

A PRELIMINARY ASSESSMENT

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මොරටුව.

THE GAL OYA WATER MANAGEMENT

PROJECT

BY

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This Dissertation has not been previously presented in whole or part, to any University or Institution for a higher degree.

June 1987

Eng. N.T. ATUKORALA

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LIST OF ABBREVIATIONS

Acs	=	Acres
Ac Ft	=	Acre Feet
ARTI	=	Agrarian Research & Training Institute
D.Chl	=	Distributory Channel
Dept.	=	Department
D.D.	=	Deputy Director
ECI	=	Engineering Consultants Incorporated
F.C	=	Field Channel
GSL	=	Government of Sri Lanka
GITI	=	Galgamuwa Irrigation Training Institute
ID	=	Irrigation Department
IE	=	Irrigation Engineer
LB	=	Left Bank
O & M	=	Operation and Maintenance
RB	=	Right Bank
TA	=	Technical Assistant
USAID	=	United States Agency for International Development
UNDP	=	United Nations Development Programme
WS	=	Work Supervisor

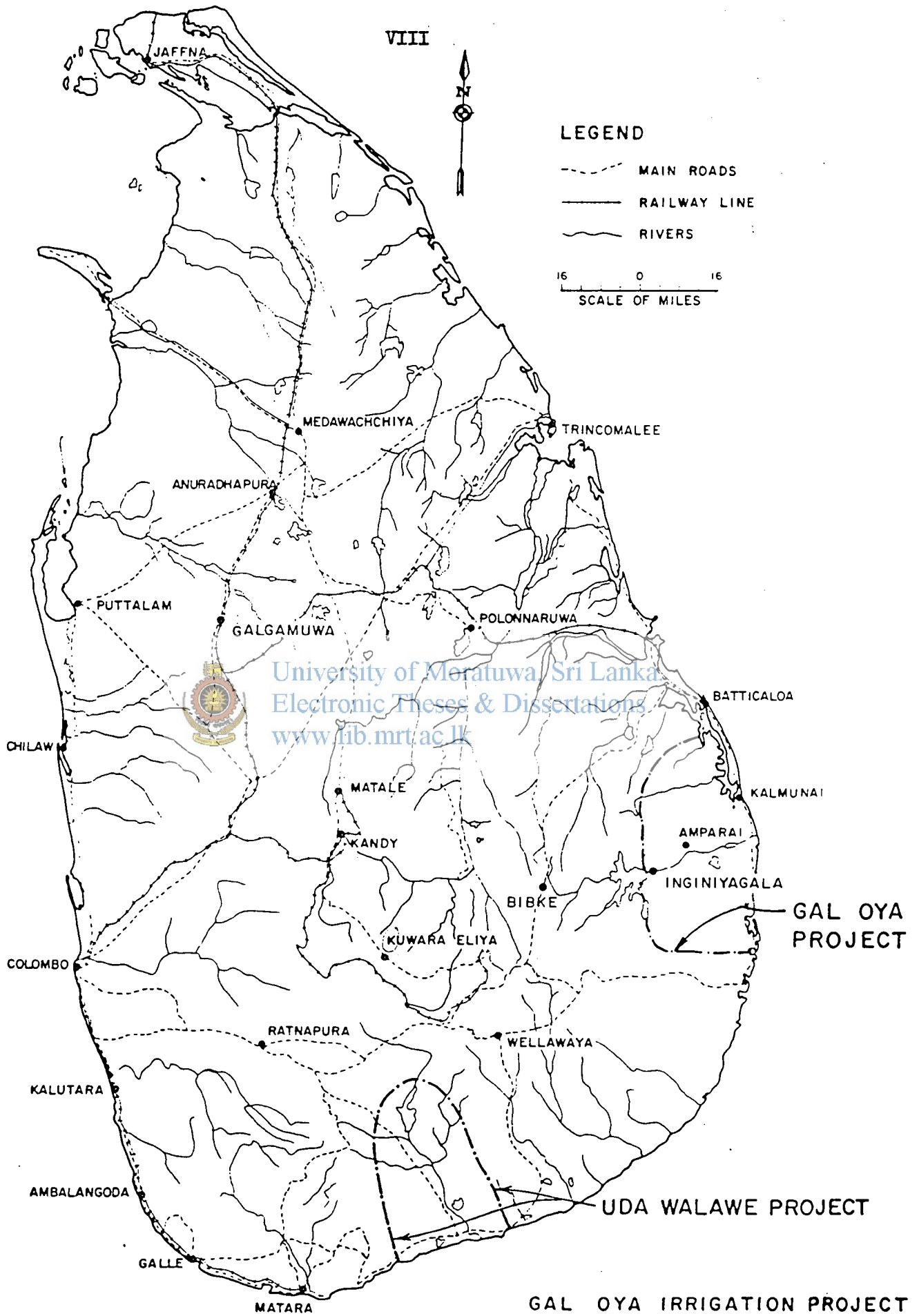




LEGEND

- - - MAIN ROADS
- RAILWAY LINE
- ~ RIVERS

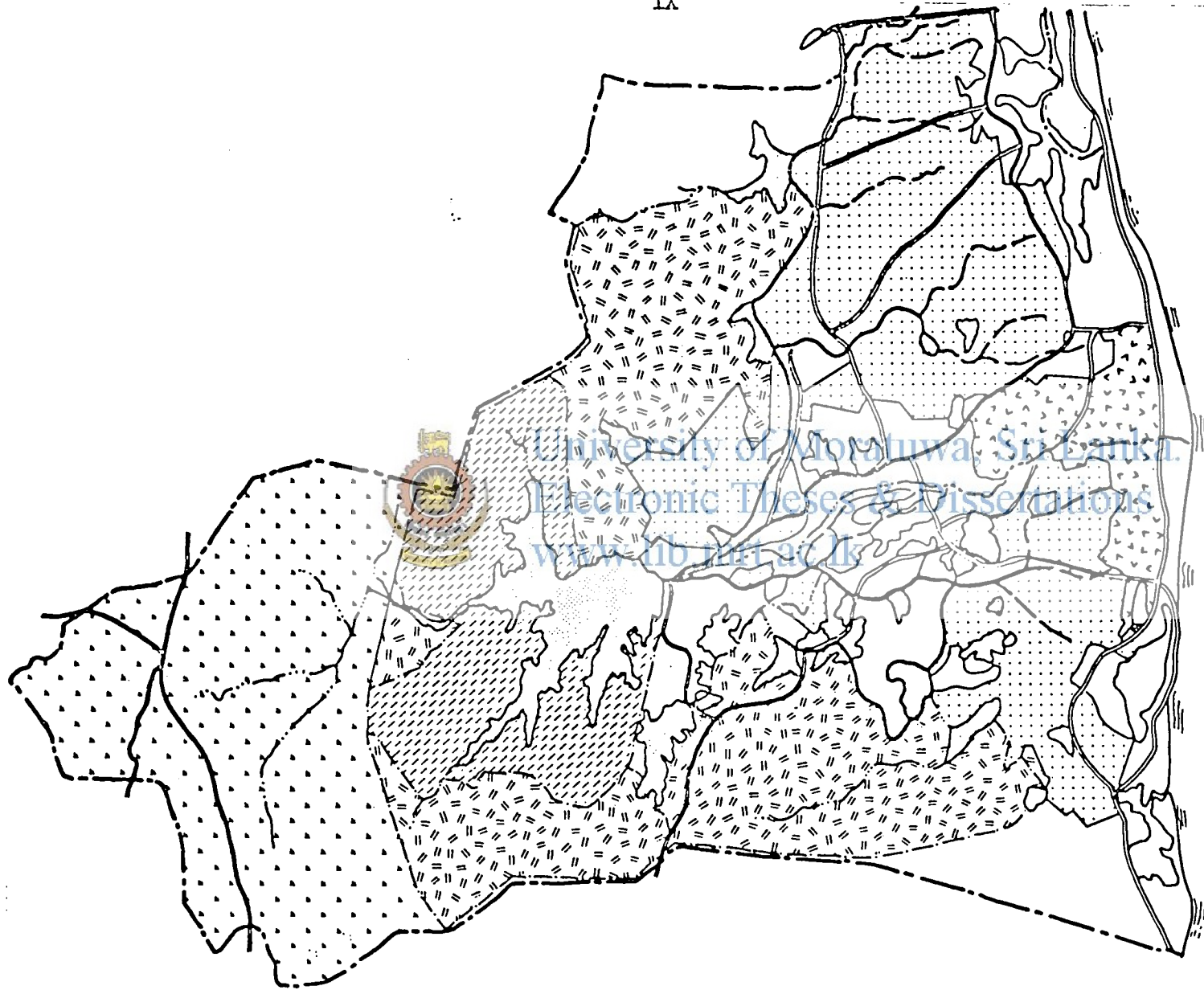
16 0 16
SCALE OF MILES



GAL OYA IRRIGATION PROJECT
LOCATION MAP

Figure 1

IX



LEGEND







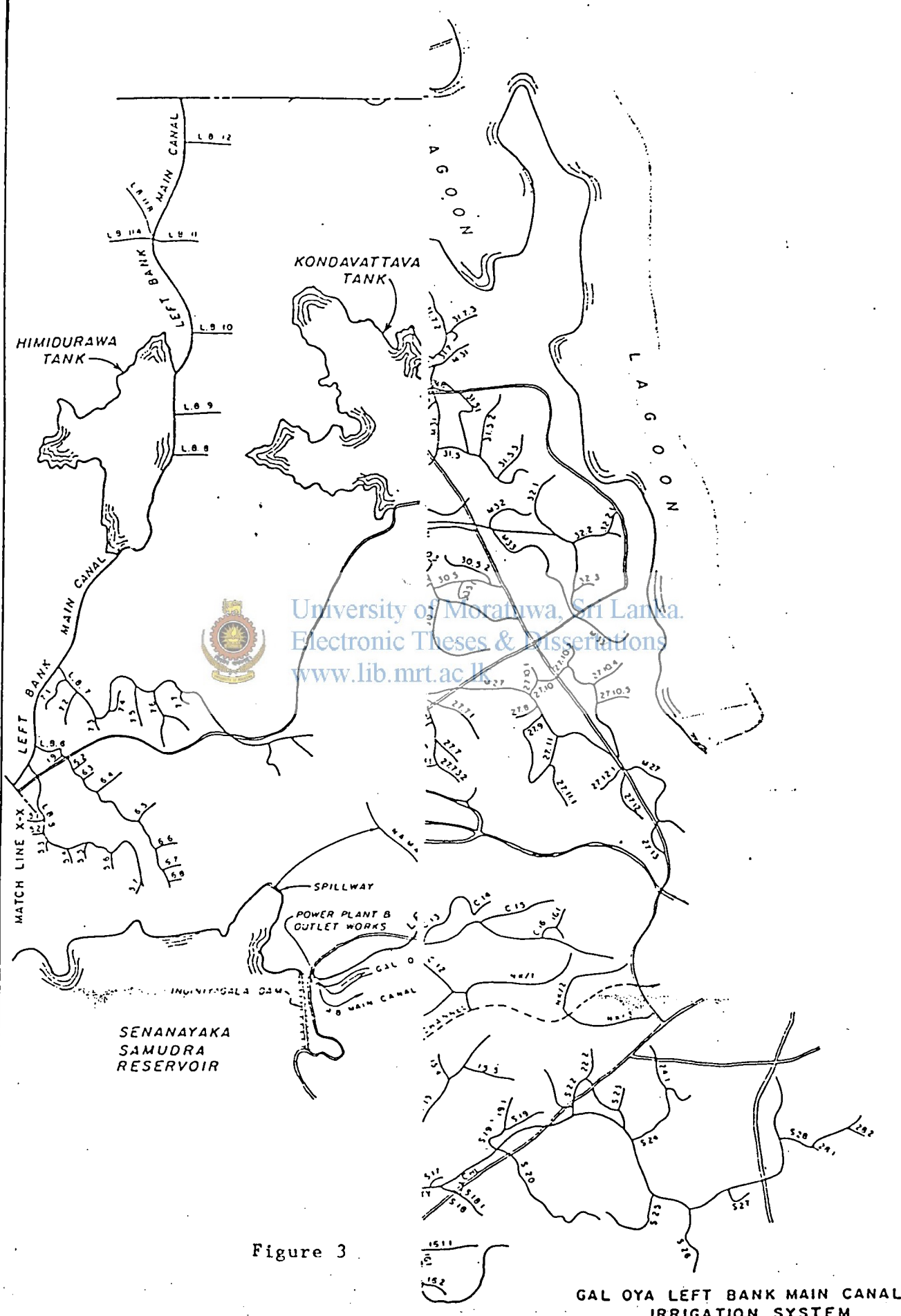
- GODB BOUNDARY
-  NATIONAL PARK
-  SANCTUARY
-  GAL OYA COLONIZATION AR.
-  PURANA AREA
(PATTIPOLA ARU SYSTEM)
-  SUGARCANE LAND
-  RESERVOIR, TANKS & LAKE
- RIVERS
- MAIN & BRANCH CANALS
- - - DISTRIBUTORY CHANNELS
- == MAIN ROADS

Figure 2

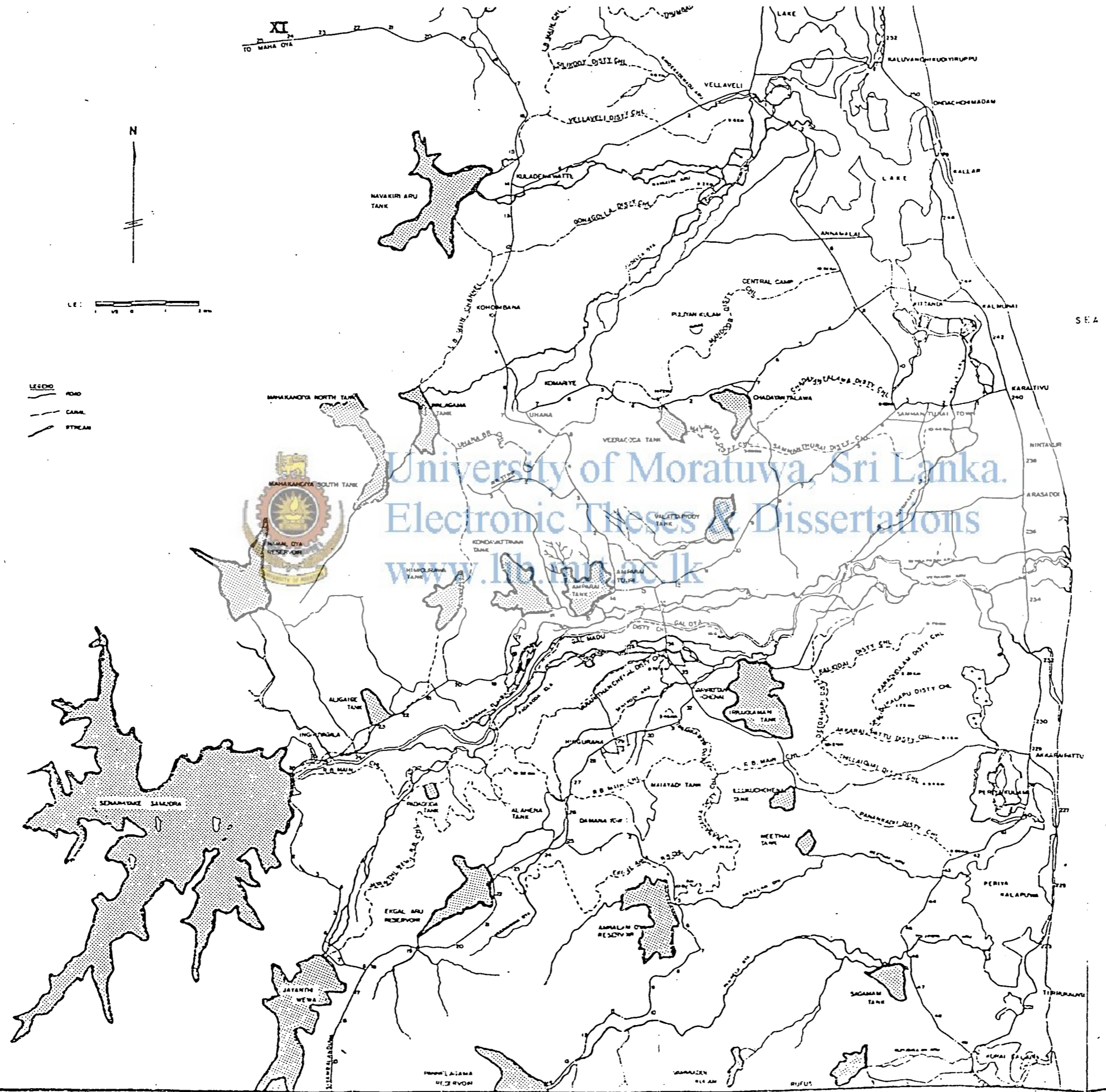
GAL OYA BASIN MAP



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Figure 3

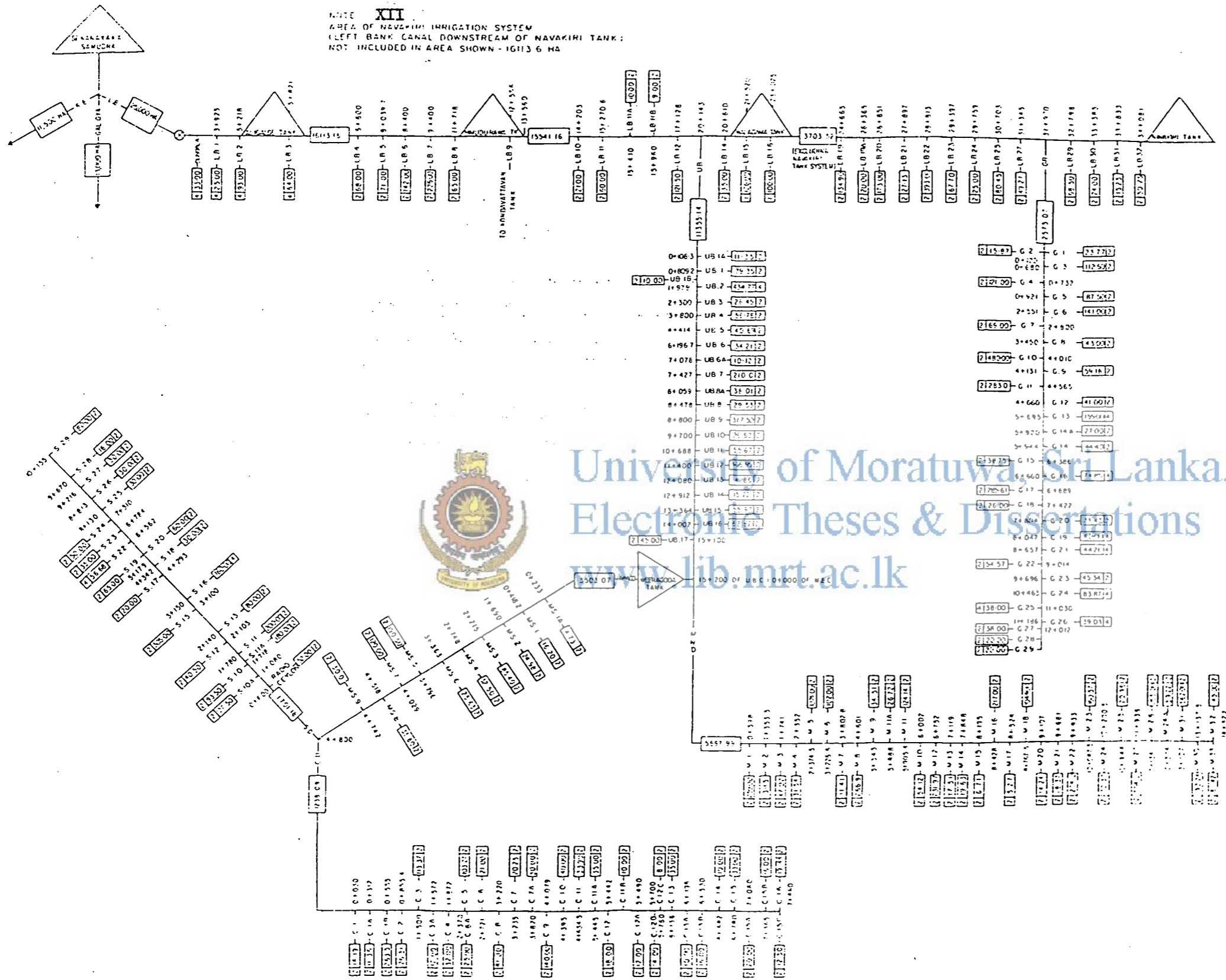
GAL OYA LEFT BANK MAIN CANAL
 IRRIGATION SYSTEM







GAL OYA IRRIGATION PROJECT
SYSTEM LAYOUT

Figure 4

NOTE XII
 AREA OF NAVAKIRI IRRIGATION SYSTEM
 (LEFT BANK CANAL DOWNSTREAM OF NAVAKIRI TANK;
 NOT INCLUDED IN AREA SHOWN - 16113.6 HA

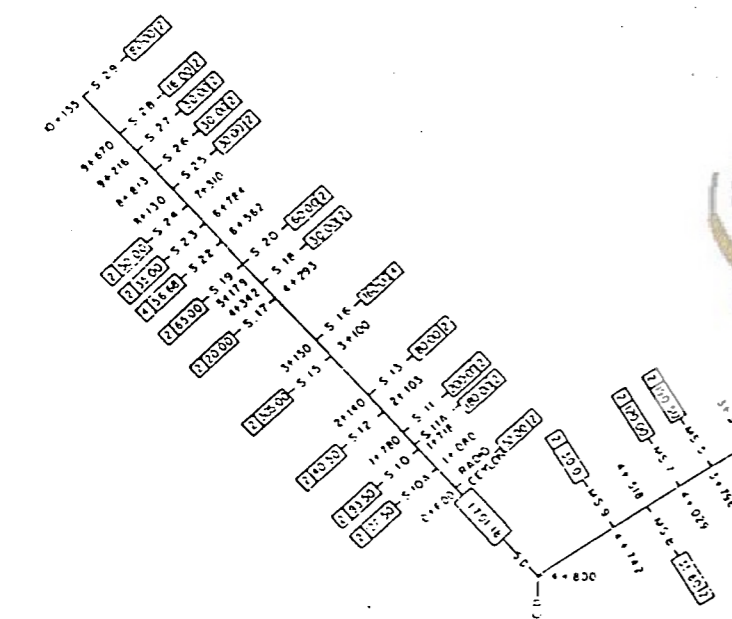


LEGEND

 RESERVOIR OR TANK
 NAME OF CANAL, DISTRIBUTORY OR FIELD CHANNEL
 THE FIGURE INSIDE LARGE BOX IS THE TOTAL COMMAND AREA IN HECTARES.
 THE FIGURE INSIDE THE BIGGER BOX IS THE COMMAND AREA IN HECTARES AND THAT IN THE SMALLER BOX REPRESENTS THE SOIL GROUP NUMBER

SOIL GROUP NUMBER

- 1 RBE-NEB (REDDISH BROWN EARTHS AND NON-CALCIC BROWN SOILS AND THEIR DRAINAGE ASSOCIATES UNDOULATING TERRAIN)
- 2 NCB-LNG (NON-CALCIC BROWN SOILS AND LOW HUMIC GLEY SOILS AND THEIR ASSOCIATES UNDOULATING TERRAIN)
- 3 SL (SOLIDIFIED SOLONCHTS AND SOLONCHAKS - ALKALINE AND SALINE SOILS VARIABLE TEXTURE LEVEL TERRAIN)
- 4 AL (ALLUVIAL SOILS OF VARIABLE TEXTURE)



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Figure 5

SOURCE: AMPARA RANGE GAL OYA DIVISION, IRRIGATION DEPARTMENT

SCHEMATIC DIAGRAM LEFT BANK GAL OYA SYSTEM

SYNOPSIS

The Galoya Irrigation Project is the first multipurpose scheme started in Sri Lanka. The project was commissioned in the year 1956. After nearly over 20 yrs. of its existence the project was in a rather poor condition. The original project served an area of 45,000 Acs, however after over 23 yrs, Irrigation facilities were available only for nearly 32,500 Acs for Maha & 19,250 Acs for Yala.

The Gal Oya rehabilitation project was funded by the USAID and commenced in 1980 and continued beyond 1985. This study analyses the impact of the project on the work done from 1980 to 1985 (Most of the work was done during this period)

The study was centered mainly on the aspects connected to irrigation as delving into other areas of assessment would be a vast exercise.



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The Irrigation aspect covered the following fields and the findings are.

a. The Social Aspect

With the rehabilitation programme there was a turn around of behavior of farmers. For example vandalism was reduced to almost nothing. No structures were damaged and no bunds cut. Third parties were not approached regarding water issues. Cultivation calendar was adhered to as planned at the cultivation meetings.

b. Water management and duty of water

Rehabilitation of the project successfully improved

- a. The water conveyance capacity
- b. The water control capacity
- c. The water measurement capacity

The foregoing enabled a very effective water management programme to be introduced and is being followed even today. This involved a computer programme with a very satisfactory feed back system. A number of water control structures were installed where necessary enabling the optimum use of water and preventing wastage. This measure improved the duty of water from pre-project value of 5.2 acft/Ac to the post project figure of 3.68 acft/Ac.

c. Paddy production

There was a gradual increase in the acreage and the Yield /Ac as the project progressed. The total acreage increased from pre-project 19,250 Acs Yala to post-project 53,000 Acs Yala in 1985. Maha Acreages were pre-project 32,500 Acs to post-project 53,000 Acs.

The increase in yield was pre project 34 bushels/Ac in 1979 to post project 60 bushels/Ac in 1985. The Yield is expected to increase further with the increase in confidence in the delivery schedules of water prompting greater agronomic inputs & increased labour inputs. Incidentally the yield in 1986 was 66.4 bushels/Ac. and in 1987 it was 70.5 bushels/Ac.

d. Economic Evaluation

An economic evaluation was done taking into account only the increase in production of paddy and the IRR was found to be 33.8%. However when the impact of the project as a whole is considered the fact that this project has raised the standard of living of the farmers within the project, created a sense of civic obligation among them together with a spin off of additional employment etc. cannot be underscored thus enabling this rehabilitation project as an example suitable for imitation in other rehabilitation projects to be taken up in the future.