



# Economics of Irrigation in Volatile Markets

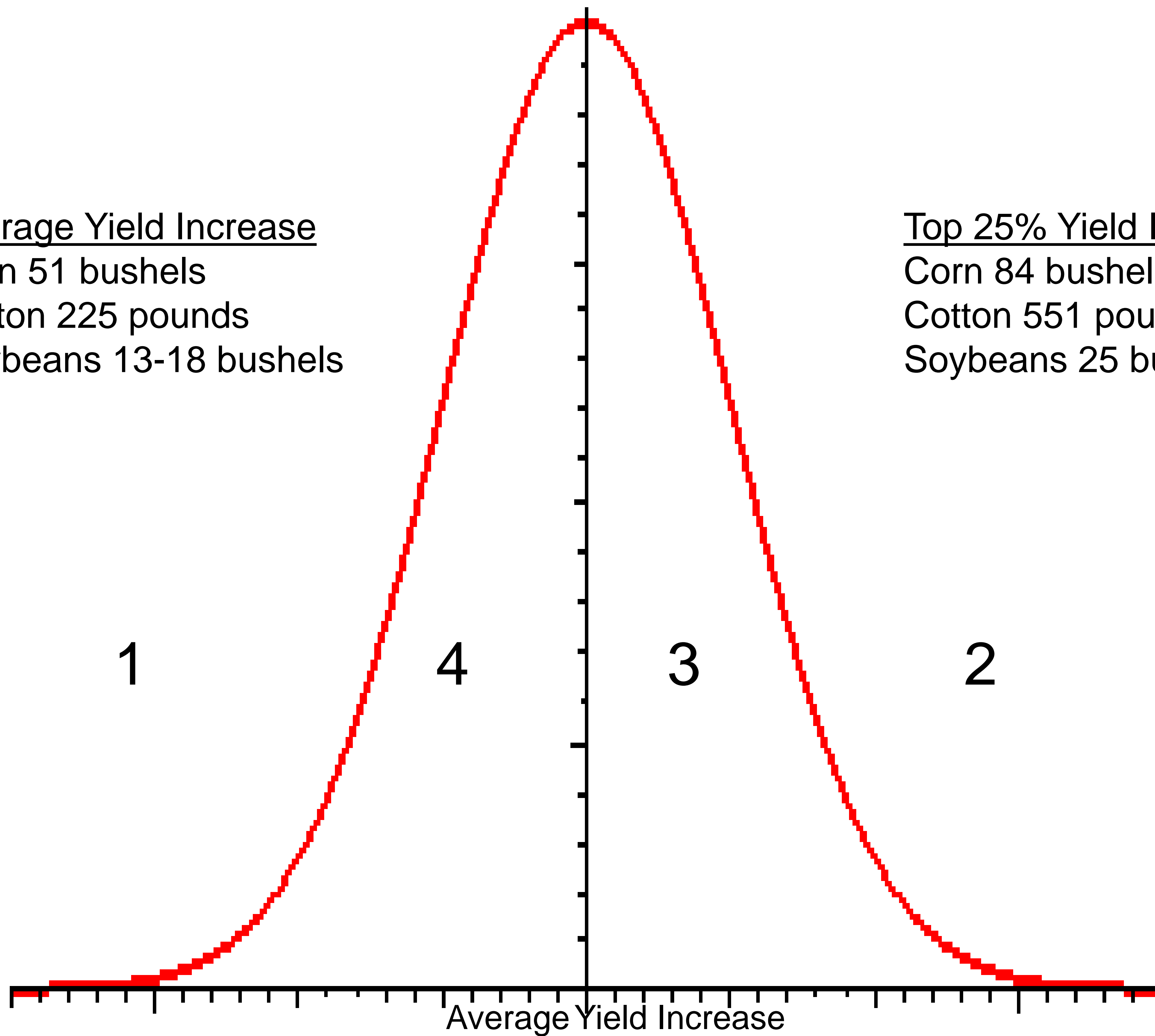
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# *Non Cost Considerations* Management

- Irrigation is not a substitute for poor management.
- High level management is needed for success.
- Stabilize yields & income
- Benefit marketing plan
- Crop Insurance
- Timing and scheduling decisions often make the difference in the success of a system.

Average Yield Increase  
Corn 51 bushels  
Cotton 225 pounds  
Soybeans 13-18 bushels

Top 25% Yield Increase  
Corn 84 bushels  
Cotton 551 pounds  
Soybeans 25 bushels



# Estimated Energy Cost West Tennessee Per Inch

<u>Fuel Source</u>	<u>Cost Per Inch</u>
Electricity	\$3.25 - \$7.00
Diesel	\$4.25 - \$8.00

Includes maintenance cost of

Electricity - 3%

Diesel- 15%

# Average Scenario

- 130 acre Center Pivot
- \$952 per acre investment
- \$162 per acre payment (7 yrs. @ 4.5%)
- \$85 per acre over the life of the system.

# Partial Budget – Corn- Payment

Per Acre

Added Revenue	<u>\$255 (51 bu *\$5)</u>	
Reduced expenses	+ _____	
Total Credits		<u>\$255</u>
Added Expenses	<u>\$247 (\$162+\$50+35)</u>	
Reduced Revenue	+ <u>\$2</u>	
Total Debits		<u>\$249</u>
Difference (Change in Net Income)		<u>\$ 6</u>
Difference at top 25% yield		\$171

# Partial Budget – Corn- Life

Per Acre

Added Revenue	<u>\$255 (51 bu *\$5)</u>	
Reduced expenses	+ _____	
Total Credits		<u>\$255</u>
Added Expenses	<u>\$170 (\$85+\$50+35)</u>	
Reduced Revenue	+ <u>\$2</u>	
Total Debits		<u>\$172</u>
Difference (Change in Net Income)		<u>\$ 83</u>
Difference at Top 25% yield		\$248

# Small Acreage Scenario

- 45 acre Center Pivot
- \$1627 per acre investment
- \$276 per acre payment (7 yrs. @ 4.5%)
- \$140 per acre over the life of the system.



# Partial Budget – Corn- Payment Small Acreage

Per Acre

Added Revenue	<u>\$255 (51 bu *\$5)</u>	
Reduced expenses	+ _____	
Total Credits		<u>\$255</u>
Added Expenses	<u>\$361 (\$276+\$50+35)</u>	
Reduced Revenue	+ <u>\$2</u>	
Total Debits		<u>\$363</u>
Difference (Change in Net Income)		<u>(\$106)</u>
Difference at top 25% yield		\$ 57

# Partial Budget – Corn- Life Small Acreage

Per Acre

Added Revenue	<u>\$255 (51 bu *\$5)</u>	
Reduced expenses	+ _____	
Total Credits		<u>\$255</u>
Added Expenses	<u>\$170 (\$140+\$50+35)</u>	
Reduced Revenue	+ <u>\$2</u>	
Total Debits		<u>\$227</u>
Difference (Change in Net Income)		<u>(\$ 28)</u>
Difference at Top 25% yield		\$193

# Crop Selection Under a Pivot

- What makes the most profit
- Rotational needs
- Scheduling & management
  - Crop moisture needs
  - Management of the crop
  - One crop vs. several
- Crop Insurance



# Crop Comparison-2012

## Per Acre Returns Above V.C. & IRR F.C.

	NI	IR-Life	IR-Payment
Wheat/Soybeans	\$324	\$ 419	\$342
NI60/28			
IR60/45			
Price \$6.61/\$12.70			
Corn	\$394	\$ 485	\$408
NI125			
IR176			
Price \$5.81			
Soybeans	\$292	\$ 374	\$297
NI40			
IR56			
Price \$12.70			
Cotton	\$330	\$ 422	\$345
NI 850 lbs.			
IR 1075 lbs.			
Price .95 lb.			



Irrigation Fixed Cost of \$85 acre based on a \$952 per acre investment.

# Shared Cost Approach on Leased Land

- Desire Win-Win for Landowner & Producer
- May Require a More Equitable Share
- Split Irrigation Cost as Crop Share
- 50 – 50 Split of Irrigation Cost
  - Share income as previously structured
- Structure Written Lease to Spell Out Arrangement

# Summary & Observations

- Management is key to success.
- Some irrigation systems may not be feasible.
  - Well cost
  - Acres irrigated
- Long Run - Irrigation looks profitable.
- Short Run – May not completely cash flow.
- Can reduce production risk; stabilize income.
- Benefit marketing plan.
- Crop Insurance
- Can work for landowner and producer.
- Irrigation is a management tool that can enhance profitability.