

The following overview briefly describes the purpose, content and potential use of the information in each report.

A financial decision making framework for irrigation conversion.

(The AgriBusiness Group)

The purpose of this report is to provide farmers with a financial decision making framework and information needs and sources.

This report starts with a description and discussion on the overall decision-making process involved in considering the opportunity to convert to irrigated farming. The first step is to establish your personal goals and business vision in order to establish the core evaluation criteria that any opportunity will be measured against. At the same time there is a need to establish knowledge gaps and create a list of information needs. This step should incorporate establishment of an advisory team of people who can help you with the decision making process.

The suggested process is then to identify opportunities, gather together information, carry out the financial assessment and then make the decision that is best. At all times there will be a need to refer back to the earlier steps to make sure that your decision meets the core criteria. In this way the opportunity can take shape in a way that best suits the individual.

The financial decision making framework suggests a process that follows through the steps of;

- Identify additional costs to irrigate.
- Prepare Status Quo budget and cashflow.
- Prepare Transition budget and cashflow.
- Risk Analysis.
- Evaluate financial performance.
- Review results.

The report discusses matters to be considered and recommends methodologies for each of these steps, including the calculation of the financial assessment parameters.

It also includes an “Information Needs and Sources” table of suggested information sources to meet the information needs at each of the steps above.

This decision-making framework is of use to all people considering or evaluating the opportunity of converting to irrigated agriculture.

Land Value Analysis - Irrigated and Dry Land. (Crighton Anderson)

The purpose of this report is to provide information on the possible increase in asset value when converting from dryland to irrigate farming.

The report details analysis of land sales information of the land value content (net sale price minus the value of improvements) for dryland and irrigated farms. The analysis was carried out across four years of sales data across seven districts of Canterbury.

The conclusions of the analysis are that;

- The added value of irrigation per hectare has ranged between \$5,125 and \$6,035 on a weighted basis.
- As dryland values have risen the added value component of irrigation on the land value has been maintained.

This information is of interest to people who are analysing the impact of conversion to irrigation and calculating the financial returns possible. Although its use is limited for individual situations it establishes the nature of the relationship between dryland and irrigated land value and is of use to provide comfort for investors calculating the impact of conversion on equity and net worth of their farming businesses.

Trends in tradable irrigation shares. (Crighton Anderson)

The purpose of this report is to provide information on the price trends of tradable irrigation shares.

The report examined and compared the price trends in tradable irrigation shares in community schemes in Canterbury. The report analyses the key considerations when valuing shares including; water availability, water delivery rate, scheme reliability and annual water charges. Some comparative analysis is carried out to determine the relationship between a number of scheme delivery characteristics and cost. There is also analysis of prices that shares have traded at over time for two schemes that have a strong trading history.

The results of this analysis show that;

- The market demonstrates that a key value driver of water scheme shares is the water entitlement in terms of annual volume.
- Early prices are indicative of the schemes cost, as the scheme becomes fully utilised the value of the shares rises to the value of the next best water alternative. Over time the value will rise to the value that water has to the best possible use of it.
- The fact that water is initially valued at cost means that there is a low risk associated with ownership of water scheme shares.

This information is of interest to people who are analysing the value of investing in irrigation scheme shares and the value of the entitlement over time.

The physical and financial impacts of conversion from dryland to irrigated farming. (The AgriBusiness Group)

The purpose of this report is to provide farmers with background information on the Physical and Financial impacts of conversion from Dryland to Irrigated farming.

The productivity section of the report details the results of modelling of productivity parameters of dryland and irrigated arable and pastoral farms in the Central Plains area. The results are presented for a decade of actual weather patterns starting from 1993. These results indicate the degree of difference in total output and variability of output between dryland and irrigated farms.

The financial section of the report details examples of the capital costs of conversion to irrigation and the ongoing costs of irrigation operation.

The economic section of the report discusses and calculates the economic considerations of calculating irrigation return from a number of perspectives. These are farm profitability, return on capital and asset value. The report suggests a number of assessment measures and explains their calculation.

The economic assessments are then demonstrated in case study analysis of a number of land use conversion options. These case studies are based on the physical performance modeling results and report variability of returns through minimum and maximum results.

This report is of use to farmers who wish to assess the physical and financial performance of their own property under irrigation. The report gives technical productivity information as well as suggesting and describing some financial assessment parameters that should be used to test the financial and economic returns. Case study results are given for some of the standard conversion options open to farmers.

Irrigation Water Calculator – to determine the volume of irrigation water required for a specific land use.

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Modern water allocation practice is to allocate units of irrigation water on a volumetric basis rather than a rate per hectare as in the past. A future community irrigation scheme might be expected to offer water on a volumetric basis with 1 unit being 1,000 cubic metres of water at a maximum flow rate. This two-page guideline allows calculation of the seasonal depth of water that a farmer will require based on the farm type and soil water holding characteristics of their soils. The units of water required can then be calculated using the formula provided that multiplies the seasonal depth by the area of land to be irrigated.

Cost of groundwater pumping - Central Plains Canterbury. (Aqualinc)

The purpose of this report is to provide existing irrigators and prospective irrigators with information on costs of groundwater supply to assist them in making a decision on whether to support a community irrigation scheme or to pursue individual groundwater options.

The report covers;

- The costs of installing new bores across a range of bore depths.
- The annual costs of operating a bore.
- The costs of conversion from an existing bore to surface water supply.
- The costs of surface water pumping and the value of water under pressure.
- The impact of increasing energy charges on pumping costs.

The technical information is illustrated through a number of different case studies of new and existing irrigation farm types.

This information will be of use to existing and potential groundwater irrigators in that it indicates the factors that should be taken into account and gives examples of indicative costs for all of the parameters identified. These parameters can be used to determine the actual result for a specific situation or the case studies can be used as the likely outcome of the calculation for similar properties across the groundwater zone.