

# IRRIGCOST

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Why compute the annualized costs of owning and operating an irrigation system?

A number of management decisions are based on the annualized costs of owning and operating an irrigation system. Before developing land for irrigation, the first decision should be to determine whether the irrigation system will be economically feasible. In other words, Will the net income from the increased yields achieved by irrigation development exceed the additional ownership and operating costs of owning and operating the irrigation system over the expected life of the various system components.

After deciding to proceed with irrigation development, one is faced with many alternative design choices, including selection of which energy source to use for pumping the irrigation water, the type of distribution system, etc.

The **IRRIGCOST** worksheet models center pivot and gated pipe irrigation systems and the most commonly used energy sources on separate tabs making side to side comparisons between alternatives possible.

When computing a fair crop-share rental arrangement, one procedure is to list all the contributions that are required for crop production in a table (land, irrigation system, machinery, labor, crop inputs, etc.). Next to each input listed, the contribution each party is making is shown in adjacent columns; one for the landowner and one for the tenant. The columns are tallied and the percentage of the total cost that each party is contributing is calculated. The “fair” rental arrangement would be to divide the crop on the same percentage as the contributions that each party has made. Alternately, after the initial listing is done, changes are sometimes made in the percentage the two parties contribute toward certain inputs until contributions match a pre-determined crop share arrangement (e.g. 60/40 or 50/50).

The costs of owning and operating the irrigation system are some of the most difficult to identify when analyzing irrigated crop share arrangements. Much of the total cost of irrigation results from ownership costs and a large percentage of ownership costs are not annual out-of-pocket costs but rather are sunk costs, such as return on capital investment, depreciation, and taxes and insurance.

A complicating factor in some rental agreements results from who owns the various components. In some cases, the landowner may furnish the entire irrigation system; in other cases the landowner may furnish the well, pump and gear head; while the tenant may furnish the power unit and/or the distribution system. A need therefore exists for the analyst to easily estimate the ownership and operating costs for each major component in various irrigation systems so each party is credited with a fair estimate of the contribution he/she is making.

**The user is encouraged to change the variables (in blue font) throughout the worksheet to match their unique situation.**