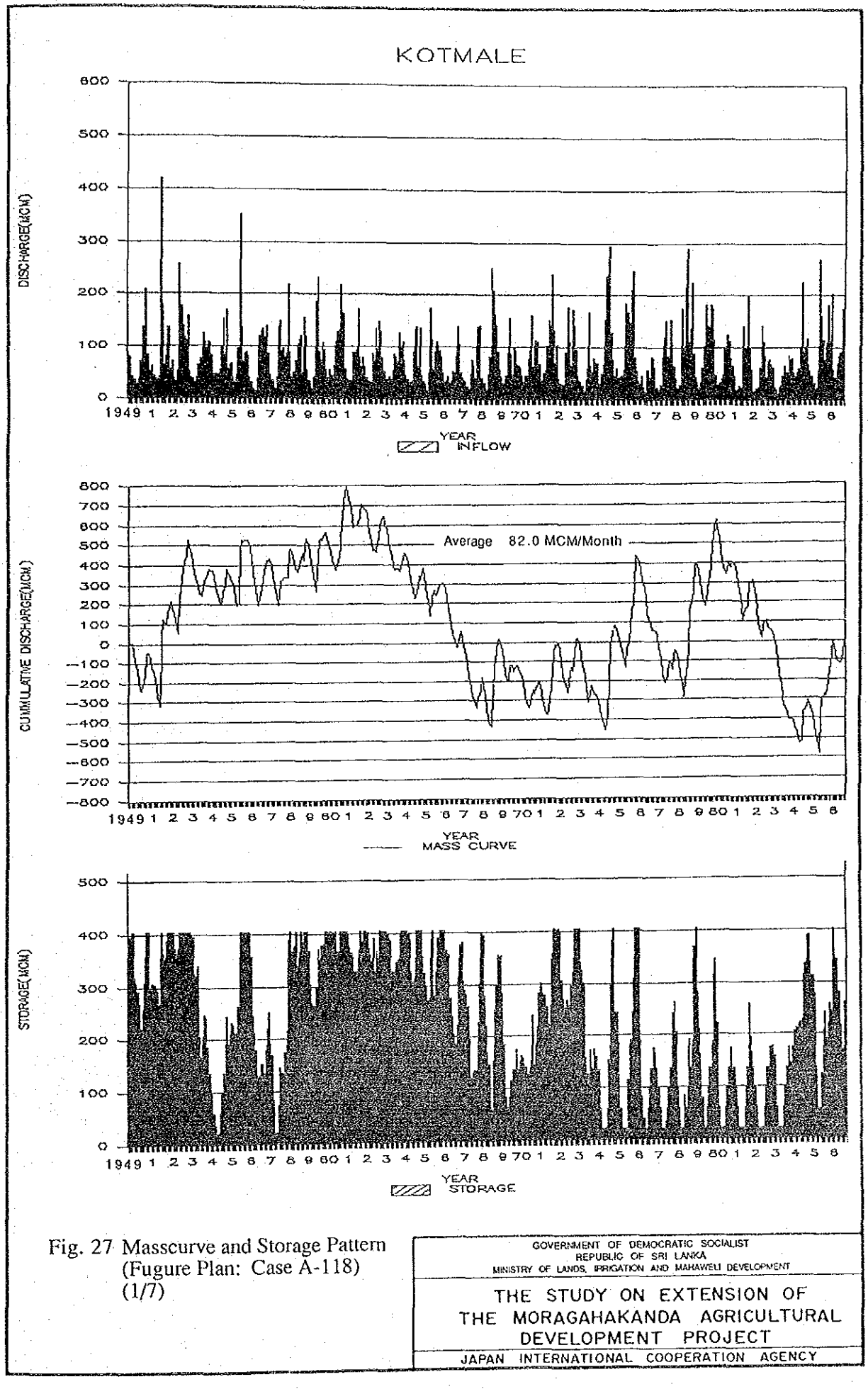


Fig. 27 Masscurve and Storage Pattern (Fugure Plan: Case A-118) (1/7)

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF LANDS, IRRIGATION AND MAHAWELI DEVELOPMENT

THE STUDY ON EXTENSION OF THE MORAGAHAKANDA AGRICULTURAL DEVELOPMENT PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

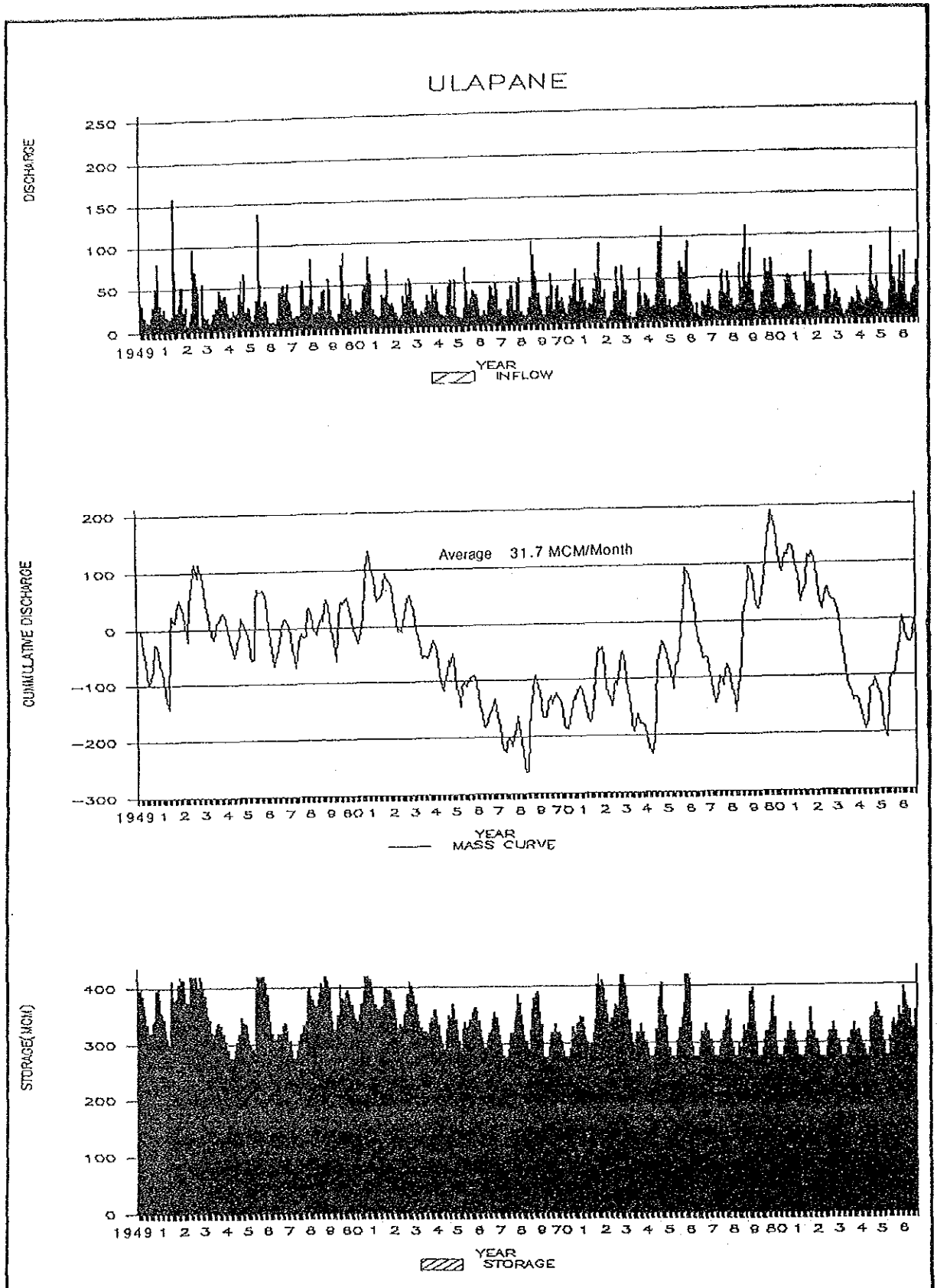


Fig. 27 Masscurve and Storage Pattern (Future Plan: Case A-118) (2/7)

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF LANDS, IRRIGATION AND MAHAWELI DEVELOPMENT

THE STUDY ON EXTENSION OF THE MORAGAHAKANDA AGRICULTURAL DEVELOPMENT PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

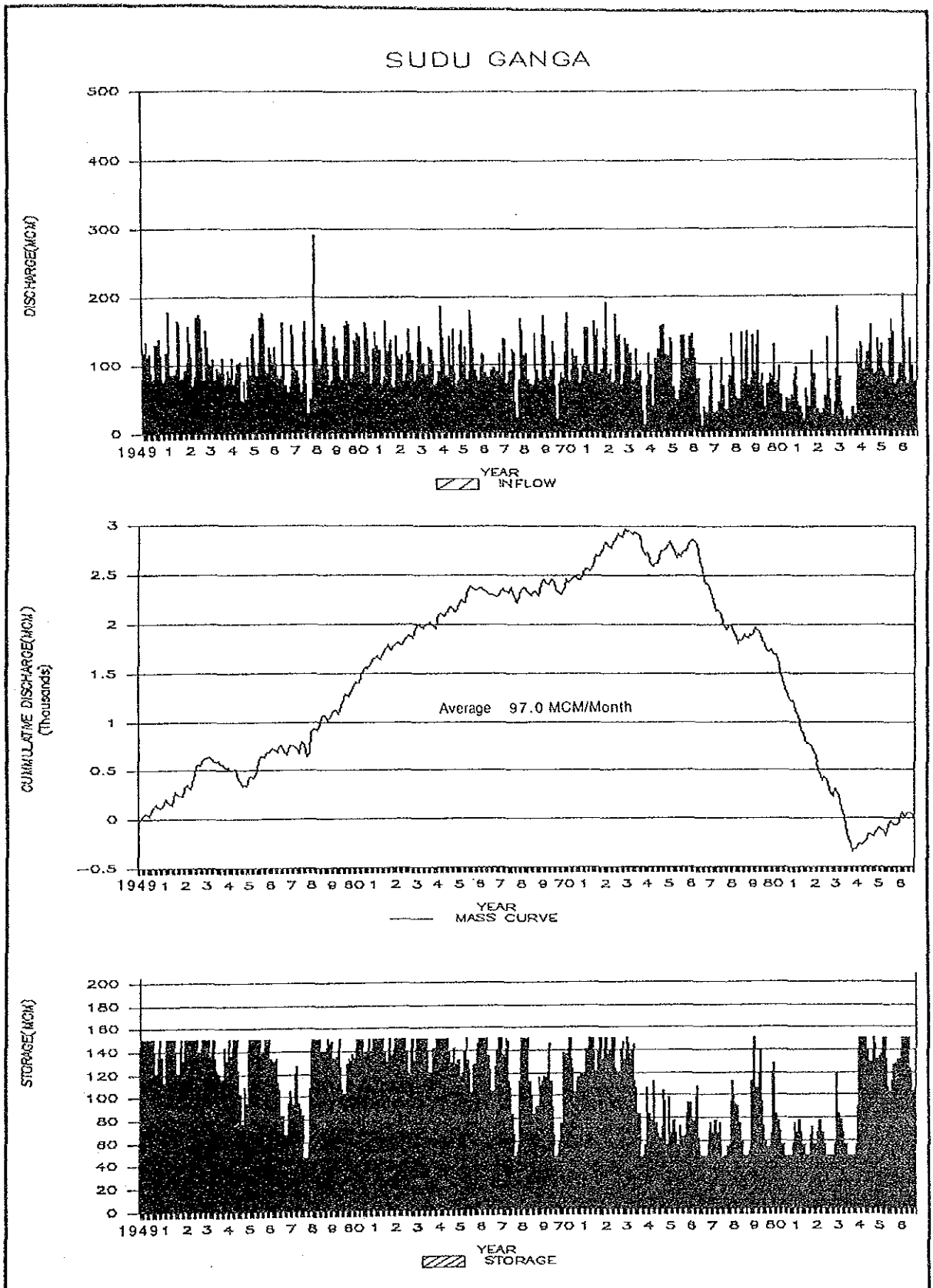


Fig. 27 Masscurve and Storage Pattern (Future Plan: Case A-118) (3/7)

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF LANDS, IRRIGATION AND MAHAWELI DEVELOPMENT

THE STUDY ON EXTENSION OF THE MORAGAHAKANDA AGRICULTURAL DEVELOPMENT PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

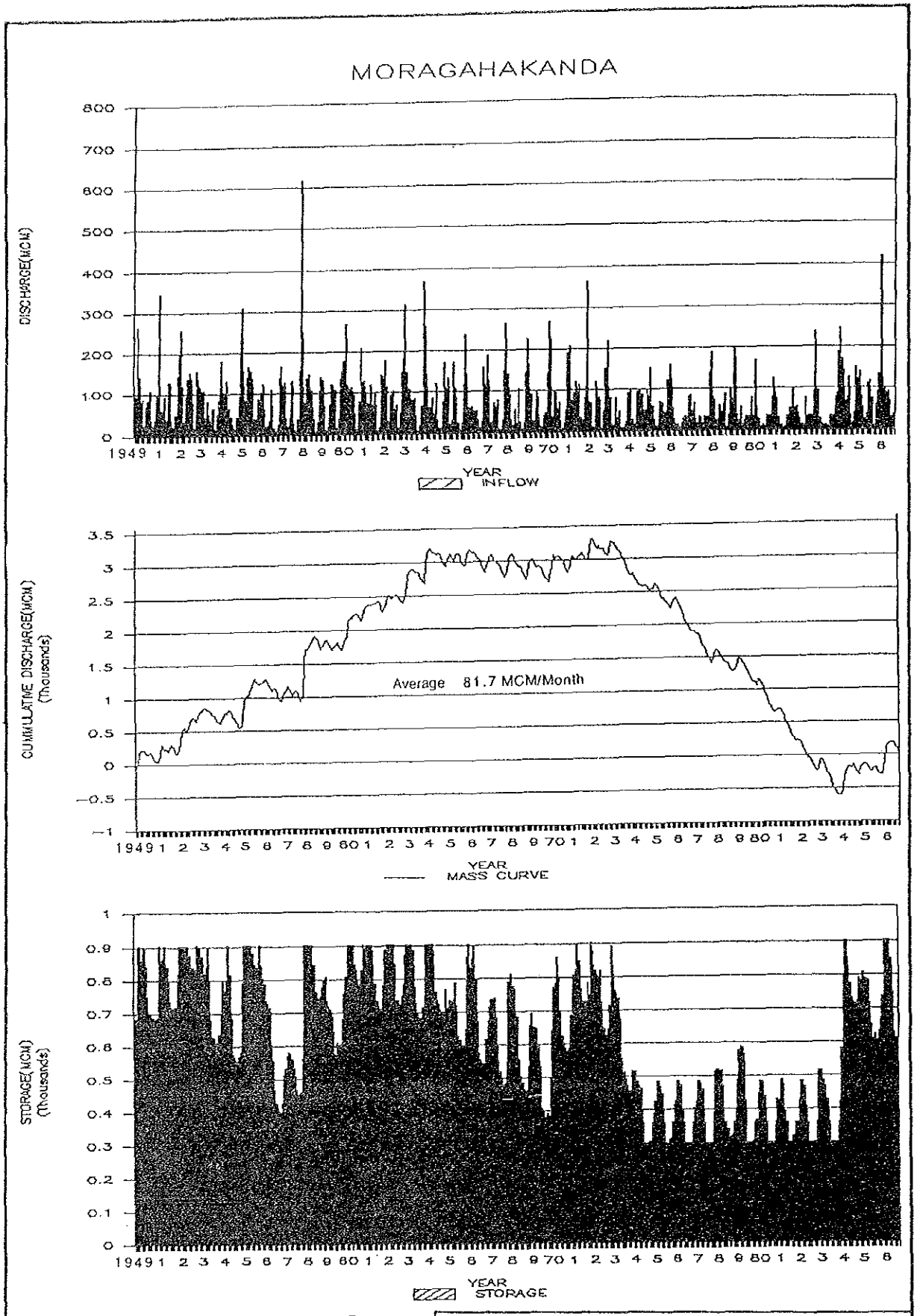


Fig. 27 Masscurve and Storage Pattern (Future Plan: Case A-118) (4/7)

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF LANDS, IRRIGATION AND MAHAWELI DEVELOPMENT

THE STUDY ON EXTENSION OF THE MORAGAHAKANDA AGRICULTURAL DEVELOPMENT PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

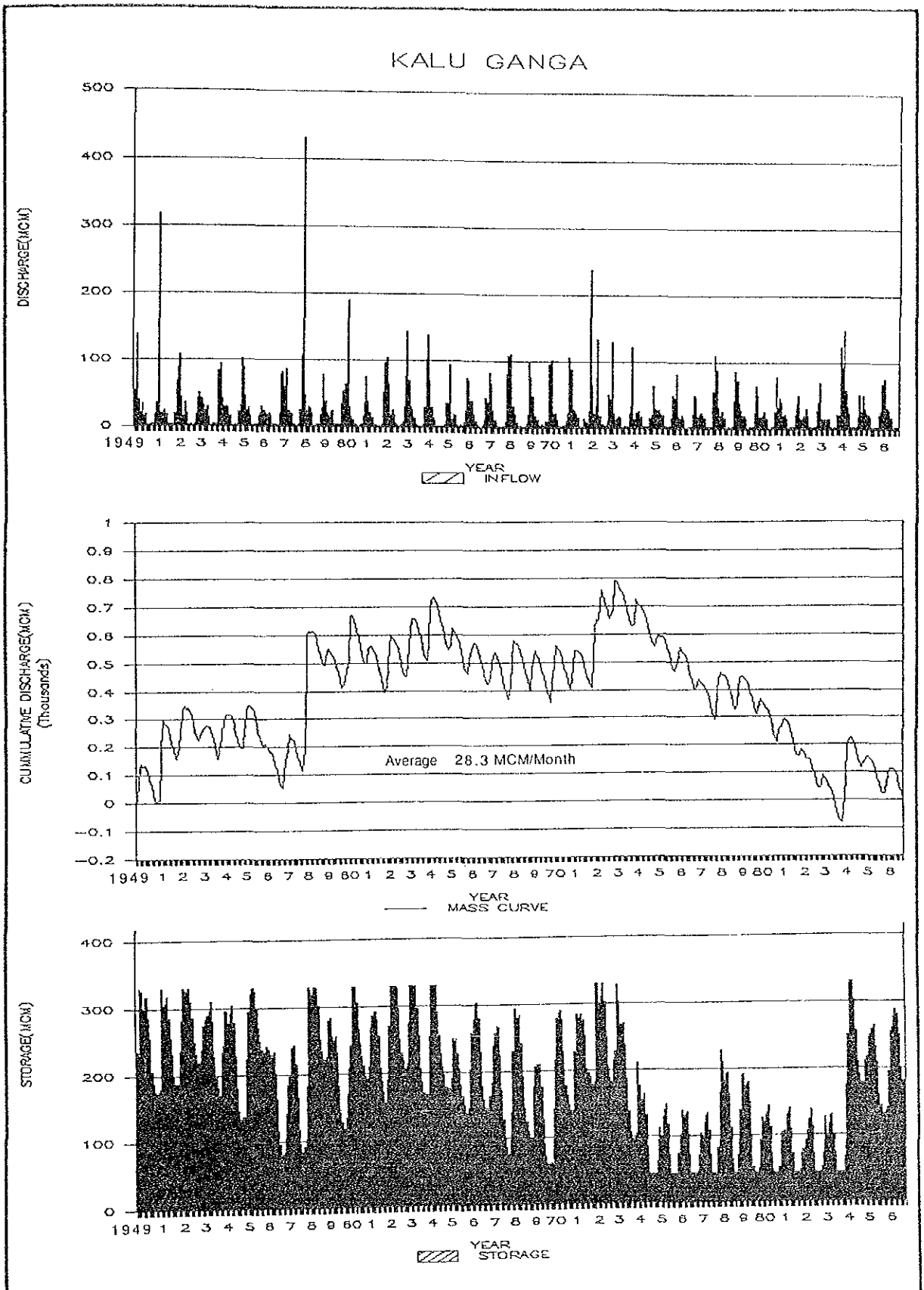


Fig. 27 Masscurve and Storage Pattern (Future Plan: Case A-118) (5/7)

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF LANDS, IRRIGATION AND MAHAWELI DEVELOPMENT

THE STUDY ON EXTENSION OF THE MORAGAHAKANDA AGRICULTURAL DEVELOPMENT PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

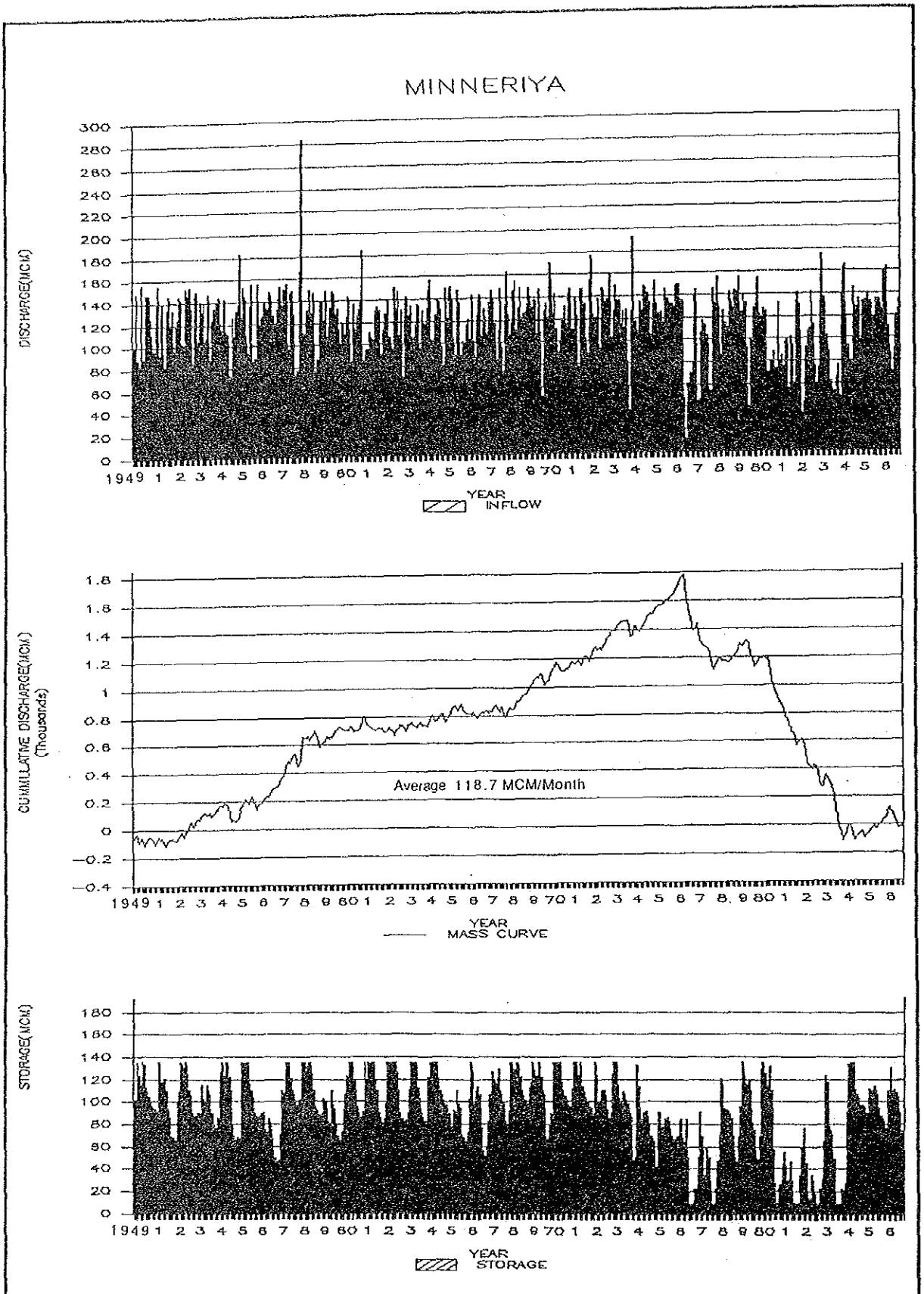


Fig. 27 Masscurve and Storage Pattern
(Future Plan: Case A-118)
(6/7)

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF LANDS, IRRIGATION AND MAHAWELI DEVELOPMENT
THE STUDY ON EXTENSION OF THE MORAGAHAKANDA AGRICULTURAL DEVELOPMENT PROJECT
JAPAN INTERNATIONAL COOPERATION AGENCY

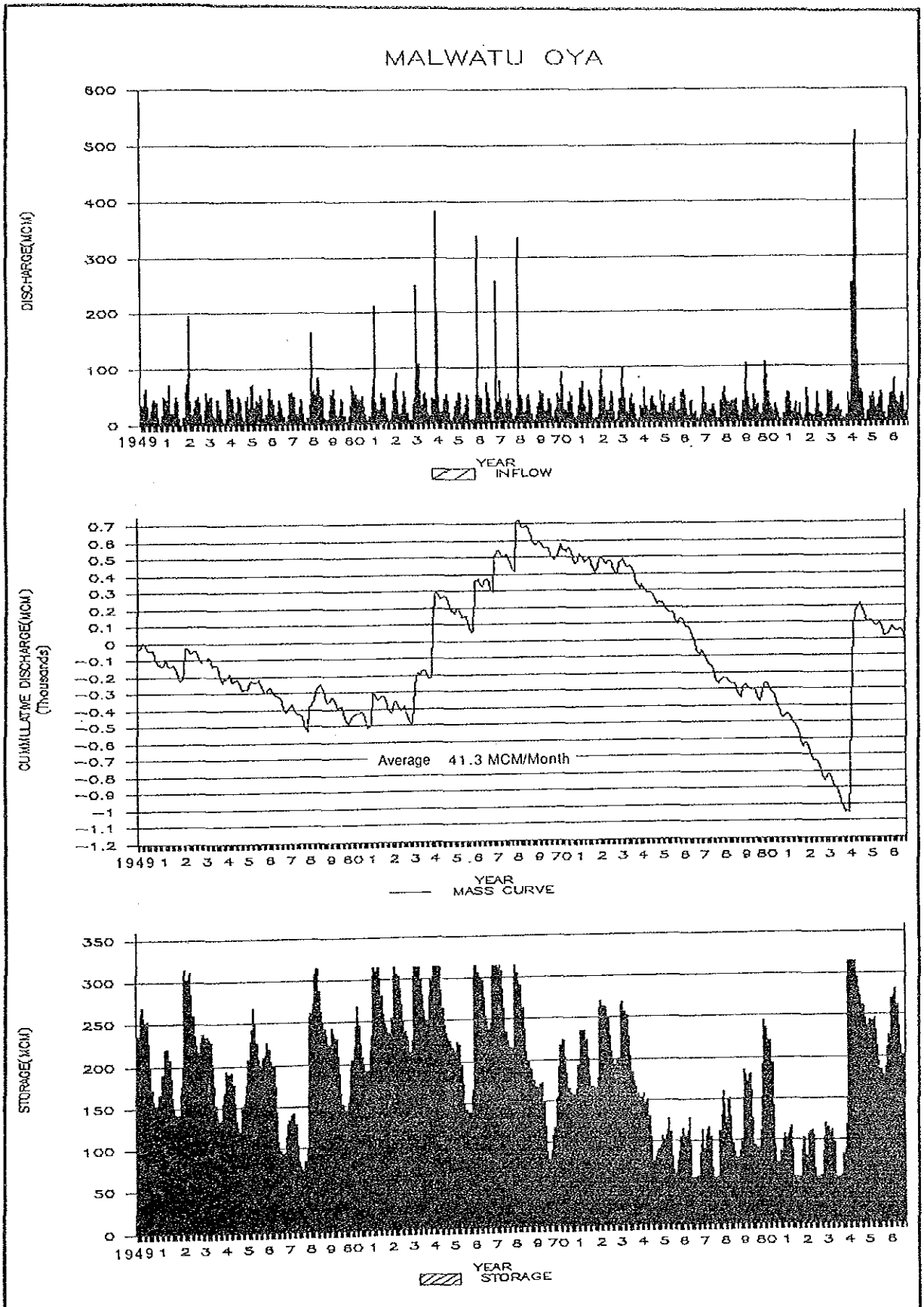


Fig. 27 Masscurve and Storage Pattern (Future Plan: Case A-118) (7/7)

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF LANDS, IRRIGATION AND MAHAWELI DEVELOPMENT

THE STUDY ON EXTENSION OF THE MORAGAHAKANDA AGRICULTURAL DEVELOPMENT PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

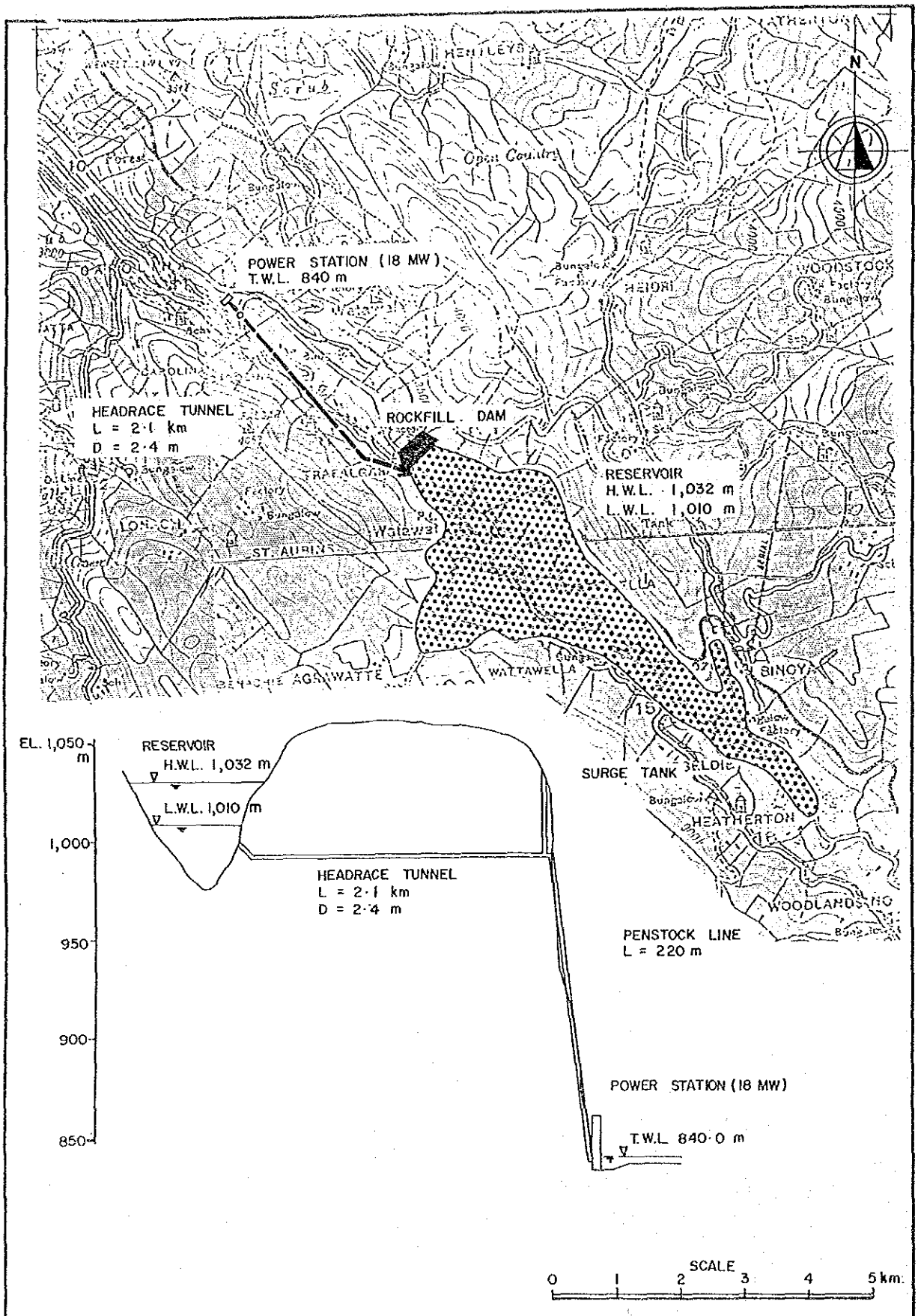


Fig. 28 Watawala Hydropower Scheme

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF LANDS, IRRIGATION AND MAHAWELI DEVELOPMENT

THE STUDY ON EXTENSION OF THE MORAGAHAKANDA AGRICULTURAL DEVELOPMENT PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

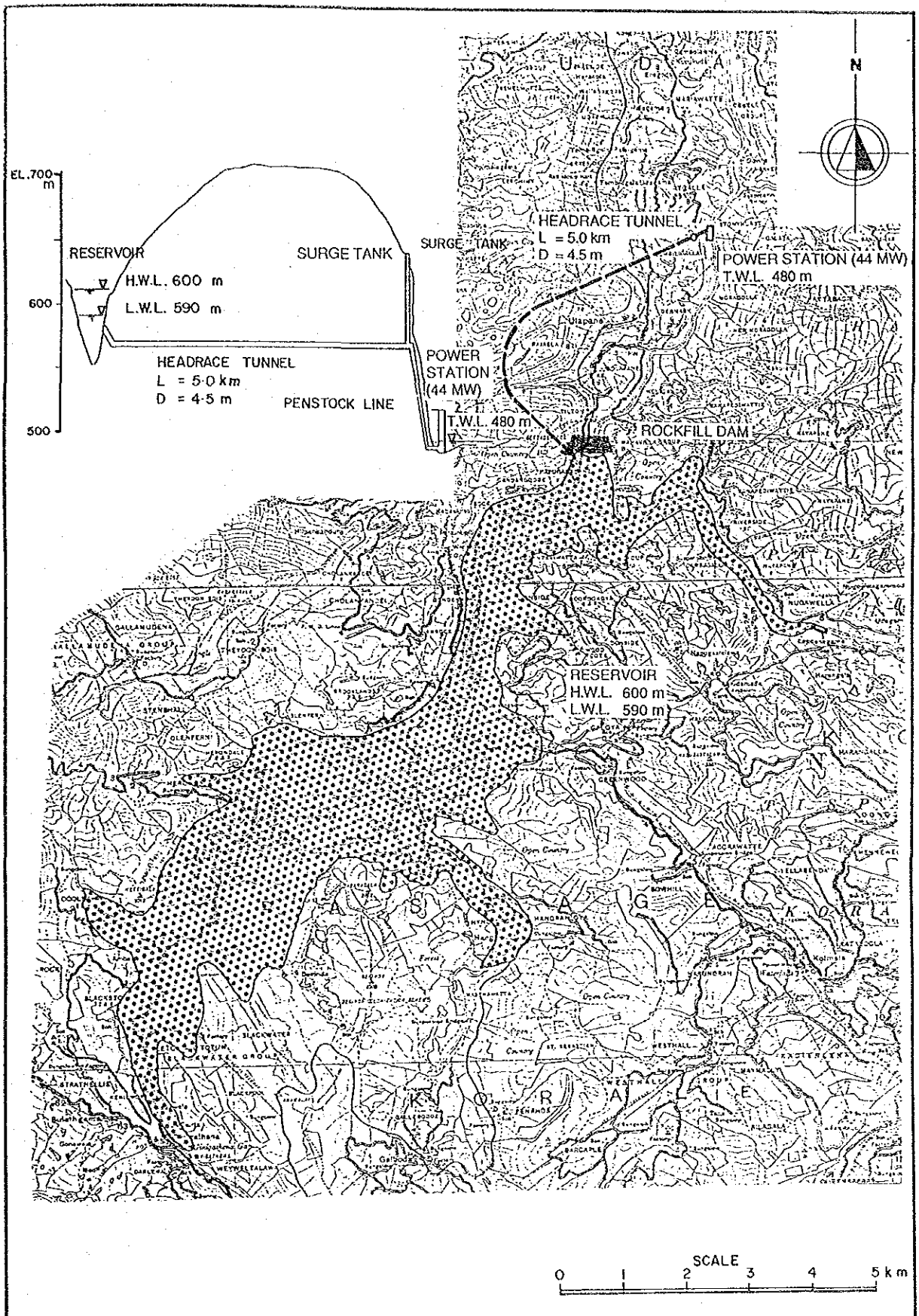


Fig. 29 Ulapane Hydropower Scheme

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF LANDS, IRRIGATION AND MAHAWELI DEVELOPMENT

THE STUDY ON EXTENSION OF THE MORAGAHAKANDA AGRICULTURAL DEVELOPMENT PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

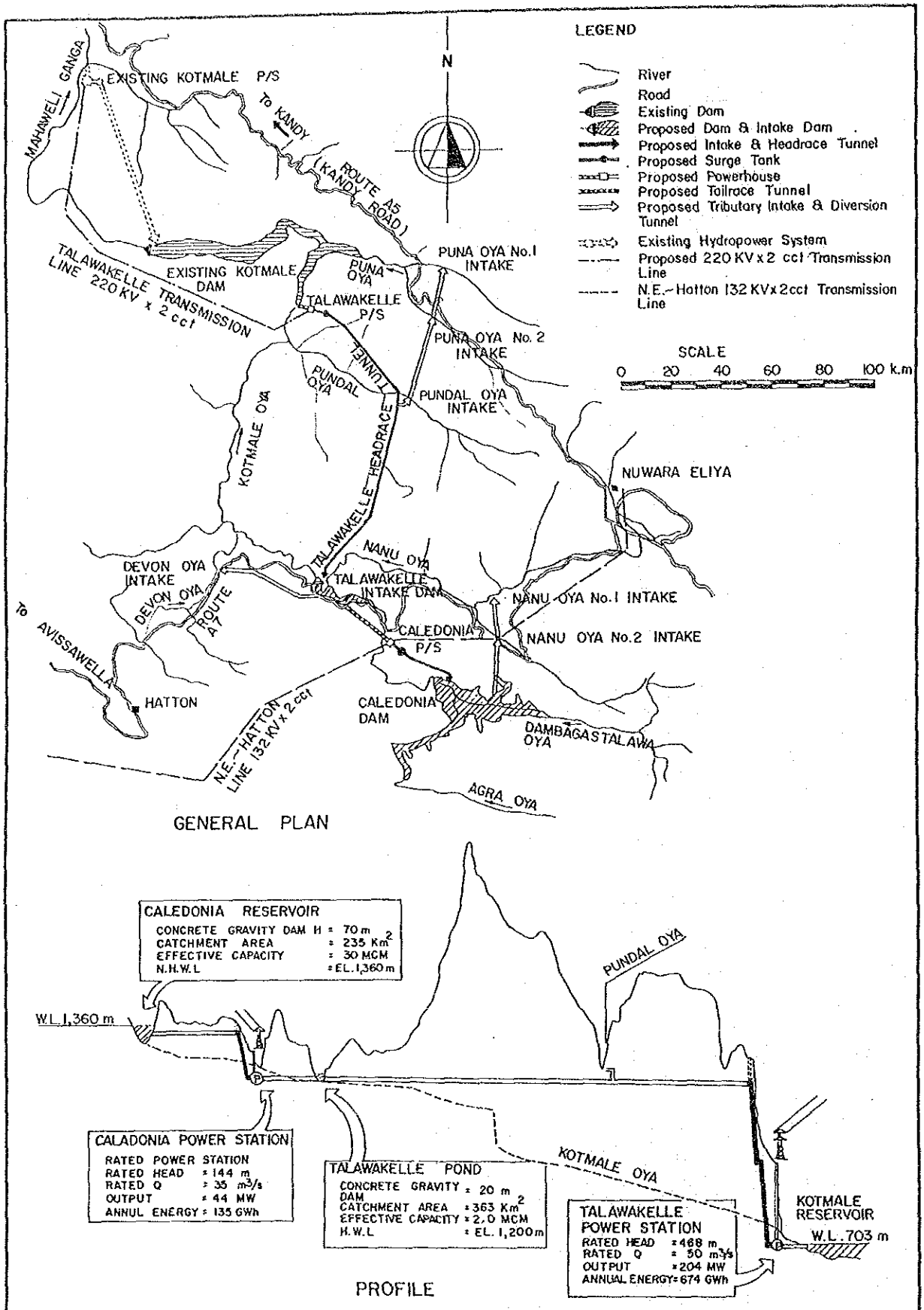


Fig. 30 Upper KotmaleHydropower Scheme

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF LANDS, IRRIGATION AND MAHAWELI DEVELOPMENT

THE STUDY ON EXTENSION OF THE MORAGAHAKANDA AGRICULTURAL DEVELOPMENT PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

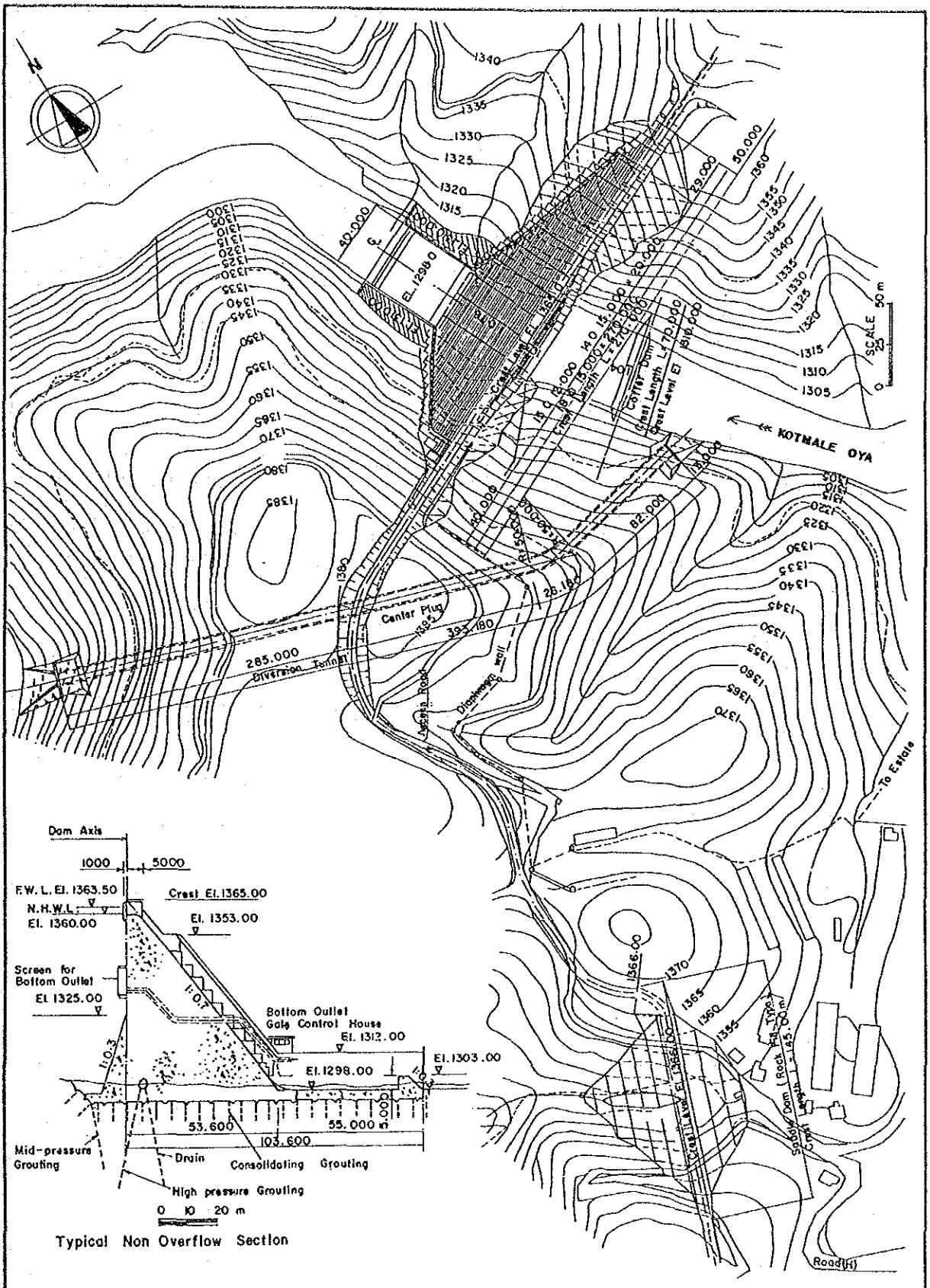


Fig. 31 Caledonia Hydropower Scheme

GOVERNMENT OF DEMOCRATIC SOCIALIST
REPUBLIC OF SRI LANKA
MINISTRY OF LANDS, IRRIGATION AND MAHAWELI DEVELOPMENT

THE STUDY ON EXTENSION OF
THE MORAGAHAKANDA AGRICULTURAL
DEVELOPMENT PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

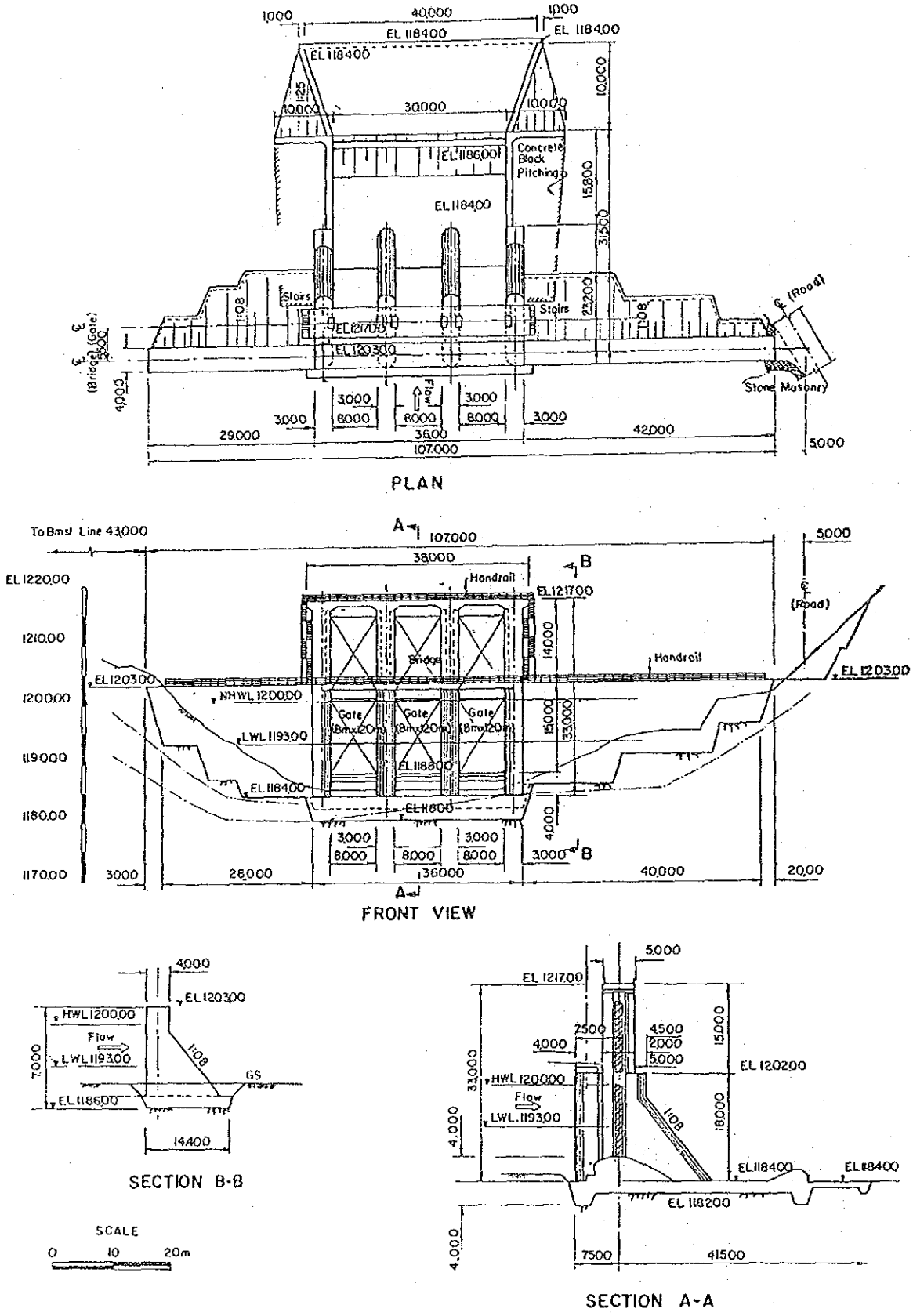
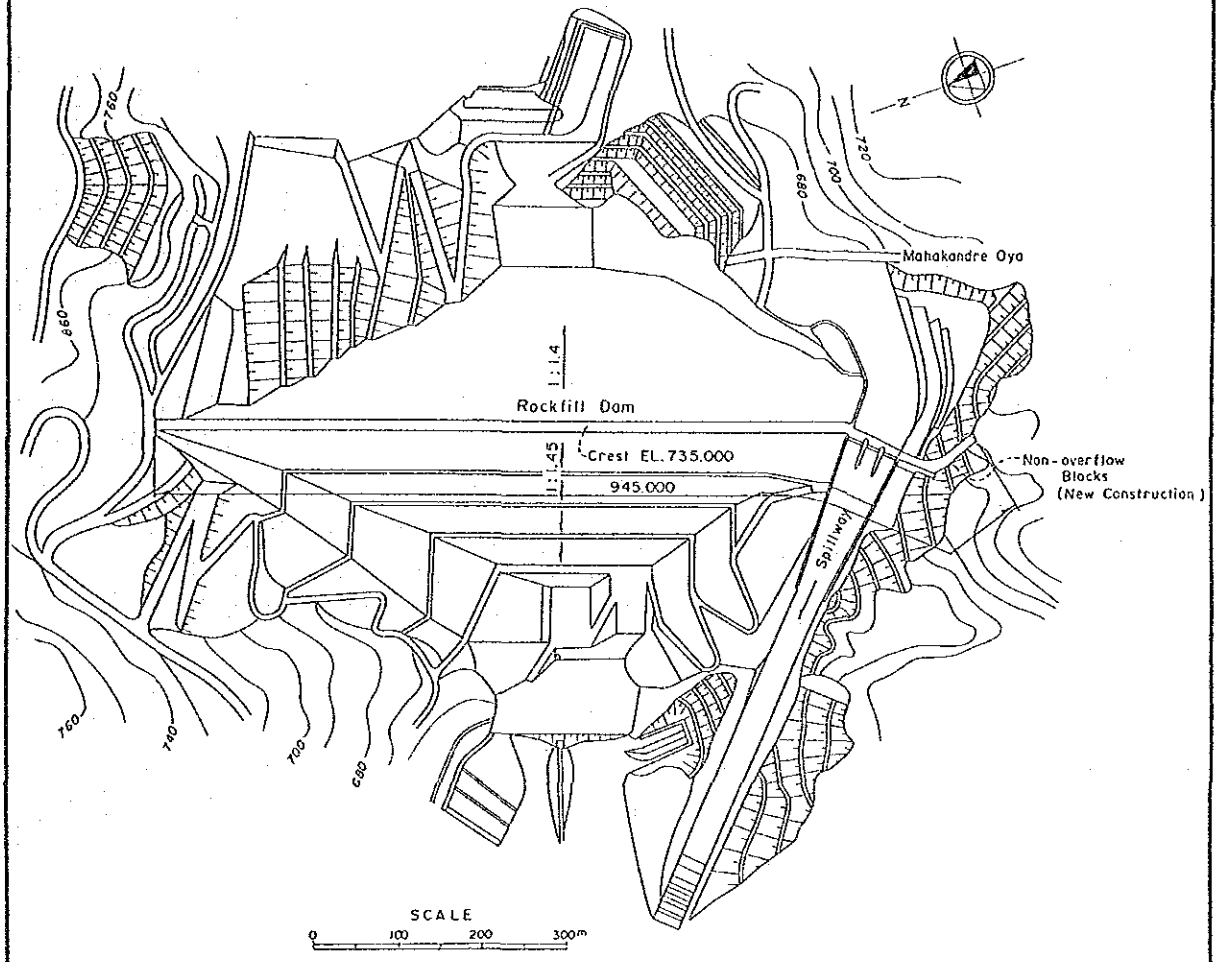


Fig. 32 Talawakele Hydropower Scheme

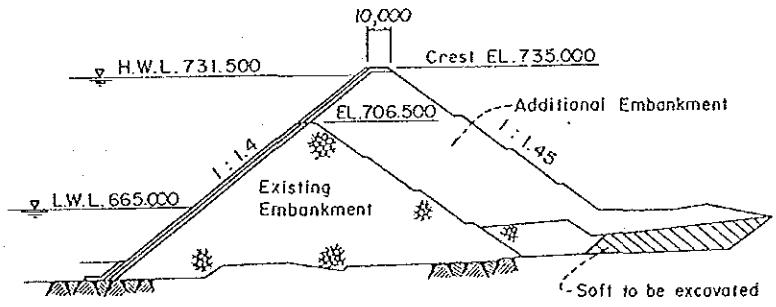
GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF LANDS, IRRIGATION AND MAHAWELI DEVELOPMENT

THE STUDY ON EXTENSION OF THE MORAGAHAKANDA AGRICULTURAL DEVELOPMENT PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY



GENERAL PLAN OF DAM



TYPICAL SECTION OF DAM

SCALE
0
100m

Fig. 33 Kotmale Extension Scheme

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF LANDS, IRRIGATION AND MAHAWELI DEVELOPMENT
THE STUDY ON EXTENSION OF THE MORAGAHAKANDA AGRICULTURAL DEVELOPMENT PROJECT
JAPAN INTERNATIONAL COOPERATION AGENCY

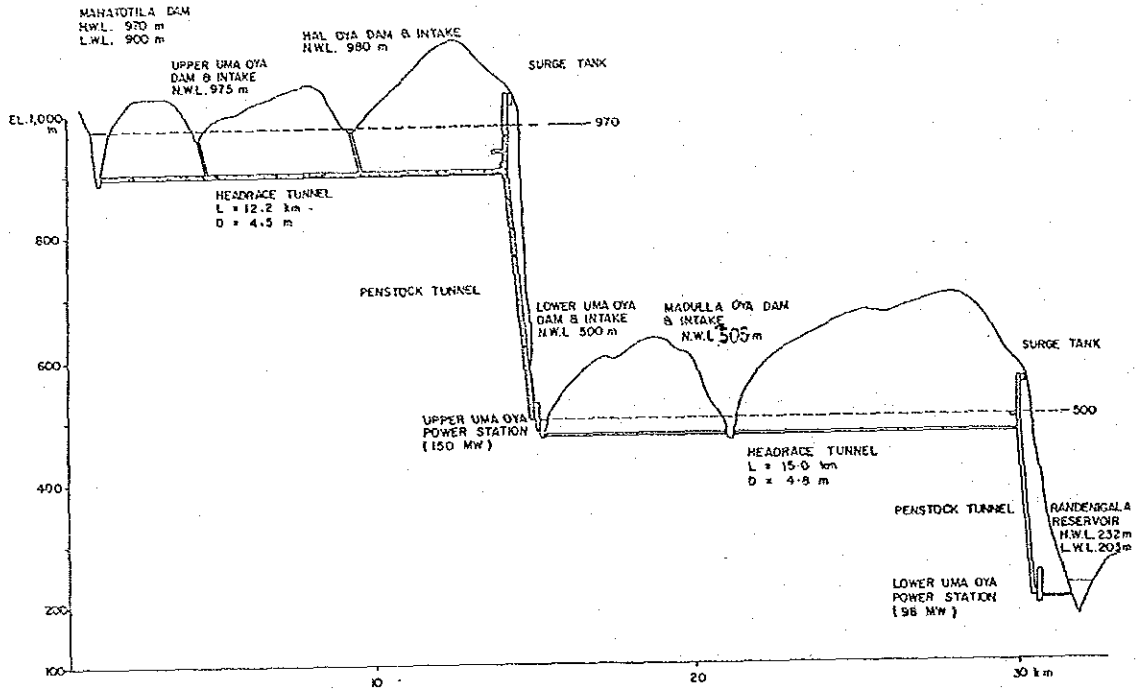


Fig. 34 Uma Oya Hydropower Scheme

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF LANDS, IRRIGATION AND MAHAWELI DEVELOPMENT

THE STUDY ON EXTENSION OF THE MORAGAHAKANDA AGRICULTURAL DEVELOPMENT PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

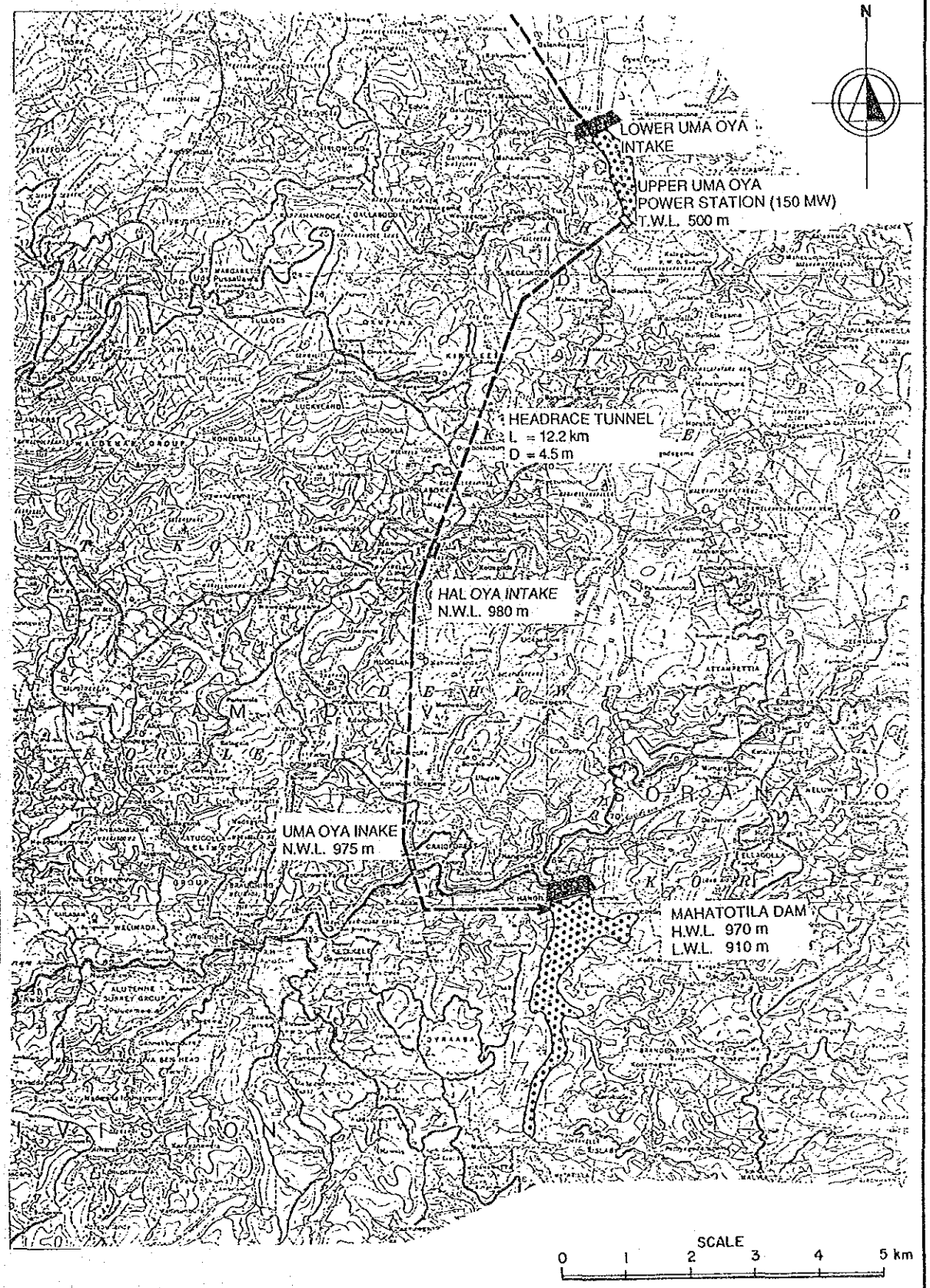


Fig. 35 Upper Uma Oya Hydropower Scheme (Scheme-1000)

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF LANDS, IRRIGATION AND MAHAWELI DEVELOPMENT

THE STUDY ON EXTENSION OF THE MORAGAHAKANDA AGRICULTURAL DEVELOPMENT PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

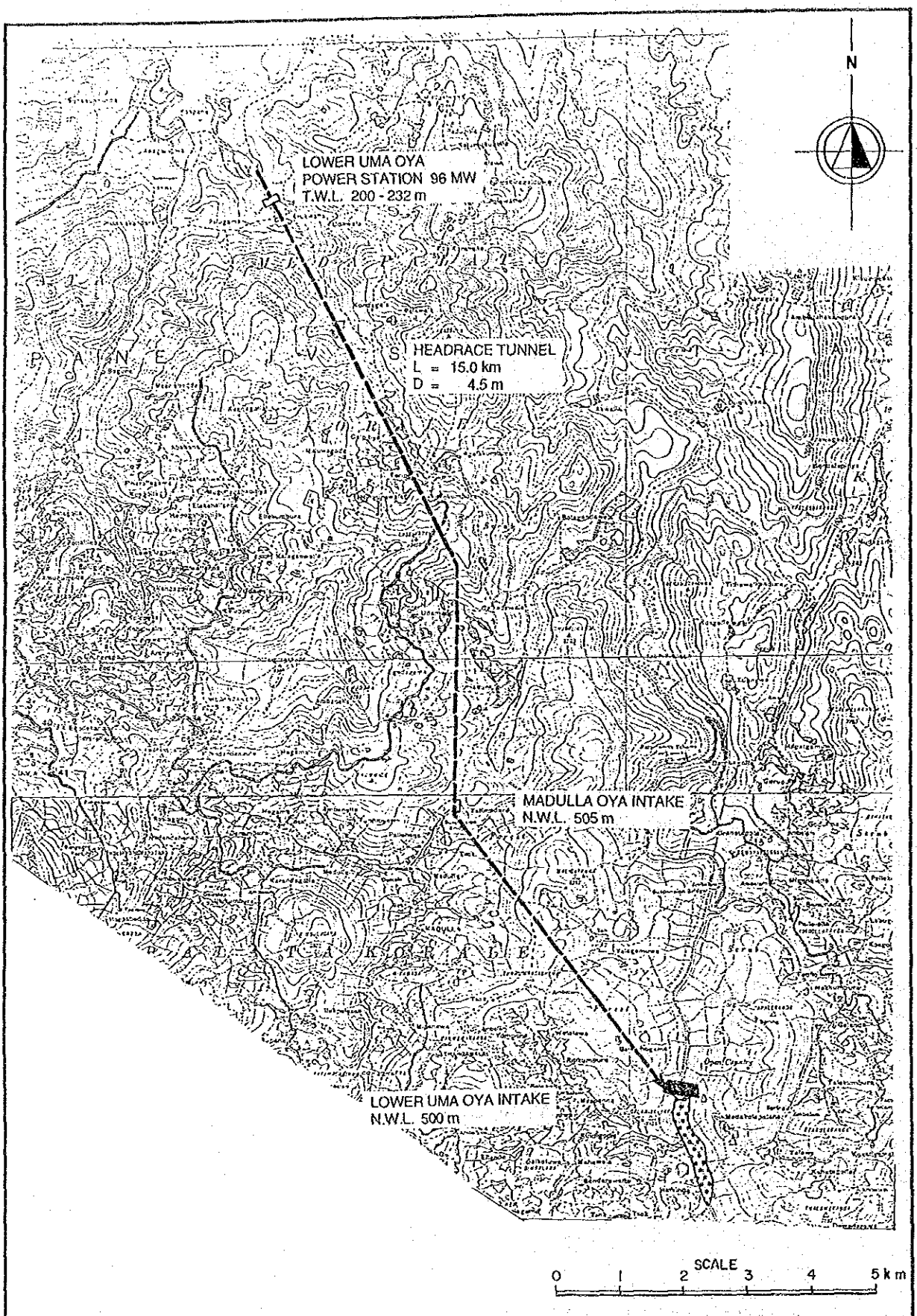


Fig. 36 Lower Uma Oya Hydropower Scheme (Scheme-500)

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF LANDS, IRRIGATION AND MAHAWELI DEVELOPMENT

THE STUDY ON EXTENSION OF THE MORAGAHAKANDA AGRICULTURAL DEVELOPMENT PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

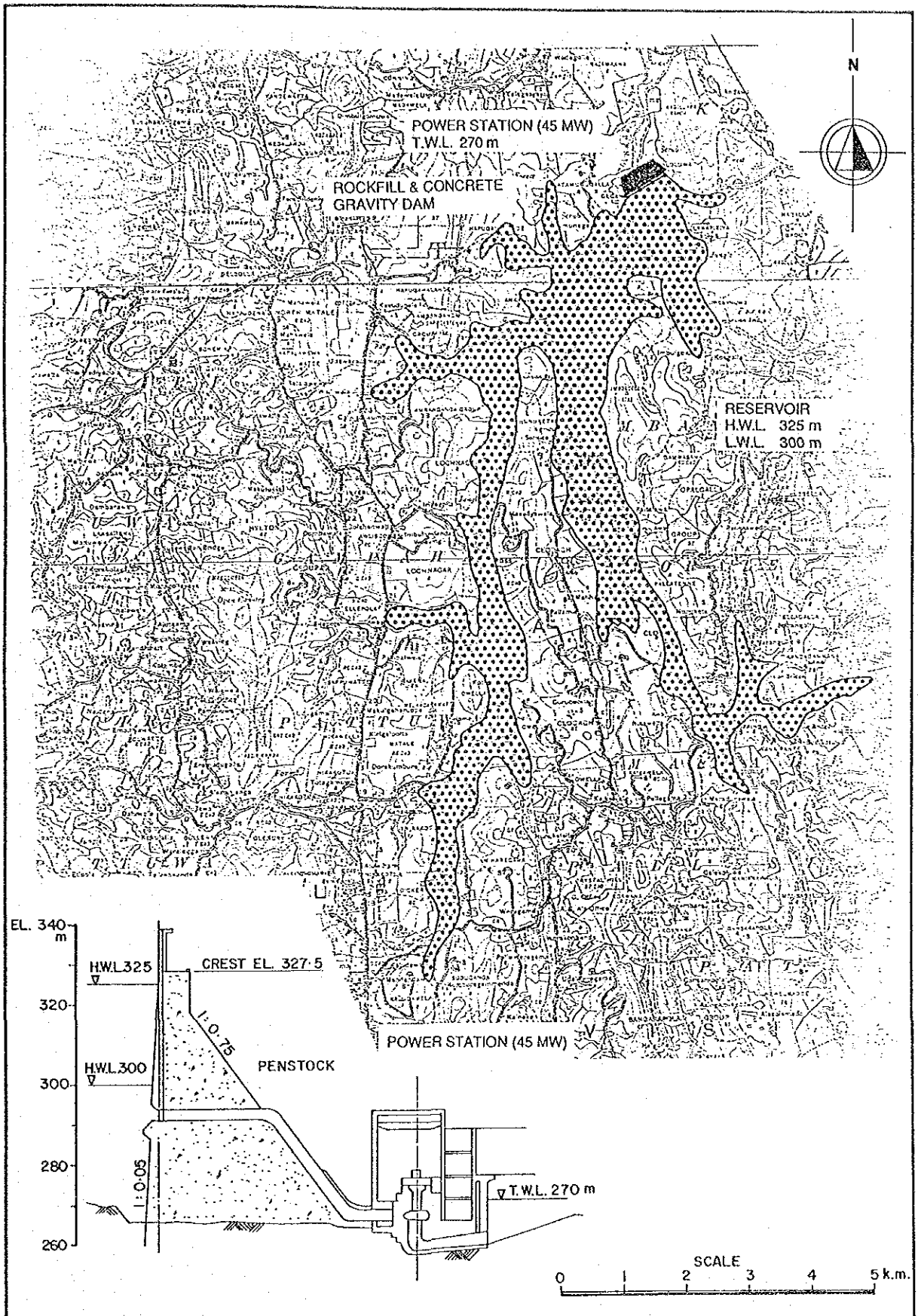


Fig. 37 Sudu Ganga Hydropower Scheme

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF LANDS, IRRIGATION AND MAHAWELI DEVELOPMENT

THE STUDY ON EXTENSION OF THE MORAGAHAKANDA AGRICULTURAL DEVELOPMENT PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

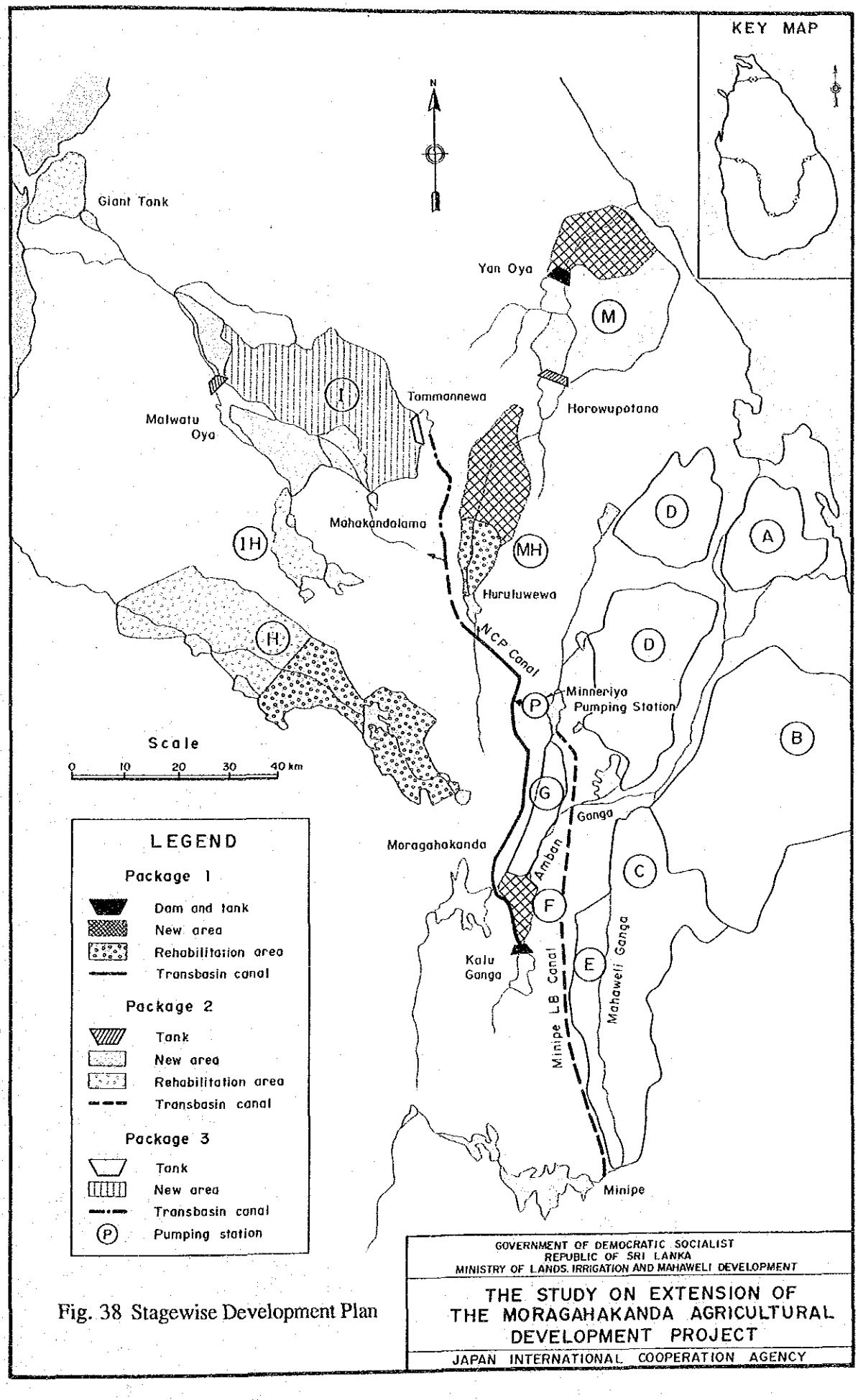


Fig. 38 Stagewise Development Plan

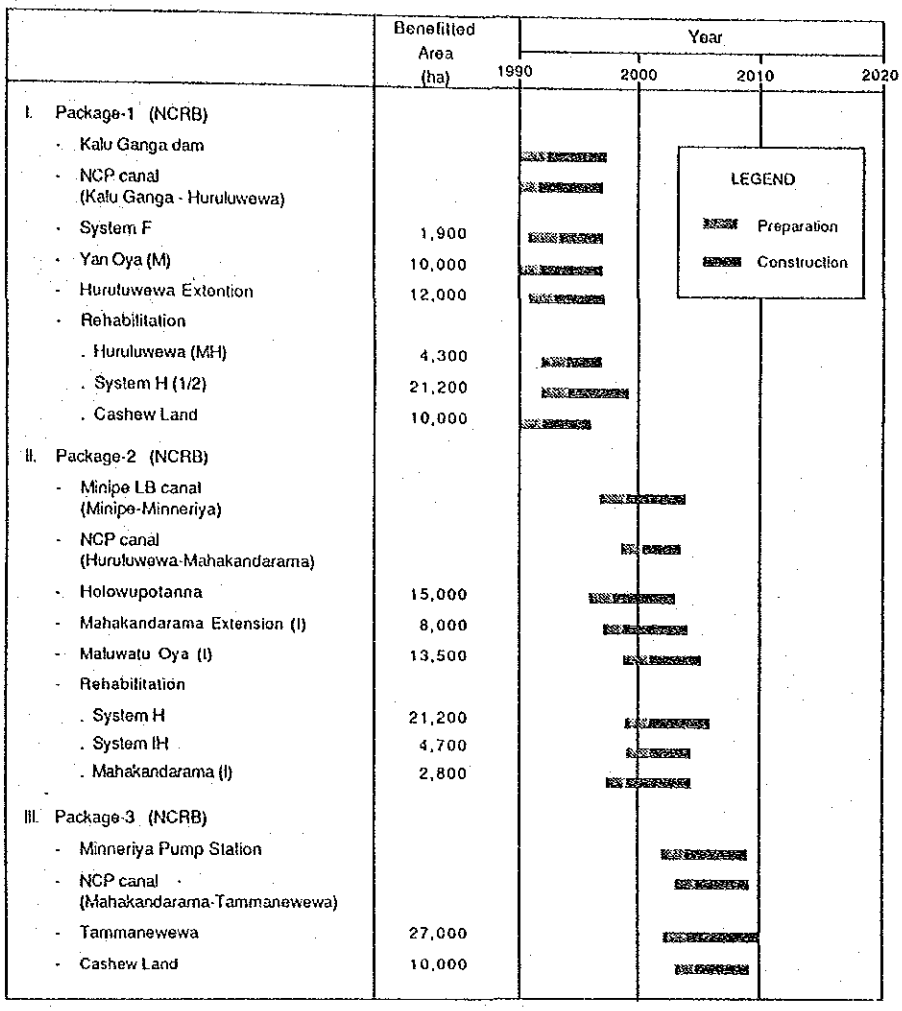


Fig. 39 Implementation Schedule

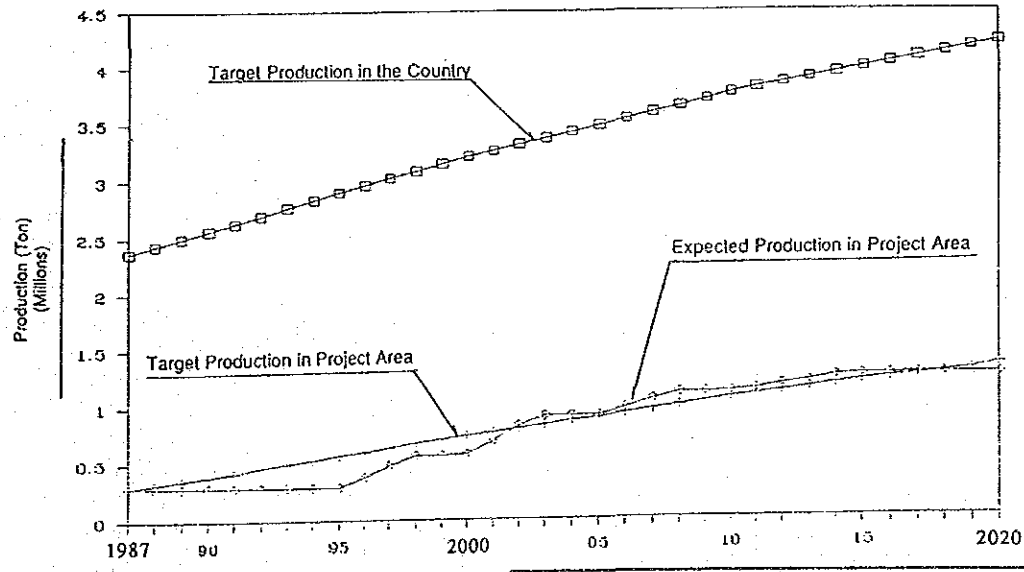


Fig. 40 Projected Paddy Production: 1987-2020

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF LANDS, IRRIGATION AND MAHAWELI DEVELOPMENT

THE STUDY ON EXTENSION OF THE MORAGAHAKANDA AGRICULTURAL DEVELOPMENT PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

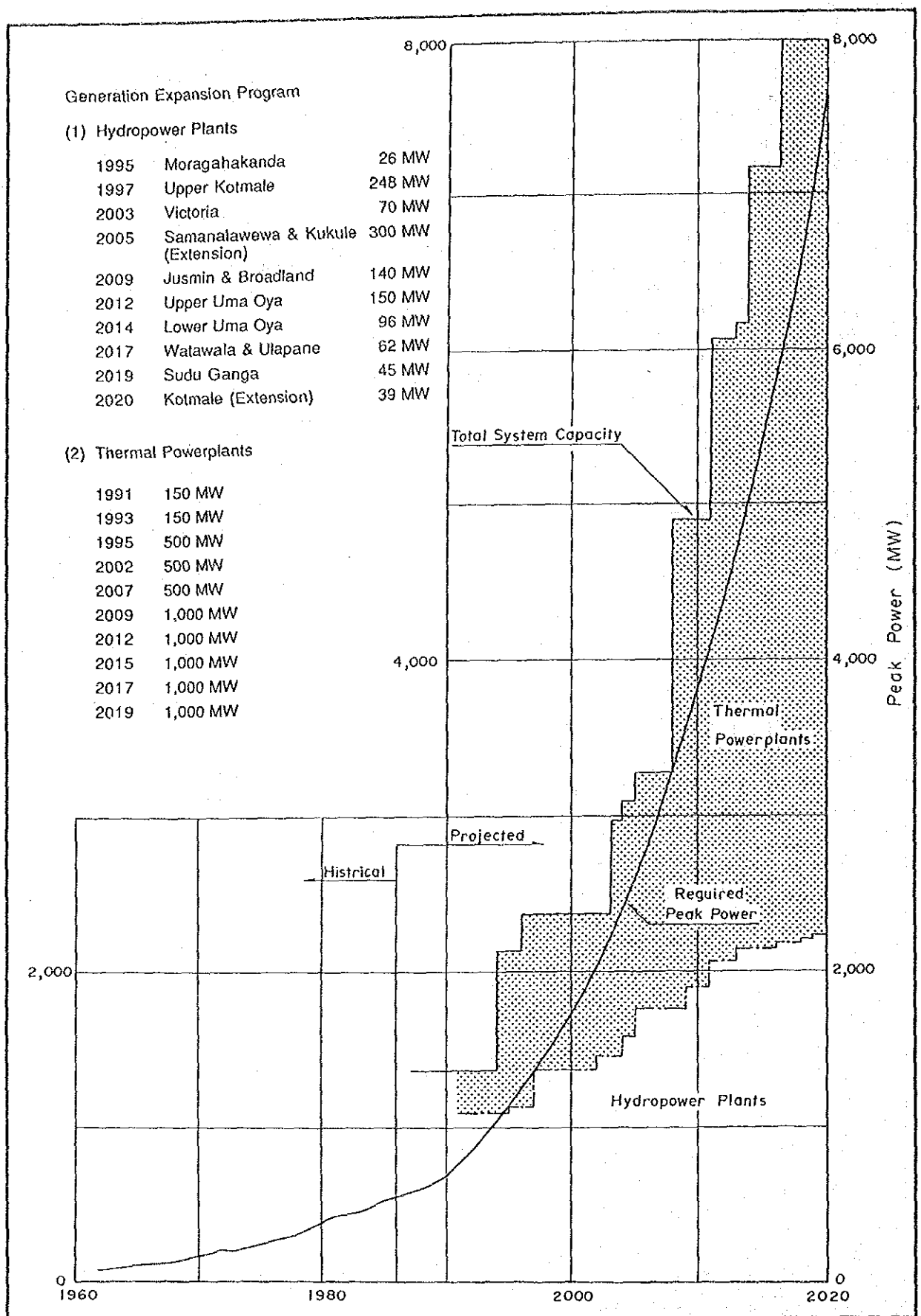


Fig. 41 Long-Term System Generation Expansion Plan (Tantative)

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF LANDS, IRRIGATION AND MAHAWELI DEVELOPMENT

THE STUDY ON EXTENSION OF THE MORAGAHAKANDA AGRICULTURAL DEVELOPMENT PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

APPENDIX

SCOPE OF WORK
FOR
THE STUDY
ON
EXTENSION
OF
THE MORAGAHAKANDA AGRICULTURAL DEVELOPMENT PROJECT
IN
THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

AGREED UPON

BETWEEN

JAPAN INTERNATIONAL COOPERATION AGENCY

AND

THE MINISTRY OF MAHAWELI DEVELOPMENT

Colombo, 28 October, 1987.

COL. IVAN SAMABAWICKRAMA
SECRETARY
MINISTRY OF MAHAWELI
DEVELOPMENT

MASAMITSU AIHARA
LEADER OF THE PRELIMINARY
SURVEY TEAM,
THE JAPAN INTERNATIONAL
COOPERATION AGENCY

I. INTRODUCTION

In response to the request of the Government of the Democratic Socialist Republic of Sri Lanka, the Government of Japan has decided to conduct a study on Extension of the Feasibility Study on The Moragahakanda Agricultural Development Project (hereinafter referred to as "the Study"), in accordance with the relevant laws and regulations in force in Japan.

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as JICA), the official agency responsible for the implementation of technical cooperation programmes of the Government of Japan, will undertake the Study in close cooperation with the authorities concerned of the Democratic Socialist Republic of Sri Lanka.

The present document sets forth the scope of work with regard to the Study.

II. Objectives of the study

The objectives of the study are to review and up-date the feasibility study on the Moragahakanda Agricultural Development Project as well as to formulate an overall agricultural development plan in the Amban Ganga Basin in consideration of (1) the most effective use of available water in the Mahaweli River System for irrigation development in the Amban Ganga basin and its adjacent areas, and (2) priority irrigation projects and proper implementation programme of these projects.

III. Scope of the study

III - 1 study area

The study area shall cover a net irrigation area of about 155,000ha, involving the Mahaweli Ganga, the Amban Ganga, and the Kalu Ganga as the major water resources for irrigation development.

III - 2 OUTLINE OF THE STUDY

The study consists of two Phases. Phase I study is to review and up-date the Feasibility Study on the Moragahakanda Agricultural Development Project in 1979. Phase II study is overall study on the Amban Ganga Basin Agricultural Development Project at master plan study level.

Phase I and Phase II Studies consist of the following work items.

1. Phase I Study

(Field Work)

1.1 To collect and review the data and information for up-dating the previous Feasibility Study including infrastructure and settlement cost.

(Home work)

1.2 To up-date the previous study.

2. Phase II Study

(Field work)

2.1 To collect and review the existing data and information relevant, (a) to hydrological analyses on the Mahaweli River System, (b) to exploration of available water for irrigation development in the study area, and (c) to preparation of an overall agricultural development plan.

(1) Meteorology and Hydrology
(2) Irrigation and drainage conditions
(3) Regional and national development plans relevant to the Mahaweli Development
(4) Present water distribution system of the dams and tanks which exist or are under construction for irrigation.
(5) The previous studies available on the Mahaweli Development Programme
(6) Hydropower generation
(7) Topography
(8) Geology and soils
(9) Vegetation
(10) Agriculture
(11) Land use and land classification
(12) Agro-economy and institution
(13) Infrastructure

2.2 To carry out field survey and investigations on the following items.

(1) Topographic survey of proposed dam sites
(2) Construction materials

2.3 To establish a basic overall agricultural development plan.
(Home work)

2.4 To analyse results of field work.

2.5 To carry out hydrological analyses on, and to explore available water in the Mahaweli River System.

2.6 To formulate an overall agricultural development plan that includes the following items.

(1) Irrigation development
(2) Dam and hydropower development

2.7 To estimate approximate cost for the projects.

2.8 To formulate implementation programme.

IV STUDY SCHEDULE

The Study will be executed in accordance with the attached tentative work schedule.

V REPORTS

JICA will prepare and submit the following reports in English to the Government of Sri Lanka.

(1) Inception Report
Twenty (20) copies at the commencement of the field work in the Phase I.

(2) Progress Report (I)
Twenty (20) copies at the end of the Home work in the Phase I.

(3) Final Report (I)
Fifty (50) copies and twenty (20) copies of its summary within one (1) month after the Home work in the Phase I.

(4) Interim Report
Twenty (20) copies at the end of the first Home work in the Phase II.

(5) Progress Report (II)
Twenty (20) copies at the end of the second field work in the Phase II.

(6) Draft Final Report
Twenty (20) copies at the end of the Phase II.
The Government of Sri Lanka provides JICA with its comments on the Draft Final Report through the Embassy of Japan within one (1) month after the receipt of the Draft Final Report.

(7) Final Report (II)
Fifty (50) copies and twenty (20) copies of its summary within two (2) months after receiving the comments on the Draft Final Report.

VI. UNDERTAKING OF THE GOVERNMENT OF SRI LANKA

1. To facilitate smooth conduct of the Study. The Government of Sri Lanka will take necessary measures :

   (1) to secure the safety of the Japanese study team.

   (2) to permit the members of the Japanese study team to enter, leave and sojourn in Sri Lanka for the duration of their assignment therein, and arrange for alien registration requirements and consular fees.

   (3) not to require the Japanese study team to pay taxes, duties, fees and any other charges on equipment, machinery and other materials brought into Sri Lanka for the conduct of the Study.

   (4) not to require the Japanese study team to pay income tax, BTT and PAYE and any other charges imposed on or in connection with any emoluments or allowances paid to the members of the Japanese study team for their services in connection with the implementation of the Study.

   (5) to provide necessary facilities to the Japanese study team for the remittance as well as utilization of funds introduced into Sri Lanka from Japan in connection with the implementation of the Study.

   (6) to secure permission for entry into private properties or restricted areas for the conduct of the Study.

   (7) to secure permission to take all data and documents related to the Study including photographs out of Sri Lanka to Japan by the Japanese study team.

2. The Government of Sri Lanka shall bear claims, if any arises, against the members of the Japanese study team resulting from, occurring in the course of or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or wilful misconduct on the part of the members of the Japanese study team.

3. The Mahaweli Authority of Sri Lanka (hereinafter referred as "MASL") shall act as counterpart agency to the Japanese study team and also as coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.

4. MASL shall, at its own expense, provide the Japanese study team with the following, in cooperation with other agencies concerned, if necessary;

(1) available data and information related to the Study,

(2) additional survey related to the Study,if necessary,

(3) counterpart personnel to participate in the various activities for the Study,

(4) suitable office with necessary equipment in Colombo and the study area,

(5) appropriate number of vehicles with drivers in the study area, and

(6) credentials or identification cards to the members of the study team.

VII. UNDERTAKING OF JICA

For the implementation of the Study, JICA shall take the following measures;

1. to dispatch, at own expense, study teams to Sri Lanka,

2. to pursue technology transfer to the Sri Lankan counterpart personnel in the course of the Study,

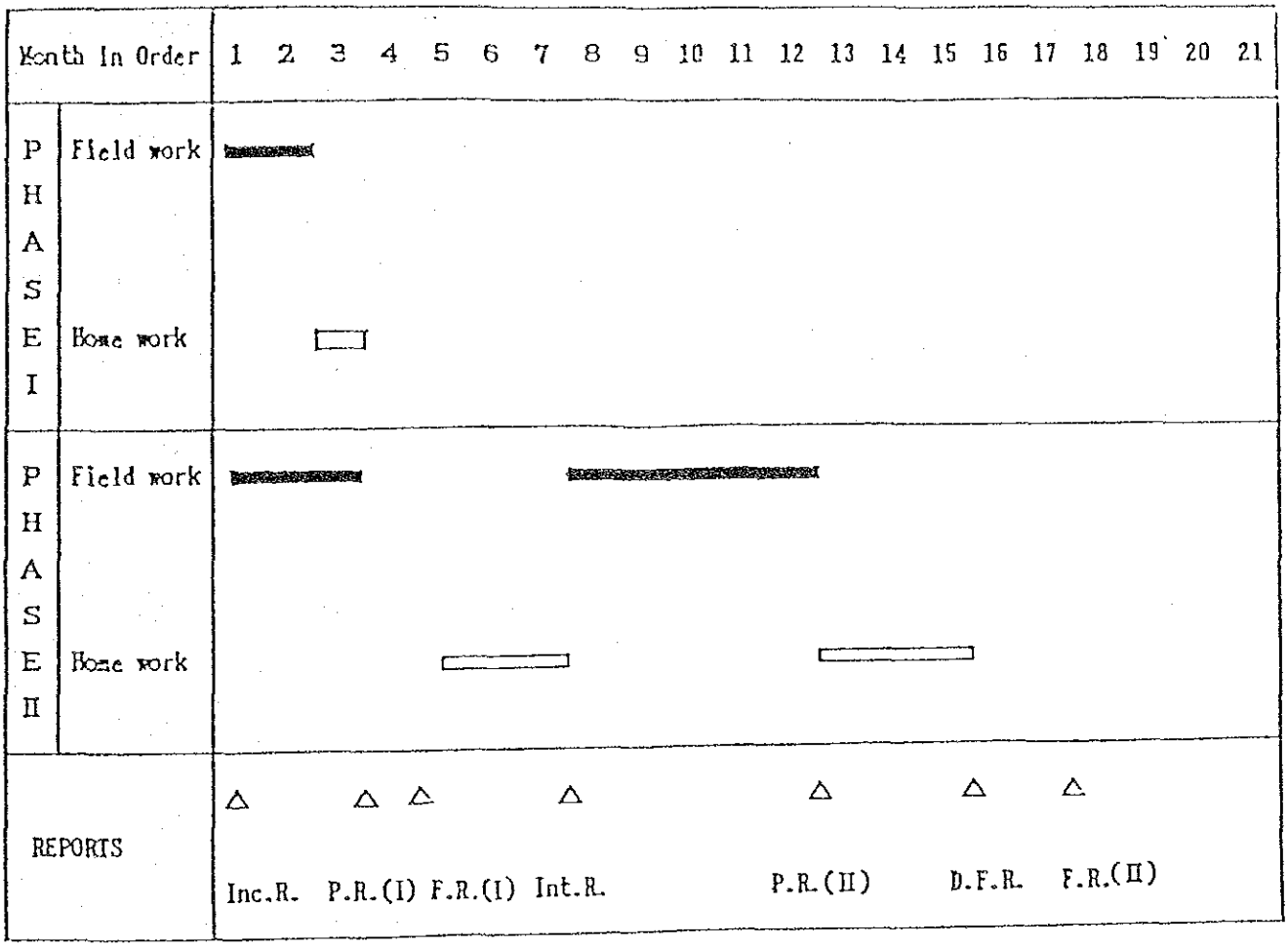
3. to provide the necessary equipment for the implementation of the Study, which will remain the property of the Government of Japan unless otherwise agreed upon.

VIII. CONSULTATION

JICA and MASL will consult with each other in respect of any matter that may arise from or in connection with the Study.

APPENDIX

TENTATIVE WORK SCHEDULE



(Remarks) Inc.R.: Inception Report P.R.: Progress Report
Int.R.: Interim Report D.F.R.:Draft Final Report
F.R. : Final Report

MINUTES OF MEETING

OF

THE SCOPE OF WORK FOR THE STUDY

ON

EXTENSION OF THE MORAGAHAKANDA AGRICULTURAL DEVELOPMENT PROJECT

IN

THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

Colombo, 28 October, 1987

COL. IVAN SAMARAWICKRAMA
SECRETARY
MINISTRY OF MAHAWELI DEVELOPMENT

MASAMITSU AIHARA
LEADER OF THE PRELIMINARY
SURVEY TEAM,
THE JAPAN INTERNATIONAL
COOPERATION AGENCY.

1. In response to the request of the Government of the Democratic Socialist Republic of Sri Lanka, the Government of Japan has dispatched a Preliminary Survey Team for this study from 18th October to 31st October, 1987 through JICA.

2. The Preliminary Survey team, headed by Mr. Masamitsu AIHARA (JICA) and the Sri Lankan officials concerned headed by Col. Ivan Samarawickrema, Secretary, Ministry of Mahaweli Development had a series of discussions and exchanged their views regarding the Study. As a result of the discussion, both sides have agreed on the Scope of Work.

3. In this connection, both sides have agreed as follows :

   (1) The study area will cover system 01, 02, F, G, H, IH, MH, I and the extensible areas in NWDZ (North West Dry Zone), see attached annex.

   (2) The up-dating of Phase I will be conducted under the same condition as the previous study except unit price.

   (3) The references concerning infrastructure and settlement cost will be provided by the Government of Sri Lanka.

   (4) The Government of Sri Lanka will provide two jeeps with drivers.

   (5) The office of the Study area will be scheduled to be located in Bakamuna.

4. List of participants at the above discussions were as follows :

MASL

(1)	Mr. K.H.S. Gunatilaka	Director-General, MASL
(2)	Mr. C.W.E. Rosa	Director Headworks Projects, MASL
(3)	Mr. P.T. Senaratne	Deputy Secretary-General, MASL
(4)	Dr. A. Attanayake	Director, PMU
(5)	Mr. H.B. Jayasekera	Addl. General Manager, CECB
(6)	Mr. Ananda Herath	Senior Asst. Secy., M/M.D.
(7)	Mr. L.U. Weerakoon	Director, WMS

Embassy of Japan

(8)	Mr. K. Maruyama	1st Secretary, Embassy of Japan

JICA

(9)	Mr. J. Hashiguchi	Resident Representative, JICA

JICA Preliminary Survey Team

(10)	Mr. Masamitsu Aihara	Team Leader
(11)	Mr. Masahiro Yagi	Member
(12)	Mr. Hitomi Nakada	Member
(13)	Mr. Isamu Ueda	Member
(14)	Mr. Takashi Shino	Member