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1994 Cotton Management Economic Notes

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Participation vs. Non-Participation

Upland cotton prices are the highest they have been for the month of March since 1991, in spite of the recent downturn in prices. The question of farm program participation needs to be looked at with a "finer tuned" pencil with cotton prices approaching the Target Price. How have changes in farm program parameters and market prices changed the profitability of farm programs?

Farm program parameters have changed more for ELS than Upland from last year. Target prices declined for ELS (105.7 to 102¢/lb.) while they remain the same for Upland. The loan rate declined from 88.12 to 85.03 for ELS and more modestly for Upland with a decline from 50.77 to 50¢/lb. On a positive note for ELS, the Acreage Reduction Program (ARP) rate declined from 20% to 15% enhancing farm program participation. The ARP rate increased from 7.5% to 11% for Upland. Deficiency payments have been the biggest incentive for farm program participation, although the loan rate and Producer Option Payments (POP) have been important for Upland the last two years. The Adjusted World Price (AWP) has increased dramatically in the last six months as expected production estimates for Pakistan, India, China, and Australia have declined. Last October the AWP was hovering around 40¢/lb. but today the AWP is trading above 65¢/lb., over a 60 percent price increase. It is unlikely that there will be any POP payments this year with the high AWP for cotton.

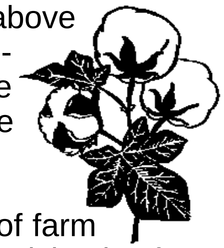

Table 1a gives a comparison of farm program participation versus non-participation for

Recent Prices	***March 23, 1994***	
	Upland	***Pima (ELS)***
	(¢/lb)	**(¢/lb)**
Spot - uncompressed	71.42	94.50
Target Price	72.90	102.00
Loan Rate	50.00	85.03
Dec '94 Futures	71.60	

Note: Upland Spot for Desert SW grade 31-3, staple 35; add 300 points for compressed bales; Pima Spot for grade 03, staple 46, 3/11/94; 1994 Phoenix Base loan rates without discounts or premiums for quality.

Table 1a. Illustrative 1994 Farm Program Considerations.

	Upland		**ELS**	
	Part.	**Non-Part.**	**Part.**	**Non-Part.**
ARP Rate	11%		15%	
Loan Rate (¢/lb)	50.0		85.03	
Target Price (¢/lb)	72.9		102.0	
Max Deficiency Payment	22.9		16.97	
Flexibility	yes		no	
Offsetting Cross Compliance	no		no	
Announced Payment	12.9		16.97	
Advance	50%		50%	
Crop Base Acreage [a]	301.62	301.62	444.4	444.4
Estimated Yield (lbs/acre)	1,200	1,200	900	900
Program Yield (lbs/acre)	1,150		800	
Estimated Farm Price [b]	67	67	85.03	85.03
Estimated US Price	65		85.03	
Seed Yield (lbs/acre)	1,800	1,800	1,600	1,600
Seed Price ($/ton)	100	100	100	100
Deficiency Payment (¢/lb)	7.9		16.97	
ARP (set-aside) Acres	33.2		66.6	
Normal Flex Acres	45.2			
Max Payment Acres	223.2		377.7	
Permitted Acreage Planted	268.4	301.62	377.7	444.4
Lint Revenues	$215,827	$242,502	$289,073	$340,086
Seed Revenues	$24,160	$27,146	$30,219	$35,552
Deficiency Payments	$20,278	$0	$50,000	$0
Variables Costs (VC) of Production	$181,198	$203,594	$283,305	$333,300
Total Net Income Over VC	$**79,066**	$**66,055**	$**85,987**	$**42,338**

[a] Base acreage for ELS and Upland are acreage levels that would have equaled the $50,000 payment limit for farm program participation in 1993.
[b] Refer to Table 1b. on how different prices affect participation and non-participation.

1994. For the example portrayed, crop base acreage was set at a level that would have resulted in $50,000 of government deficiency payments in 1993 for both Upland and ELS. The realized deficiency payment for Upland last year was 18.6¢/lb. and the final payment for ELS has not yet been determined, but will undoubtedly be close to the maximum of 17.58¢/lb. These figures were utilized to obtain a crop base acreage of 301.62 acres for Upland and 444.4 acres for ELS.

Assumptions regarding crop yields, program yields, farm price, average US price, seed yield, and seed price are all given in Table 1a. These factors determine the revenues that will be received from lint, cottonseed, and deficiency payments. Deficiency payments are determined by taking the difference between the Target Price and average US price received for the calendar marketing year multiplied by program yield and the maximum paymentacres(i.e.,($.729/lb.-$.65/lb.)•1,500 lbs./acre • 223.2 acres for Upland). Maximum payment acreage is determined by subtracting off 11% for ARP acres and 15% for Normal flex acres ((1 - .15 - .11) • 301.62) for Upland. ELS doesn't have "flex acreage" requirements so that just the 15% ARP requirement is subtracted off of base acreage to obtain payment acreage. After revenues, variable costs of production determine the profitability of participation versus non-participation. Ownership or fixed costs of production are the same under participation or non-participation so that they are ignored here, even though they influence cash taken to the bank at the end of the year. Variable costs of $675/acre for Upland and $750/acre for Pima were used in Table 1a. **Given the revenue and cost assumptions above, farm program participation is $13,011 and $43,649 more profitable for Upland and ELS, respectively.** Note that the deficiency payment for Upland is only $20,278 compared to $50,000 in 1993. The deficiency payment for ELS would have been higher this year ($51,277) if the $50,000 payment limit were not in place.

Because different price outcomes directly influence the deficiency payment received, Table 1b compares participation to non-participation for different prices. Farm price was set 2 cents above the average US price for Upland since Arizona quality has historically received a premium compared to the rest of the US, even though this premium has been unreliable in recent years. If a producer markets all their cotton for the year in one week, the disparity between the average US price and farm price for the year could have a significant positive or negative difference. **The "break-even" price for participation versus non-participation occurs with a farm price of 71.4¢/lb. and average US price of 69.4¢/lb. for Upland, and 97.44¢/lb. farm and US price for ELS.** Program participation for Upland could still be profitable if you sell your cotton above 71.4¢/lb., providing that the US price drops accordingly.

Table 1b also considers the difference in returns for 1994 compared to 1993. Farm program participation returns in 1993 (farm price of 55 and 88.12 for Upland and ELS, respectively), were subtracted from the maximum of participation or non-participation for 1994. POP payments were not included for 1993, so that the improvement in returns for 1994 is inflated for Upland. Overall, the bottom line of profitability for Upland should improve marginally this year while prospects look poorer for ELS. Stating the obvious but maybe overlooked, prices need to penetrate the Target Price before a significant enhancement in producer returns can be realized from a price increase.

Table 1b. How Different Price Outcomes Affect Returns of Farm Program Participation.

Farm Price (¢/lb)	US Price (¢/lb)	Part. Minus Non-Part. Returns	Change in Returns from 1993[a]
1994 Upland			
62	60	$27,836	$4,869
65	63	$18,941	$6,832
67	65	$13,012	$8,141
69	67	$7,082	$9,450
71.4	69.4	$0	$11,055
73	71	-$4,778	$16,846
75	73	-$10,451	$24,085
1994 ELS			
85.03	85.03	$43,649	-$7,770
90	90	$26,931	-$4,611
95	95	$8,821	-$2,722
97.44	97.44	$0	-$1,785
102	102	-$16,532	$16,454

[a] Using a 55 ¢/lb farm price, farm program participation returns for 1993 were subtracted from the maximum of participation or non-participationfor 1994. Change in return figures do not include POP payments.