approval of the Agricultural Marketing Adviser, mark his private trade mark on a container in a manner approved by the said officer, provided that the private trade mark does not represent a quantity or grade of Cotton Seed different from that indicated by the grade designation mark affixed to the container in accordance with these rules.

7. Method of Packing :-

(1) Cotton seeds shall be packed in new B.- Twill jute bags or any other type of container and in such capacity and in such manner as may be specified from time to time by the Agricultural Marketing Adviser.

(2) Packing material shall be clean and dry free from fungus contamination and insect infestation and obnoxious smell.

(3) Each package shall contain cotton seeds of the same variety and of the same grade designation.

(4) Each package shall be securely closed and sealed in the manner prescribed by the Agricultural Marketing Adviser.

SCHEDULE-I

(See Rules 3 and 4)

Grade designations and definition of quality of Cotton Seeds

Grade Designa-tion	Definition of quality						General characteristics
	Special Characteristics						
	Percent by weight (Maximum)						
	Foreign matter	Damaged seeds	Immature Shriveled and dead seeds	Weevilled seeds	Linters	Moisture	
1	2	3	4	5	6	7	8
I	1.0	1.0	2.0	0.5	4.0	10.0	The cotton seeds shall :- i) be obtained from the plant of Gossypium species; ii)be well developed, mature, clean and dry; iii)be reasonably uniform in shape, size and colour; iv)be free from dirt, obnoxious smell, deleterious substances, insect nfestation, visible mould attack and rodent contamination except to the extent provided under special characteristics.
II	3.0	2.0	4.0	1.0	6.0	10.0	
III	5.0	4.0	6.0	1.5	10.0	10.0	

Definitions :-

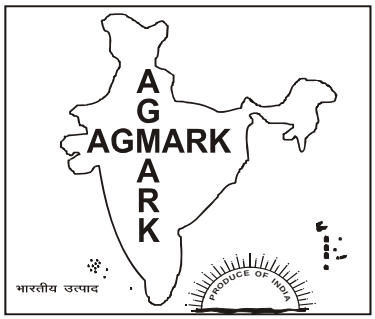
1. Foreign matter : shall be stones, lumps of earth, straw, chaff, stems, any other edible or non-edible seeds or any other foreign material.
2. Damaged Seeds : shall be the seeds which are internally damaged or discoloured or broken materially affecting the quality.
3. Immature, shriveled and dead seeds : shall be the seeds not properly developed and/or shrunken. Dead seeds shall be those seeds which can easily be crushed, if crushed between two fingers.
4. Weevil led seeds : shall be the seeds which are wholly or partly bored or eaten by the weevils.

5. Linters : shall be the seeds with adhered fuzz or short lint.

SCHEDULE-II

(See rule 5)

Grade designation mark



(Published in the Gazette of India Part-II, Section 3(i) under G.S.R. 60, dated 15-1-1983)

Annexure – III

MODEL AGREEMENT FOR CONTRACT FARMING

(All clauses of the agreement are subject to the respective explanatory notes given under "Contents of a model contract farming agreement)

1. Parties to the Agreement

This agreement is executed Between Contract Farming Sponsor, herein after called Party of the First part. **and**

Contract Farming Producer/s herein after called Party of the Second part At_____ on this _____ day of 2003, on terms and conditions hereinafter mentioned.

2. Description of Farm land covered by the agreement

The party of the Second part agrees to produce and deliver to the party of the First part and the party of the First part agrees to buy from the party of the Second part, the items of the agricultural produce described in clause 4, on the lands mentioned (owned/cultivated) below :-

3. Duration of the Agreement

The agricultural produce mentioned in clause 4 will be supplied to the party of the First part within a period of _____ Months/Years from the date hereof. OR This agreement is between the party of the First part and party of the Second part for agricultural produce described in clause 4 for a period of _____ Months/years.

4. Description of Farm Produce

The party of the Second part agrees to produce for the party of the First part, the items of agricultural produce mentioned below as per Schedule 1 annexed herewith.

5. Quantity Specification

The Second party agrees to supply quantity mentioned in the schedule 1, to the First party.

6. Quality Specifications of Commodity Contracted

The Second party agrees to supply the quantity contracted according to the quality specifications stipulated in Schedule 1. It the agricultural produce is not as per the agreed quality standards, the party of the First part will be entitled to refuse to take the delivery of the agricultural produce only on this count. Then

a) The party of the Second part shall be free to sell the produce to the party of the First part at a mutually re-negotiated price

OR

b) n open market (to bulk Buyer viz. exporter/ processor/manufacturer etc.) and if he gets a price less than the price contracted, he will pay to the party of the First part, for his investment proportionately less

OR

c) In the market yard and if the price obtained by him is less than contracted price, then he will return proportionately less for the party of the First parts investment.

In the event the party of the First part refuses/fails to take the delivery of the contracted produce for his own reasons then the party of the Second part will be free to sell the produce in the open market and if the price received is lower than the contracted price the difference will be on account of the party of the First part and shall be recoverable as per the procedure of law.

b) Cultivation/Input Specifications.

The party of the Second part agrees to adopt instructions/practices in respect of Land preparation, nursery, fertilization, pest management, irrigation, harvesting and any other, as suggested by the party of the first part from time to time.

b) Crop Delivery Arrangements

Buying will be as per the following terms and buying slips will be issued immediately after the purchase.

Date	Delivery point	Cost of delivery

It will be the responsibility of the party of the First part to take into possession the contracted produce at the delivery point agreed after it is offered for delivery and if he falls to take delivery within _____ period then the party of the Second part will be free to sell the agriculture produce contracted.

b) In the bulk buyer viz. exporter/ processor/ manufacturer etc.), and if it gets a price less than the price contracted, it will pay to the party of the First part for his investment proportionately less.

OR

b) In the market yard, and if the price obtained is less than the contracted price then it will return proportionately less to party of the First part for his investment. Quality maintenance in transit will be the responsibility of the party of the First part.

9. Pricing Arrangements

The party of the Second part will be paid as per the price/rate mentioned in Scheduled 1 when his crop has been harvested and delivered to the party of the First part and all outstanding advances given to him have been deducted. The following schedule shall be followed for the payment.

Date	Mode of payment	Place of payment

10. Insurance Arrangement.

The party of the First part and the party of the Second part shall insure the contracted produce mentioned in clause 4, for the period of _____ against the risk of losses due to acts of Gods, destruction of specified assets, loan default and production and income loss and all other acts or events beyond the control of the parties, such as very low production caused by the serious outbreak of a disease, epidemic or by abnormal weather condition, floods, drought, hailstom, cyclones, earthquakes, fire or other catastrophes, war, acts of Government, action existing on or after the effective date of this agreement which prevent totally or partially the fulfillment of the obligation of the farmer. Upon request, the party of the Second part invoking such acts shall provide to the other party confirmation of the existence of facts. Such evidence shall consist of a statement of certificate of the appropriate Government Department. If such a statement or certificate cannot reasonably be obtained, the party of the Second part claiming such acts may as substitute, thereof, make a notarial statement describing in details the facts claimed and the reasons why such a certificate or statement confirming the existence of such facts. Alternatively, subject to the mutual agreement between the two parties, the party of the Second part may fill his quota of the produce through other sources and the loss suffered by him thereby due to price difference, shall be shared equally between the parties, after taking into account the amount recovered from the insurance company. The insurance premium shall be shared equally by both the parties.

11. Support Services to be Provided by the Party of the First Part.

The First party of the agreement hereby agrees to provide following services to the Second party during the period of cultivation and post harvest management.

12. Farmer-Management Forum.

The party of the First part or it's representatives agrees to have regular interactions with the farmers forum set up/named by the party of the Second part during the period of contract.

13. Monitoring Quality and Yields.

The party of the First part or it's representatives shall have the right to enter the premises/fields of the party of the Second part to monitor farming practices adopted and the quality of the produce from time to time.

14. Registration of Contract farming Agreements and Dispute Resolution Mechanism.

The party of the First part confirms that he has registered himself with the Registering Authority _____ on _____ and shall pay the fees in accordance with the law

prevailing in this regard to the Registering Authority which has jurisdiction to regulate the marketing of agriculture produce which is cultivated on the land described in clause2. **OR** The party of the First part has registered himself on _____ with a single point registration Authority namely _____ prescribed by the State in this regard. The fees levied by the respective Registering Authority shall be borne by the party of First part exclusively and will not be deducted in any manner, what-so-ever, from the amounts paid to the party of the Second part.

In the event of any dispute or difference arising between the parties hereto or as to the rights and obligations under this agreement or as to any claim, monetary or otherwise of one party against the other or as to the interpretation and effect of any terms and conditions of this agreement, such dispute or difference shall be referred to arbitration authority constituted for the purpose or Authority declared by State Government in this regard.

15. Indemnity in favour of party of the Second part.

The party of the First part will have no rights whatsoever as to the Title, Ownership, Possession of the land/property of the party of the party of the Second part which is particularly described in clause 2, of this agreement nor will it in any way alienate the party of the Second part from the land property particularly described in clause 2, not mortgage, lease, sublease or transfer the land property of the Second party in any way to any other person/institution.

16. Submission of Agreement for Registration.

Copy of this agreement signed by both the parties will be submitted within a period of 15 days by the party of the First part with the _____ market committee/ registering authority as required by the APMR Act/ any other registering authority prescribed for the purpose.

17. Dissolution of Contract.

Dissolution of Contract will be with consent of both the parties and such dissolution deed will be communicated to the registering authority within 15 days of such dissolution.

18. Change of address of either parties.

In case of change of address of a party, it should be intimated to the other party and also to the Registering Authority.

Each party hereto will act in good faith diligently and honestly with the other in the performance of their responsibilities under this agreement and nothing will be done to jeopardize the interest of the other.

In witness whereof the parties have signed this agreement on the _____ day, _____ month and the _____ year first above mentioned.

PARTY OF THE FIRST PARTPARTY OF THE SECOND PART

(Authorized signatory, stamp & name)

(Authorized signatory/Thumb Impression & Name)

Witnesses
(Name, full address)

Witnesses
(Name, full address)