

## **CHALLENGES FACING THE WORLD COTTON MARKET**

**Terry Townsend**  
**International Cotton Advisory Committee**  
**Washington, DC**

### **Abstract**

World production is dropping significantly below consumption during 2009/10, and tighter ending stocks are resulting in higher prices. World cotton production is forecast to rise in 2010/11 in response to higher prices for cotton. The Cotlook A Index stood near 80 cents per pound at the end of December 2009, compared with less than 60 cents one year earlier. In addition, world mill use is rising with improved economic growth. The latest projections from the IMF indicate that the world economy is headed toward positive growth in 2010, an improvement over conditions in 2009.

The world cotton industry is in the midst of a period of retrenchment after a decade of extraordinary growth. During the next decade, world production and consumption are forecast to grow slowly, resulting in higher prices in nominal terms but a steep decline in cotton's share of world fiber use. Marketing margins will continue to tighten because of competitive pressures within the cotton sector and between cotton and polyester.

### **2009/10: Significant Drop Expected in Global Ending Stocks**

World cotton production is projected at 22.2 million tons in 2009/10, 5% lower than in 2008/09 due to a lower yield. This is the third consecutive season of decline in global cotton production, the result of a decrease in price competitiveness of cotton vs. competing crops, and also, in the last two seasons, of a weakening in cotton yields. The world average cotton yield increased from 566 kg/ha in 1998/99 to a record of 792 kg/ha in 2007/08. This considerable increase was driven by several factors, including the introduction of new technologies, expanded use of existing techniques, and shifts in areas used for cotton production. However, since 2007/08 the cotton yield has declined. In 2009/10, the world cotton yield is projected down by 5% to about 730 kg/ha, the lowest in six seasons.

World cotton mill use is projected up by 2% to 23.8 million tons in 2009/10, driven by the global economic recovery. Amongst the seven largest cotton consumers, only those in Asia (China, India, Pakistan and Bangladesh) are expected to experience growth in cotton mill use during 2009/10. Their combined share of world cotton mill use is forecast at 70%.

World imports are projected up by 6% to 7.0 million tons in 2009/10, boosted by stronger mill use. Chinese imports are expected to increase by 15% to 1.8 million tons to make up for a much-reduced crop. (The Government of China has already released 1.4 million tons of import quota.) Exports from India could rebound to 1.4 million tons, driven by a large exportable surplus. However, US exports could decrease by 21% to 2.3 million tons.

Global cotton ending stocks are falling by 13% to 10.7 million tons in 2009/10. This will be the largest decline since 2002/03. Half of this decline is expected to take place in China and half in the rest of the world. The global stocks-to-use ratio is forecast to drop from 53% in 2008/09 to 45% in 2009/10.

The Cotlook A Index continued to increase during December and reached nearly 80 cents per pound, 20 cents higher than a year earlier. Based on a lower stocks-to-mill use ratio in the World-less-China in 2009/10, the ICAC Price Model forecasts a season-average Cotlook A Index of 70 U.S. cents/lb in 2009/10 (the 95% confidence interval is between 64 and 77 cents/lb). This would represent a 15% increase from the 2008/09 average.

### **2010/11: Production Increase Expected**

Higher cotton prices in 2009/10 and lower prices for grains and oilseeds, could encourage farmers to increase cotton plantings in 2010/11. World cotton area is forecast to increase by 5% to 32 million hectares in 2010/11. Assuming an average yield of 760 kg/ha, 4% higher than in 2009/10 but still lower than in the three seasons preceding 2009/10, world cotton production is forecast at 24.2 million tons, up nearly 10%.

2010/11 production in China is forecast at 7.7 million tons, one million tons higher than in the current season. Most of the gain is expected to come from increased area in response to higher domestic prices. 2010/11 Production in India is estimated little changed from 2009/10 as most of the gain in yields tied to improved technology has already been achieved. U.S. production is expected to climb by one-tenth to reach three million tons, primarily because of increased cotton area. Production in Pakistan, Brazil and Uzbekistan, collectively, is estimated at 4.6 million tons in 2010/11. The three countries are accounting for 4.3 million tons of production in 2009/10.

Forecasts by the IMF, UNCTAD, the U.S. Federal Reserve and OECD all indicate that the recovery in world GDP growth during 2010 and 2011 will be gradual. Accordingly, since income growth is an important explanatory variable in models of fiber use, projections of world fiber use at the consumer level for 2010 and 2011 indicate only modest growth. A comparison with the pattern of recovery following the world recession in 1973 supports a forecast of gradual recovery in fiber consumption at the end use level (COTTON: Review of the World Situation, November-December 2009, ICAC). Therefore, cotton mill use is forecast at 24.4 million tons in 2010/11, an increase equivalent to the long run average of 2%. With the rise in cotton prices during 2009, cotton is less competitive with polyester than previously, and a full recovery in world mill use to the record of more than 26 million tons may take several years.

World trade is forecast at 6.9 million tons in 2010/11, essentially unchanged from the level expected in 2009/10. The ratio of world trade in cotton to world mill use ranged between 0.28 and 0.38 since 1990/91. The ratio of imports to mill use is currently less than 0.30, and imports are expected to remain low relative to mill use during 2010/11 unless import policies by the Government of China change substantially.

Global ending stocks are expected to decrease slightly to 10.5 million tons.

### **Slower Growth Expected**

During the last three decades, world cotton production rose from approximately 14 million metric tons to a record of 27 million in 2004/05, before falling to 22 million in 2009/10. The trend increase was about 350,000 tons per year, and a simple trend line explains almost three-fourths of the year-to-year variation in cotton production.

The upward trend in world cotton production obscures periods of little or no growth. Between 1984/85 and 2002/03 (a period of peak to trough) there was no increase in world production, showing that there can be long periods of stagnation even within an overall pattern of increase. Production climbed to a higher plateau during 2004/05 and has fallen since, and world production is not forecast to return to the record level in the foreseeable future.

Prices of cotton relative to prices of grains and oilseeds have been declining for two decades. Cotton yields have been rising faster than yields of competing crops, and cotton must compete with polyester for market share, while food crops have no synthetic competitors. Consequently, the supply of cotton has been expanding faster than demand has grown, and prices of cotton have been dropping relative to prices of competing crops. With new mandates by governments to expand biofuel production (the renewable fuel standard in the U.S. requires producers to blend 36 billion gallons of fuel by 2022, up from 9 billion in 2008), it is likely that the long run decline in cotton prices relative to grain and oilseed prices will not only continue, but may accelerate.

World cotton area has varied between 30 million and 36 million hectares since 1980/81, with no trend either up or down. However, with the ratio of prices of cotton to competing crops declining in the face of rising demand for food and biofuels, it is likely that the average level of world cotton area will drop during the coming decade. Rather than varying around an average of 33 million hectares, as has been the case for decades, world area is expected to vary around an average level of 30 million hectares in coming years.

The world yield rose from 400 kilograms per hectare in the early 1980s, to about 600 kilograms in the 1990s, to almost 800 kilograms per hectare earlier this decade, but yields are leveling off and falling now. The rise in yields was linked to improved technology, especially biotechnology, expanded adoption of existing technologies, and the development of cotton production in high-yielding regions of Xinjiang, China, Central Brazil and Eastern Turkey. While researchers report many new developments in the pipeline, there are no breakthrough technologies ready for commercial application in the next few years that will give a new boost to the world yield. In fact, with higher

energy costs and other resource constraints, the efforts of farmers and researchers are likely to be focused on cost minimization over the next several years rather than on output growth.

Accordingly, with area in decline and yields rising slowly, world production is expected to remain below 27 million tons for another decade. Slow growth in world production and consumption is likely to translate into little growth in world trade. World cotton exports reached 9.6 million tons during 2005/06, but trade of between 7 and 8 million tons is likely during the foreseeable future.

Slower growth in production means higher prices in nominal terms, but not necessarily in real terms. Between 1973/74 and 1997/98, the Cotlook A Index rose and fell around an average of 74 cents per pound. In the decade since, the average has been 58 cents. However, based on an expectation of lower world area and slow growth in production, the ICAC Secretariat suggests that the A Index will vary around a higher average between 60 and 70 cents per pound in the decade ahead. Year-to-year volatility in prices is unlikely to change as supply shocks and uncertainties regarding demand will continue as always, but the average price in nominal terms (not adjusted for inflation) will probably be higher than in the 2000's.

Nevertheless, when inflation is considered, real average revenue per hectare in the world is likely to continue downward. Real average revenue per hectare, calculated by multiplying the A Index by the world yield and deflating to 2008 prices, was \$3,000 in the early 1970s and is now about \$1,000. Real average world revenue per hectare was sustained during the past decade by the rise in yields that offset declining prices, but yield increases are not likely to continue at the same pace as during this decade, and the downward trend in cotton revenue adjusted for inflation is likely to resume. Reduced revenue for producers will translate into tighter margins throughout the ginning, warehousing and merchandising pipeline, resulting in continued consolidation of cotton operations around the world.



ICAC

## SUPPLY AND DISTRIBUTION OF COTTON

### January 4, 2010

Seasons begin on August 1

	2005/06	2006/07	2007/08	2008/09 Est.	2009/10 Proj.	2010/11 Proj.
	Million Metric Tons					
<b>BEGINNING STOCKS</b>						
<b>WORLD TOTAL</b>	<b>11.605</b>	<b>12.270</b>	<b>12.600</b>	<b>12.031</b>	<b>12.34</b>	<b>10.75</b>
CHINA	2.622	3.991	3.653	3.321	3.85	3.11
USA	1.196	1.321	2.064	2.187	1.38	1.09
<b>PRODUCTION</b>						
<b>WORLD TOTAL</b>	<b>25.639</b>	<b>26.752</b>	<b>26.030</b>	<b>23.398</b>	<b>22.22</b>	<b>24.09</b>
CHINA	6.616	7.975	8.071	8.025	6.75	7.75
INDIA	4.097	4.760	5.219	4.930	5.19	5.31
USA	5.201	4.700	4.182	2.790	2.74	2.99
PAKISTAN	2.194	2.147	1.894	1.960	2.11	2.27
BRAZIL	1.038	1.524	1.602	1.214	1.20	1.30
UZBEKISTAN	1.210	1.171	1.206	1.000	0.95	1.01
OTHERS	5.283	4.475	3.856	3.479	3.28	3.46
<b>CONSUMPTION</b>						
<b>WORLD TOTAL</b>	<b>24.973</b>	<b>26.419</b>	<b>26.473</b>	<b>23.236</b>	<b>23.80</b>	<b>24.16</b>
CHINA	9.439	10.600	10.900	9.000	9.27	9.46
INDIA	3.655	3.908	4.050	3.863	4.13	4.30
PAKISTAN	2.532	2.633	2.637	2.452	2.55	2.63
EAST ASIA & AUSTRALIA	1.884	1.869	1.843	1.684	1.70	1.69
EUROPE & TURKEY	2.117	2.087	1.751	1.433	1.37	1.32
BRAZIL	0.973	0.992	1.007	0.937	0.94	0.94
USA	1.278	1.074	0.999	0.781	0.74	0.72
CIS	0.633	0.682	0.664	0.602	0.60	0.59
OTHERS	2.461	2.574	2.621	2.483	2.50	2.52
<b>EXPORTS</b>						
<b>WORLD TOTAL</b>	<b>9.738</b>	<b>8.105</b>	<b>8.361</b>	<b>6.557</b>	<b>7.09</b>	<b>6.92</b>
USA	3.821	2.833	2.973	2.890	2.29	2.32
BRAZIL	0.429	0.283	0.486	0.596	0.40	0.40
UZBEKISTAN	1.020	0.980	0.887	0.560	0.79	0.82
CFA ZONE	1.010	0.924	0.589	0.470	0.52	0.52
INDIA	0.751	0.960	1.530	0.515	1.37	1.14
AUSTRALIA	0.628	0.465	0.265	0.260	0.35	0.37
<b>IMPORTS</b>						
<b>WORLD TOTAL</b>	<b>9.614</b>	<b>8.187</b>	<b>8.392</b>	<b>6.629</b>	<b>7.09</b>	<b>6.92</b>
EAST ASIA & AUSTRALIA	1.774	1.899	1.860	1.657	1.71	1.70
CHINA	4.200	2.306	2.511	1.523	1.80	1.83
EUROPE & TURKEY	1.275	1.344	1.085	0.869	0.95	0.85
PAKISTAN	0.352	0.502	0.851	0.475	0.55	0.51
CIS	0.333	0.322	0.271	0.242	0.23	0.00
<b>TRADE IMBALANCE 1/</b>	<b>-0.125</b>	<b>0.083</b>	<b>0.031</b>	<b>0.072</b>	<b>0.00</b>	<b>0.00</b>
<b>STOCKS ADJUSTMENT 2/</b>	<b>0.123</b>	<b>-0.086</b>	<b>-0.157</b>	<b>0.076</b>	<b>0.00</b>	<b>0.00</b>
<b>ENDING STOCKS</b>						
<b>WORLD TOTAL</b>	<b>12.270</b>	<b>12.600</b>	<b>12.031</b>	<b>12.341</b>	<b>10.75</b>	<b>10.68</b>
CHINA	3.991	3.653	3.321	3.850	3.11	3.22
USA	1.321	2.064	2.187	1.379	1.09	1.05
<b>ENDING STOCKS/MILL USE (%)</b>						
<b>WORLD-LESS-CHINA 3/</b>	<b>53</b>	<b>57</b>	<b>56</b>	<b>60</b>	<b>53</b>	<b>51</b>
<b>CHINA 4/</b>	<b>42</b>	<b>34</b>	<b>30</b>	<b>43</b>	<b>34</b>	<b>34</b>
<b>COTLOOK A INDEX 5/</b>	<b>56.15</b>	<b>59.15</b>	<b>72.90</b>	<b>61.20</b>	<b>70*</b>	

1/ 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.

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

3/ World-less-China's ending stocks divided by World-less-China's mill use, multiplied by 100.

4/ China's ending stocks divided by China's mill use, multiplied by 100.

5/ U.S. cents per pound.

\* The price projection for 2009/10 is based on the ending stocks/consumption ratio in the world-less-China in 2007/08 (estimate), in 2008/09 (estimate) and in 2009/10 (projection), on the ratio of Chinese net imports to world imports in 2008/09 (estimate) and 2009/10 (projection), and on the average price for the first five months of 2009/10.

95% confidence interval: 64 to 77 cents per pound.



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## SUPPLY AND DISTRIBUTION OF COTTON

January 4, 2010

Seasons begin on August 1

	2005/06	2006/07	2007/08	2008/09 Est.	2009/10 Proj.	2010/11 Proj.
	Million 480-Lb. Bales					
<b>BEGINNING STOCKS</b>						
<b>WORLD TOTAL</b>	<b>53.30</b>	<b>56.36</b>	<b>57.87</b>	<b>55.26</b>	<b>56.7</b>	<b>49.4</b>
CHINA	12.04	18.33	16.78	15.25	17.7	14.3
USA	5.50	6.07	9.48	10.04	6.3	5.0
<b>PRODUCTION</b>						
<b>WORLD TOTAL</b>	<b>117.76</b>	<b>122.87</b>	<b>119.55</b>	<b>107.47</b>	<b>102.0</b>	<b>110.6</b>
CHINA	30.39	36.63	37.07	36.86	31.0	35.6
INDIA	18.82	21.86	23.97	22.64	23.8	24.4
USA	23.89	21.59	19.21	12.82	12.6	13.8
PAKISTAN	10.08	9.86	8.70	9.00	9.7	10.4
BRAZIL	4.77	7.00	7.36	5.57	5.5	6.0
UZBEKISTAN	5.56	5.38	5.54	4.59	4.4	4.6
OTHERS	24.26	20.55	17.71	15.98	15.1	15.9
<b>CONSUMPTION</b>						
<b>WORLD TOTAL</b>	<b>114.70</b>	<b>121.34</b>	<b>121.59</b>	<b>106.72</b>	<b>109.3</b>	<b>111.0</b>
CHINA	43.35	48.69	50.06	41.34	42.6	43.4
INDIA	16.79	17.95	18.60	17.74	19.0	19.7
PAKISTAN	11.63	12.09	12.11	11.26	11.7	12.1
EAST ASIA & AUSTRALIA	8.65	8.58	8.47	7.73	7.8	7.8
EUROPE & TURKEY	9.72	9.59	8.04	6.58	6.3	6.1
BRAZIL	4.47	4.56	4.63	4.30	4.3	4.3
USA	5.87	4.94	4.59	3.59	3.4	3.3
CIS	2.91	3.13	3.05	2.76	2.8	2.7
OTHERS	11.30	11.82	12.04	11.41	11.5	11.6
<b>EXPORTS</b>						
<b>WORLD TOTAL</b>	<b>44.73</b>	<b>37.22</b>	<b>38.40</b>	<b>30.12</b>	<b>32.6</b>	<b>31.8</b>
USA	17.55	13.01	13.65	13.28	10.5	10.7
BRAZIL	1.97	1.30	2.23	2.74	1.8	1.8
UZBEKISTAN	4.68	4.50	4.07	2.57	3.6	3.8
CFA ZONE	4.64	4.24	2.71	2.16	2.4	2.4
INDIA	3.45	4.41	7.03	2.37	6.3	5.2
AUSTRALIA	2.88	2.14	1.22	1.19	1.6	1.7
<b>IMPORTS</b>						
<b>WORLD TOTAL</b>	<b>44.16</b>	<b>37.60</b>	<b>38.54</b>	<b>30.45</b>	<b>32.6</b>	<b>31.8</b>
EAST ASIA & AUSTRALIA	8.15	8.72	8.54	7.61	7.9	7.8
CHINA	19.29	10.59	11.53	7.00	8.3	8.4
EUROPE & TURKEY	5.85	6.17	4.99	3.99	4.4	3.9
PAKISTAN	1.61	2.31	3.91	2.18	2.5	2.4
CIS	1.53	1.48	1.24	1.11	1.1	0.0
<b>TRADE IMBALANCE 1/</b>	<b>-0.57</b>	<b>0.38</b>	<b>0.14</b>	<b>0.33</b>	<b>0.0</b>	<b>0.0</b>
<b>STOCKS ADJUSTMENT 2/</b>	<b>0.57</b>	<b>-0.40</b>	<b>-0.72</b>	<b>0.35</b>	<b>0.0</b>	<b>0.0</b>
<b>ENDING STOCKS</b>						
<b>WORLD TOTAL</b>	<b>56.36</b>	<b>57.87</b>	<b>55.26</b>	<b>56.68</b>	<b>49.4</b>	<b>49.1</b>
CHINA	18.33	16.78	15.25	17.68	14.3	14.8
USA	6.07	9.48	10.04	6.34	5.0	4.8
<b>ENDING STOCKS/MILL USE (%)</b>						
<b>WORLD-LESS-CHINA 3/</b>	<b>53</b>	<b>57</b>	<b>56</b>	<b>60</b>	<b>53</b>	<b>51</b>
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1/ 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.

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

3/ World-less-China's ending stocks divided by World-less-China's mill use, multiplied by 100.

4/ China's ending stocks divided by China's mill use, multiplied by 100.

5/ U.S. cents per pound.

\* The price projection for 2009/10 is based on the ending stocks/consumption ratio in the world-less-China in 2007/08 (estimate), in 2008/09 (estimate) and in 2009/10 (projection), on the ratio of Chinese net imports to world imports in 2008/09 (estimate) and 2009/10 (projection), and on the average price for the first five months of 2009/10.

95% confidence interval: 64 to 77 cents per pound.