

WRC tools help farmers improve efficiency, cut costs



South African farmers face many challenges in meeting the country's food security needs, from a variable climate to rising production costs and the pressures of a globalised market. The Water Research Commission (WRC) has invested in the development of several tools to help farmers prosper in a volatile environment.

Compared to other countries, the level of subsidisation of agriculture in South Africa is one of the lowest in the world.

This means that local farmers have to continually raise the efficiency of their operations to remain profitable. Over the past few years, local agriculture has also been hard hit by exceptionally high input price increases, for example, fuel, fertilisers and electricity.

Water management, mainly in respect to irrigation practice, is one of the most critical determinants of economically efficient crop production, particularly in a seasonally dry country such as South Africa. In the case of pivot irrigation, for example, the cost of the pump, maintenance and water levies can make up to 25% of the production costs per hectare, thus it is a considerable expense requiring the necessary attention. At the same time, there is pressure from government on the agricultural segment to reduce its overall water use.

Through the years the WRC has funded the development of several computer-based tools to assist farmers in managing their costs and risks. Hundreds of commercial and emerging farmers have already been trained on, and are already benefiting from, these tools.

RISKMAN

Risk management should form an integral part of the daily decision process while managing a farm business. RiskMan is a simulation model of net cashflow for water use and crop combinations at specific risk levels, generally applied at farm scale. The main aim with the development of this program was to provide risk-management information to bridge the gap between theory and practice at whole farm level.

Any agribusiness advisor or farmer can make use of the program. RiskMan weighs up alternative actions to reduce exposure to unfavourable financial outcomes and provides reliable and relevant

information on which decisions can be based. It supports, but does not replace, the decision-maker in risk management.

RiskMan is especially suitable for, among others, the quantification of interest rate, irrigation cost, product price, yield or production variation and hail damage; evaluating different production management strategies; and determining the effect at whole farm level of including or excluding a crop or livestock enterprise from a farm plan. It can also assist in the verification of risk data; simulate the total margin above specified costs or net cash flow at whole farm level; and rank production management strategies, taking risk attitudes into account.

IRRICOST

IrriCost is an aid for the management of irrigation costs. Both the capital and operating costs must be considered when purchasing a new irrigation system. Thus the IrriCost cost-accounting program has been developed to estimate both the annual fixed and variable costs of irrigation systems.

This Windows-based program can be used by all farmers, extension officers and advisers involved in centre pivot and hand-line irrigation who have access to a personal computer. The scope of IrriCost's field of application is wide, and the program can be used to compare the costs of alternative system designs, to evaluate annual costs and to budget irrigation costs.

FARMS

RiskMan and IrriCost have now also been combined in a single system, FARMS (Farm level Agricultural Management Simulator). This computer program combines the benefit of the two programs with other tools to form a comprehensive farm management decision-support system. FARMS can also be used in conjunction with other systems

developed with funding from the WRC, namely SWB (Soil-Water-Balance) and the international award-winning WAS (Water Administration System).

The FARMS program generates short-term whole farm plans and enterprise budgets with fixed quantities and prices. Tested for several farmers in the irrigation areas of Riet River, Rama and Loskop, training has also been extended to agribusinesses, bureau services and advisors in the main irrigation areas of South Africa.

Technology is one of the greatest drivers for progress in agriculture, however, new technology is only valuable when it is appropriately applied. The tools developed by the WRC have already proven to make a difference in the lives of farmers, and others are encouraged to make full use of these programs, which are available free of charge.

For more information on the agricultural tools available from the WRC, contact Publications at Tel: (012) 330-0340, E-mail: orders@wrc.org.za or visit: www.wrc.org.za. For advice on implementation of these decision support tools, please contact Dr Bennie Grové or Prof Klopper Oosthuizen at the Department of Agricultural Economics, University of the Free State in Bloemfontein. □

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