



INTERNATIONAL COTTON ADVISORY COMMITTEE

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WORLD COTTON MARKET CONDITIONS *

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The decade of the 1970s was identified by the United Nations as the “Decade of Africa,” a decade when foreign investment, improved infrastructure, higher levels of education and especially increased foreign aid were to raise Africa out of poverty. We know sadly that the 1970s were instead a lost decade for Africa, and that per capita income for the average African was lower in 1980 than it had been in 1970.

In many ways, the 1990s were a lost decade for cotton. World consumption stagnated in the 1990s, ranging between 83 and 89 million bales, and consumption only rose to 91 million bales in 1999/00 after five years of price declines. The world cotton yield rose to a record of 533 pounds of lint per acre in 1991/92 and has not been higher in the nine years since. The world yield this season is estimated at 520 pounds per acre. In contrast, from the end of World War II until the 1990s, the world cotton yield rose at an average rate of 2% per year and never went more than three years without reaching a new record. With input costs continuing upward during the 1990s, the failure of yields to rise means that the average cotton farmer is earning less per hectare of production today than at the end of the 1980s.

This doesn't mean that all was bleak and that all sectors of the world cotton economy moved backward in the 1990s. Cotton production rose in many areas, mill use of cotton expanded in Turkey, North America, South Asia and the ASEAN countries, and retail level consumption of cotton per capita reached a record in the USA and was maintained in Europe. The economies of Central Asia completed an historic transition to independence in the 1990s and have reoriented their agricultural industries to domestic priorities. The intrinsic preferences of consumers for the natural-fiber properties of cotton remained intact.

The 1990s are now mercifully behind us, and the cotton industry is again moving forward, but three legacies from the 90s continue to affect the world industry. First, the world cotton yield is not rising, and thus an expansion of supply will come only from higher prices that result in increased area. Secondly, cotton consumption is rising as incomes grow, but use is rising by less than the rate of population growth, causing per capita consumption to fall and cotton's market share to decline. Third, China (Mainland) was a net importer in most years during the 1980s and 1990s, and China (Mainland) is expected to again be an importer in most years of this decade.

World Cotton Production Problems Persist

2000/01 is the ninth consecutive year in which the world yield has not risen, and the 2000/01 world yield is estimated 3% lower than the 1991/92 record. The decline in the world yield since 1991/92 suggests that the cotton industry is in the midst of a period of slow growth in production caused by specific difficulties affecting productivity in several of the largest producing countries. The existence of the leaf curl virus and resistance to pesticides in Pakistan, India and Francophone Africa, changes in the government

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- Paper presented to the Beltwide Cotton Economics and Marketing Conference, January 12, 2001, Anaheim, CA.
 - The International Cotton Advisory Committee is an association of 43 governments of countries with an interest in cotton. The Secretariat of the Committee publishes information related to world cotton production, supply, demand and prices, and provides technical information on cotton production technology. Detailed statistics are found bimonthly in *COTTON: Review of the World Situation*, \$150 per year. A monthly outlook by fax is also available for \$250 per year or on the Internet for \$200 per year. Access to the latest estimates of world cotton supply and use by the Secretariat is also available on the Internet for \$1,500 per year.

program in the USA, and economic difficulties in Central Asia are affecting cotton yields in some of the largest cotton producing countries representing half of world production.

The national average yield in India reached 280 pounds per acre in 1989/90, rose by only 5% over the next seven years and is estimated lower at 240 pounds per acre this season, the same as in the early 1990s. Production declines have been the most pronounced in North India because of disease and insect resistance to pesticides, and the yield failures are occurring despite concentrated efforts to improve the technology used by farmers.

Pakistan yields climbed dramatically during the 1980s with the introduction of new varieties, and the national average reached 687 pounds per acre in 1991/92. However, disease and difficulties controlling insects have led to lower yields since, and the average in 2000/01 is estimated at 510 pounds. Pakistan has made progress developing new varieties tolerant of the leaf curl virus, but the new varieties have intrinsically lower ginning ratios than the varieties used to reach record yields in the late 1980s.

Yields in Francophone Africa reached approximately 420 pounds per acre in 1990/91 but fell during the 1990s, and the regional yield this season is less than 300 pounds per acre. Poor weather and low prices, which discourage harvesting, are contributing to a steep drop in yields this season, but difficulty controlling insects and an expansion of area have also affected production.

Cotton yields in the USSR peaked in the early 1970s and then tended to decline because of soil degradation, a lack of incentives and general inefficiency. The yield in Uzbekistan averaged 860 pounds per acre in the late 1980s and fell during the 1990s as input supplies were disrupted and incentives continued to weaken. The Uzbek yield this season is estimated at less than 600 pounds per acre, roughly on par with yields in the 1950s.

And the US is also experiencing yield problems. US cotton yields were flat during the 1960s and 1970s, usually between 450 and 535 pounds per acre but rose to 706 pounds per acre in 1987/88. Over the last thirteen seasons, US yields have been equal to or lower than the 1987/88 yield, and the estimate for 2000/01 is 619 pounds. The rise in the U.S. yield up to 1987/88 coincided with a shift of acreage to the West after allotments ended, expectations of rising prices in the inflationary environment of the 1970s and early 1980s that led to intensive application of inputs, and the government program that linked program benefits to yields. Since 1987, cotton area has tended to fall in the irrigated Far West, inflationary expectations for cotton prices no longer prevail, and payment yields under the government program are frozen.

The significance of the decline in the world yield since 1991/92 is shown by the history of world cotton area since 1950/51. Since the 1940s, world cotton area has been in a range between 72 million and 89 million acres, with no obvious tendency either higher or lower. World area is estimated at 81 million acres this season, and a rise to 84 million acres is projected for 2001/02 with the rise in prices this season. Increased area is expected in China (Mainland) and India in response to higher domestic prices. U.S. area may increase because of weak competing crop prices and an attractive crop insurance program. Rising international prices may encourage increased area in the Southern Hemisphere and Francophone Africa.

A small increase in area to 4.1 million hectares and a five-year average national yield results in an estimate of 2001/02 China (Mainland) production of around 19 million bales, a default option given uncertainty regarding government policy. Production this season will apparently reach 20 million bales, but the national yield is a record and may not occur again next year.

Cotton prices are higher relative to competing crop prices this season than they were last season, and U.S. cotton area may expand in 2001. Combined with lower abandonment, harvested area is estimated at more than 14 million acres and production at about 19 million bales.

Indian production is falling to the lowest level in six years at about 11 million bales, but domestic prices are rising and a supply response is probable in 2001. A 3% gain in area and better weather may result in production of more than 12 million bales next year. Pakistan production in 2000/01 is estimated at 7.8 million bales, a decline of 8% from last season, based on deliveries to gins through mid-December and an expectation that picking will finish earlier than usual this season. Despite difficult weather, production this

season will still be above the average of the 1990s, indicating that substantial progress has been made in combating the leaf curl virus. Pakistan production has benefited from unusually high yields the last two years, and production in 2001/02 may decline 500,000 bales to 7.3 million bales.

Production in Uzbekistan is dropping to an estimated 4.3 million bales in 2000/01, probably the smallest harvest in Uzbekistan in about four decades. Normal weather will presumably lead to increased production next season, as the government will try to maintain cotton production near five million bales per year. Production in the CIS is estimated at 6.3 million bales this season and seven million next season. Production in the USSR used to average 12 million bales.

Cotton production in Turkey has been between 3.5 and 4.1 million bales the last six seasons as increased area in the irrigated Southeast region has offset declining production in other regions because of competition with food crops. Production in 2001/02 is estimated in the middle of the range at 3.8 million bales.

Production in Greece and Spain is estimated at 2.3 million bales this season and 2.2 million bales next season. A gradual decline in EU cotton area is expected over the next decade because of reductions in the income subsidy. EU cotton production rose from 450,000 bales in the early 1980s to a record of 2.5 million bales in 1999/00, but domestic use is still larger than production and net imports are about three million bales.

Exports and production from Francophone Africa are falling this season because of the lowest yields for the region in two decades. Production is estimated at 3.4 million bales this year, and even with no growth in area, production is projected to rise to four million bales next year with better yields. The availability of unused land, the provision of cotton inputs to greater numbers of farmers, and an expansion of planted area per farm family contributed to increases in area and production during the 1980s and 1990s. But an overvalued currency that reduces prices paid to farmers, disruptions to the cotton system because of privatization and agronomic problems associated with insect control are leading to long-term difficulties.

Production in the Southern Hemisphere is estimated at 9.5 million bales this season and about the same next season. Production in Australia is estimated at 3.2 million bales this season and 3.6 million next season as area continues to expand with higher cotton prices. Production in Zimbabwe is rising to a record of nearly 600,000 bales this season with very high yields. Production could be closer to 500,000 bales next season.

Production in South America is estimated at 5.8 million bales in 2000/01, and six million next season. Brazilian production in 2000/01 is estimated at 3.9 million bales, the highest in over a decade and nearly three times the level of production four years ago. Production in the State of Mato Grosso was 160,000 bales in 1996/97 and is estimated at 2.1 million bales this season. Brazil imported 2.3 million bales and exported almost zero cotton in 1996/97, but imports this season are estimated at 900,000 bales, and exports are climbing to an estimated 700,000 bales. Brazilian production in 2001/02 is estimated at 4.1 million bales. Production is also recovering in Argentina and Paraguay because of higher market prices.

Consumption Rising, Weakly

World cotton consumption increased by 4% to 91 million bales in 1999/00, but cotton use is projected to increase by less than 1% both this season and next and reach 92 million bales in 2001/02. The consumption of non-cotton fibers rose by 4% in 1999 and is expected to continue to expand at a faster rate than cotton. As a result, cotton's share of the textile fiber market is declining from 41.4% in 1998 and 40.9% last year to an estimated 40.7% in 2000.

Nevertheless, even though the rate of growth is lower than for chemical fibers, cotton consumption is rising again after a decade of stagnation around 85 million bales. Stagnation was caused principally by two factors, the breakup of the USSR and government policy in China (Mainland). The breakup of the USSR and the COMECON trading block resulted in a subtraction from world cotton consumption after 1991 of approximately nine million bales. Further, the government of China (Mainland) enforced an explicit policy of limiting consumption to about 21 million bales. Consequently, consumption outside the former USSR, Central Europe and China (Mainland) needed to rise by nine million bales in the 1990s just to keep the world total steady. However, both situations are improving this decade. Mill use of cotton is

rising in the CIS, and consumption in China (Mainland) is estimated at 22 million bales this season, possibly reflecting a change in national consumption policy.

Per capita world cotton consumption climbed from 3.16 kilograms in 1998 and 1999 to an estimated 3.19 kilograms in 2000. World cotton consumption is projected to increase at an average annual rate of 1% during this decade and reach 100 million bales in 2010. Non-cotton fiber consumption is projected to increase at a rate more than twice that of cotton, reaching 170 million bales in 2010. Consequently, cotton's share of world fiber mill use is estimated at 37% in 2010.

Lower fiber prices and better world economic performance are fueling the current rise in world fiber consumption, including the rise in cotton use. The decline in cotton prices between 1995 and 1999 is contributing to the rise in consumption now. World GDP growth increased from 2.4% in 1998 to 4.7% in 2000 and the global economic outlook remains favorable. The IMF projects that economic growth will be 4.2% in 2001, despite higher energy prices.

Most of the increase in world cotton consumption at the end-use level is occurring in industrial countries, while increases in cotton mill use are taking place in developing countries. As a consequence, net imports of cotton textiles by industrial countries are estimated to have increased from 25 million bales in 1998 to 27 million bales in 1999. In 1999, developing countries accounted for 76% of world cotton mill use and 43% of end-use cotton consumption. Industrial countries accounted for 20% of world cotton mill use and 50% of end-use cotton consumption.

Consumption of cotton in China (Mainland) seems to be rising at an unusually steep rate as a national policy of stock reduction remains in effect. Production of cotton yarn is estimated at 1.8 million tons for the three months of August through October 2000, compared with 1.5 million tons during the first three months of last season, an increase of one-fifth. Even assuming that the proportion of chemical fiber in cotton yarn is rising from 36% last season to 37% this season, mill use of cotton in China (Mainland) could be climbing from 20 million bales to 21 million bales. Adding about two million bales for use in all the non-mill categories results in an estimate of 23 million bales for total use in China (Mainland) in 2000/01, up from an estimated 22 million bales during last season.

Consumption in India is sensitive to changes in domestic cotton production. Indian production is falling to an estimated 11 million bales this season, one million bales less than last season and nearly three million bales less than in 1996/97. The decline in production is resulting in increases in domestic prices of between 15% and 25% compared with December last year. Imports rose to 1.8 million bales in 1999/00 and the estimate for this season is 1.4 million bales. These are the highest levels of imports for India since the 1950s. As a consequence of higher domestic prices, Indian cotton consumption in 2000/01 is estimated at 13 million bales, down 450,000 bales from last season.

Mill use in the USA is estimated at 9.5 million bales in 2000/01 and 9.4 million bales next season, the lowest since 1990/91. 2000/01 is the third straight season in which U.S. mill use is falling, but cotton consumption at the retail level in the U.S. continues higher. Net domestic consumption (mill use of cotton plus the cotton textile and apparel trade balance) in calendar 2000 is estimated at 21 million bales, an increase of 3% over 1999 and double the level of retail sales in 1986. U.S. consumers account for 22% of world cotton consumption, and on a whole-trade pipeline basis, the U.S. is a net cotton importer of about three million bales. Imports of cotton textile products rose by 13% in 2000, and over the last four years, while retail sales of cotton products increased by 26%, cotton textile imports climbed by 80%. The consequence has been downward pressure on U.S. mill use of cotton. While U.S. economic growth slowed in the second half of 2000 and the U.S. dollar may weaken in 2001, the percentage difference between retail sales and textile imports is so large that the downward trend in U.S. mill use is likely to continue for at least several more years. However, mill use in Mexico is rising an estimated 100,000 bales to 2.5 million bales this season.

Cotton use is rising in Pakistan this season because of ample domestic supplies following the rise in production last season. Use is estimated at a record of 7.5 million bales, an increase of 150,000 bales.

Cotton use in Brazil is estimated at a record of 4.2 million bales. Increased domestic cotton production is providing an expanded supply for the local industry. Stronger economic growth encouraged by the decline in the real exchange rate in 1999 is helping to expand both domestic consumption and textile exports.

2000/01 cotton use in the EU and Central Europe is estimated about the same as last season at 5.2 million bales and 900,000 bales, respectively. However consumption in Turkey is rising by 200,000 bales to an estimated 5.4 million bales. Imports by countries in the EU, Central Europe and Turkey are estimated at 7.3 million bales in 2000/01, the same as last season.

Cotton use in East Asia and Australia is holding at the same aggregate level of the last five years of about nine million bales. Consumption in Japan is continuing downward, but there are increases in Thailand and Hong Kong. Consumption in the Commonwealth of Independent States is climbing to an estimated 2.8 million bales, including 1.4 million bales in Russia.

China (Mainland) Importing

During the last eleven seasons beginning in 1989/90, China (Mainland) was a net importer eight times, or more than three-fourths of the time. Cumulatively over the last eleven seasons China (Mainland) imported fifteen million bales while importing just two million bales. Currently, because of a policy of stock reduction, China (Mainland) is a net exporter. But the long-term expectation in a nation with a large population and scarce land resources is that China (Mainland) will be a net importer of cotton in most seasons.

An interesting counter-point is made by researchers at Iowa State University (Beghin and Fang, Iowa Ag Review, Fall 2000, Vol. 6. No. 4) who compare the value of domestic production to foreign exchange costs of imports to argue that China (Mainland) has a comparative advantage in the production of high-valued labor-intensive crops such as rice, tobacco, vegetables, citrus and cotton. That would imply that cotton production in China should rise. However, Beghin and Fang acknowledge that cotton is a special case because of government policies to accumulate stocks and that China (Mainland) would be ill advised to expand cotton production further. In addition, it is important to note that the government of China (Mainland) has limited cotton consumption since the mid-1980s to an annual average of 21 million bales in order to favor the use of chemical fibers. As a consequence, per capita cotton consumption in China has fallen for 15 years. If the government relaxes the policy limiting cotton use, and consumption is allowed to rise to the level of natural consumer demand, as seems to be happening since 1998, consumption in China (Mainland) could continue upward.

2000/01 production in China (Mainland) is estimated at 20 million bales, leaving a deficit of three million bales and prompting a forecast that China (Mainland) will need to import substantial amounts of cotton by the end of this season. Even with production of 20 million bales again in 2001/02, the momentum behind the rise in consumption will likely carry China (Mainland) stocks lower again, perhaps forcing imports back to the range seen in the mid-1990s. Over the last two decades no other factor on the cotton supply and use balance sheet has had as much of an impact on year-to-year changes in average cotton prices as changes in net trade by China (Mainland). The forecast rise in imports by China (Mainland) to more than two million bales by next season is driving the forecast of next years average A Index higher. The ratio of ending stocks to use in China (Mainland) is projected to fall to 44% at the end of this season, the same as in 1993/94.

Conclusion

The 1990s was a lost decade for the world cotton industry, but this decade will be one of growth. With consumption rising in both the CIS and China (Mainland), and growth continuing elsewhere, world consumption is forecast at 22 million bales in 2001/02. However, the world yield is not climbing, with ramifications for the structure of the world cotton industry. With world cotton use climbing, while yields are stagnant, cotton area must expand toward the top of the long-term range. In order to attract cotton area, cotton yields will need to be above average. The average of the Cotlook A Index over the last three decades has been 74 cents per pound, and prices are expected to move toward the average next season. Over the balance of this decade, cotton prices are likely to be above the long-term average in most years.

SUPPLY AND DISTRIBUTION OF COTTON

January 5, 2001

Years Beginning August 1

	1996	1997	1998	1999 Est.	2000 Proj.	2001 Proj.
Million 480-Lb. Bales						
BEGINNING STOCKS						
WORLD TOTAL	41.006	43.266	45.550	45.109	41.41	37.4
CHINA (MAINLAND)	17.061	18.381	19.736	18.941	12.92	10.4
USA	2.609	3.971	3.887	3.939	3.92	4.1
NET EXPORTERS	16.574	17.941	18.618	18.594	19.89	18.6
NET IMPORTERS 1/	24.432	25.325	26.933	26.515	21.52	18.8
PRODUCTION						
WORLD TOTAL	90.019	92.102	86.067	87.246	87.28	91.1
CHINA (MAINLAND)	19.304	21.136	20.673	17.587	19.98	19.1
USA	18.942	18.793	13.918	16.968	17.40	19.1
INDIA	13.890	12.337	12.883	12.180	11.02	12.4
PAKISTAN	7.319	7.171	6.798	8.497	7.81	7.3
UZBEKISTAN	4.877	5.229	4.591	5.282	4.27	5.1
TURKEY	3.601	3.849	4.052	3.634	3.44	3.8
OTHERS	22.085	23.588	23.152	23.098	23.36	24.3
CONSUMPTION						
WORLD TOTAL	88.762	89.041	87.138	90.990	91.30	91.9
CHINA (MAINLAND)	21.587	21.587	21.128	22.046	22.97	22.0
INDIA	13.154	12.678	12.775	13.497	12.86	13.3
EU, C. EUR. & TURKEY	11.491	11.813	10.813	11.397	11.60	11.7
USA	11.126	11.349	10.403	10.240	9.53	9.4
EAST ASIA & AUSTRALIA	9.579	8.826	9.030	9.589	9.28	9.5
PAKISTAN	7.002	7.088	7.027	7.349	7.46	7.6
BRAZIL	3.668	3.714	3.881	4.134	4.18	4.4
CIS	1.863	2.046	2.067	2.469	2.74	2.9
OTHERS	9.292	9.939	10.013	10.269	10.68	11.2
EXPORTS						
WORLD TOTAL	27.783	27.148	24.549	27.784	28.33	29.6
USA	6.865	7.500	4.345	6.750	7.81	8.7
UZBEKISTAN	4.786	4.823	4.134	4.134	3.61	4.4
FRANCOPHONE AFRICA	3.301	3.783	3.873	3.622	3.15	3.8
AUSTRALIA	2.386	2.641	3.033	3.261	3.07	3.4
GREECE	0.896	0.859	1.056	1.350	1.24	1.1
ARGENTINA	1.330	1.010	0.751	0.367	0.50	0.6
CHINA (MAINLAND)	0.010	0.028	0.677	1.699	0.92	0.9
IMPORTS						
WORLD TOTAL	28.150	26.432	24.929	27.884	28.33	29.6
EAST ASIA & AUSTRALIA	9.170	8.233	8.941	9.320	9.03	9.2
EU, C. EUR. & TURKEY	7.444	7.798	6.868	7.255	7.33	7.3
SOUTH AMERICA	2.909	2.670	2.177	2.471	1.78	1.1
CIS	0.945	1.253	1.210	1.587	1.68	1.7
CHINA (MAINLAND)	3.613	1.834	0.337	0.138	1.38	2.8
TRADE IMBALANCE 2/	0.367	-0.716	0.380	0.100	0.00	0.0
STOCKS ADJUSTMENT 3/	0.635	-0.061	0.250	-0.059	-0.03	0.0
ENDING STOCKS						
WORLD TOTAL	43.266	45.550	45.109	41.407	37.36	36.5
CHINA (MAINLAND)	18.381	19.736	18.941	12.919	10.39	9.3
USA	3.971	3.887	3.939	3.922	4.06	5.0
NET EXPORTERS	17.941	18.618	18.594	19.886	18.58	18.9
NET IMPORTERS 1/	25.325	26.933	26.515	21.520	18.78	17.6
ENDING STOCKS/USE 4/	0.42	0.41	0.39	0.39	0.40	0.42
COTLOOK A INDEX 5/	78.60	72.20	59	53	64*	69*

1/ Includes Brazil, China (Mainland), Colombia, Greece, Mexico, Turkey and traditional importers

2/ The inclusion of linters and waste, changes in weight during transit, differences in reporting periods and measurement error account for differences between world imports and exports.

3/ Difference between calculated stocks and actual; amounts for forward seasons are anticipated

4/ World-less-China (Mainland) ending stocks minus China net exports, quantity divided by world-less-China consumption

5/ U.S. Cents per pound. Not a model result for 1998/99. The estimates for 1999/00 are based on net China (Mainland) trade and world-less-China (Mainland) ending stocks to use.

*/ 95% confidence interval extends 12 cents above and below the point estimate

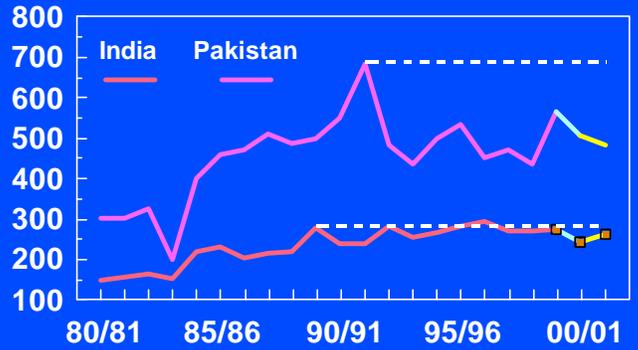
WORLD COTTON YIELDS

Pounds per Acre



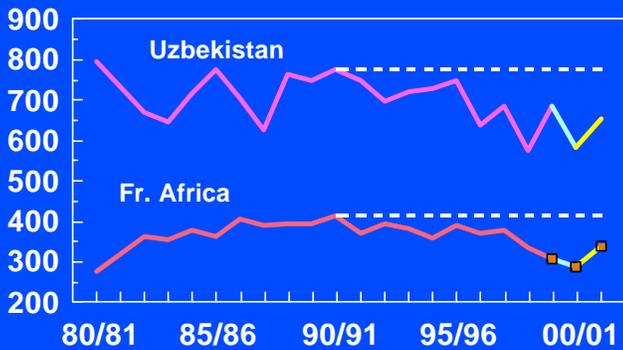
COTTON YIELDS

Pounds per Acre



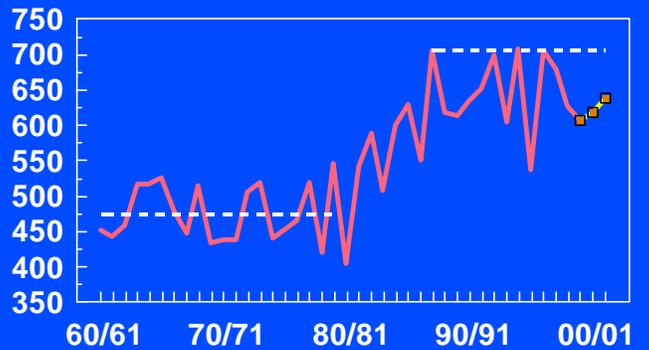
COTTON YIELDS

Pounds per Acre



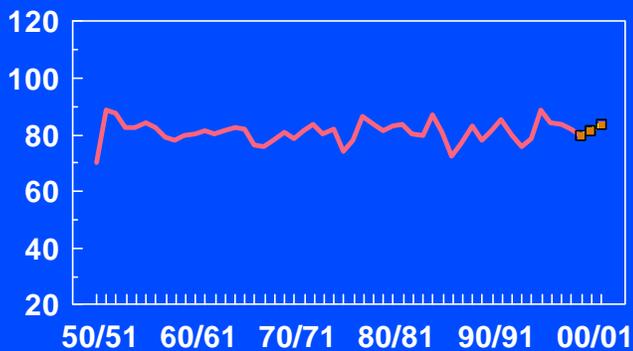
COTTON YIELDS: USA

Pounds per Acre



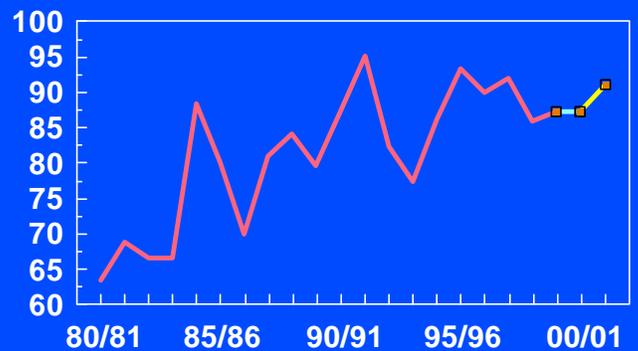
WORLD COTTON AREA

Million Acres



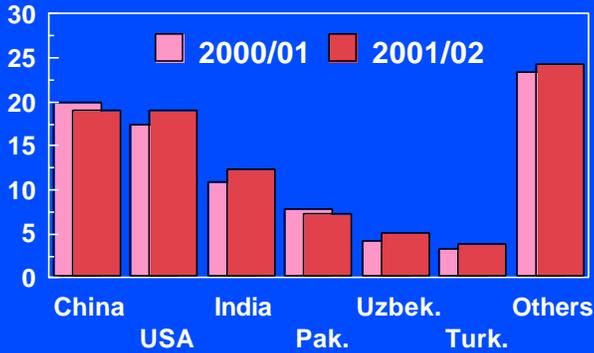
WORLD COTTON PRODUCTION

Million Bales



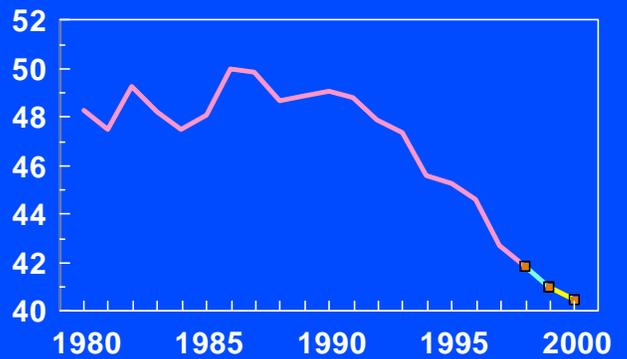
COTTON PRODUCTION

Million Bales



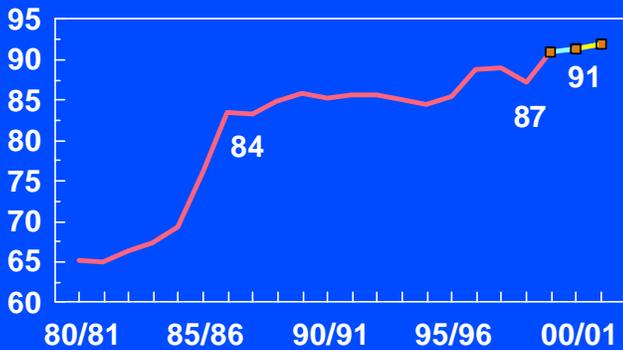
COTTON'S MARKET SHARE

Percent of End Use



WORLD COTTON CONSUMPTION

Million Bales



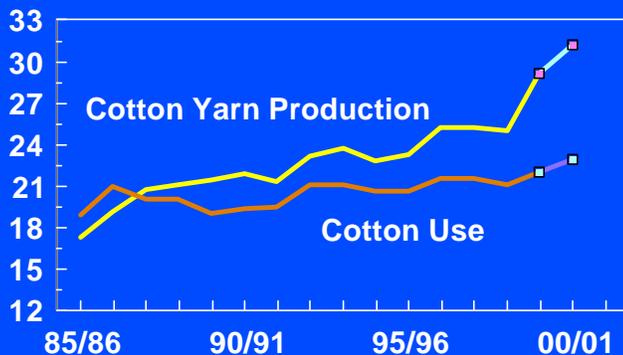
U.S. COTTON CONSUMPTION

Million Bales



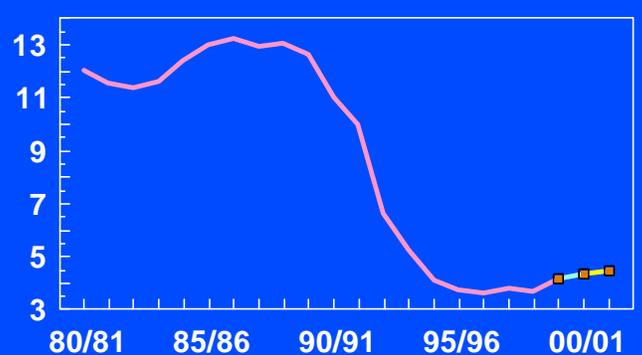
CHINA (Mainland)

Million Bales



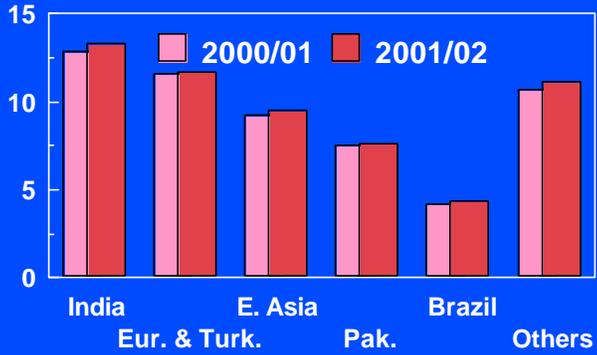
CONSUMPTION: COMECON

Million Bales



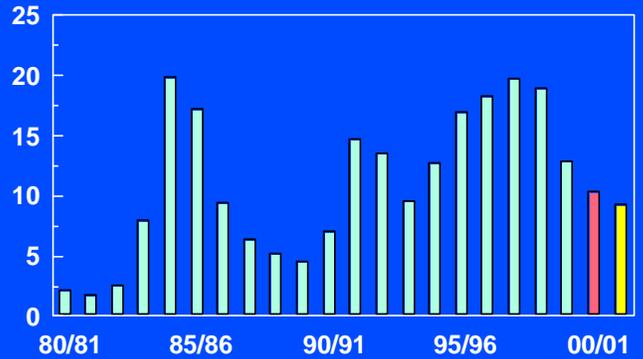
COTTON CONSUMPTION

Million Bales



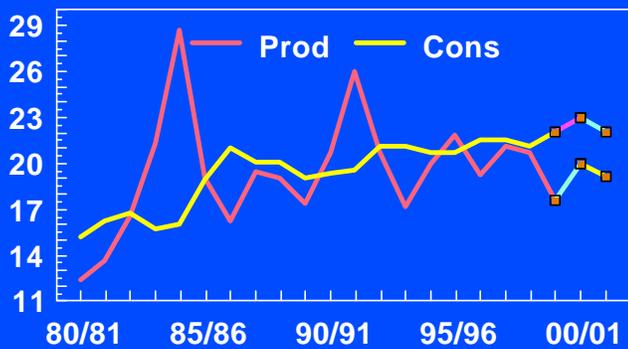
STOCKS: CHINA (MAINLAND)

Million Bales



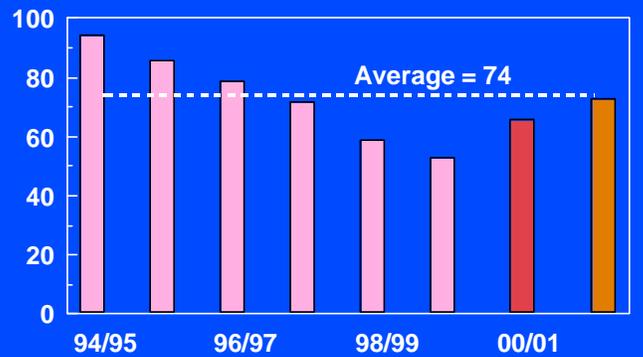
CHINA (MAINLAND)

Million Bales



AVERAGE COTLOOK A INDEXES

U.S. Cents per Pound



U.S. S/U RATIO

