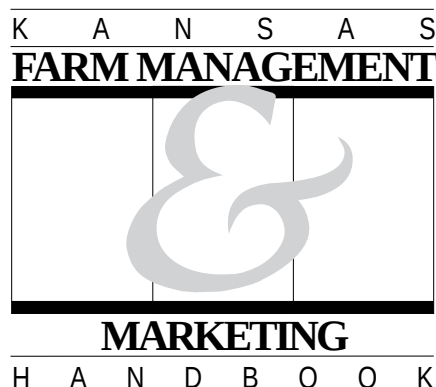




# Flood-Irrigated Corn

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Converting dryland to flood irrigation requires \$20,000 to \$70,000 capital. The range depends on depth to water, land preparation, run of pipe required, and type of equipment purchased. MF-836, *Irrigation Capital Requirements and Energy Costs*, details the ranges of costs and the amounts used for this budget.

## Cost-Return Projections

Land preparation costs are included in land value. Other investments are shown in Table 1. Price of the energy source and Total Dynamic Head are the important factors affecting pumping costs. For instance, a \$1 change in natural gas price causes a \$2.97 increase with 100 feet TDH. However, with 500 feet TDH, a \$1 change in gas price causes a \$14.83 change in costs for each acre foot of water pumped.

The choice of a flood or center pivot system depends on: (1) available capital, (2) labor availability during the growing season, (3) the terrain (uneven land may require a center pivot system), and (4) soil type. Capital outlays will run \$20,000 to \$40,000 higher with a center pivot system, but labor requirements could be reduced by as much as 1 hour/acre compared to flood irrigation.

## Yield Level

Cost per bushel and net returns in crop production are highly dependent on yields. The following estimated budget includes three different yield levels. Yield levels vary for many reasons such as soil type/land quality, weather, input levels, and management. Budgeting at multiple yield levels can help producers examine the financial risk of a crop enterprise that is directly related to production risk as well as to compare the profitability of crop enterprises on farmland tracts with varying yield potentials.

## Profit and Return Factors

Net return on investment is the percentage return on investment. This measure enables comparisons to be made between enterprises and other investment alternatives. Asset turnover is the percentage of investment recovered by total returns. Inverting this measure allows different enterprises to be compared on the basis of capital required to generate a dollar of gross income.

**Table 1. Factors Used for Cost-Return Budget**

| Item                            | Yield Level (bu) |        |        |             |
|---------------------------------|------------------|--------|--------|-------------|
|                                 | 160              | 190    | 220    |             |
| Water, 260 TDH<br>(acre inches) | 18               | 21     | 24     | \$1.92/inch |
| Fertilizer:                     |                  |        |        |             |
| N (Anhy.)                       | 170              | 170    | 210    | \$0.19/lb   |
| N (Dry)                         | 20               | 20     | 20     | \$0.29/lb   |
| P                               | 45               | 45     | 45     | \$0.27/lb   |
| K                               | 0                | 0      | 0      | \$0.13/lb   |
| Seed (seeds/Acre)               | 28,000           | 32,000 | 36,000 |             |
| Seed Price, \$/1,000            | \$0.90           | \$0.90 | \$0.90 |             |
| Labor Hours                     | 3.15             | 3.15   | 3.15   |             |
| Labor Price/Hour                |                  |        |        | \$9.00      |
| Land Value/Acre                 |                  |        |        | \$605.00    |
| Land Interest Rate              |                  |        |        | 6.00%       |
| Machinery Investment            |                  |        |        | \$208.00    |
| Machinery Life                  |                  |        |        | 10 yrs      |
| Interest Rate on Machinery      |                  |        |        | 10.00%      |
| Well, Pump, and Gearhead Value  |                  |        |        | \$228.00    |
| Well, Pump, and Gearhead Life   |                  |        |        | 15 yrs      |
| Power Unit and Meter Value      |                  |        |        | \$39.00     |
| Power Unit and Meter Life       |                  |        |        | 7 yrs       |
| Irrigation System Value         |                  |        |        | \$33.00     |
| Irrigation System Life          |                  |        |        | 10 yrs      |
| Insurance Rate on Machinery     |                  |        |        | 0.25%       |
| Interest on Variable Costs      |                  |        |        | 10.00%      |

# COST-RETURN PROJECTION—FLOOD-IRRIGATED CORN<sup>1</sup>

|                                                                           | Yield Level (bu.) |          |          | Your Farm |
|---------------------------------------------------------------------------|-------------------|----------|----------|-----------|
|                                                                           | 160               | 190      | 220      |           |
| VARIABLE COSTS PER ACRE:                                                  |                   |          |          |           |
| 1. Labor (3.15 hrs × \$9.00 per hr) .....                                 | \$ 28.35          | \$ 28.35 | \$ 28.35 |           |
| 2. Seed (___ lbs × \$.90 per lb) .....                                    | 25.20             | 28.80    | 32.40    |           |
| 3. Herbicide (\$32.45) and Insecticide (\$53.38) .....                    | 85.83             | 85.83    | 85.83    |           |
| 4. Fertilizer .....                                                       | 50.25             | 50.25    | 57.85    |           |
| 5. Fuel and Oil—Crop .....                                                | 8.12              | 8.12     | 8.12     |           |
| 6. Fuel and Oil—Pumping <sup>2</sup> .....                                | 34.56             | 40.32    | 46.08    |           |
| 7. Crop Machinery Repairs .....                                           | 28.50             | 28.50    | 28.50    |           |
| 8. Irrigation Repairs and Maintenance .....                               | 3.60              | 4.20     | 4.80     |           |
| 9. Crop Insurance .....                                                   | 6.25              | 6.25     | 6.25     |           |
| 10. Drying @\$0.10/bu .....                                               | 16.00             | 19.00    | 22.00    |           |
| 11. Custom Hire (_____ operation) <sup>3</sup> .....                      |                   |          |          |           |
| 12. Crop Consulting .....                                                 | 6.50              | 6.50     | 6.50     |           |
| 13. Miscellaneous .....                                                   | 7.00              | 7.00     | 7.00     |           |
| 14. Interest <sup>1</sup> / <sub>2</sub> Variable Cost @ 10% .....        | 15.01             | 15.66    | 16.68    |           |
| A. TOTAL VARIABLE COSTS .....                                             | \$315.17          | \$328.78 | \$350.36 |           |
| FIXED COSTS PER ACRE:                                                     |                   |          |          |           |
| 15. Real Estate Taxes (including well) @ 0.5% .....                       | \$ 4.17           | \$ 4.17  | \$ 4.17  |           |
| 16. Interest on Land and Well (\$833/A × 6%) <sup>4</sup> .....           | 49.98             | 49.98    | 49.98    |           |
| 17. Rent for Rented Land <sup>5</sup> .....                               |                   |          |          |           |
| 18. Depreciation on Crop Machinery .....                                  | 13.52             | 13.52    | 13.52    |           |
| 19. Interest on Crop Machinery @ 10% <sup>6</sup> .....                   | 14.04             | 14.04    | 14.04    |           |
| 20. Depreciation on Irrigated Equipment and Well .....                    | 24.07             | 24.07    | 24.07    |           |
| 21. Interest on Irrigation Equipment @ 10% <sup>6</sup> .....             | 3.60              | 3.60     | 3.60     |           |
| 22. Insurance on Machinery and Equipment @ .25% .....                     | 0.70              | 0.70     | 0.70     |           |
| B. TOTAL FIXED COSTS .....                                                | \$110.08          | \$110.08 | \$110.08 |           |
| C. TOTAL COSTS (A + B) .....                                              | \$425.24          | \$438.85 | \$460.44 |           |
| D. YIELD PER ACRE .....                                                   | 160               | 190      | 220      |           |
| E. PRICE PER BUSHEL .....                                                 | \$ 2.50           | \$ 2.50  | \$ 2.50  |           |
| F. NET GOVERNMENT PAYMENTS <sup>7</sup> .....                             | \$ 40.80          | \$ 48.45 | \$ 56.10 |           |
| G. RETURNS PER ACRE ((D × E) + F) .....                                   | \$440.80          | \$523.45 | \$606.10 |           |
| H. RETURNS OVER VARIABLE COSTS (G–A) .....                                | \$125.63          | \$194.67 | \$255.74 |           |
| I. RETURNS OVER TOTAL COSTS (G–C) .....                                   | \$ 15.56          | \$ 84.60 | \$145.66 |           |
| J. VARIABLE COSTS PER BUSHEL (A ÷ D) .....                                | \$ 1.97           | \$ 1.73  | \$ 1.59  |           |
| K. FIXED COSTS PER BUSHEL (B ÷ D) .....                                   | \$ 0.69           | \$ 0.58  | \$ 0.50  |           |
| L. TOTAL COSTS PER BUSHEL (C ÷ D) .....                                   | \$ 2.66           | \$ 2.31  | \$ 2.09  |           |
| M. ASSET TURNOVER (G ÷ INVESTMENT) <sup>8</sup> .....                     | 39.60%            | 47.03%   | 54.46%   |           |
| N. NET RETURN ON INVEST<br>((I+14+16+19) ÷ INVESTMENT) <sup>8</sup> ..... | 8.50%             | 14.76%   | 20.34%   |           |

<sup>1</sup>See Table 1, page 1, for factors used. <sup>2</sup>See MF-836, "Irrigation Capital Requirements and Energy Costs." If using custom hire, adjust lines 5, 7, 18, and 19. <sup>3</sup>Assumes interest rate shown in Table 1. <sup>4</sup>If cash rented, insert zero in lines 15 and 16. <sup>5</sup>Assumes one-half the (original cost plus salvage value) at the interest rate shown in Table 1. <sup>6</sup>Net government payment equals yield per acre (D) times expected deficiency payment minus prorated cost of set-aside acres. Based on 15% flex acres and 5% ARP. The price used was a five-year average price. The 1995 farm program may have major changes. <sup>7</sup>Investment equals total value of all fixed assets shown in Table 1.



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