

**DEVELOPING A DECISION SUPPORT SYSTEM FOR
ON-FARM WATER MANAGEMENT
IN SRI LANKA**

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By

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ABSTRACT

On-farm irrigation planning and management require information on soil properties, climatic conditions and the quality and quantity of irrigation water available. Many individuals and institutions have been involved in gathering the above information in Sri Lanka for more than fifty years. But, the reality is that the information gathered is mostly confined to progress reports, feasibility studies and even to hand written documents. Furthermore, they are widely scattered and not available in the form needed for on-farm irrigation planning and management. The main reason is that there is no co-ordination and data-sharing mechanism exists among the agencies involved in various activities.

Decision making on irrigation is one of the most complicated activities undertaken by irrigation planners, managers, marketing agents, manufacturers, academics and farmers. The informational and logical aspects of decision making imply that a computer, with its ability to handle and process large amounts of information and analyze complex logical relations, is an ideal tool to support this activity. A study was conducted to develop a user-friendly Decision Support System, using appropriate computer hardware and software to make the irrigation-related information for the Dry Zone of Sri Lanka readily available for above mentioned target group.

This package allows retrieval facility for information on major soil types and their properties, rainfall and reference crop evapotranspiration for different locations in the Dry Zone of Sri Lanka. Further, for the calculation of crop water requirements and irrigation scheduling a facility was made to link to the CROPWAT programme. Also, this software package provides recommendation on irrigation method suitable

for a particular location based on infiltration rate, hydraulic conductivity, available water capacity and irrigation water quality. In addition to that, details on irrigation expertise and training tools are provided for academic and research interests. Present status of micro-irrigation in Sri Lanka, including the information on irrigation equipment companies are provided for the users to be up to date with the emerging technologies. It is hoped that this research has sufficiently demonstrated the potential value of irrigation information and that necessary resources will be found to further develop this work for the benefit of the wider irrigation community.

TABLE OF CONTENTS

	Page
ABSTRACT	iii
ACKNOWLEDGEMEN	v
TABLE OF CONTENTS	vii
LIST OF FIGURES AND TABLE	xiii
ABBREVIATIONS	xv
CHAPTER I: INTRODUCTION	1
1.1 Objectives of the study	4
1.2 Scope of the study	4
CHAPTER II: LITERATURE REVIEW	5
2.1 Decision Support System (DSS)	5
2.1.1 Definition	5
2.1.2 Taxonomies	6
2.1.3 System architecture	7
2.1.4 Development Frameworks.	9
2.1.5 Developing a DSS	11
2.1.5.1 System Development Life Cycle (SDLC)	11
2.1.5.2 Where does the DSS fit into the picture?	13
2.1.5.3 Why is a DSS needed?	14
2.1.5.4 What advantages will the usage of the DSS have?	14

	Page
2.1.5.5 Who needs the DSS?	15
2.1.5.6 When will the DSS be used?	15
2.2 Design of computer tools	15
2.3 Structure of software	16
2.4 Required characteristics	18
2.5 DSS for irrigation management in Sri Lanka	20
2.6 Decision support system for On Farm Water Management	22
2.7 Plant Irrigation Requirements	23
2.7.1 Soil-Water-Plant relationships	23
2.7.1.1 Soils	23
2.7.1.2 Intake Rate	24
2.7.1.3 Soil Water Storage and Movement	26
2.7.1.4 Water-Holding Capacity	27
2.7.1.5 Irrigation Interval	28
2.7.2 Evapotranspiration	28
2.7.2.1 Water Use Calculations	31
2.7.2.2 Leaching Fractions	32
2.8 Irrigation and water management	33
2.9 Estimating irrigation requirement	35
2.10 Efficiency and evaluation	36
2.11 Criteria for the choice of irrigation method	37

	Page
2.11.1 Irrigation methods	38
2.11.2 Selection of method	39
2.11.3 Selection of various Irrigation methods	44
2.11.3.1 Border Irrigation	46
2.11.3.2 Basin Irrigation	46
2.11.3.3 Wild flooding/ponding	47
2.12 Agro ecology of Sri Lanka	47
2.13 Soils of Sri Lanka	50
2.14 Water Resource in Sri Lanka	52
2.14.1 Surface water	52
2.14.2 Ground Water	53
2.15 Irrigation in Sri Lanka	54
2.16 Irrigation status in dry zone	55
2.17 Major soil types in irrigated areas in the Dry Zone of Sri Lanka	58
2.18 Irrigation problems in relation to soil types in the Dry Zone of Sri Lanka	60
2.19 Moisture conservation measures	61
2.20 Modern water control and Management practices in Irrigation	62

	Page
CHAPTER III: MATERIALS AND METHODS	65
3.1 Covered study are and location	65
3.2 Development of DSS	65
3.2.1 Initiation/Planning	65
3.2.2 Requirements Gatherings and Analysis	66
3.2.3 Design	67
3.2.4 Build or Coding	67
3.2.5 Testing	68
3.2.6 Operations and Maintenance	68
3.3 The steps involved in the development of DSS	68
3.3.1 Formulation of logic	68
3.3.2 Collection of data	71
3.3.3 Storage of data in logical sequences	71
3.2.4 Programming for data retrieval and computation	72
3.3 Components of DSS	75
3.3.1 Database and knowledge representation	76
3.3.2 Inference Engine	76
3.3.3 User interface	77

	Page
CHAPTER IV: RESULTS AND DISCUSSION	78
4.1 General overview	78
4.2 Structure of main window	79
4.3 District and Location	80
4.4 Information of soil and Station	81
4.5 Rainfall data for different locations of Sri Lanka	84
4.6 ETo	85
4.7 Selection of suitable irrigation methods	86
4.8 Moisture conservation aspects	87
4.9 Information on agricultural irrigation expertise in Sri Lanka	88
4.10 Irrigation theory	90
4.11 Irrigation Converter	91
4.12 Crop information	92
4.13 ETo and CWR calculation	93
4.14 Irrigation scheduling	94
4.15 Maps	95
4.16 Product Quality	96
4.16.1 Performance	96
4.16.2 Accuracy	97
4.16.3 Response of users	97