DRAFT AS OF 12 JULY 2002

Implementation Conference: Stakeholder Action For Our Common Future

TEMPLATE FOR COLLABORATIVE STAKEHOLDER ACTION PLAN

Motivation

Water User Associations are coming into being, as required by the National Water (Act No 36 of 1998). A requirement of the Act is that each WUA must plan its water use in an acceptable manner. DWAF has nominated SAPWAT as the procedure to be applied for the estimation of crop irrigation requirements. In order to plan water use in an acceptable manner it is important that planners and WUA management have a thorough understanding of irrigation principles, the implications of latest irrigation methods and can communicate with members on the application of alternative strategies. SAPWAT encapsulates these principles and is a valuable training aid. Few WUAs and Agribusiness that services them have had exposure to SAPWAT and its capabilities and therefore it is desirable to demonstrate the use of SAPWAT and to train personnel of the WUAs and Agribusiness in how to apply SAPWAT as a planning and management tool.

Title: Strengthening research / farmer partnerships: Using SAPWAT as a planning tool for the estimation of crop irrigation requirements and the development of efficient water management (see below!)

1. Background	
Relevant sustainable development agreement(s)	
Relevant components of the (draft) Johannesburg agreements	
2. Content	
Goal(s)	• Using SAPWAT as a planning tool for o estimating crop irrigation requirements o developing efficient water management by selected Water User Associations (WUAs) and o Training WUA personnel and personnel of agribusiness in the application of SAPWAT • To train personnel of WUAs and personnel of agribusiness in the use of SAPWAT as a planning tool for estimating crop irrigation requirements as well as the development of efficient irrigation strategies by 9 newly established WUAs for their areas of responsibility. • To develop an irrigation water requirement and management plan for WUAs along the lines of the Douglas report (WRC Report No TT163/01).
Outputs	• Expected results: WUA personnel and of related agribusiness able to independently: • estimate water requirements of individual crops and crop rotations with the aid of SAP-

	WAT; • develop alternative water management strategies and evaluate the impacts on efficient water supply with the aid of SAPWAT; • draw up an irrigation water requirement plan for their area of responsibility.
Social, economic, environmental impact	
Contribution to: povert eradication social inclusion and empowerment good governance gender equity	
Work programme: steps Including timetable	**Commencement date and project duration** Start date: 1 November 2002 End date: 28 February 2004 End date for telephonic, fax and e-mail support: 31 August 2004
Beneficiaries (including location / scope)	**Target groups and Expected results** • Newly established WUA[1]s and Agribusiness personnel that service them **Scope:** • Cover 9 WUAs, to be selected in consultation with the steering committee, in the initial phase.
3. Organisational	
Who (incl. which stakeholders) Facilitating organisation Implementing organisations Advisory organisations	Researchers / Scientific Community Government (Dept of Water – DWAF) Farmers organisations Agribusiness. Stakeholder Forum (through the Implementation Conference) Water Users Associations – TBC Research Centre – TBC Dept of Water (South Africa?) - TBC
Monitoring	
Evaluation: intermediate; final	
Reporting	
Knowledge Management: before; during; after	
Finance	
4. (Inter)governmental action	

[1] WUA: Water Use Associations

Necessary government action? National level (which country/countries)	
International level: necessary / desired commitments in Johannesburg (and/or beyond)	

SAPWAT : Further Information

SAPWAT– a powerful South African tool for planning and managing irrigation

The estimation of crop water requirements is an essential starting point when both farm-scale and major irrigation projects are planned or upgraded (Water Research Commission).

The need to rehabilitate existing small-scale farmer irrigation schemes, as well as the implementation of catchment management agencies and water user associations has emphasised the importance of managing irrigation water effectively.

Water Research Commission pilot stuffy (1996) leading to development of the pilot computer program SAPWAT
Aim: establish a decision making procedure for

- the estimation of crop water requirements
- provision of comprehensive “built-in” databases that obviate the need to seek climate or crop data elsewhere.

SAPWAT

- not a crop growth model but a planning and management tool relying heavily on an extensive South African climate and crop database.
- General in applicability - the same procedure is utilised for vegetable and field crops, annual and perennial crops, as well as pasture and tree crops. It is possible to simulate wide-bed planting, inter-cropping and different irrigation methods and evaluate the effect of soil water management options, e.g deficit irrigation
- Extends the facilities provided by the irrigation program CROPWAT
- A tool to facilitate “designing for management” + to facilitate consultation and interaction with farmers and advisors.
- an aid to judgement - user should be comfortable with its application and feel free to contribute local knowledge and experience.

APPLICATIONS

Possible applications, listed in the document, are the following:

q Macro planning

Irrigation accounts for the major share of water requirements in South Africa so much that the irrigation component is important in catchment planning. SAPWAT principles have been recognised by the Department of Water Affairs and Forestry and incorporated in the irrigation inputs into the national water balance model.

q Water pricing strategy

In terms of the National Water Act users are required to register the use of irrigation water for pricing purposes and the Department have indicated that the method for determining the annual irrigation requirement is the SAPWAT computer program. SAPWAT, in the absence of general metering, enables all water use for irrigation to be quantified equally thereby ensuring a cost recovery in a “fair and systematic” manner.

q Water demand management strategy

In the future water user associations (WUAs) will be required to develop water management plans on a regular basis. The impact of irrigation practices and strategies on water budgets requires the assessment of impact on crop irrigation requirements. This is one of the functions for which SAPWAT was developed.

q Small-scale farmer irrigation schemes and community gardens

One of the primary objectives of the SAPWAT development programme was “provision for the specific circumstances and requirements of emerging irrigation farmers and community gardens”. Particular attention was paid to this aspect and presently consultants engaged in the land care initiatives of the National Department of Agriculture are basing designs for sustainable rehabilitation of irrigation schemes on SAPWAT predictions.

q Irrigation planning and management

Planning how much irrigation water is required and when is a prerequisite for individual farmers, designers, water user associations, irrigation schemes and reservoir management. The strength of SAPWAT lies in an extensive database that saves the user the chore of “looking for figures” and inbuilt routines for undertaking sensitivity analyses of alternative strategies.

q Support for irrigation scheduling

SAPWAT is not a real-time scheduling model but can be a valuable complement to instrumented soil water content methods. It is being realised that for farmers, advisors and consultants scheduling can be a labour intensive and expensive operation. An atmospheric demand-based program can provide pre-season irrigation programmes based on historic weather data that can go a long way towards alleviating much of the urgency of short-term real time scheduling. SAPWAT is designed to accommodate updated historic weather data to the present, should this be required.