

THE STUDY FOR THE POTENTIAL REALIZATION OF IRRIGATED AGRICULTURE IN THE DRY AND INTERMEDIATE ZONES OF SRI LANKA

MAIN REPORT

Table of Contents

LOCATION MAP
SUMMARY

Page

PART - I GENERAL BACKGROUND

Chapter 1	INTRODUCTION	1 - 1
1.1	Authority	1 - 1
1.2	Background of the Study	1 - 1
1.3	Objectives and Areas to be Covered by the Study.....	1 - 2
1.4	Progress of the Work.....	1 - 2
1.5	Acknowledgement	1 - 5
Chapter 2	NATIONAL AND REGIONAL SOCIO-ECONOMY	2 - 1
2.1	National Socio-economy.....	2 - 1
2.1.1	Land and Population	2 - 1
2.1.2	National Economy	2 - 1
2.1.3	Agriculture	2 - 2
2.2	Regional Socio-economic Background	2 - 3
2.2.1	Population Characteristics	2 - 3
2.2.2	Industries of the Region.....	2 - 4
2.3	Government Policies for Agricultural Development	2 - 5
Chapter 3	PRESENT CONDITIONS OF THE STUDY AREA	3 - 1
3.1	Location, Administrative Divisions and Population.....	3 - 1
3.2	Natural Conditions	3 - 1
3.2.1	Topography and Geology	3 - 1
3.2.2	Meteorology and Hydrology	3 - 2
3.2.3	Soils and Vegetation	3 - 3
3.3	Agriculture	3 - 4
3.3.1	Present Land Use	3 - 4
3.3.2	Land Holding and Land Tenure	3 - 4
3.3.3	Agricultural Production	3 - 5

3.3.4	Animal Husbandry	3 - 8
3.3.5	Inland Fisheries	3 - 9
3.4	Irrigation	3 - 9
3.4.1	General	3 - 9
3.4.2	Water Source	3 - 10
3.4.3	Irrigation	3 - 10
3.4.4	Operation and Maintenance	3 - 11
3.4.5	Farmers ‘ Participation in Rehabilitation Work	3 - 15
3.5	Marketing and Processing Facilities	3 - 16
3.6	Rural Infrastructure	3 - 18
3.7	Marketing and Prices	3 - 19
3.7.1	General	3 - 19
3.7.2	Marketing of Agricultural Products	3 - 19
3.7.3	Marketing of Farm Inputs	3 - 20
3.7.4	Co-operatives and Farmer Companies	3 - 20
3.7.5	Market Access	3 - 21
3.7.6	Demand and Supply of Agricultural Products and Export Market Potential	3 - 21
3.7.7	Agricultural Prices	3 - 22
3.8	Community and Farmers’ Organisation	3 - 22
3.8.1	Village Community	3 - 22
3.8.2	Farmers’ Organisations	3 - 23
3.8.3	Other Community Based Organisations	3 - 25
3.8.4	Gender Issues	3 - 26
3.9	Agricultural and Social Support Services	3 - 26
3.9.1	Project Related Institution for Agricultural and Rural Development	3 - 26
3.9.2	Agricultural Research	3 - 27
3.9.3	Agricultural Extension	3 - 28
3.9.4	Rural Banking and Credit	3 - 29
3.9.5	Seed Production and Distribution	3 - 30
3.9.6	Social Support Activities	3 - 31
3.10	Environment	3 - 31
3.10.1	Present Status of Natural Resources	3 - 31
3.10.2	Current Environmental Issues	3 - 33
3.10.3	On-going Environment Conservation Programmes	3 - 36
3.11	Previous and On-going Projects related to the Study Area	3 - 37
3.11.1	Previous and On-going Projects	3 - 37
3.11.2	Case Study	3 - 37

PART - II MASTER PLAN STUDY

Chapter 4	SELECTION OF IRRIGATION SCHEMES TO BE STUDIED	4 - 1
Chapter 5	INVENTORY OF THE IRRIGATION SCHEMES	5 - 1
5.1	General	5 - 1
5.2	General Background of Irrigation Schemes.....	5 - 2
5.2.1	General Situation	5 - 2
5.2.2	Agriculture	5 - 4
5.2.3	Irrigation and Drainage Facilities	5 - 8
5.2.4	Operation and Maintenance	5 - 13
5.2.5	Rural Infrastructure	5 - 17
5.2.6	Farmers' Organisation and Village Community	5 - 18
5.2.7	Farm Economy	5 - 20
5.2.8	Role of Women in Farming and Living	5 - 22
5.2.9	The Poor in the Irrigation Schemes	5 - 22
5.2.10	Problem of Youth in the Community	5 - 23
5.3	The Summary of the Present Situation in the Irrigation Schemes.....	5 - 24
Chapter 6	CONSTRAINTS OF COMMUNITY AND NEEDS FOR DEVELOPMENT DERIVED FROM FARMERS.....	6 - 1
6.1	Farmers and RRA Workshop	6 - 1
6.2	Constraints of Community	6 - 2
6.3	Needs for Development	6 - 4
6.4	Development Concerning Organisation	6 - 6
6.5	Results of RRA Workshop and Its Evaluation	6 - 7
Chapter 7	CONSTRAINTS AND DEVELOPMENT POTENTIAL	7 - 1
7.1	Problems and Major Constraints for Agriculture Development	7 - 1
7.2	Development Potential for Future Agricultural Development	7 - 3
Chapter 8	BASIC DEVELOPMENT CONCEPTS OF MASTER PLAN	8 - 1
8.1	Preparation Process of Basic Development Concepts	8 - 1
8.2	Basic Development Constraints and Basic Objectives of the Irrigation Schemes	8 - 2
8.2.1	Basic Development Constraints	8 - 2
8.2.2	Basic Development Objectives	8 - 3
8.3	Basic Approach to Programmes Formulation on the Overall Goal of the Master Plan	8 - 7
8.3.1	The Overall Goal of the Master Plan	8 - 7

8.3.2	Basic Approach on the Programme Formation	8 - 7
8.4	Review of Development Components in the Master Plan	8 - 9
8.4.1	Formulation of the Preliminary Development Components	8 - 9
8.4.2	Review of the Preliminary Development Components	8 - 11
8.4.3	Development Components Proposed in the Master Plan	8 - 12
8.5	Executing Agency of Development Components	8 - 13
8.6	Review of Development Stage of Irrigation Schemes	8 - 13
Chapter 9	MASTER PLAN ON DEVELOPMENT OF AGRICULTURE	9 - 1
9.1	Outline of Master Plan on Development of Agriculture	9 - 1
9.2	Awareness Programme of Participatory Approach	9 - 1
9.3	Strengthening of Farmers' Organisation and Community Development	9 - 6
9.3.1	General	9 - 6
9.3.2	Farmers' Organisation	9 - 7
9.3.3	Community Co-ordinating Committee	9 - 11
9.3.4	Kanna Meetings	9 - 11
9.3.5	Community Based Organisations	9 - 12
9.3.6	Women's Participate to Development	9 - 13
9.4	Agricultural Production Plan (Stabilisation of Productivity and Crop Diversification)	9 - 13
9.4.1	General	9 - 13
9.4.2	Land Use Plan	9 - 14
9.4.3	Proposed Crops and Cropping Pattern	9 - 15
9.4.4	Proposed Farming Practices and Crop Production	9 - 17
9.4.5	Crop Budget	9 - 18
9.4.6	Improvement of Land Fragmentation	9 - 19
9.5	Proposed Income Generating Activities	9 - 20
9.5.1	General	9 - 20
9.5.2	Components of Income Generation	9 - 20
9.5.3	Implementation of Income Generation Activities	9 - 21
9.6	Improvement of Marketing and Agricultural Credit	9 - 22
9.6.1	Improvement of Marketing	9 - 22
9.6.2	Agricultural Credit	9 - 24
9.7	Irrigation and Drainage Plan	9 - 27
9.7.1	General	9 - 27
9.7.2	Irrigation Water Demand	9 - 27
9.7.3	Water Resources Assessment	9 - 28
9.7.4	Delineation of Irrigation Area	9 - 29
9.7.5	Rehabilitation and Improvement Plan of Irrigation Facilities	9 - 30

9.8	Operation and Maintenance of Irrigation Facilities and Farm Roads	9 - 32
9.8.1	General	9 - 32
9.8.2	Clarification of Scope of Responsibility for Water Management, Operation and Maintenance	9 - 32
9.8.3	Water Management	9 - 32
9.8.4	Maintenance Plan.....	9 - 33
9.8.5	Maintenance Activities	9 - 33
9.8.6	Data Collection, Monitoring and Reporting System	9 - 34
9.8.7	O&M Costs	9 - 34
9.8.8	Training on Water Management, Operation and Maintenance	9 - 35
9.9	Proposed Plans for Strengthening of Agricultural Supporting Services.....	9 - 36
9.9.1	Basic Approach for Formulation of Strengthening Plans	9 - 36
9.9.2	Scope of Planning and Supporting Programmes for Crop Sub- sector	9 - 36
9.9.3	Scope of Planning and Supporting Programmes for Income Generation	9 - 37
9.9.4	Annual and Overall Implementation Programme for Support Programmes	9 - 38
9.9.5	Proposed Management System and Institutional Set-up for Agricultural Support Services	9 - 38
9.10	Research Programme of Cascade System and Subsurface Water.....	9 - 39
9.11	Monitoring and Evaluation of the Project	9 - 40
9.11.1	General.....	9 - 40
9.11.2	Monitoring	9 - 41
9.11.3	Evaluation	9 - 42
Chapter 10	ENVIRONMENTAL ASSESSMENT	10 - 1
10.1	Basic Approach	10 - 1
10.2	Institutional Aspects	10 - 1
10.3	Environmental Conservation Plan	10 - 2
10.4	Monitoring Plan	10 - 5
Chapter 11	IMPLEMENTATION PLAN AND COST ESTIMATE.....	11 - 1
11.1	Implementation Plan	11 - 1
11.1.1	General	11 - 1
11.1.2	Project Executing Agencies	11 - 1
11.1.3	Awareness Programme through Process Oriented Community Development	11 - 3
11.1.4	Rehabilitation / Improvement Works for Irrigation Infrastructures..	11 - 4
11.1.5	Implementation Schedule	11 - 7

11.2	Cost Estimate	11 - 7
Chapter 12	PROJECT EVALUATION	12 - 1
12.1	General	12 - 1
12.2	Economic Evaluation	12 - 1
12.3	Farm Budget	12 - 3
12.4	Socio-economic Impact	12 - 6
Chapter 13	CONCLUSIONS AND RECOMMENDATIONS FOR THE MASTER PLAN STUDY	13 - 1
13.1	Conclusions	13 - 1
13.2	Recommendations	13 - 2

PART - III FEASIBILITY STUDY FOR THE PRIORITY IRRIGATION SCHEMES

Chapter 14	EVALUATION AND SELECTION OF PRIORITY IRRIGATION SCHEMES	14 - 1
14.1	Evaluation Method	14 - 1
14.2	Result of Evaluation	14 - 3
14.3	Selection of Priority Irrigation Schemes	14 - 4
Chapter 15	PRESENT CONDITIONS OF THE PRIORITY IRRIGATION SCHEMES	15 - 1
15.1	Location and Population of the Priority Irrigation Schemes	15 - 1
15.2	Natural Condition	15 - 1
15.3	Agriculture	15 - 3
15.3.1	Land Holding and Land Tenure	15 - 3
15.3.2	Crop Production	15 - 3
15.3.3	Livestock	15 - 5
15.3.4	Inland Fishery	15 - 6
15.4	Irrigation and Drainage	15 - 6
15.5	Marketing and Rural Infrastructure	15 - 14
15.5.1	Marketing and Processing Facilities	15 - 14
15.5.2	Rural Infrastructure	15 - 15
15.6	Marketing Agricultural Products and Farm Inputs	15 - 15
15.6.1	Marketing of Agricultural Products	15 - 15
15.6.2	Marketing of Farm Inputs	15 - 16
15.7	Community and Farmers' Organisation	15 - 16

15.7.1	Village Community	15 - 16
15.7.2	Community Based Organisations in the Community	15 - 18
15.7.3	Farmers' Organisations.....	15 - 19
15.7.4	Gender	15 - 21
15.8	Agricultural and Social Support Services	15 - 22
15.8.1	Agriculture and Rural Development Institutions	15 - 22
15.8.2	Agricultural Extension	15 - 22
15.8.3	Agrarian Service Centre and Agrarian Service Committee	15 - 24
15.8.4	Agricultural Research	15 - 25
15.8.5	Seed Production and Distribution	15 - 25
15.8.6	Rural Credit and Agricultural Insurance	15 - 25
15.8.7	Support Services of Agencies Related to Income Generation	15 - 26
15.9	Environment	15 - 26
Chapter 16	SURVEY FOR PARTICIPATORY PLANNING.....	16 - 1
16.1	General	16 - 1
16.2	PCM Workshop	16 - 2
16.2.1	Outline of PCM Workshops.....	16 - 2
16.2.2	Results of PCM Workshop	16 - 3
16.3	Preparation of Project Design Matrix	16 - 7
16.3.1	Preparation of the Preliminary Project Design Matrix by the Study Team	16 - 7
16.3.2	Review and Evaluation of the Preliminary Project Design Matrix by Farmers	16 - 11
16.3.3	Preparation of the Project Design Matrix Adopted in F/S.....	16 - 13
16.4	Results and Evaluation of Survey for Participatory Planning	16 - 14
16.5	Survey and Investigation of Irrigation Facilities by Farmers	16 - 17
16.5.1	Method of Survey and Investigation.....	16 - 17
16.5.2	Evaluation of Survey and Investigation.....	16 - 17
Chapter 17	DEVELOPMENT PLAN OF THE PRIORITY IRRIGATION SCHEMES	17 - 1
17.1	Introduction	17 - 1
17.2	Basic Development Concept	17 - 1
17.2.1	Overall Goal and its Adaptability with the Development Components of the Master Plan	17 - 1
17.2.2	Basic Approaches on the Programme Preparation	17 - 2
17.3	Development Plan in the Priority Irrigation Schemes	17 - 4
17.3.1	Nachchaduwa Major Scheme	17 - 4
17.3.2	Palukadawela Major Scheme.....	17 - 16

17.3.3	Periyakulama Medium Scheme	17 - 28
17.3.4	Mahananneriya Medium Scheme	17 - 39
17.3.5	Mahananneriya Minor Scheme Group (Cascade).....	17 - 51
17.4	Proposed Plans for Strengthening of Agricultural Support Institutions	17 - 63
17.4.1	Proposed Areas to be Addressed and Support	17 - 63
17.4.2	Support Programmes.....	17 - 63
17.4.3	Proposed Management System and Institutional Set-up	17 - 65
Chapter 18	ENVIRONMENTAL CONSERVATION PLAN.....	18 - 1
18.1	General	18 - 1
18.2	Environmental Impact Assessment and Environmental Mitigation Plan	18 - 1
18.3	Monitoring Plan	18 - 5
Chapter 19	IMPLEMENTATION PLAN AND COST ESTIMATE.....	19 - 1
19.1	Implementation Plan	19 - 1
19.1.1	Project Executing Agencies	19 - 1
19.1.2	Awareness Programme	19 - 2
19.1.3	Implementation Programme of Rehabilitation and Improvement Works for Irrigation Infrastructures	19 - 2
19.1.4	Procurement Plan	19 - 3
19.1.5	Overall Implementation Plan	19 - 4
19.2	Cost Estimate	19 - 5
19.2.1	Initial Investment Cost	19 - 5
19.2.2	O&M and Replacement Cost.....	19 - 10
Chapter 20	PROJECT EVALUATION FOR THE FEASIBILITY STUDY	20 - 1
20.1	General	20 - 1
20.2	Economic Evaluation	20 - 1
20.3	Financial Evaluation	20 - 4
20.3.1	Cash Flow Analysis	20 - 4
20.3.2	Farm Budget under with Project	20 - 5
20.4	Socio -economic Impact	20 - 7
Chapter 21	CONCLUSIONS AND RECOMMENDATIONS FOR THE FEASIBILITY STUDY	21 - 1
21.1	Conclusions	21 - 1
21.2	Recommendations	21 - 2

List of Tables

	<u>Page</u>
Table 2.1.1 National Socio-economic Indicators	T - 1
Table 3.9.1 Features of Agricultural Extension Agencies and Project Related Support Facilities	T - 2
Table 3.9.2 Extension Management System of DOA and PDOAs in the Study Area	T - 3
Table 3.9.3 Major Agricultural Supporting Programmes Implemented and Planned by IPEU and PDOAs	T - 4
Table 3.9.4 4 Major On-going Rural Credit Schemes in the Study Area and Their Terms & Conditions	T - 5
Table 3.11.1 Previous and On-going Projects related to the Study Area (1/2 – 2/2)..	T - 6
Table 4.1 Candidate Major and Medium Irrigation Scheme	T - 8
Table 4.2 List of Major and Medium Irrigation Schemes to be Studied	T - 9
Table 4.3 List of Minor Irrigation Schemes.....	T - 10
Table 5.1.1 Present Condition of 100 Irrigation Schemes (1/10 - 10/10)	T - 11
Table 5.2.1 Hydrological Characteristics of Minor Irrigation Schemes	T - 21
Table 5.2.2 Assessment of Major and Medium Irrigation Scheme (1/2 – 2/2)	T - 22
Table 6.2.1 Problems of Community Identified by Farmers in Each Scheme (Results of RRA Workshop)	T - 24
Table 6.2.2 Problems of Community Identified by Farmers (Results of RRA Workshops)	T - 25
Table 6.3.1 Needs for Development Identified by Farmers in Each Schemes (Results of RRA Workshop)	T - 26
Table 6.3.2 Needs for Improvement and Development of Community (Results of RRA Workshop)	T - 27
Table 8.6.1 Information for Development Stage of Irrigation Schemes	T - 28
Table 8.6.2 Analysis for Development Stage of Irrigation Schemes	T - 29
Table 9.2.1 Outline of Implementation plan of Awareness Programme (1/2 - 2/2). T - 30	
Table 9.2.2 Curriculum and Expected Results of Awareness Programme (1/3 - 3/3)	T - 32
Table 9.7.1 Irrigation Water Requirement (1/3 - 3/3)	T - 35
Table 9.7.2 Summary of Water Balance Study	T - 38
Table 9.7.3 Existing Conditions of Major and Medium Irrigation Schemes	T - 39
Table 9.7.4 Rehabilitation Plan for Respective Projects (1/3 - 3/3).....	T - 40
Table 9.9.1 Farming Constraints and Needs for Crop Sub-sector Support Programmes Identified by Extension Agencies	T - 43
Table 9.9.2 Needs for Support Programmes in Crop Sub-sector by Scheme	T - 44
Table 9.9.3 Proposed Support Programmes under the Project (1/3 - 3/3)	T - 45
Table 9.9.4 Annual and Overall Work Programmes of Support Services under the Project: Agricultural Support Programmes by Scheme	T - 48

Table 9.9.5	Annual and Overall Work Programmes of Support Services under the Project (1/2 - 2/2)	T - 49
Table 9.9.6	Basic Time Framework for Planning and Implementation of Agricultural Support Programmes	T - 51
Table 11.2.1	Financial Project Costs	T - 52
Table 12.2.1	Economic Project Costs	T - 53
Table 12.2.2	Annual Irrigation Benefit	T - 54
Table 14.2.1	Scoring of the Irrigation Schemes.....	T - 55
Table 14.2.2	Evaluation of the Irrigation Schemes	T - 56
Table 15.1.1	Socio-economic Indicators of the Priority Irrigation Schemes	T - 57
Table 15.3.1	OFC Farmers' Interest on OFC Cultivation - PCM workshop participants	T - 58
Table 15.8.1	Implementation of Agricultural Extension Programmes in 1999 in the Project Areas (1/2 - 2/2)	T - 59
Table 15.8.2	Deployment of Livestock Extension Staffs and Extension Programmes in the Project Areas	T - 61
Table 15.8.3	Rural Credit Institutions Operated in the Project Areas and Their Coverage of Cultivation Loan and Paving Schemes	T - 62
Table 15.8.4	Major Agriculture Credit Schemes Operated in the Project Area	T - 63
Table 16.3.1	Preliminary Project Design Matrix (1/5 - 5/5).....	T - 64
Table 19.2.1	Costs for Rehabilitation and Improvement of Irrigation Facilities and Farm Roads	T - 69
Table 19.2.2	Costs for Rehabilitation and Improvement of Supporting Facilities and Provision of Equipment	T - 70
Table 19.2.3	Costs for Awareness and Training Programmes	T - 71
Table 19.2.4	Costs for Administration of PMU and Capital of Loan	T - 71
Table 19.2.5	Annual Disbursement Schedule of Project Costs	T - 72
Table 20.3.1	Cash Flow Statement - Development Plan of Priority Irrigation Schemes	T - 73

List of Figures

	<u>Page</u>
Figure 3.2.1	Agro-ecological Zones of Sri Lanka..... F - 1
Figure 3.9.1	Overall Government Administrative Structure F - 2
Figure 3.9.2	Present Agricultural Extension Network in the Study Area F - 3
Figure 3.9.3	Extension System and Research-Extension Linkage of IPEU and PDOAs F - 4
Figure 3.10.1	Distribution of Reddish-brown Earth-low Humic Gley Association Soils and Agro-ecological Environment of Sri Lanka F - 5

Figure 3.10.2	Distribution of Reddish-brown Earth-non Calcic Brown-low Humic Gley Association	F - 6
Figure 4.1	Location Map of Candidate Irrigation Schemes	F - 7
Figure 4.2	Location Map of Minor Irrigation Scheme (Hydrological Group I)	F - 8
Figure 4.3	Location Map of Minor Irrigation Scheme (Hydrological Group II and III)	F - 9
Figure 4.4	Location Map of Minor Irrigation Scheme (Hydrological Group IV)	F - 10
Figure 4.5	Location Map of Minor Irrigation Scheme (Hydrological Group V) ...	F - 11
Figure 4.6	Location Map of Minor Irrigation Scheme (Hydrological Group VI)	F - 12
Figure 4.7	Location Map of Minor Irrigation Scheme (Hydrological Group VII)	F - 13
Figure 4.8	Location Map of Minor Irrigation Scheme (Hydrological Group VIII)	F - 14
Figure 4.9	Location Map of Minor Irrigation Scheme (Hydrological Group IX)	F - 15
Figure 9.9.1	Approaches for Formulation of Agricultural Support Programmes	F - 16
Figure 9.9.2	Proposed Management System for Planning and Implementation of Agricultural Support Programmes	F - 17
Figure 9.9.3	Proposed Institutional Set-up for Agricultural Support Programmes ..	F - 18
Figure 9.9.4	Proposed Extension System and Research-Extension-Farmer Linkage in Crop Sub-sector	F - 19
Figure 11.1.1	Proposed Institutional Set-up for Project Implementation and Management.....	F - 20
Figure 11.1.2	Proposed Organisational Structure of Project Management Unit	F - 21
Figure 11.1.3	Proposed Implementation Schedule.....	F - 22
Figure 15.3.1	Present and Proposed Cropping Calendar.....	F - 23
Figure 15.8.1	Current Extension System of Crop Sub-sector in the Project Areas....	F - 24
Figure 17.4.1	Proposed Management System for Implementation of Agricultural Support Programmes.....	F - 25

Attachments

	<u>Page</u>
ATTACHMENT –1	SCOPE OF WORKS FOR THE STUDYA - 1
ATTACHMENT –2	MINUTES OF MEETING ON THE SCOPE OF WORKS.....A - 9
ATTACHMENT –3	MINUTES OF MEETING FOR INCEPTION REPORTA - 15
ATTACHMENT –4	MINUTES OF MEETING FOR PROGRESS REPORT - 1A - 19
ATTACHMENT –5	MINUTES OF MEETING ON INTERIM REPORTA - 23
ATTACHMENT –6	MINUTES OF MEETING ON PROGRESS REPORT - 2A - 27
ATTACHMENT –7	MINUTES OF MEETING ON DRAFT FINAL REPORT.....A - 31

Abbreviations

ADA	Agricultural Development Authority
ADB	Asian Development Bank
ADPA	Agricultural Development and Productivity Assistant
AEARP	Agricultural Extension and Adaptive Research Project
AGA	Assistant Government Agents
AI	Agricultural Instructors
AO	Agricultural officer
AP	Environmental Action Plan
ARI	Artificial Insemination
ARS	Agricultural Research Station
ASC	Agrarian Service Centre
BC	Branch Canal
CA	Catchment area
CARP	Council of Agricultural Research Policy
CCB	Coconut Cultivation Board
CCC	Community Co-ordination Committee
CDO	Community Development Officer
CEA	Central Environmental Authority
CEB	Ceylon Electricity Board
CFC	Ceylon Fertiliser Corporation
COD	Chemical Oxygen Demand
CP	Central Province
CRI	Coconut Research Institute
CTMU	Coconut Triangle Milk Union
CWE	Co-operative Wholesale Establishment
DA	Department of Agriculture
DA&DDP	Draught Animal and Dairy Development Project
DAPH	Department of Animal Production and Health
DAS	Department of Agrarian Services
DC	Distributary canal
DD Office	Deputy Director's Range Offices
DEA	Department of Export Agriculture
DM	Department of Meteorology
DOA	Department of Agriculture
DS	Divisional Secretary / Divisional Secretariat
DWC	Department of Wildlife Conservation
EA	Environmental Assessment
EC	Electricity Conductivity
EIA	Environmental Impact Assessment
EIED	Employment Investment & Enterprise Development

EIRR	Economic Internal Rate of Return
ETU	Extension Development Unit
FA	Field Assistance
FAO	Food and Agriculture Organisation of United Nations
FC	Field canal
FCRD	Field Crops Re-search and Development Division
FMTC	Farm Mechanisation Training
FO	Farmers' Organisation
FSWL	Full Supply Water Level
GA	Government Agent
GDP	Gross Domestic Product
GOSL	Government of Sri Lanka
ha	hectare
HD	Health Department
HIB	Human Inhabited Zone
HORD	Horticultural Crop Research and Development Division
HORDI	Horticultural Crop Research and Development Institute
HRDU	Human Resource Development Unit
HUZ	Human Inhabited or sparsely Inhabited Zone
ID	Irrigation Department
IDU	Institutional Development Unit
IE	Irrigation Engineer
IEE	Initial Environmental Examination
IFAD	International Fund for Agricultural Development
IIMI	International Irrigation Management Institute
ILDC	Indian Livestock Development Co-operation
IMD	Irrigation Management Division
INMAS	Integrated Management of Major Irrigation Schemes
IPEU	Inter Provincial Extension Unit
IRDP	Integrated Rural Development Programme
IRDP	Integrated Rural Development Project
IUCN	International Union for Conservation of Nature and Natural Resources
JICA	Japan International Cooperation Agency
KARTI	Kobbekaduwa Agricultural Research and Training Institute
km	Kilometre
KVS	Village-level Extension Agents
LB	Left bank
LDD	Livestock Development Division
LDIs	Livestock Development Instructors
LDO	Land Development Ordinance
LHG	Low Humic Gley (soils)

LO	Labour officer
MANIS	Management of Irrigation Systems
MASL	Mahaweli Authority of Sri Lanka
MC	Main Canal
MCM	Million cubic meters
MIP	Ministry of Irrigation and Power
ML	Maintenance Labour
MOAL	Ministry of Agriculture and Lands
MPAHA	Ministry of Public Administration and Home Affairs
MPCS	Multi Purpose Co-operatives
MPPI	Ministry of Planning and Policy Implementation
NAITA	National Apprentice and Industrial Training Authority
NAQDA	National Aquaculture Development Authority
NCP	North Central Province
NLDB	National Livestock Development Board
NPC	National Paper Corporation
NWP	North Western Province
NWSDB	National Water Supply and Drainage Board
NYSC	National Youth Service Council
O&M	Operation and Maintenance
OFC	Other Field Crops, meaning all field crops other than paddy rice
PBME	Project Benefits Monitoring and Evaluation
PCs	Provincial Councils
PDAPH	Provincial Department of Animal Production & Health
PDOA	Provincial Department of Agriculture
PHI	Public Health Instructor
PMB	Paddy Marketing Board
PMC	Project Management Committee
PMO	Project Monitoring Officer
PRDD	Provincial Rural Development Department
RARDC	Regional Agricultural Research and Development Centres
RARS	Regional Agricultural Research Station
RB	Right Bank
RBE	Reddish Brown Earth
REAP	Rural Economic Advancement Programme
RPM	Resident Project Manager
RRD	Rice Research and Development Division
RRI	Rubber Research Institute
RRS	Rice Research Stations
Rs.	Sri Lanka Rupee
RTWG	Regional Technical Working Group

RVDB	River Valleys Development Board
S/W	Scope of Works
SADA	Sri Lanka Aquaculture Development Authority
SAEP	Second Agricultural Extension Project
SER	Supplemental Environmental Report
SRI	Sugarcane Research Institute
T&V	Training and Visit
TA	Technical Assistant
TRI	Tea Research Institute
US \$	United States Dollar
VSC	Veterinary Service Centre
WHO	World Health Organisation
WS	Work Supervisor
Ande	Share cropping arrangements in which smallholders without animals herd and manage a flock on behalf of a larger farmer and in return retain half the offspring.
Anicut	A diversion weir to abstract water from a natural channel
Attam	Labour exchange between farmers
Asswedumized	Bunded and puddled (of land for paddy cultivation)
Chena	Slashing, burning, and shifting cultivation
Ganga	River
Grama Niladhari (GN)	Village-level government officials
Maha	North-east monsoon season (approx. Oct -Mar.)
Oya, Ara	River
Pola	Weekly fair
Pradeshiya Sabha	Local elected council (at divisional level)
Purana	Old or ancient
Shramadana	Self help / shared labour
Tank	A reservoir storing water for irrigation
Wewa	Water tank
Yala	South-west monsoon season (approx. Apr. - Sept.)
Yaya	Paddy field

Measurement Units

Extent

cm² = Square-centimetres (1.0 cm x 1.0 cm)
m² = Square-meters (1.0 m x 1.0 m)
Km² = Square-kilometres (1.0 Km x 1.0 Km)
a. = Acre or Acres (100 m² or 0.1 ha.)
ha. = Hectares (10,000 m²)
ac = Acres (4,046.8 m² or 0.40468 ha.)

Volume

cm³ = Cubic-centimetres
(1.0 cm x 1.0 cm x 1.0 cm or
1.0 m-lit.)
m³ = Cubic-meters (1.0 m x 1.0 m x
1.0 m or 1.0 K-lit.)
lit. = Litre (1,000 cm³)

Length

mm = Millimetres
cm = Centimetres (cm = 10 mm)
m = Meters (m = 100 cm)
Km = Kilometres (Km = 1,000 m)
Inch = 2.54 cm
ft = foot (0.3048 m)
mile = 1,609.34 m

Weight

gr. = Grams
Kg = Kilograms (1,000 gr.)
ton = Metric tonne (1,000 Kg)
MCM = 1,000,000 cu-m = 810.68 acre-ft
ac-ft = 1,233.83 m³

Currency

US\$ = United State Dollars
US\$ 1.00 = Rs. 71.0
(Rate in January 2000)
J¥ = Japanese Yen
Rs. = Sri Lankan Rupees

Time and Others

sec. = Seconds
min. = Minutes (60 sec.)
hr. = Hours (60 min.)
cusec. = 28.32 lit/sec
cu-m/s = 35.31 cu-ft/sec

Fiscal Year of Sri Lanka

From 1/January to 31/December