



Palestinian National Authority
Palestinian Water Authority



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Sustainable Management of the West Bank and Gaza Aquifers

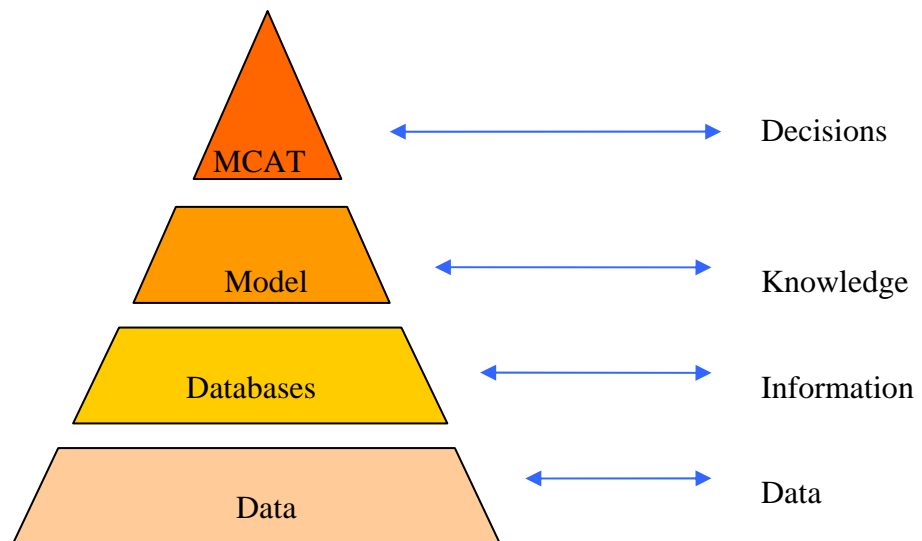
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Technical Manual for SUSMAQ Decision Support Toolkit Software for Sustainability Assessments of Water Resources Management Options in Palestine



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<p>The SUSMAQ Project</p> <p>The aim of the project is to increase understanding of the sustainable yield of the West Bank and Gaza aquifers under a range of future economic, demographic and land use scenarios, and to evaluate alternative groundwater management options. The project is interdisciplinary, bringing together hydrogeologists and groundwater modellers with economists and policy experts. In this way, hydrogeological understanding can inform, and be informed by, insights from the social sciences. The results of the study will provide support to decision-making at all levels in relation to the sustainable yield of the West Bank and Gaza aquifers.</p> <p>The project runs from November 1999 to October 2004, and is a partnership between the Palestinian Water Authority, University of Newcastle upon Tyne. The project is funded by the United Kingdom Government’s Department for International Development (DfID).</p>	<p>Project Results Dissemination</p> <p>The project disseminates its results through the project website www.ncl.ac.uk/susmaq, newsletters, workshops, technical meetings, publications in conference and scientific journals.</p>
<p>Bibliographical Reference</p> <p>This report should be referenced as: SUSMAQ (2005). Technical Manual for SUSMAQ Decision Support Toolkit Software for Sustainability Assessments of Water Resources Management Options in Palestine. Report No. SUSMAQ - SUS #56 V1.1, Sustainable Management of the West Bank and Gaza Aquifers, Palestinian Water Authority (Palestine) and University of Newcastle upon Tyne (UK).</p> <p>Authors: Felipe S Contreras Jimenez, Geoff Parkin, Amjad Aliewi, Muath Abu Saada, Enda O’Connell</p>	

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1 Introduction

The Decision Support Toolkit (DST) for the SUSMAQ Project was designed to help the Palestinian Water Authority (PWA) in the selection of the best Management Options according to socio-economic/hydropolitical and climatic drivers at a regional or national scale. The DST was developed in Microsoft Excel and Visual Basic for Applications (VBA).

The structure of the DST is divided in three blocks. The first block is the Database Manager, the second block is the Model setting and finally the third block is the Multi-Criteria Analysis Tool (MCAT). The theoretical basis for the MCAT is described in **SUSMAQ Report#41**.

The Database Manager allows the user to access five databases: Scenario, Region, Package, Management Options and Basic Indicators databases. In each of these databases the user will be able to create, delete and modify items.

The Model setting allows the user to create a model based on the data stored in the different databases. During this process the user will have to select a particular Scenario, a Region, set a list of relevant Management Options, Packages and Basic Indicators. The software will guide the user in this task.

Finally the Multi-Criteria Analysis Tool MCAT allows the user to rank the Management Options. The MCAT is divided in three simple steps: Calculate the Basic Indicator values, assign weights and rank the Management Options. The whole process is described in more detail in the DST User Guide (**SUSMAQ Report#57**). Case study applications of the DST to regions of the West Bank are described in **SUSMAQ Report#60**.

This report describes the thinking behind the software and its structure. The detail of how different components are linked inside the software, tasks and routines is also included.



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