

**PROBLEMS AND FACTORS INFLUENCING THE
ADOPTION OF MICRO-IRRIGATION SYSTEM FOR
CROP CULTIVATION IN BANDARAWELA DSD,
BADULLA**



BY

H.W.B.M.R.M.BANDARA



FTC 14

Project Report
Library - EUSL

**DEPARTMENT OF BIOSYSTEMS TECHNOLOGY
FACULTY OF TECHNOLOGY
EASTERN UNIVERSITY
SRI LANKA
2021**

ABSTRACT

This study was done to determine the factors influence on the adoption of MIS and the problems faced by the farmers in practicing MIS for vegetable cultivation at Bandarawela Divisional Secretariat division of Badulla District. A field survey was done with randomly selected 60 farmers using structured questionnaire, direct observations as well as personal interview.

Results indicated that extent of crop cultivated under MIS is very less than the areas irrigated with NON MIS. High water use efficiency and ease of maintenance and less labour availability are some of the reasons behind the shift from NON MIS to MIS. However, lack of capital, knowledge and poor water quality are the major factors influencing on the adoption MIS in the study area. Therefore, the study suggests that regular extension services, training programs and supply of subsidies for establishing MIS will motivate the farmers for the adoption of MIS in the study area.

TABLE OF CONTENT

ABSTRACT

ACKNOWLEDGEMENT

TABLE OF CONTENTS.....v

LIST OF TABLES.....ix

LIST OF FIGURES.....x

1	CHAPTER 01: INTRODUCTION.....	01
1.1	Background information.....	01
1.2	Problem identification & Justification.....	02
1.3	Objectives.....	03
2	CHAPTER 02: LITERATURE REVIEW.....	03
2.1	Current water resource status in Sri Lanka.....	03
2.2	Crop and vegetable cultivation in Sri Lanka.....	04
2.3	Application of technology for Water management.....	05
2.4	Methods of Irrigation.....	06
2.5	Micro Irrigation System (MIS).....	07
2.5.1	Sprinkler irrigation system.....	08
2.5.1.1	Advantages of Sprinkler irrigation system.....	10

2.5.1.2. Disadvantages of Sprinkler irrigation system.....	10
2.5.2 Drip Irrigation system.....	11
2.5.2.1 Advantages of Drip irrigation system.....	11
2.5.2.2 Disadvantages of Drip irrigation system.....	12
2.6 Field performance of MIS.....	12
2.7 Micro Irrigation System in Sri Lanka.....	14
3 CHAPTER 3: METHODOLOGY.....	15
3.1 Location of the study area.....	15
3.2 Sample collection.....	15
3.3 Data collection.....	16
3.4 Data analysis.....	16
4 CHAPTER 04: RESULTS AND DISCUSSION.....	17
4.1 Socio-Economic status of the respondents.....	17
4.1.1 Age of the respondents.....	17
4.1.2 Gender of the responds.....	18
4.1.3 Educational level of the Respondents.....	19
4.1.4 Monthly income of the responded farmers.....	21
4.2 Adaption of micro irrigation system among vegetable farmers.....	22

4.3	Types of water source for Irrigation.....	23
4.4	Unique features of MIS non adopter farmers.....	24
4.4.1	Existing irrigation method.....	24
4.4.2	Awareness about MIS.....	25
4.4.3	Factors on Adaptation of MIS from responded farmers.....	26
4.4.4	Organizational Support to Establish MIS.....	27
4.4.5	Analysis of Factors influencing adaptation of micro irrigation system.....	28
4.4.6	Problems of currently practicing irrigation system.....	30
4.5	Farmers adopting Micro irrigation system.....	31
4.5.1	Vegetable cultivation under MIS.....	31
4.5.2	Previous irrigation method before MIS.....	32
4.5.3	Benefits of Adoption MIS.....	33
4.5.4	Limitations of Micro irrigation system.....	34
4.5.5	Expenditure to establish MIS.....	35
4.5.6	Tranning on Micro irrigation system.....	36
4.5.7	Availability of Spare parts of Micro irrigation system.....	37
4.5.8	Disease spreading Information from MIS observed from the farmers.....	38
4.5.9	Farmer satisfaction with the MIS.....	39

5	CHAPTER 05: CONCLUSIONS.....	40
5.1	SUGGESTIONS AND RECOMMENDATION.....	41
6	CHAPTER 06: REFERENCES.....	4

LIST OF TABLES

Table 4.1 Age distribution of MIS adopted respondents.....	17
Table 4.2 Monthly income of the MIS non adopted Respondents.....	21
Table 4.3 Existing irrigation method.....	24
Table 4.4 Awareness about MIS.....	26
Table 4.5 Factors Influencing on Adoption of MIS in study area.....	27
Table 4.6 Organizational support to Establish MIS.....	28
Table 4.7 Factor analysis for adaptation of MIS.....	29
Table 4.8 Problems of currently practicing irrigation system.....	31
Table 4.9 Vegetable cultivation under MIS.....	32
Table 4.10 Previous irrigation method before MIS.....	33
Table 4.11 Benefits of Adoption MIS.....	34
Table 4.12 Limitations of Micro irrigation system.....	35
Table 4.13 Cost for the establishment of MIS.....	36
Table 4.14 Training of Micro irrigation system.....	37
Table 4.15 Availability of Spare parts.....	38
Table 4.16 Disease spreading Information.....	39
Table 4.17 Farmer satisfaction with the MIS.....	40

LIST OF FIGURES

Figure.4.1 Gender of the respondent.....	18
Figure.4.2 Educational level of the MIS adopted Respondents.....	19
Figure.4.3 Educational level of the MIS non adopted Respondents.....	20
Figure 4.4 Adoption of Micro Irrigation System.....	22
Figure 4.5 Types of water source with adoption of MIS.....	23
Figure 4.6 Farmers used gravity for the sprinkler irrigation system.....	24