



# INTERNATIONAL COTTON ADVISORY COMMITTEE

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## Current Cotton Situation in the World

By

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Cotton production in the world is going through drastic changes. Prices are at the lowest in the history of cotton, cost of production is the highest ever, cotton is losing its share against other fibers, genetically engineered varieties are expanding and fiber testing is becoming more and more automatic and faster.

### Production and Prices

According to the ICAC, 19.25 million tons of cotton will be produced in the world during 1999/00 as against 19.31 million tons of consumption. Though the figures are still estimates as the crop in the Southern Hemisphere is not over yet, production will be higher by 3% over 1998/99 while consumption is expected to increase by only half of the increase in production. The ICAC estimates suggest that during 2000/01 production will drop by about 4% to 18.53 million tons while consumption will increase by 1% to 19.5 million tons. The main reason for lower production and higher consumption is low international prices during 1999/00.

The international cotton prices are usually measured by the Cotlook A Index, published by a private company based near Liverpool, UK. The Cotlook A Index does not reflect the actual prices at which trading is done, but is the strongest indicator of international prices. The long term average for the Cotlook A Index is 72 cents per pound. But, at the end of 1999, the A Index had dropped to only 44 cents per pound. The main reason has been higher ending stocks in the world, financial crisis particularly in South East Asia and huge carry over by China (Mainland). According to market fundamentals, prices should have been higher than current levels. The international cotton prices have already started moving up and by the end of February the A Index had moved close to 55 cents per pound. Prices will continue to recover during the remainder of 1999/00 and the ICAC estimates suggest that the end of the season average will increase to 52 cents per pound.

The other major factor which has a big impact on international prices is trade from China (Mainland). During different years China could be an exporting country or an importing country. During years when China (Mainland) is exporting cotton, international prices usually remain low and vice versa. For the last two years, China (Mainland) is holding a carry over of over 4.0 million tons and it was feared that China would be a large net exporter of cotton in 1998/99 and then in 1999/00. The international market incorrectly expected China (Mainland) to export about half a million tons of cotton but actual Chinese exports were only 120,000 tons in 1998/99 and expected to be 300,000 tons this season.

### Consumption

On the average 60% of the total production in the world is consumed in the producing countries. About 6-7 million tons are traded in the international markets. How much is left at the end of the season to be added to the world supply in the next year has a significant impact on international prices. World ending stocks declined from 9.9 million tons in 1997/98 to 9.7 million tons in 1998/99 and 9.4 million tons this season. However, due to lower production in the coming season, ending stocks are expected to fall by about one million tons during 2000/01.

On the average the world cotton consumption has increased at the rate of 0.3% during the 1990s. ICAC's studies, done in collaboration with the FAO, forecast that 50.5 million tons of all fibers will be consumed in 2005. However, demand for cotton continues to perform below the demand for other fibers and as a result cotton is losing its share against other fibers. It is estimated that the market share of cotton in 1999 and 2000 is 42%. Cotton's share will continue to drop and is estimated to be only 40% in 2005. ICAC member governments are concerned about the declining share of cotton. The ICAC Secretariat has analyzed the situation and concluded that lack of promotional campaigns and cotton prices are the main reasons.

### **Yields**

In the last 50 years, cotton production has more than doubled from 8.4 million tons in 1951/52 to 19.2 million tons in 1999/00. There have been periods of slow growth but yields showed an increasing trend for the last 50 years. During the same period, there was no increase in the area devoted to cotton. Thus all the increase in production has come from increases in yields. Between 1950/51 and 1991/92, world cotton yields rose at an average rate of about 2% per year or 8 kilograms/ha/year, hitting new records at least once every three years. In 1991/92, world production hit a record 20.7 million tons with a world yield of 598 kg/ha. The average yield in 1998/99 was only 551 kg/ha and is expected to be 590 kg/ha in 1999/00, the 8th consecutive season without setting a new record.

The five largest cotton producing countries of the world, China (Mainland), India, Pakistan, USA and Uzbekistan, share about  $\frac{1}{3}$  of the world total production. In four of the five countries cotton yields are not increasing.

The U.S. yield reached 791 kilograms per hectare in 1987/88 and has not grown from that level in the twelve years since. Cotton yields are not increasing in India, Pakistan and Uzbekistan either. Because of the shift in cotton area, cotton yields are recovering in China (Mainland). Among the five other larger cotton producing countries, which account for another 10% of world production, yields are slightly increasing in Turkey only.

The reason for no increase in yields is that, given the limitations in various countries, agronomic management of the cotton plant has reached near optimization. The nature of limitations to higher productivity is different in different countries but it seems that the available recoverable potential under most production conditions has been utilized. Thus, the world cotton industry has entered into a period of slow or even no growth in yields.

### **Transgenic Cotton**

Genetic engineering of cotton may be a solution to overcome stagnation in yields. Development of transgenic cotton and other transgenic crops has opened an entirely new era in crop breeding. Now techniques are available to isolate non-cotton genes and induct them into the cotton plant for specific objectives. Currently, two types of such cottons are grown on a commercial scale in many countries, Bt cotton resistant to insects and transgenic cotton resistant to herbicides. The United States is the first country to adopt transgenic cotton on a commercial scale from 1996/97 and had 60% of total area planted to transgenic varieties in 1999/00. In addition to the USA, Argentina, Australia, China, Mexico and South Africa also have gone into commercial production of Bt cotton. Many other countries are assessing the economic value of transgenic cottons for their countries. These are Colombia, Bolivia, Brazil, El Salvador, Greece, India, Israel, Paraguay, Spain, Thailand and Zimbabwe.

Some countries still do not have access to the technology which has tremendous applications and hopes. But, it is believed that either through collaboration with multinationals or development of their own capabilities, the technology will be available to all countries. The fact is that we are progressing toward a stage of directed breeding where genes of our own choice could be inducted or even deleted from crop species.

## Organic Cotton

Organic production of cotton started from 1990/91 in Argentina, Australia, Turkey and the USA. Since then organic production of cotton has also been tried in Benin, Brazil, Egypt, Greece, India, Israel, Mozambique, Nicaragua, Paraguay, Peru, Senegal, Tanzania, Uganda, Zambia and Zimbabwe.

Some of the fundamental requirements of organic production are no chemicals, a transitional period and certification. There are many reasons to explain why organic production was started. It can also be claimed that it is a consumer driven initiative. Typically, producers of organic cotton expected lower cost of production mainly due to elimination of insecticides, lower yields and higher income due to premium price. It was expected that lower costs and premium in price would compensate the loss in yield and ultimately farmers would not suffer economic losses. It was expected that less environmental pollution, long-term viability of farming and safety from insecticide use would be a bonus.

So far, the highest quantity of organic cotton (12,833 tons) was produced in the world during 1995/96. 9,028 and 7,967 tons of organic cotton was produced during 1996/97 and 1997/98 respectively. No actual data are available for the 1998/99 season but the U.S. is the largest producer of organic cotton. In most other countries organic cotton area was below 1,000 ha and mostly it was on experimental basis with support from some international agencies.

## Organic Cotton Area in the USA

Year	Hectares
1990/91	365
1991/92	1,332
1992/93	2,552
1993/94	5,020
1994/95	6,417
1995/96	9,966
1996/97	4,362
1997/98	3,663
1998/99	3,792
1999/00	6,667

The International Cotton Advisory Committee has done a number of reports and papers on organic cotton. It is concluded that the following issues require attention in organic production.

- \_ Research should be undertaken on organic production technology.
- \_ Conventional varieties are suitable for organic conditions?
- \_ Elimination of pesticides reduces the cost of production.
- \_ Loss in yield is not too high.
- \_ Organic production does not affect cropping intensity and consequently farm income.
- \_ Organic production receives premium price.

## Cost of Production

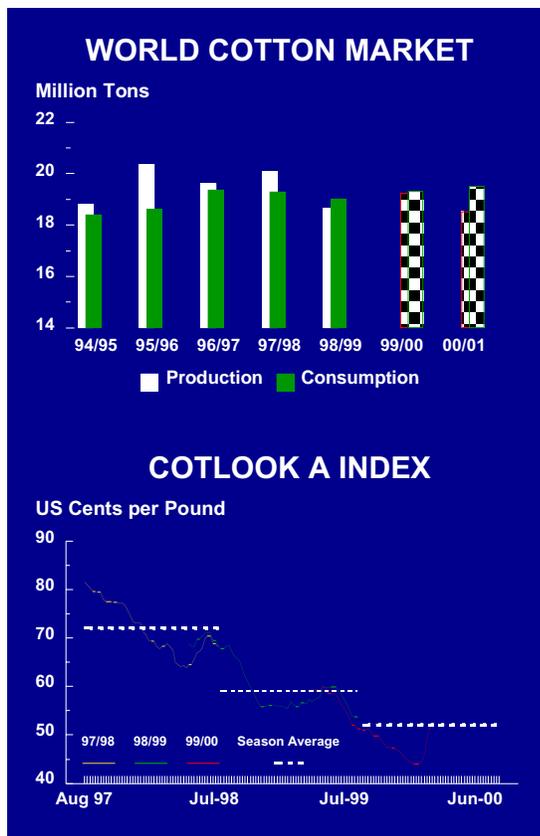
The cost of producing cotton is the most critical factor in deciding the area to be planted to cotton. Experience shows that countries have gone out of production only because it became expensive to produce cotton. In 1980/81, average yields in Guatemala were the second highest in the world just behind yields in Israel. Guatemala stopped producing cotton in 1996/97, with cotton yields still 150 kg/ha above the world average and almost comparable to levels in the USA. The ICAC undertakes a survey of the cost of production of cotton in the world and the last report was published in October 1998. The data showed that among major exporting countries, it is most expensive to produce cotton in the USA.

Other conclusions from the last survey of the ICAC on cost of production are

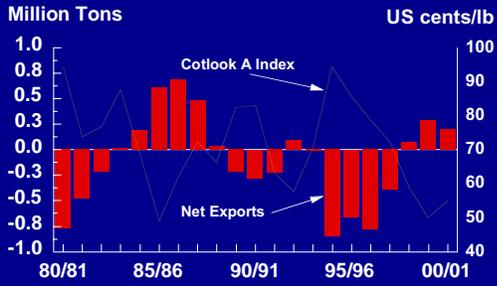
- \_ Input use has been optimized
- \_ Cost/ha will increase at a slower rate
- \_ Increase in input costs will increase cost/kg of lint
- \_ It is more expensive to produce rainfed cotton compared to irrigated cotton

### Fiber Quality

Fiber quality is another area where significant changes are occurring at a very fast rate. The spinning industry has moved toward high speed and automation, which has enhanced the need for accurate and efficient testing of fiber quality. Consequently, the value of cotton as a raw material has increased to over 60% of the total costs. Now, the textile industry requires least contamination, minimum short fiber content and more uniform cotton. While the need for quality cotton has improved, repeatability of the data has also become more important. The high volume instrument (HVI) testing is becoming more popular. High cost of the HVI machine is a big limitation and still in the last 10 years, the number of machines has more than doubled. It is estimated that at the end of 1999, there were 1302 machines installed in the world. The latest generation of HVI machines can measure 12 properties of the fiber in about 40 seconds. These measurements are length, length uniformity, short fiber index, strength, elongation, color, trash, micronaire, maturity index, fiber moisture, fiber fluorescence and neps. Since 1992, all cotton in the U.S. is classed on HVI. Many other countries are moving to HVI classification.



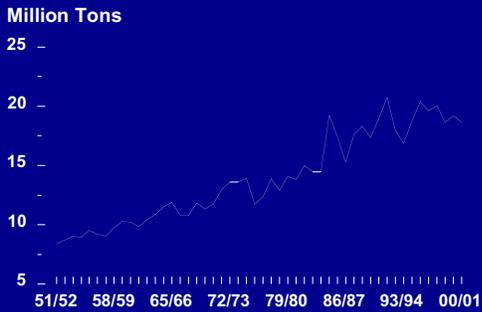
### CHINA (MAINLAND) NET EXPORTS AND THE COTLOOK A INDEX



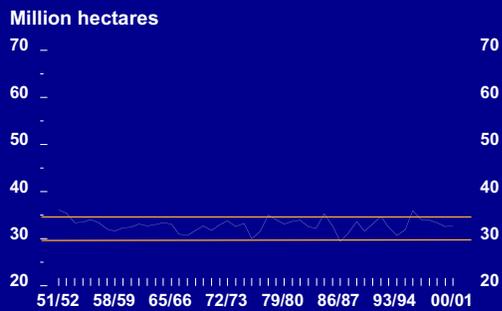
### COTTON'S SHARE OF THE WORLD TEXTILE MARKET



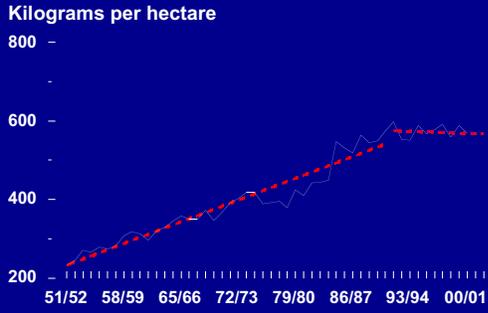
### WORLD COTTON PRODUCTION



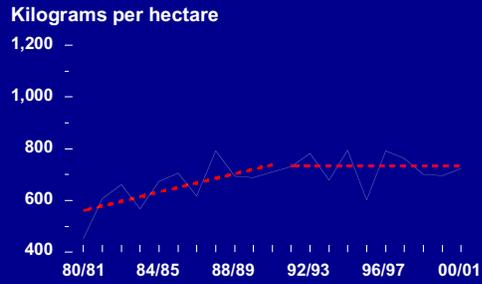
### WORLD COTTON AREA



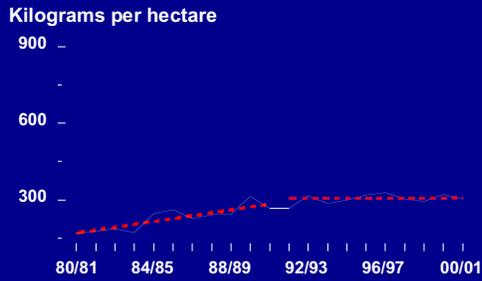
### WORLD COTTON YIELDS



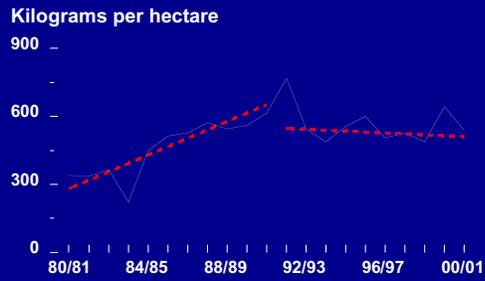
### COTTON YIELDS UNITED STATES



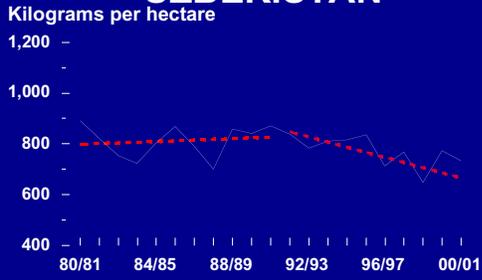
### COTTON YIELDS INDIA



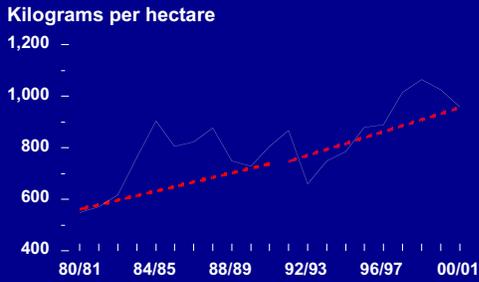
### COTTON YIELDS PAKISTAN



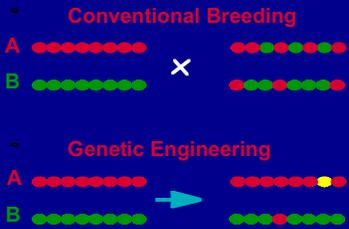
## COTTON YIELDS UZBEKISTAN



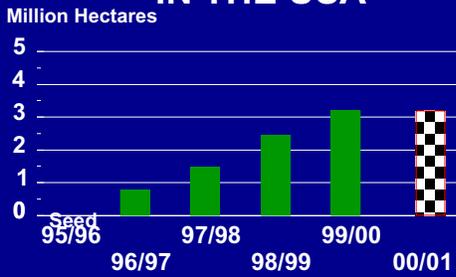
## COTTON YIELDS CHINA (MAINLAND)



## GENETIC ENGINEERING



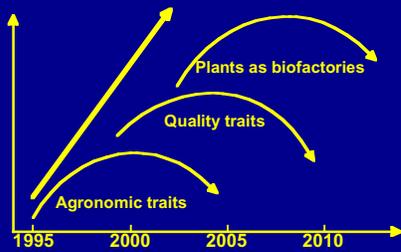
## TRANSGENIC COTTON AREA IN THE USA



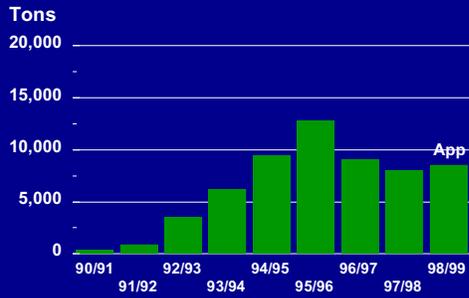
## COTTON VARIETIES IN THE US 1999/00 - By Gene Type



### WHAT IS NEXT?



### ORGANIC COTTON



### HIGH YIELDING COUNTRIES (YIELD OVER 1,000 Kg LINT)

