



IRRIGATION BENCHMARKING MODULE



A performance assessment tool for irrigation managers and rural consultants

Rural Solutions SA, with financial assistance from the Department of Water Land and Biodiversity Conservation and the South East Catchment Water Management Board, has developed an Irrigation Benchmarking Module for use by groups of irrigators.

Benchmarking

Benchmarking is simply the process of collecting information, calculating indicators of performance, and comparing performance across a group of sites or participants.

The Irrigation Benchmarking Module

The Irrigation Benchmarking Module uses a standard set of information about irrigation systems, irrigation management and returns, to calculate a set of irrigation performance indicators.

The following indicators are used in irrigation benchmarking.

Yield (kg/ha)

Yield per ha is a commonly used measure of production performance for many farmers. This measure is further enhanced with the introduction of water used in production of the yield obtained.

Irrigation Water Use Index (Applied) (kg/ML)

[Water Use Efficiency]

Irrigation water use index (Applied) indicates the efficiency of the conversion of water applied into product (meat) on a per hectare basis. Water use is calculated using the producers' irrigation records and measured application rates.

Gross Production Water Use Index (Applied) (\$/ML)

[Gross Return per Megalitre]

Gross production water use index (Applied) is a ratio that provides a measure of dollar value gained for the irrigation water applied.

Water cost per Kilogram (\$/kg)

[Cost of Water per Kilogram of product]

Water cost per kilogram of product is a coarse measure of the cost of water for the achieved yield. Cost of water is a combination of license costs and the cost of pumping the water.

Irrigation Field Application Efficiency (%)

[Application Efficiency]

Application efficiency is a measure of how much of the applied water is stored within the root zone. It is a good indicator of performance as it represents the proportion of applied water that is utilised by the crop or pasture.

Drainage is estimated via the use of a water balance incorporating crop factors, rainfall, irrigation applied, and evaporation data.

Pasture Utilisation per Megalitre (MJ/ML)

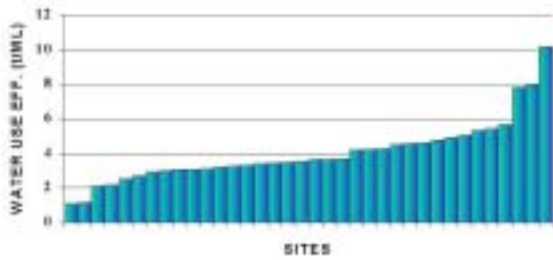
For livestock pasture utilisation per megalitre is a measure of energy consumed from the pasture per Megalitre of irrigation applied. It is therefore a measure in part of the pasture production resulting from the irrigated pasture unit being benchmarked. This ratio is calculated from reverse feed budgets and does not indicate the total energy produced by the pasture unit.

Gross Return per Dollar of Water input (\$/\$)

This ratio measures the conversion of the cost of water into the value of the product produced. Calculated from the gross return per Megalitre (\$/ML) and the cost of water (\$/ML).

Comparisons of indicators are presented graphically, as shown below.



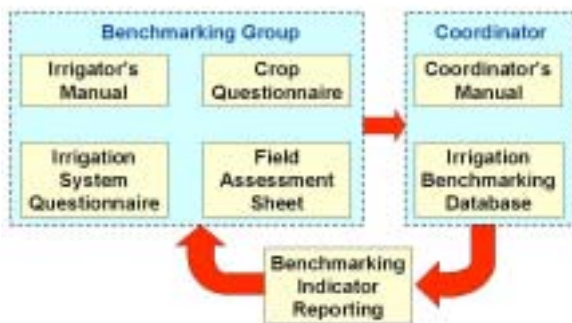


The module is designed for groups, who input information for a single season and crop type, and compare the performance of sites amongst the group.

The use of codes to identify sites means that each member can identify their own site within the group, and therefore compare their relative performance, but no one can identify who manages the other sites in the group.

Components of the Module

The module comes complete with everything a group needs for the benchmarking exercise.



An Irrigator's Manual, provided to each group member, guides members through the process of collecting the required data. Questionnaires are supplied to record this information.

A Coordinator's Manual gives advice on setting up and coordinating groups, assigning codes, entering data and generating results. It also gives assistance in finding help for the group at various stages of the process.

The Database mirrors the Questionnaires, making data entry simple. It also automatically generates the indicator reports.

Crop Types

Currently the module can benchmark irrigation of citrus, winegrapes, potatoes, lucerne seed, dairy, prime beef and prime lamb production. Almost any crop type can be incorporated into the software.

Further Information

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