

5. *Cost of production and net profit.*—The calculations presented in the preceding section of this appendix indicate gross returns (deducting only cost of livestock feed). No calculations have been made either of the net returns to farm operator or of the unit cost of production. It has been assumed that net income and total cost of production per acre are the same for both communities. This assumption is reasonably accurate, though not exactly so. Cost of water (and perhaps other production factors) is somewhat higher in Arvin than in Dinuba, but labor costs in Dinuba appear to be greater. Since Arvin producers reach an extremely early market they probably receive higher prices. This is particularly true of fruits, potatoes, and commercial vegetables. Yields on the relatively new soils of Arvin are also advantageous.

The major cost of production disadvantage in the Arvin area is the cost of water. Because it seemed possible that the cost of water might be sufficient cause to account for the different economic conditions in the two communities, a careful analysis has been made of water costs in the two communities. It should be pointed out that, in the long run at least, water costs should be absorbed by land value, since the land values are very low without water and the two combined are an economic asset far exceeding the sum of each separately. Ignorance of irrigation requirements and costs may make this consideration inoperative on a short-run basis.

Water costs were calculated on units of average size for each community, and the cost of water in Arvin was also calculated on the basis of average size of units in Dinuba, in order to make more direct comparisons possible. These sizes are: Dinuba, 57 acres; Arvin, 497 acres and 57 acres.

The following assumptions were made:

(1) Duty of water: 2 feet 3 inches in Dinuba (average for San Joaquin Valley) and 2 feet 11 inches for Arvin (adjusted to allow for differences in precipitation). On this basis total annual water requirements per farm are: Dinuba, 143 acre-feet; Arvin 1,451 and 166 acre-feet.

(2) Irrigation season of 7 months with wells operated half the time during these months, and peak demands were assumed to be taken care of by full-time use of wells during those periods. Well requirements on this basis are: Dinuba, 309 gallons per minute; Arvin, 3,135 and 359 gallons per minute. Single wells would be sufficient for 57-acre farms, but three wells would be required for the 497-acre farm.

(3) Average water-level conditions in each community were used. A report of the Alta irrigation district, based upon 65 wells and made in 1931, indicated an average depth of 43.5 feet. A report to the Kern County Water Development Commission entitled "Cost per Acre-Foot of Pumped Irrigation Water in Kern County," by C. H. Monett, based upon eight Arvin wells and made in 1933 was used for Arvin. This report indicated a depth of 114 feet, but this was increased to 151 feet on the basis of information as to the recession of the ground water level since that date. These two reports indicated average draw-down of 8 feet in Dinuba and 26 feet in Arvin, and these figures were used. A pumping head of 54 feet and of 182 feet was used for Dinuba and Arvin, respectively, allowing for discharge of water at a point a few feet above the ground, as indicated in these