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ANALYZING THE 1983
PAYMENT IN KIND PROGRAM
AT THE FARM LEVEL

by

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Analyzing the Payment-In-Kind Program at the Farm Level

Introduction

The 1983 Payment-in-Kind (PIK) was quoted as being "basically simple," however, the economic analysis of whether or not to participate and at what level becomes quite complex. In order to participate in the PIK program, a farmer must be enrolled in the 1983 Acreage Reduction Program (ARP). For further information on the ARP, see University of Minnesota Agricultural Extension Service Folder 670, "Analyzing the 1983 Acreage Reduction Program At The Farm Level".

The PIK program has three objectives: (1) reduce production through a further cutback in planting, (2) reduce surplus stock holdings, and (3) to reduce budget outlays that would exist with higher production and stock levels. It is intended to be in effect for the 1983 production year and possibly the 1984 production year if stocks are not worked down to a level more in line with demand.

Options Available

The PIK program increases the options available to a farmer. A farmer may participate in the PIK option by setting aside an additional 10 to 30 percent of base crop acreage for wheat, corn and grain sorghum. Payment for the additional acreage that is set aside will be made with entitlement to a certain amount of bushels of the commodity that would have been produced. The payment for corn and grain sorghum will be 80% of the established yield, for wheat it will be 95% of the established yield. Entitlement will take place at the normal time of harvest. The participant receiving the Payment-in-Kind can sell it then or receive storage payments for it up to five months before it is sold. The participant is guaranteed a yield and is responsible for pricing and marketing the commodity.

A farmer has the opportunity to take the total base acreage out of production by bidding the percent payment-in-kind for diverting all of the base acreage. The amount bid must be less than 80 percent for corn and grain sorghum and less than 95 percent for wheat. If total signup in a county is less than 50 percent of the county's base, whole base bids will be accepted up to a maximum of 50 percent of the total base of the county.

All land receiving PIK is subject to the same conservation use as the paid and non-paid diverted land in the ARP.

Configuring the Base Acreage

Figures I and II show various configurations of a base acre with the various options available in the PIK program. These figures show the percentages to be planted and the percentages that are required to be set aside. Also shown are the various options of the PIK program 10,20 and 30% participation and the whole crop bid basis. The figures are representative on a one acre basis of the total base crop acreage of a participant. This one acre model can then be enlarged to provide a picture of the total base acreage in terms of portions planted, portions set aside, portions receiving payments in kind and portions receiving diversion payments. Economic analysis can then be made between options in the ARP-PIK program as well as comparison with other crops.

Analyzing the Options

Table I is a worksheet to economically evaluate participation in the 1983 ARP and PIK program to provide the user greater flexibility when comparing options and allows the determination of a breakeven bid to put the whole base acreage into the PIK program.

Acreage enrolled in ARP and/or PIK can provide up to four possible types of returns. First, returns are attained from producing and marketing the crop in compliance with ARP requirements. Second, an ARP participant may receive deficiency payments if the first five months' average price of the commodity falls below the target price. Half of the expected deficiency payment is available at signup. Third, a participant will receive a diversion payment on qualifying land. This payment will occur with all program options. Fourth, a participant enrolled in PIK is guaranteed a "yield" at normal harvest time. The participant is responsible for pricing and marketing payment in kind (PIK) grain received through the program.

Table II provides a means to analyze the returns on a whole farm basis with the estimates made on a base acre basis with the worksheet in Table I. The whole farm analysis will be more helpful in planning the financial cash flow needs and availability in 1983.

Reducing Financial Risk

This year there are a number of farmers in serious financial trouble. Net farm income has been low for the past three years, some parts of the state have had problems with late planting and adverse to impossible harvest conditions, interest costs to the farmer have remained high, and asset values have diminished. Consequently, many farmers face very high asset to debt ratios and must decrease their risk exposure because of their financial situation. There is little room for additional losses.

The government programs available in 1983 provide farmers with both price and production stability. With reference to Figures I and II, the ARP program participant is guaranteed a target price for the commodity enrolled

in the program. The participant faces only the production risk on the acreage planted. The production risk can be reduced with All Risk Crop Insurance (ARCI) provided by the Federal Crop Insurance Corporation (FCIC) and offered through private insurance agents.

As a producer increases the level of participation and enrolls in the PIK program, a guarantee is made of "yield". The PIK participant is subject to a price risk on PIK grain. However, a participant is guaranteed a yield of certain quality at a specified time, which lends quite well to forward contracting to reduce price risk. The PIK grain is eligible to receive storage payments up to five months so immediate marketing need not be necessary. Most farmers will receive their own commodity holdings -- either reserve or regular loan -- therefore, they are able to monitor the condition of the grain much more closely.

Summary

Our analysis of the ARP and PIK programs indicate greater net returns in most situations to the participant, especially the PIK option. Although a large participation rate will reduce surpluses, indications at this time are that there will not be a great strengthening of commodity prices for 1983. Surpluses are simply too large. The PIK program will, with most commodities, free up stocks and place a greater amount of commodity on the market. The overall objectives of these programs is to reduce stocks and this will be accomplished if the participation rate is high enough.

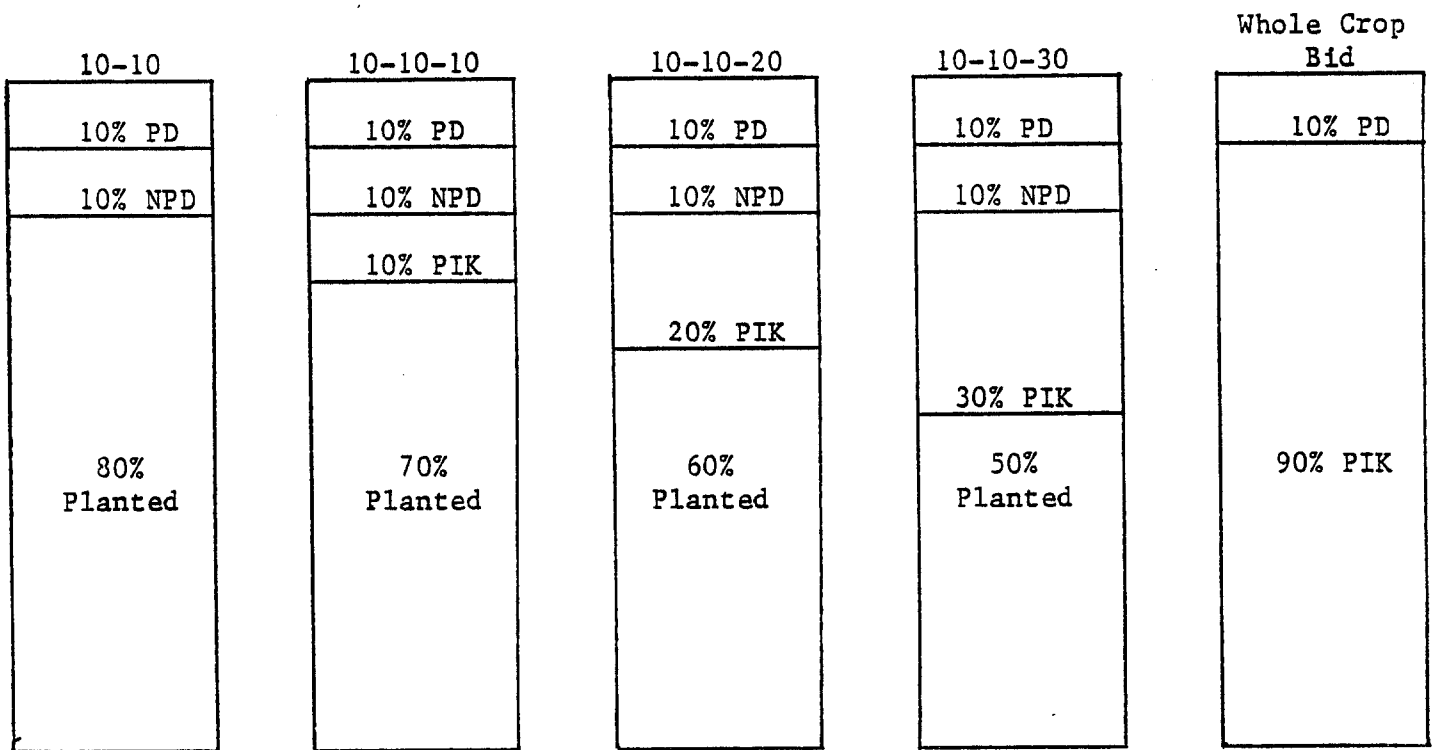
The programs are quite flexible and allow the farmer many choices. There are few cross compliance regulations. Most producers are likely to find their net returns will be increased as well as more stable by participating

in the 1983 program. Soybeans can be grown in many areas of the nation in place of corn, wheat and cotton. There are no non-paid set aside requirements for soybeans so they may prove to be very popular with many farmers nationwide.

Each producer is encouraged to use the worksheets in Tables I and II and study the options carefully for 1983.

FIGURE I

CONFIGURATION OF A BASE ACRE WITH VARIOUS
OPTIONS IN THE ACREAGE REDUCTION PROGRAM AND THE
PAYMENT IN KIND PROGRAM FOR CORN OR GRAIN SORGHUM

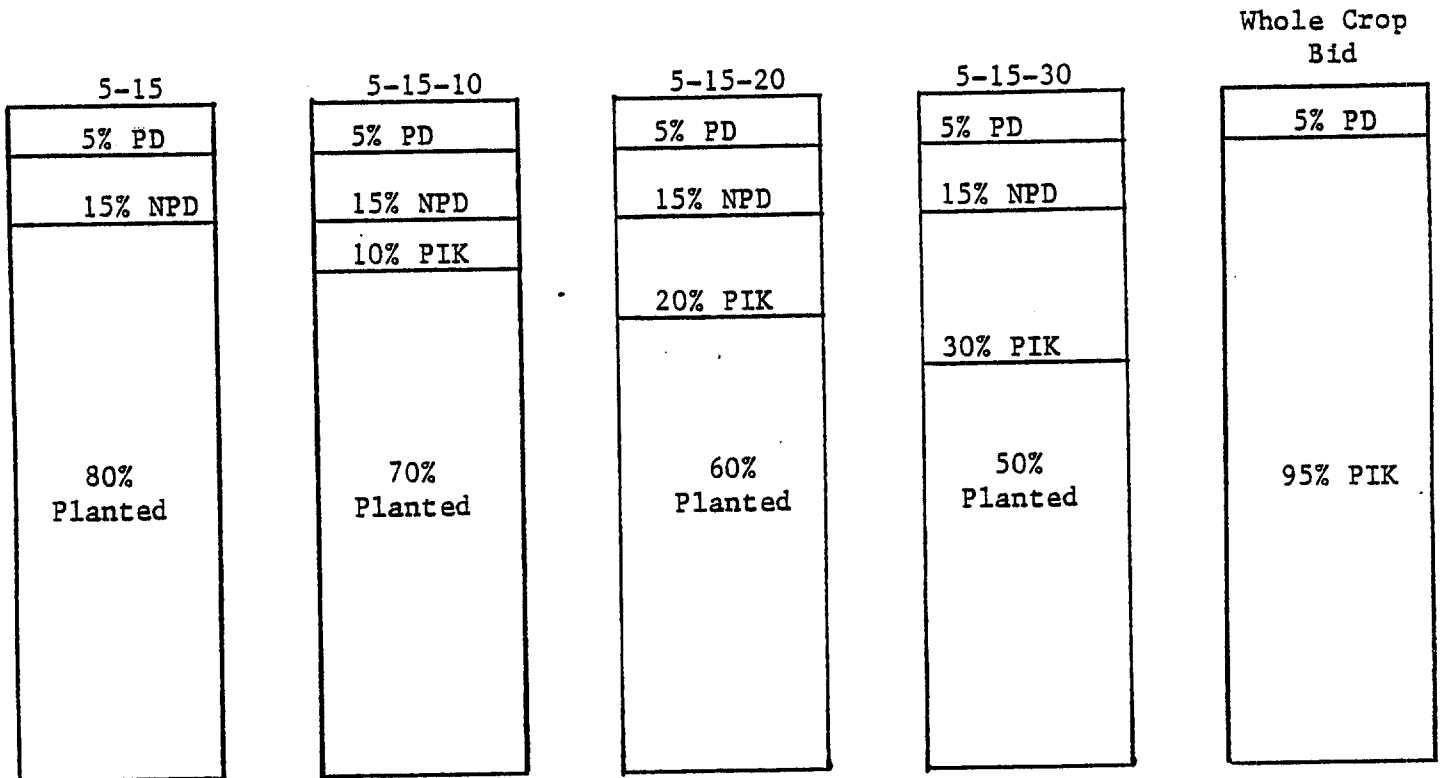


PD = Paid Diversion

NPD = Non-Paid Diversion = 12.5% of Planted Acreage

PIK = Payment in Kind Acreage

FIGURE II
 CONFIGURATION OF A BASE CROP ACRE
 WITH VARIOUS OPTIONS IN THE ACREAGE
 REDUCTION PROGRAM AND THE PAYMENT IN KIND
 PROGRAM FOR WHEAT



PD = Paid Diversion
 NPD = Non-Paid Diversion
 PIK = Payment in Kind Acreage

TABLE I

WORKSHEET TO EVALUATE PARTICIPATION IN 1983 ARP & PIK

By Comparing One Composite Acre Of Each Alternative

<u>INCOME</u>	<u>Non Participation</u>	<u>ARP</u>	<u>ARP & PIK</u>
Expected Yield	(A) _____	_____	_____
Expected Market Price Or Loan Rate (if higher)	(B) _____	_____	_____
Portion Of Base Acre Planted ^{1/}	(C) <u>1.0</u>	_____	_____
<u>Loan Or Market Receipts/Base Acre</u>	(AxBxC=D) _____	_____	_____
Expected Deficiency Payment/Bushel ^{2/}	(E) _____	_____	_____
Base Yield (ASCS)	(F) _____	_____	_____
Portion Of Base Acre Planted ^{1/}	(C) _____	_____	_____
<u>Deficiency Payment/Base Acre</u>	(ExFxC=G) _____	_____	_____
Base Yield (ASCS)	(F) _____	_____	_____
Diversion Payment/Bushel (corn-\$1.50; wheat-\$2.70)	(H) _____	_____	_____
Portion Paid Reduction (corn-.10; wheat-.05)	(I) _____	_____	_____
<u>Diversion Payment/Base Acre</u>	(FxHxI=J) _____	_____	_____
Payment-In-Kind Ratio (corn-.8; wheat-.95)	(K) _____	_____	_____
Expected Market Price On PIK Grain	(L) _____	_____	_____
Value Of "Crop-Swap" Per Acre	(FxKxL=M) _____	_____	_____
Portion Elected For PIK ^{3/}	(N) _____	_____	_____
<u>Crop-Swap Value/Base Acre</u>	(MxN=O) _____	_____	_____
TOTAL GROSS INCOME PER BASE ACRE	(D+G+J+O=P) _____	_____	_____
<u>EXPENSES (Cash Operating)</u>			
Cash Costs/Acre ^{4/}	(Q) _____	_____	_____
Portion Of Base Acre Planted ^{5/}	(R) _____	_____	_____
<u>Growing Expense/Base Acre</u>	(QxR=S) _____	_____	_____
Set-Aside Net Cash Costs/Acre ^{4/}	(T) _____	_____	_____
Portion Of Base Acre Set Aside ^{5/}	(U) _____	_____	_____
<u>Set-Aside Cost/Base Acre</u>	(TxU=V) _____	_____	_____
TOTAL CASH OPERATING EXPENSES	(S+V=W) _____	_____	_____
RETURNS LESS CASH OPERATING EXPENSES	(P-W=X) _____	_____	_____
<u>TOTAL FARM BASE BID--HOW MUCH SHOULD I BID?</u>			
Gross Income Needed In Total Base Bid	(X+T-J=Y) _____	_____	_____
PIK Bu. Needed For Equal Return/Base Acre	[Y÷L÷(1-I)=Z] _____	_____	_____ bu. _____ bu.
Percent To Bid For Equal Return ^{6/}	(100xZ÷F=AA) _____	_____	_____

(see back for footnotes)

FOOTNOTES

- 1/ Typically .8 (80%); however, if non-cross compliance crop is planted instead of the base crop, planting may occur on all base acreage not receiving a diversion payment (90% or 95%).
- 2/ There may be no deficiency payment if either (1) average price of first five months of marketing is greater than target price or (2) a non-cross compliance crop is planted on base acreage. The maximum deficiency payment is 21¢ on corn; 65¢ on wheat; 24¢ on oats; and 44¢ on barley. They will be reduced as the average five month U.S. price increases over the U.S. loan rate of: corn - \$2.65; wheat - \$3.65; oats - \$1.36; and barley \$2.16.
- 3/ The portion elected for the partial PIK can be anywhere from .10 to .30. The portion elected for PIK on a whole farm bid is .90 for corn and .95 for wheat.
- 4/ If land taxes are included as cash operating costs, they should be included for both planted and set-aside portions. Consider storage costs--they may be appropriate for the marketing plan in mind for each option.
- 5/ Items R and U must equal 1.0 (100%).
- 6/ This total farm base bid gives no credit for the reduced labor and the reduced risk in a total base set-aside. As open market price expectations are increased, the PIK portion of the program becomes relatively more advantageous than the ARP, resulting in a lower breakeven bid percentage. If expected non-participation yield increases relative to ASCS base yield--participation becomes less advantageous and a higher bid percentage is required. A range of prices on the PIK grain might be considered to evaluate the possible impact of this risk variable on the bid level and expectations from other options.

TABLE II

SUMMARY ANALYSIS WORKSHEET FOR TOTAL FARM ACREAGE

	<u>PROGRAM CROPS</u>	<u>OTHER CROPS</u>	<u>TOTAL</u>
<u>BASE ACREAGE</u> ^{1/}	_____	_____	_____
Loan or Market Receipts (D) ^{2/}	_____	_____	_____
Deficiency Payments (G)	_____	XX	XX
Diversion Payments (J)	_____	XX	XX
Crop - Swap Value (O)	_____	XX	XX
<u>TOTAL GROSS INCOME</u> (P)	_____	_____	_____
Growing Expense (S)	_____	_____	_____
Set Aside Expense (V)	_____	XX	XX
<u>TOTAL CASH OPERATING EXPENSES</u> (W)	_____	_____	_____
<u>RETURNS LESS CASH OPERATING EXPENSE</u> (X)	_____	_____	_____
<u>CASH AVAILABLE AT SIGNUP</u>			
½ Deficiency Payments (Total Line G) ÷ 2	_____	_____	_____
½ Diversion Payment (Total Line J) ÷ 2	_____	_____	_____

1/ Use the worksheet to estimate which crops and options to be considered. Multiply the figures from Worksheet I times the Acreages considered with each crop.

2/ Letters refer to lines from Worksheet I. Multiply Worksheet I values times Acreage.

WORKSHEET TO EVALUATE PARTICIPATION IN 1983 ARP & PIK

By Comparing One Composite Acre Of Each Alternative

by
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Extension Economists - University of Minnesota

CORN

	Non Participation	ARP	30% ARP & PIK
INCOME			
Expected Yield	(A) <u>135</u>	<u>140</u>	<u>140</u>
Expected Market Price Or Loan Rate (if higher)	(B) <u>2.50</u>	<u>2.55</u>	<u>2.55</u>
Portion Of Base Acre Planted ^{1/}	(C) <u>1.0</u>	<u>.80</u>	<u>.50</u>
Loan Or Market Receipts/Base Acre	(AxBxC=D) <u>338</u>	<u>286</u>	<u>179</u>
Expected Deficiency Payment/Bushel ^{2/}	(E)	<u>.21</u>	<u>.21</u>
Base Yield (ASCS)	(F)	<u>125</u>	<u>125</u>
Portion Of Base Acre Planted ^{1/}	(C)	<u>.80</u>	<u>.50</u>
Deficiency Payment/Base Acre	(ExFxC=G)	<u>21</u>	<u>13.13</u>
Base Yield (ASCS)	(F)	<u>125</u>	<u>125</u>
Diversion Payment/Bushel (corn-\$1.50; wheat-\$2.70)	(H)	<u>1.50</u>	<u>1.50</u>
Portion Paid Reduction (corn-.10; wheat-.05)	(I)	<u>.10</u>	<u>.10</u>
Diversion Payment/Base Acre	(FxHxI=J)	<u>18.75</u>	<u>18.75</u>
Payment-In-Kind Ratio (corn-.8; wheat-.95)	(K)		<u>.8</u>
Expected Market Price On PIK Grain	(L)		<u>2.50</u>
Value Of "Crop-Swap" Per Acre	(FxKxL=M)		<u>250</u>
Portion Elected For PIK ^{3/}	(N)		<u>.30</u>
Crop-Swap Value/Base Acre	(MxN=O)		<u>75</u>
TOTAL GROSS INCOME PER BASE ACRE	(D+G+J+O=P) <u>338</u>	<u>325</u>	<u>285</u>
EXPENSES (Cash Operating)			
Cash Costs/Acre ^{4/}	(Q) <u>173</u>	<u>167</u>	<u>167</u>
Portion Of Base Acre Planted ^{5/}	(R)	<u>.80</u>	<u>.50</u>
Growing Expense/Base Acre	(QxR=S)	<u>134</u>	<u>84</u>
Set-Aside Net Cash Costs/Acre ^{4/}	(T)	<u>20</u>	<u>20</u>
Portion Of Base Acre Set Aside ^{5/}	(U)	<u>.20</u>	<u>.50</u>
Set-Aside Cost/Base Acre	(TxU=V)	<u>4</u>	<u>10</u>
TOTAL CASH OPERATING EXPENSES	(S+V=W) <u>173</u>	<u>138</u>	<u>94</u>
RETURNS LESS CASH OPERATING EXPENSES	(P-W=X) <u>165</u>	<u>188</u>	<u>192</u>
TOTAL FARM BASE BID--HOW MUCH SHOULD I BID?			
Gross Income Needed In Total Base Bid	(X+T-J=Y)	<u>189</u>	<u>193</u>
PIK Bu. Needed For Equal Return/Base Acre	(Y÷L÷(1-I)=Z]	<u>84</u> bu.	<u>86</u> bu.
Percent To Bid For Equal Return ^{6/}	(100xZ÷F=AA)	<u>67%</u>	<u>69%</u>

(see back for footnotes)

FOOTNOTES

- 1/ Typically .8 (80%); however, if non-cross compliance crop is planted instead of the base crop, planting may occur on all base acreage not receiving a diversion payment (90% or 95%).
- 2/ There may be no deficiency payment if either (1) average price of first five months of marketing is greater than target price or (2) a non-cross compliance crop is planted on base acreage. The maximum deficiency payment is 21c on corn; 65c on wheat; 24c on oats; and 44c on barley. They will be reduced as the average five month U.S. price increases over the U.S. loan rate of: corn - \$2.65; wheat - \$3.65; oats - \$1.36; and barley \$2.16.
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