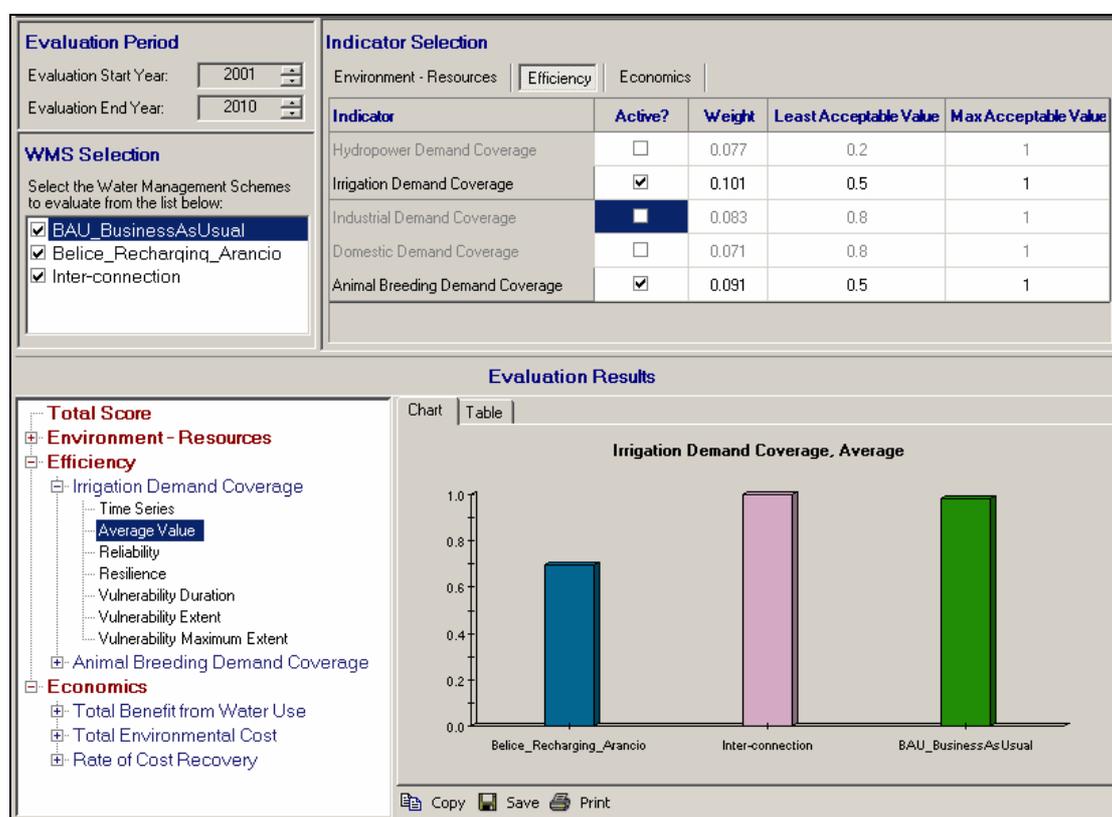# MANUAL OF THE INTEGRATED DECISION SUPPORT SYSTEM

Chapter Eight

Evaluation of Water Management Schemes

.

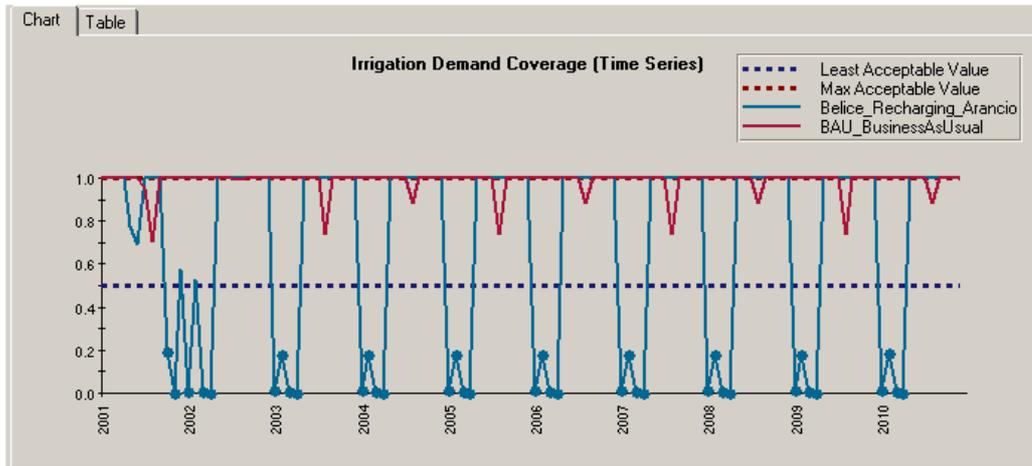# Chapter 8 – Evaluation of Water Management Schemes

The Graphical User Interface of the Evaluation Module (EM), can be opened by the *Evaluation* menu of the Navigation Panel. Necessary condition to run the module is that more than two water management schemes for the case study region have been simulated, so that their results are ready to be compared and involved in the statistical analysis.

The window of the EM interface comprises of four panels. From the two of the upper part which should be accessed first, the user can choose the schemes to be evaluated and for which period of time, defined by a first and last evaluation year. He can also select and activate the indicators whose time series will be subjected to the evaluation. Indicators are classified in three categories *Environment and Resources*, *Efficiency* and *Economics*. The variables belong to the regional set that is shown in the Simulation Detailed Results View.

Figure 1. The Evaluation Module's window

The *Indicator Selection* panel is structured in three tables, each one related to a category. From there indicators are activated with a tick in the *Active?* column and the weight to be used in the calculation of the *Relative sustainability index* at the category or WMS level can be edited. Least and Max acceptable values can be modified according to the preferences of the Decision Maker or the existing suggested values can be confirmed.

Figure 2. Comparing time series of irrigation demand coverage

The two panels at the bottom of the window show the evaluation results. The DSS user can navigate through the activated indicators in the left panel and for each select one of the statistical measures, whose value is then plotted in the chart panel on the right. The statistical indices available are the following: Reliability, Resilience and the three figures of Relative Vulnerability, namely Duration, Extent and Maximum Extent. Moreover, the user can view the time series and average value of the single activated indicator over the selected evaluation period.

The Evaluation Table displays the statistical information for all the indicators and categories and thus finally shows the aggregated Total Score for every single management scheme. The schemes are in the table columns so that their score for each index can easily be compared. Both chart and score table can be copied, saved as images and printed by using the corresponding buttons in the toolbar below them.

Indicator / Criterion	BAU_BusinessAsUsual	Inter-connection	Belice_Recharging_Arancio
⊞ Environment - Resources	0	0	0
⊟ Efficiency	0.07097369	0.07097369	0
⊟ Irrigation Demand Coverage	0.7027027	0.7027027	0
Average	0.98407456	1	0.69482722
Reliability	1	1	0.69166667
Resilience	1	1	0.2972973
⊟ 1-Relative Vulnerability			
Extent	1	1	0
Max Extent	1	1	0
Duration	0.7027027	0.7027027	0
⊞ Animal Breeding Demand Coverage	0	0	0
⊞ Economics	0	0	0.03175521
Total Score	0.07097369	0.07097369	0.03175521

Figure 3. The Evaluation Table of the WSM DSS