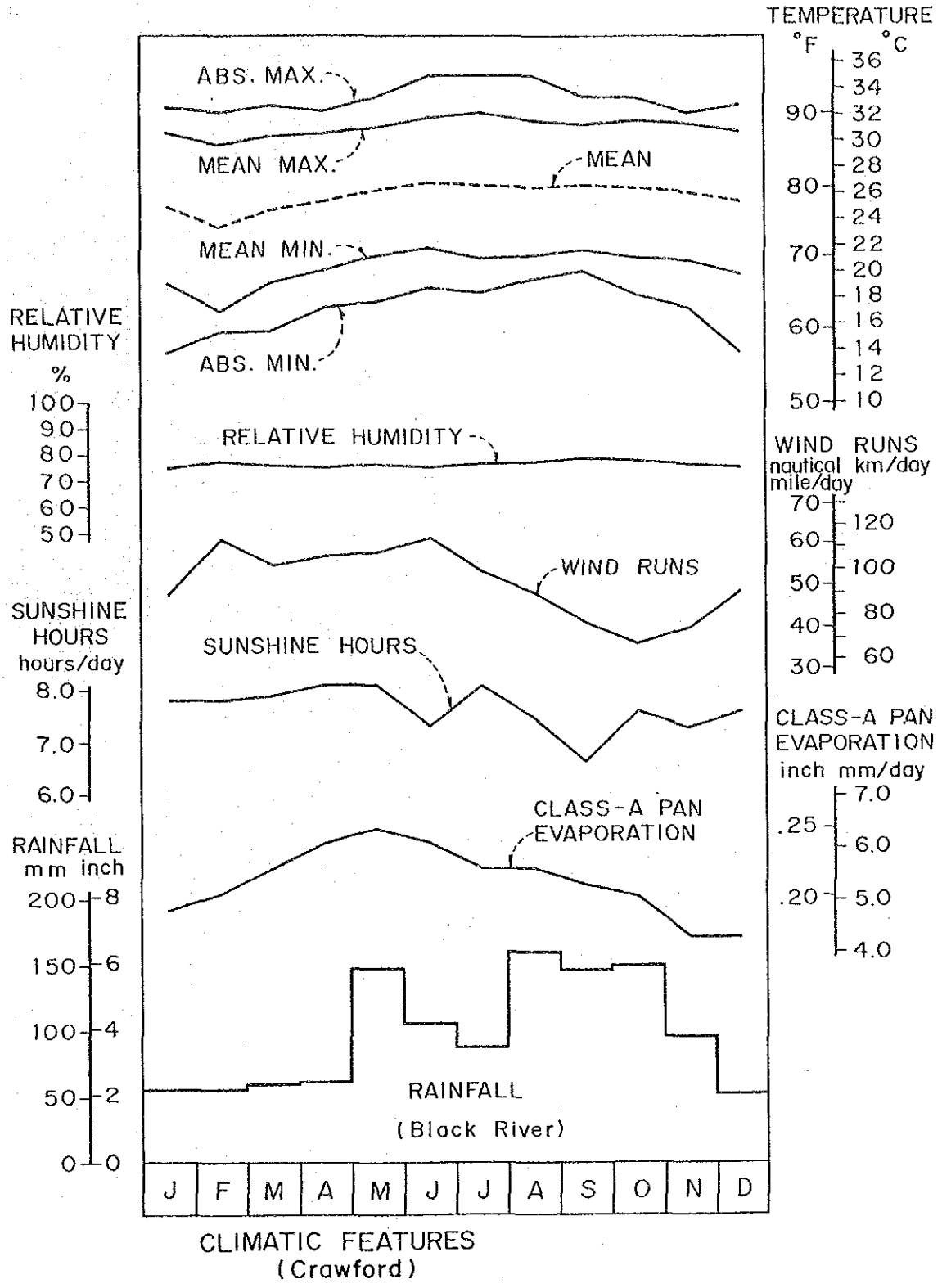
FIGURES



CLIMATIC FEATURES
(Crawford)

BLACK RIVER LOWER MORASS AGRICULTURAL DEVELOPMENT PROJECT
Fig. 1 CLIMATIC FEATURES AT CRAWFORD
JAPAN INTERNATIONAL COOPERATION AGENCY

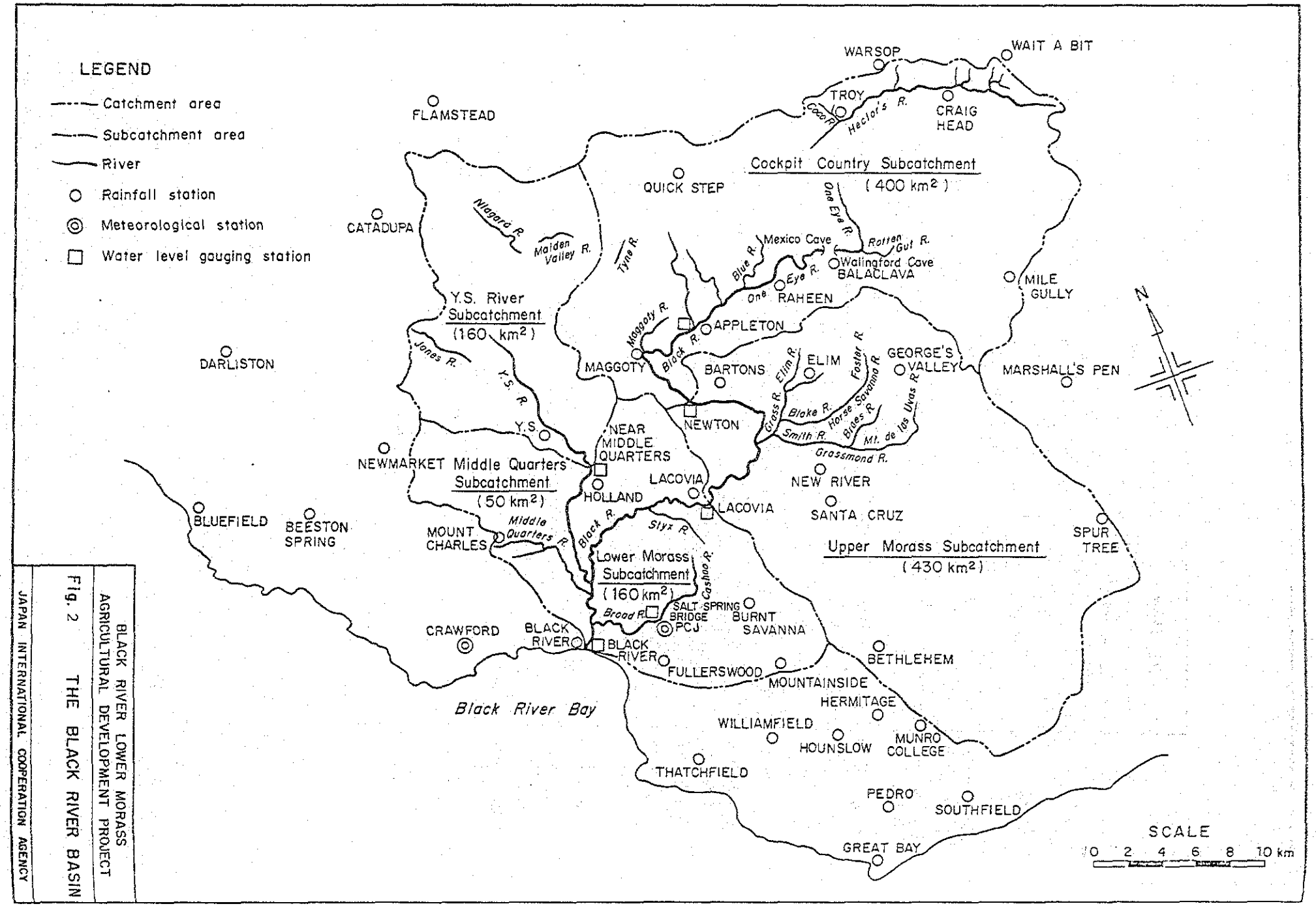
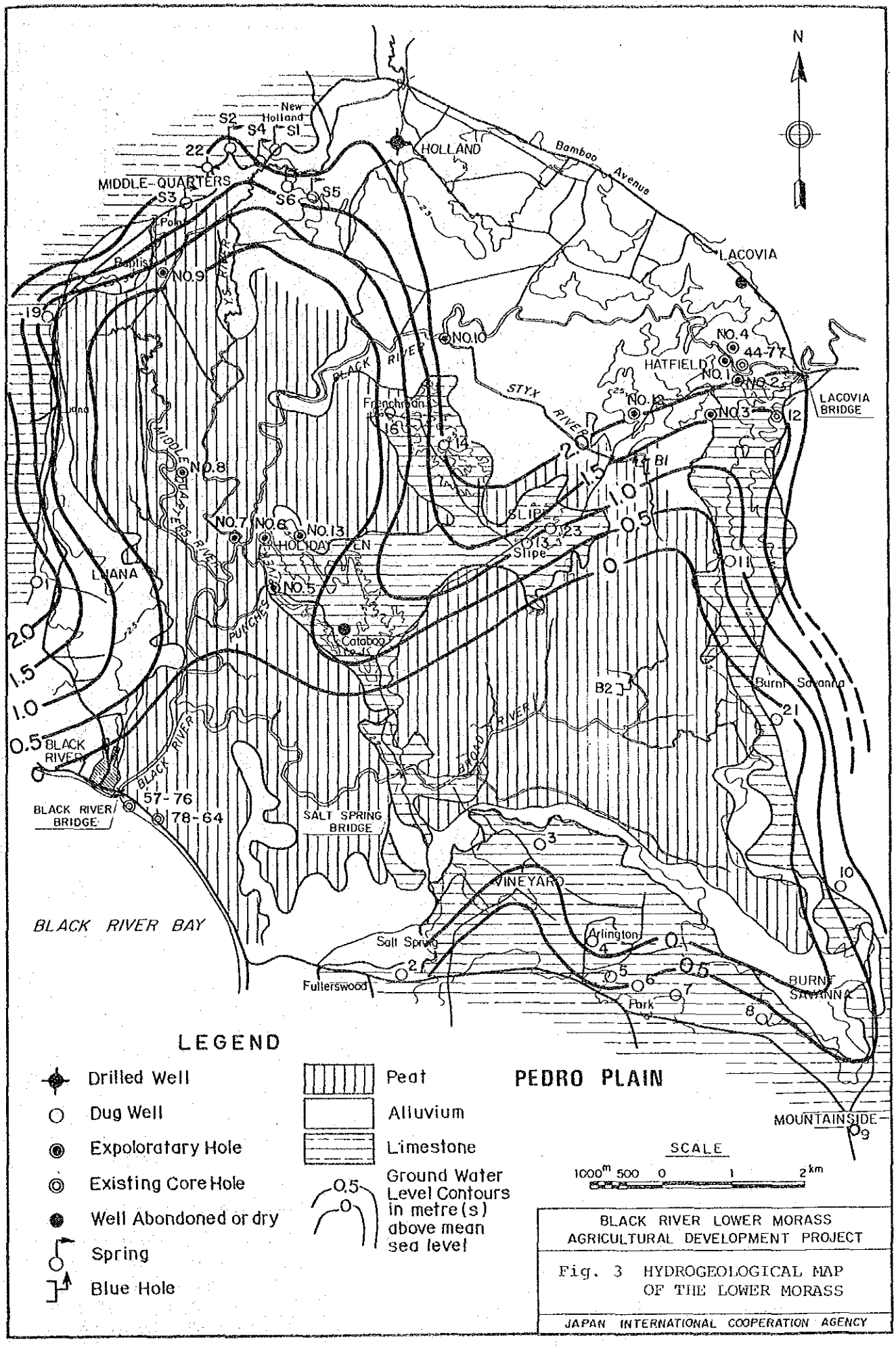
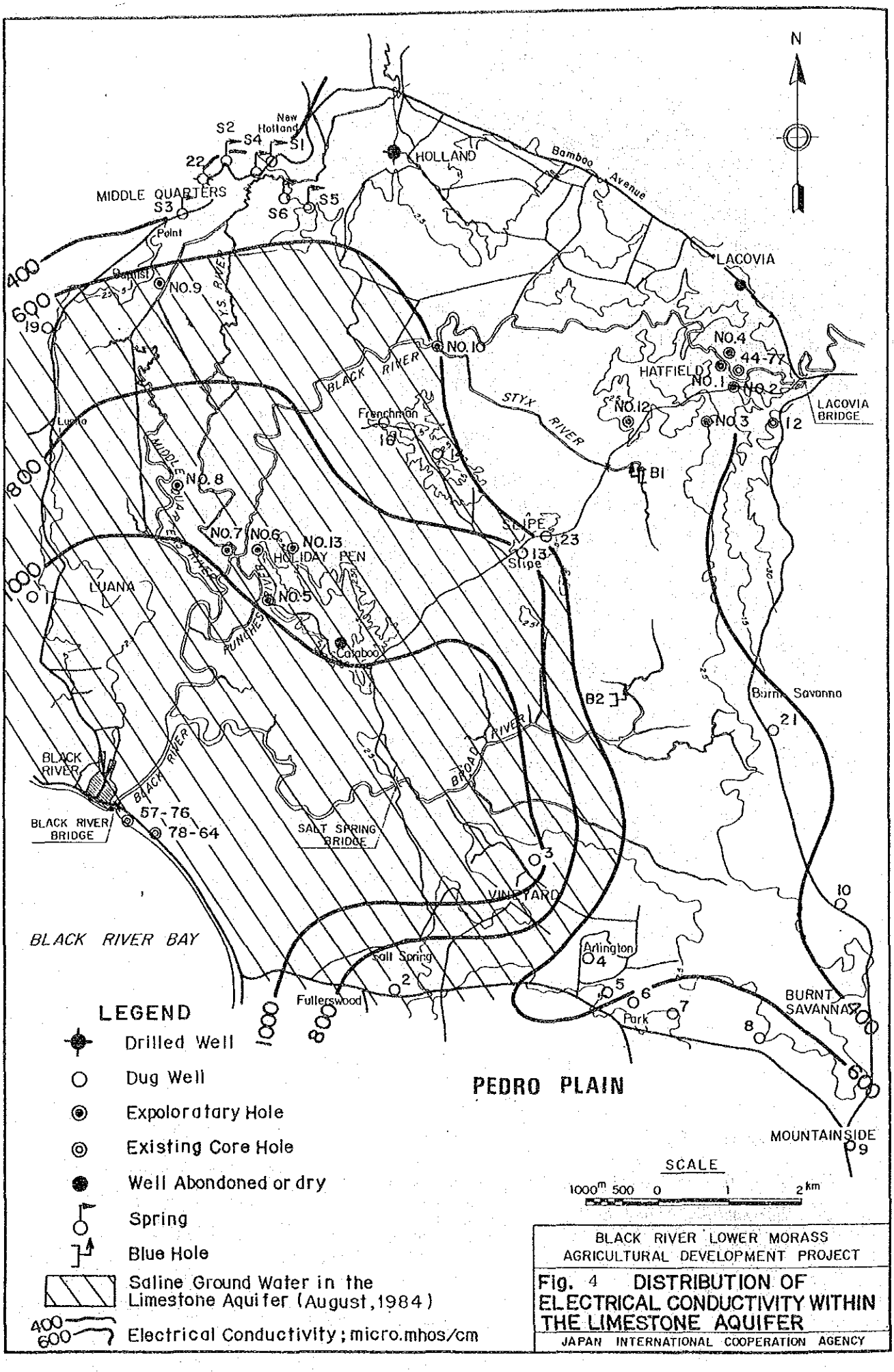


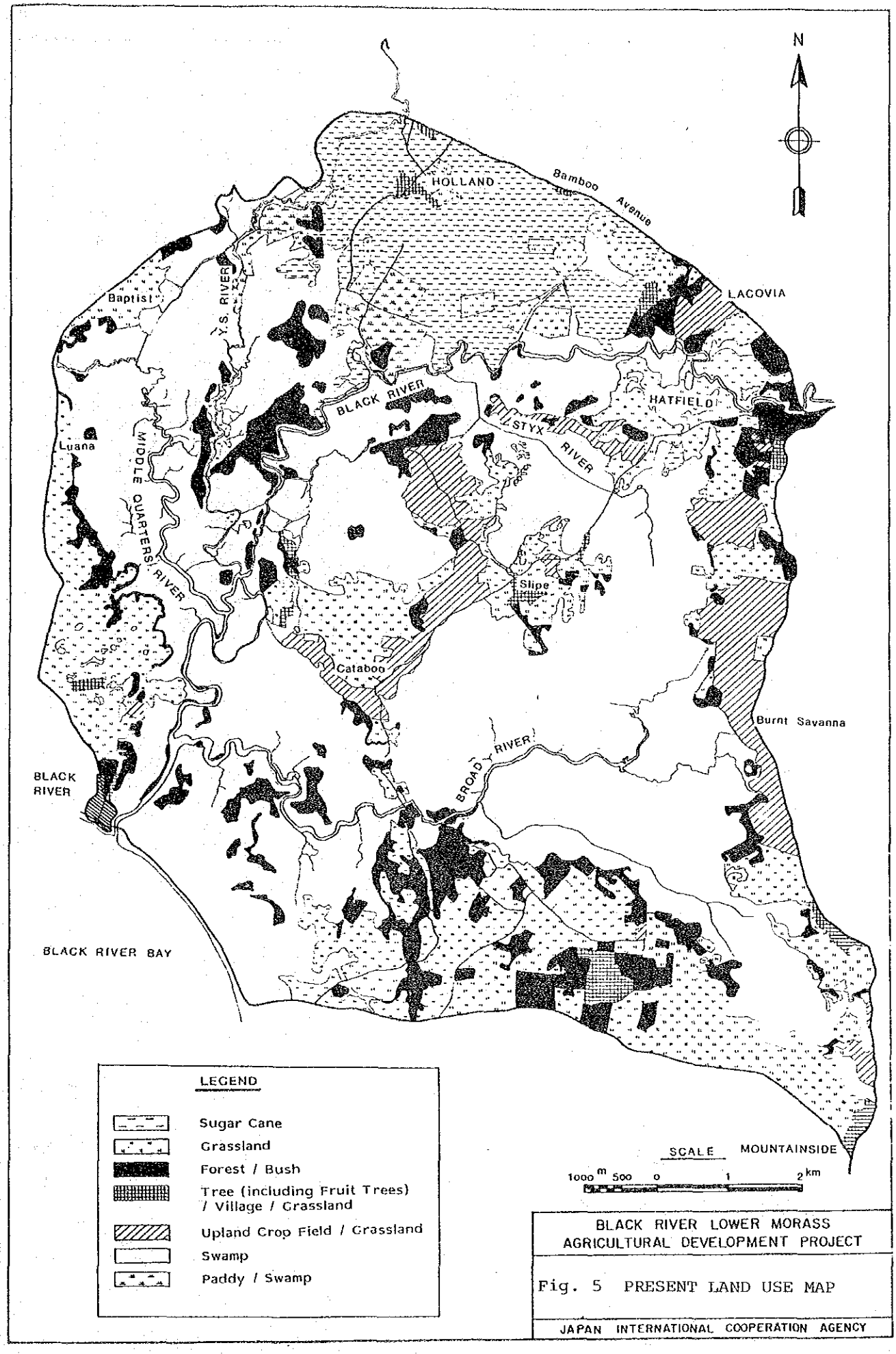
Fig. 2 THE BLACK RIVER BASIN

BLACK RIVER LOWER MORASS AGRICULTURAL DEVELOPMENT PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY


N
New Holland
S2
S4
S1
22
HOLLAND
Bamboo Avenue
MIDDLE QUARTERS
S3
S6
S5
Point
Baptist
NO.9
19
LACOVIA
NO.10
BLACK RIVER
NO.4
44-77
HATFIELD
NO.1
NO.2
STYX RIVER
NO.12
NO.3
12
LACOVIA BRIDGE
Frenchman
16
14
NO.8
MIDDLE QUARTERS RIVER
NO.7
NO.6
NO.13
HOLIDAY GREEN
SLIPE
23
Slipe
11
LIANA
NO.5
PUNCHES
Catabo
15
2.0
1.5
1.0
0.5
0
B2
Burnt Savanna
21
BLACK RIVER
BLACK RIVER BRIDGE
57-76
78-64
SALT SPRING BRIDGE
BROAD RIVER
3
VINEYARD
10
BLACK RIVER BAY
Salt Spring
Arlington
4
2
5
6
7
8
Fullerswood
Park
BURNT SAVANNA
MOUNTAINSIDE
9
LEGEND
Drilled Well
Dug Well
Expoloratary Hole
Existing Core Hole
Well Abondoned or dry
Spring
Blue Hole
Peat
Alluvium
Limestone
0.5
0
Ground Water Level Contours in metre(s) above mean sea level
PEDRO PLAIN
SCALE
1000m 500 0 1 2km
BLACK RIVER LOWER MORASS AGRICULTURAL DEVELOPMENT PROJECT
Fig. 3 HYDROGEOLOGICAL MAP OF THE LOWER MORASS
JAPAN INTERNATIONAL COOPERATION AGENCY

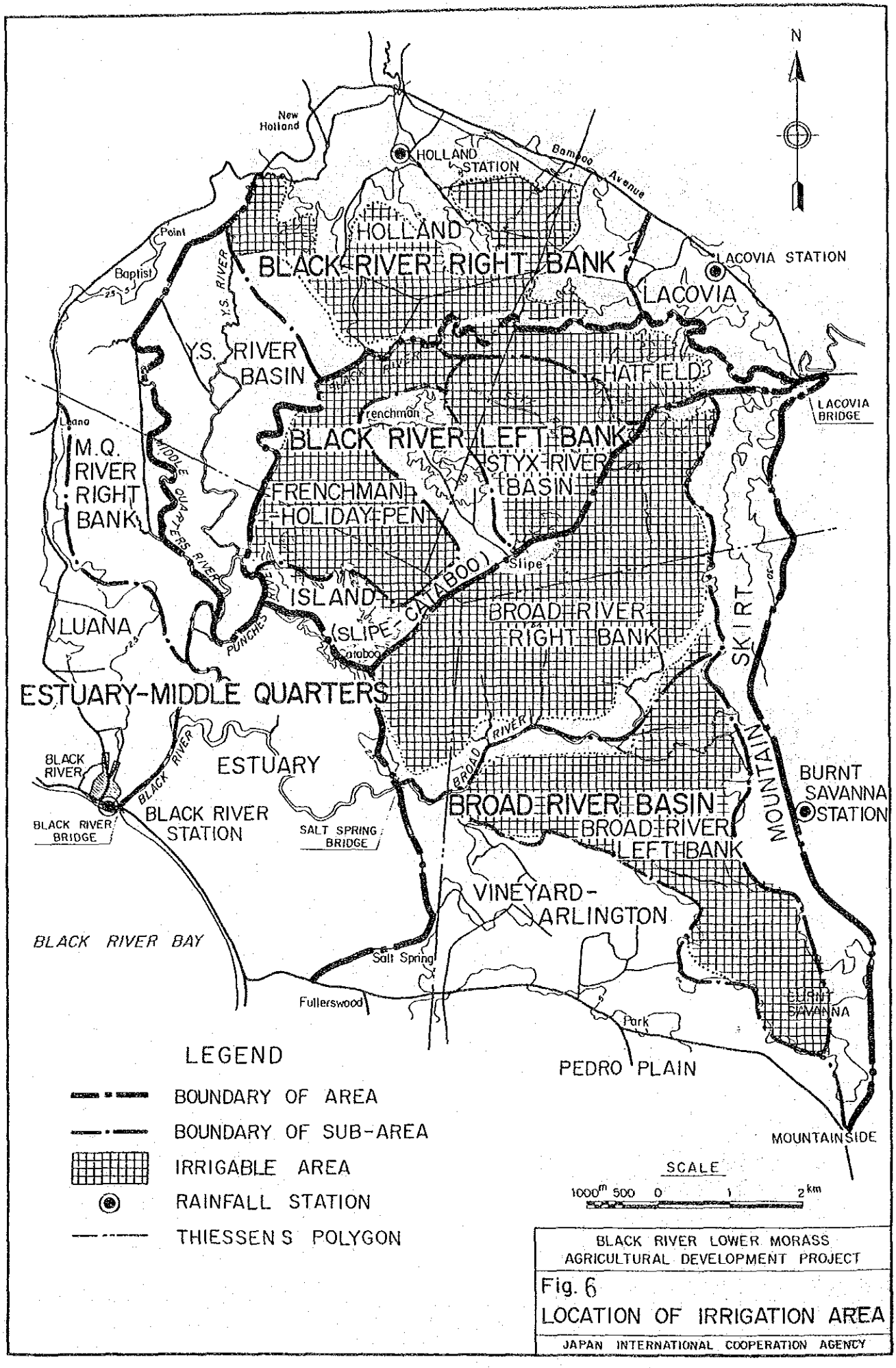

N
New Holland
S2
S4
S1
22
HOLLAND
Bamboo Avenue
MIDDLE QUARTERS
S3
S6
S5
Point
LACOVIA
NO.9
Y.S. RIVER
NO.10
BLACK RIVER
NO.4
44-77
HATFIELD
NO.1
NO.2
LACOVIA BRIDGE
STYX RIVER
NO.12
NO.3
12
Frenchman
B1
NO.8
MIDDLE QUARTERS
NO.7
NO.6
NO.13
HOLIDAY PEN
SLIPE
23
13
Slipe
LUANA
NO.5
PUNCHEON RUN
Cataboo
B2
Burnt Savanna
21
BLACK RIVER
BLACK RIVER
57-76
78-64
BLACK RIVER BRIDGE
SALT SPRING BRIDGE
BROAD RIVER
3
VINEYARD
10
BLACK RIVER BAY
Salt Spring
Arlington
4
2
5
6
7
8
Fullerswood
Park
BURNT SAVANNAS
1000
800
600
400
MOUNTAINSIDE
9
PEDRO PLAIN
LEGEND
Drilled Well
Dug Well
Expoloratary Hole
Existing Core Hole
Well Abondoned or dry
Spring
Blue Hole
Saline Ground Water in the Limestone Aquifer (August, 1984)
400
600
Electrical Conductivity ; micro.mhos/cm
SCALE
1000m 500 0 1 2km
BLACK RIVER LOWER MORASS AGRICULTURAL DEVELOPMENT PROJECT
Fig. 4 DISTRIBUTION OF ELECTRICAL CONDUCTIVITY WITHIN THE LIMESTONE AQUIFER
JAPAN INTERNATIONAL COOPERATION AGENCY



BLACK RIVER LOWER MORASS AGRICULTURAL DEVELOPMENT PROJECT

Fig. 5 PRESENT LAND USE MAP

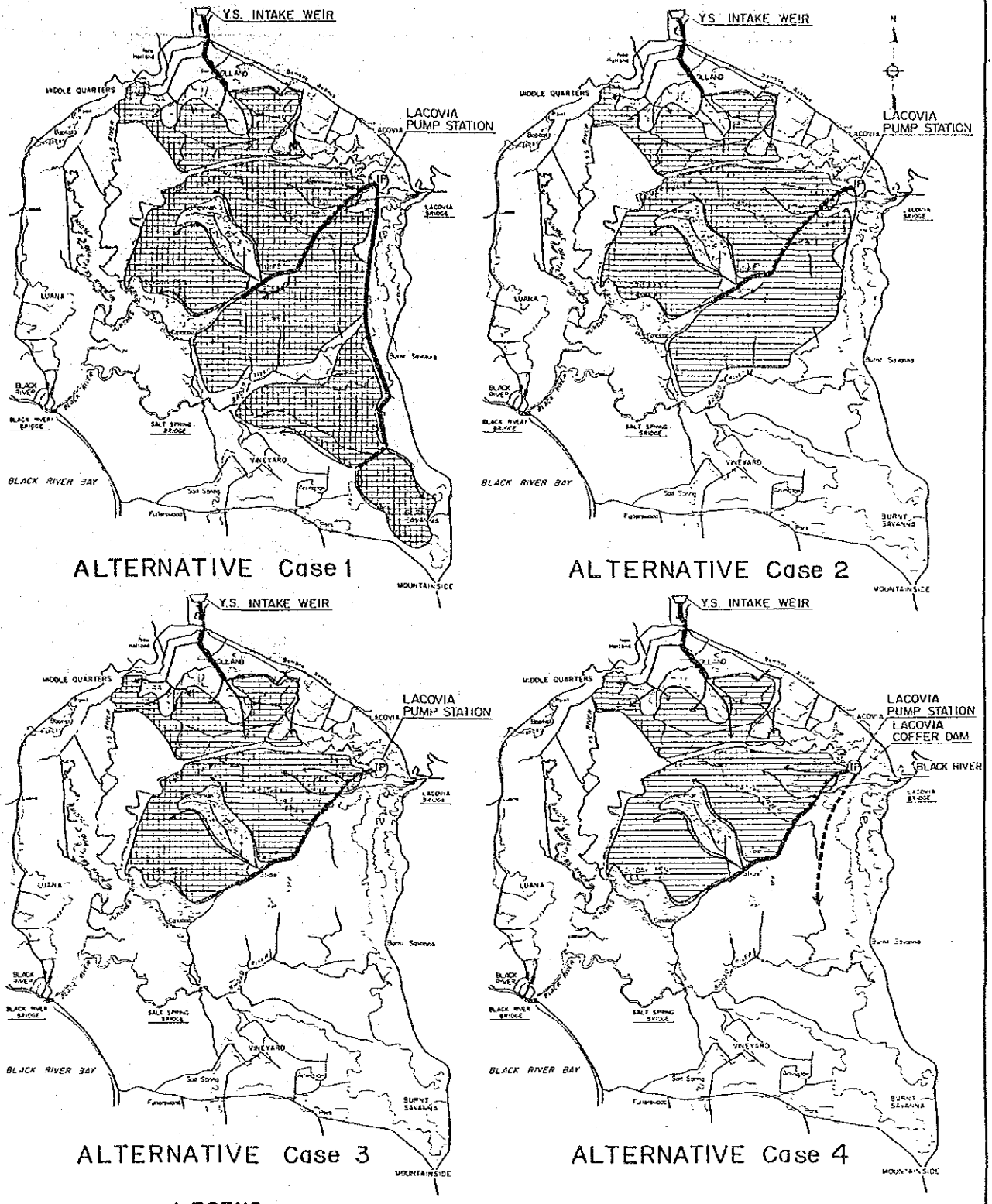
JAPAN INTERNATIONAL COOPERATION AGENCY



BLACK RIVER LOWER MORASS AGRICULTURAL DEVELOPMENT PROJECT

Fig. 6
LOCATION OF IRRIGATION AREA

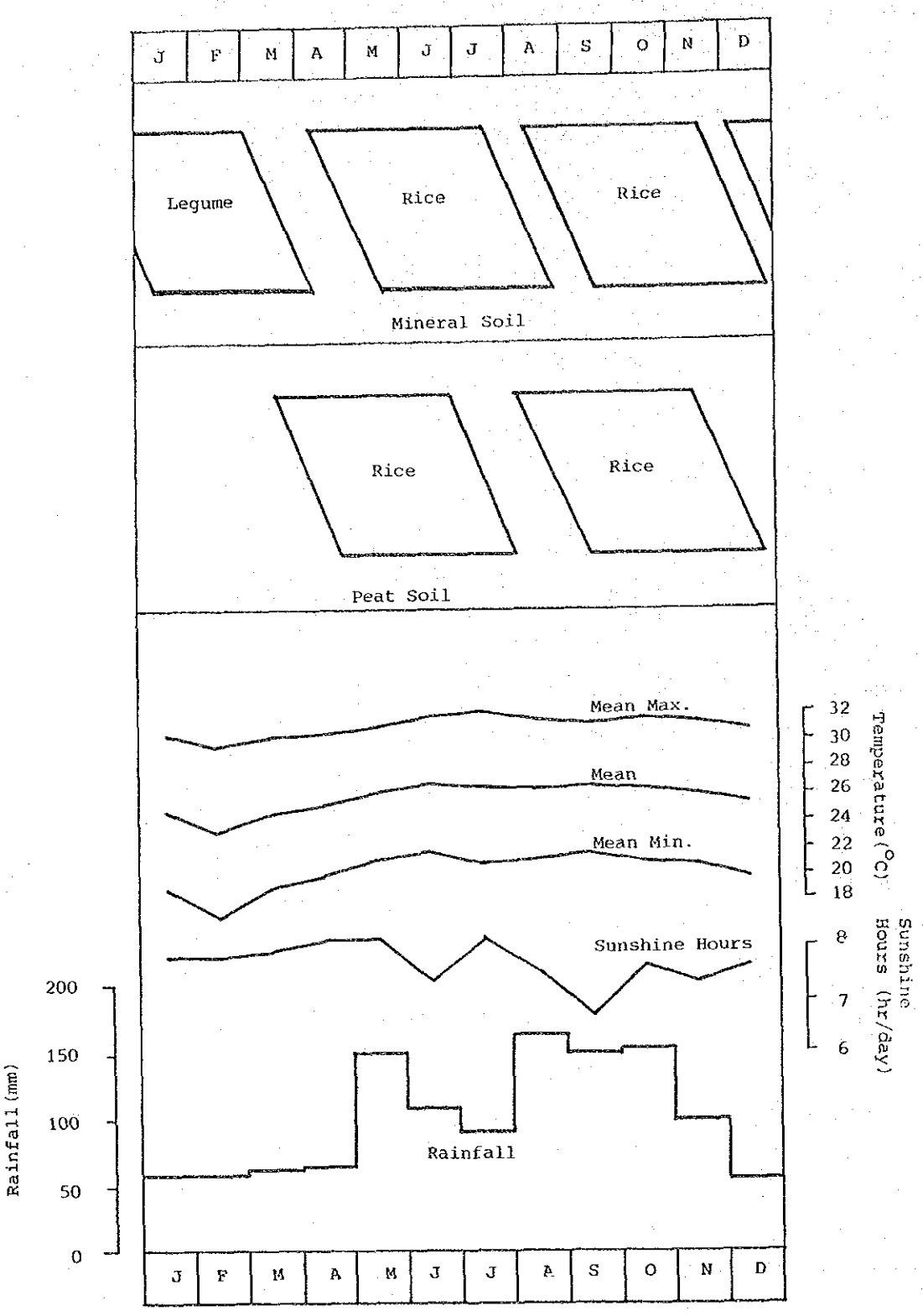
JAPAN INTERNATIONAL COOPERATION AGENCY



BLACK RIVER LOWER MORASS AGRICULTURAL DEVELOPMENT PROJECT

Fig. 7
ALTERNATIVE PLANS

JAPAN INTERNATIONAL COOPERATION AGENCY

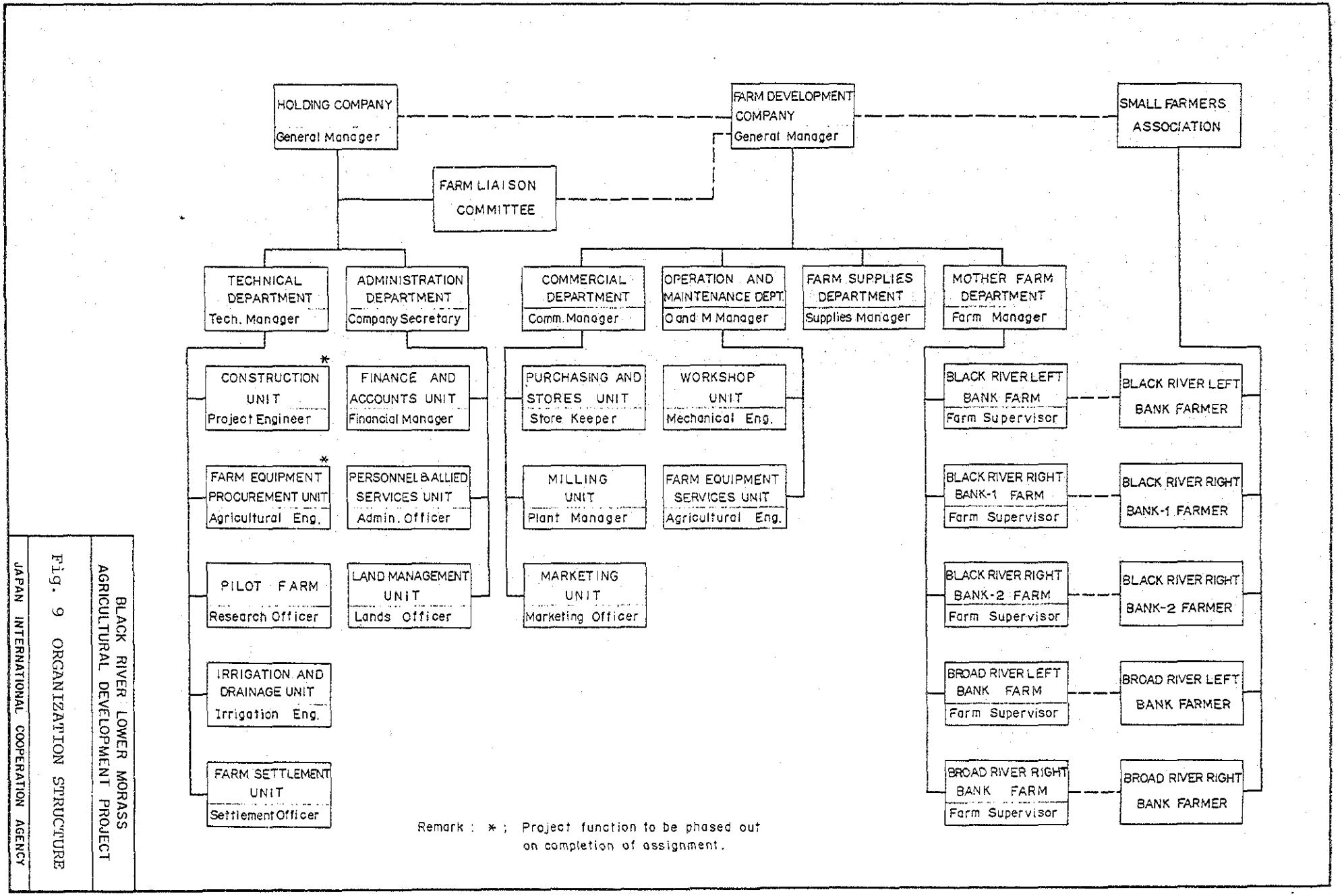


BLACK RIVER LOWER MORASS
AGRICULTURAL DEVELOPMENT PROJECT

Fig. 8

PROPOSED CROPPING PATTERN

JAPAN INTERNATIONAL COOPERATION AGENCY



BLACK RIVER LOWER MORASS AGRICULTURAL DEVELOPMENT PROJECT

Fig. 9 ORGANIZATION STRUCTURE

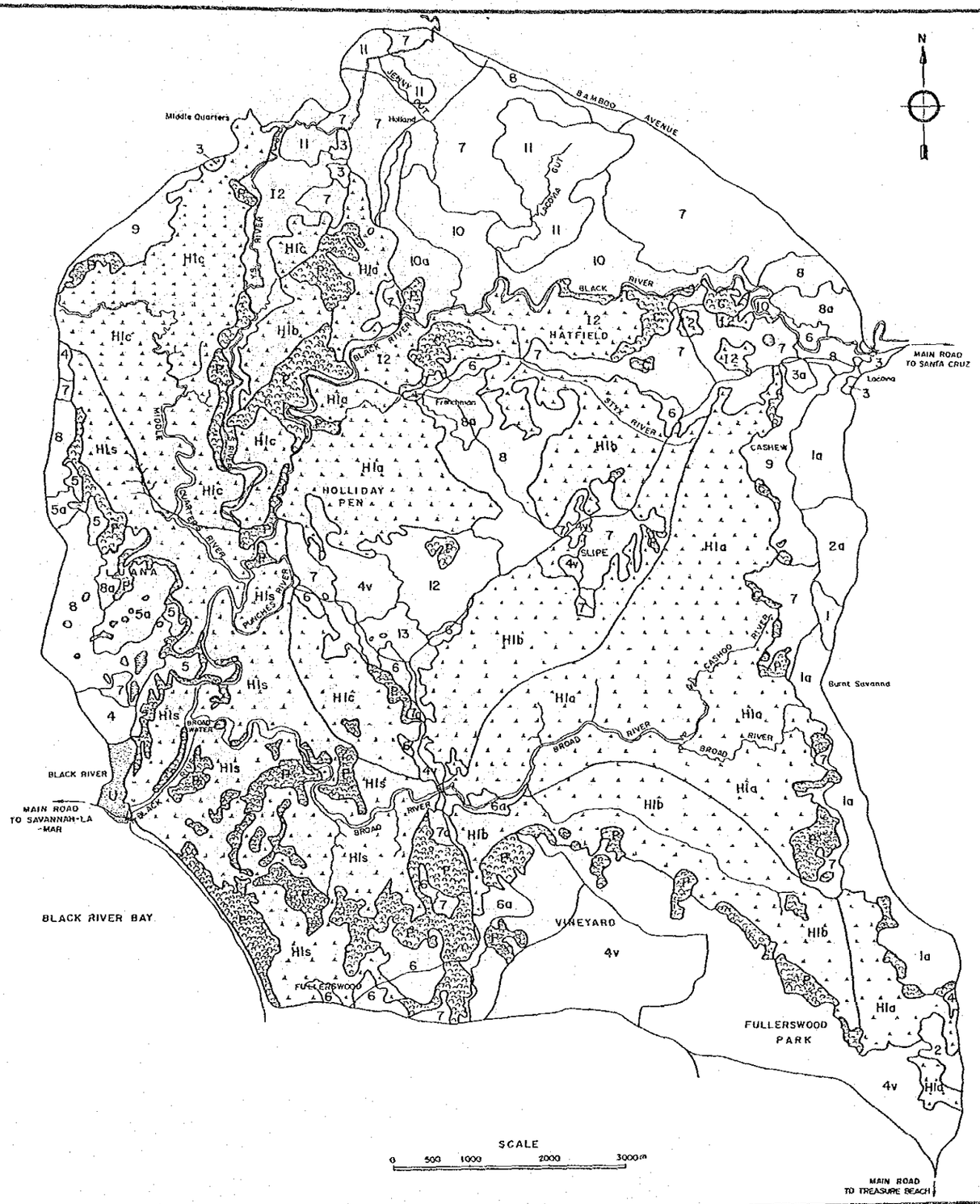
JAPAN INTERNATIONAL COOPERATION AGENCY

BLACK RIVER LOWER MORASS
AGRICULTURAL DEVELOPMENT PROJECT

Fig. 10 IMPLEMENTATION SCHEDULE

JAPAN INTERNATIONAL COOPERATION AGENCY

PLATES



LEGEND

- SOIL BOUNDARY
- ROAD
- RIVER
- 12 SOIL TYPE
- SWAMP
- POND
- BRIDGE
- U URBAN AREA
- C MARSHY FOREST - CLAY
- P MARSHY FOREST - PEAT

SOILS LEGEND

UPLAND SOIL

A. HILLS

I. LIMESTONE SOIL

1	Chudleigh clay loam	73	3	Bonnygate stony clay loam	77
1a	Chudleigh clay loam-Bonnygate stony clay loam complex.	73/77	3a	Bonnygate stony clay loam-Chudleigh clay loam complex.	77/73
2	Lucky Hill clay loam	74	4v	Carron Hall clay loam-extremely rocky complex.	94v
2a	Lucky Hill clay loam-Bonnygate stony clay loam complex.	74/77	4	Carron Hall clay	94

B. ALLUVIAL PLAIN

II. OLD ALLUVIAL SOIL

5	Hodges sand	150	7a	Fourpath clay-Cashew clay loam complex.	203/151
5a	Hodges sand-Fourpath sandy loam complex.	150/204	8	Fourpath sandy loam.	204
6	Cashew clay loam.	151	8a	Fourpath sandy loam-Hodges sand complex.	204/150
6a	Cashew clay loam-Fourpath clay loam.	151/203	9	Anglesey clay loam.	83
7	Fourpath clay.	203			

III. RECENT ALLUVIAL SOIL

10	Wallen clay.	9
10a	Wallen clay-Broad River Peat complex.	9/Hla
11	Holland clay.	109

C. ALLUVIAL PLAIN/FLAT HILLS

IV. OLD ALLUVIAL/LIMESTONE SOIL

12	Cashew clay loam-Carron Hall clay extremely rocky complex.	151/94v
13	Fourpath-Carron Hall clay extremely rocky complex.	203/94v

INUNDATED SOIL

D. ALLUVIAL SWAMP

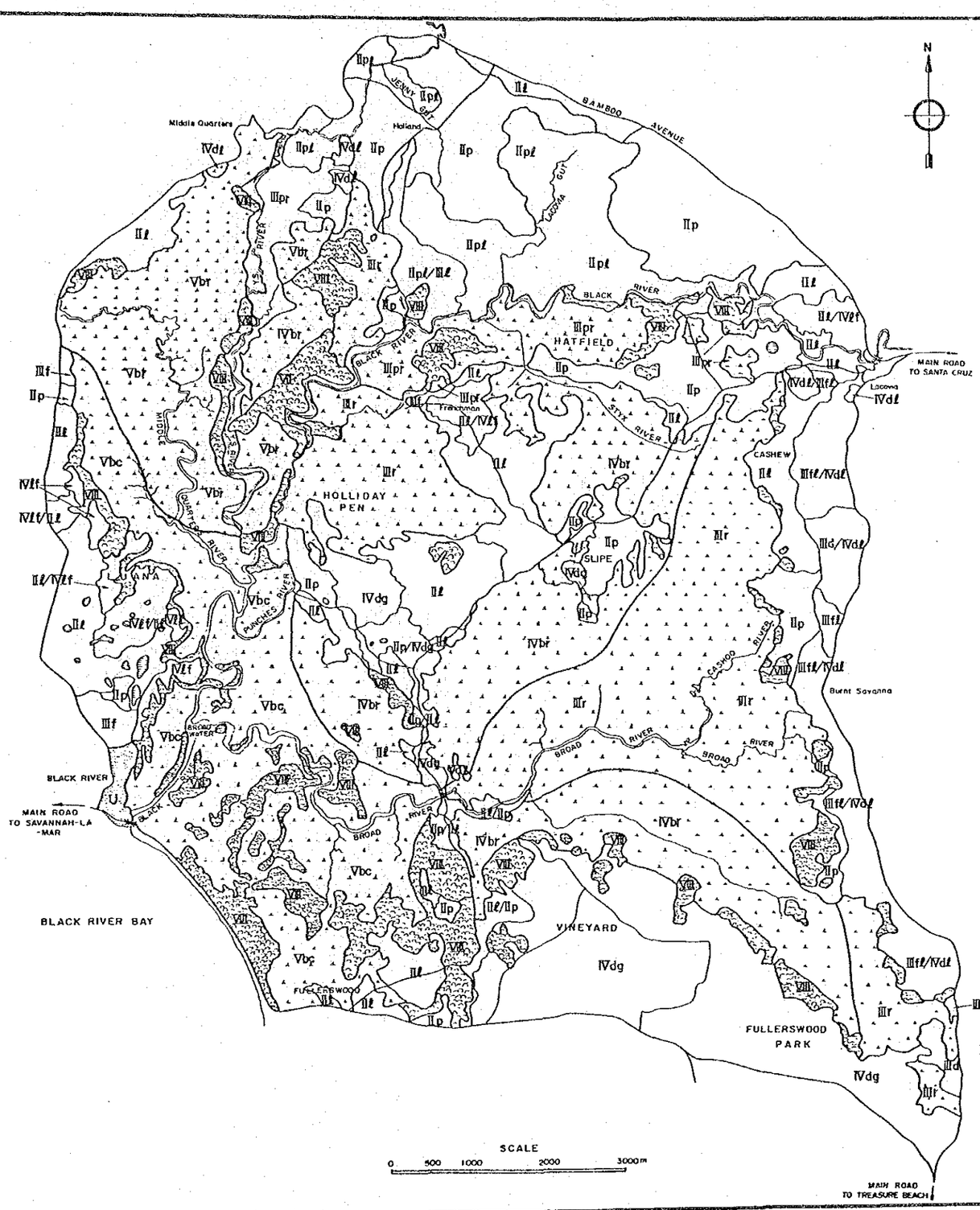
V. RECENT ALLUVIAL SOIL

14	Black River clay.	I2
15	Broad River peat.	Hla
16	Morass Peat-high decomposition phase.	Hlb
16a	Morass Peat-low decomposition phase.	Hlc
16b	Morass Peat-sulfidic phase.	Hls

BLACK RIVER LOWER MORASS AGRICULTURAL DEVELOPMENT PROJECT

PLATE 1 SOIL MAP

JAPAN INTERNATIONAL COOPERATION AGENCY



LEGEND

- SOIL BOUNDARY
- ROAD
- RIVER
- MANGROVE / FOREST
- SWAMP
- POND
- BRIDGE
- URBAN AREA
- LAND CAPABILITY CLASSES FOR RICE

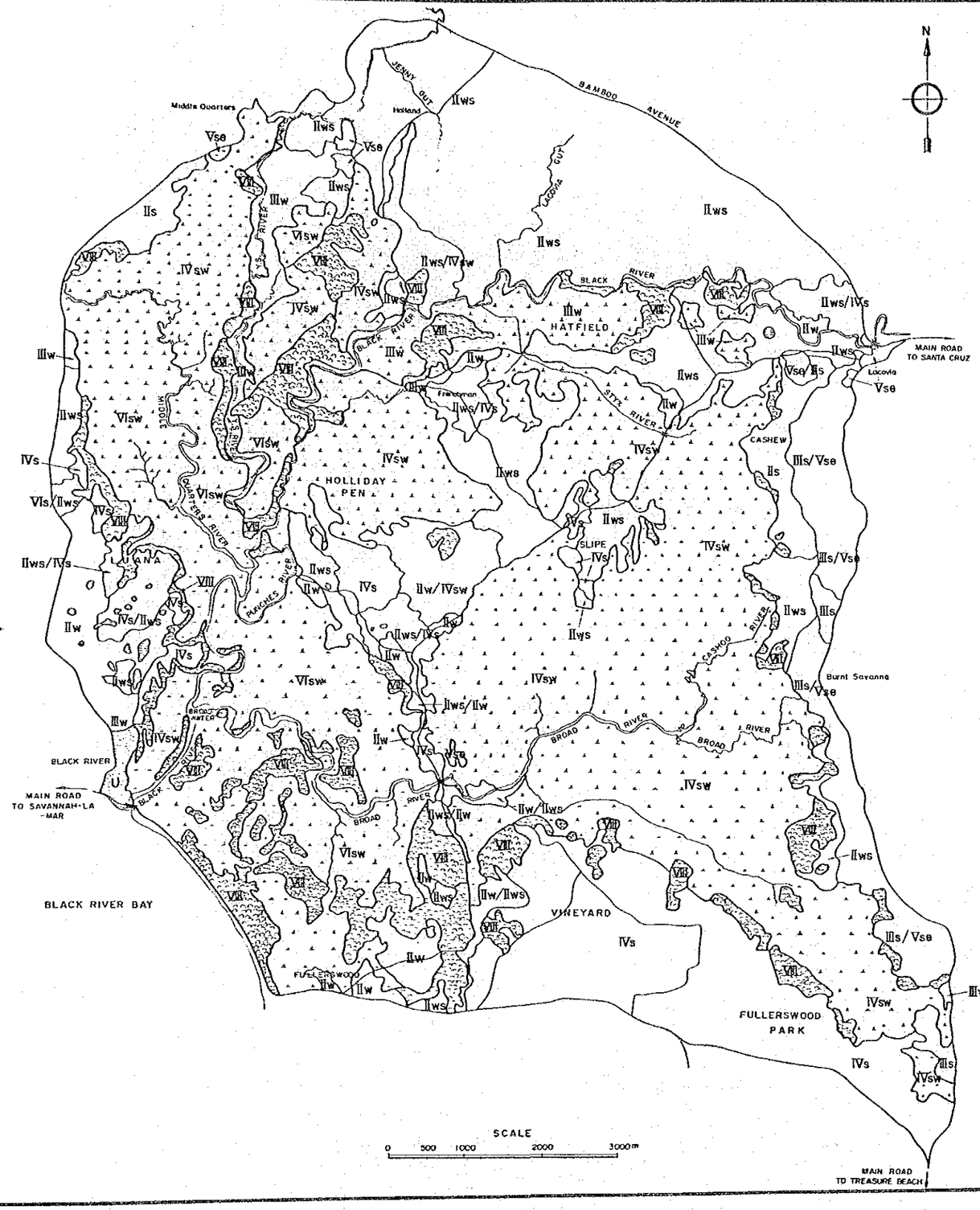
LAND CAPABILITY CLASSES FOR RICE CULTURE

- IIℓ Land suitable for cultivation with moderate limitation. Leaking of logged water is the main limitation to its use.
- IIp Land suitable for cultivation with moderate limitation. Difficult proughing of soil is the main limitation to its use.
- IIpℓ Land suitable for cultivation with moderate limitaiton. Leaking and difficult plowing of soil are the chief limitation to its use.
- IIId Land suitable for cultivation with strong limitation, imposed by shallow effective soil depth.
- IIIf Land suitable for cultivation with strong limitation, imposed by adverse soil fertility.
- IIIfℓ Land suitable for cultivation with strong limitations, imposed by poor soil fertility and leaking of logged water.
- IIIpr Land suitable for cultivation with strong limitations, imposed by ploughing and oxi-reduction of soil.
- IVdℓ Land marginal for cultivation due to shallow soil depth and extreme leaking of logged water.
- IVdg Land marginal for cultivation due to shallow soil depth and gravel soil.
- IVℓf Land marginal for cultivation due to extreme leaking of logged water and low soil fertility.
- IVbr Land marginal for cultivation due to extremely low bearing capacity and strong oxi-reduction of soil.
- Vbr Land not suitable for cultivation due to extremely low bearing capacity and strong oxi-reduction of soil.
- Vbc Land not suitable for cultivation due to extremely low bearing capacity and chemical hazards of soils.
- VIII Land not suitable for agriculture due to marshy forest.

BLACK RIVER LOWER MORASS AGRICULTURAL DEVELOPMENT PROJECT

PLATE 2
LAND CLASSIFICATION MAP FOR RICE CULTURE

JAPAN INTERNATIONAL COOPERATION AGENCY



LEGEND

- SOIL BOUNDARY
- ROAD
- RIVER
- MANGROVE / FOREST
- SWAMP
- POND
- BRIDGE
- U — URBAN AREA
- IIIw — LAND CAPABILITY CLASSES FOR UPLAND CROPS

LAND CAPABILITY CLASSES FOR UPLAND CROPS

IIw Land suitable for cultivation with moderate limitations. Naturally wet land of which drainage is the main limiting factor to its use.

IIs Land suitable for cultivation with moderate limitations. Soil fertility or other factors are the main limitation to its use.

IIws Land suitable for cultivation with moderate limitations, imposed by drainage and soil factors.

IIIs Land suitable for cultivation with strong limitations. Naturally wet land needing much attention to drainage.

IIIs Land suitable for cultivation with strong limitations, imposed by adverse soil factors.

IVs Land marginal for cultivation due to adverse soil factors.

IVsw Land marginal for cultivation due to adverse soil factors and poor drainage.

Vse Land not suitable for cultivation due to extremely low soil fertility and erosion hazards.

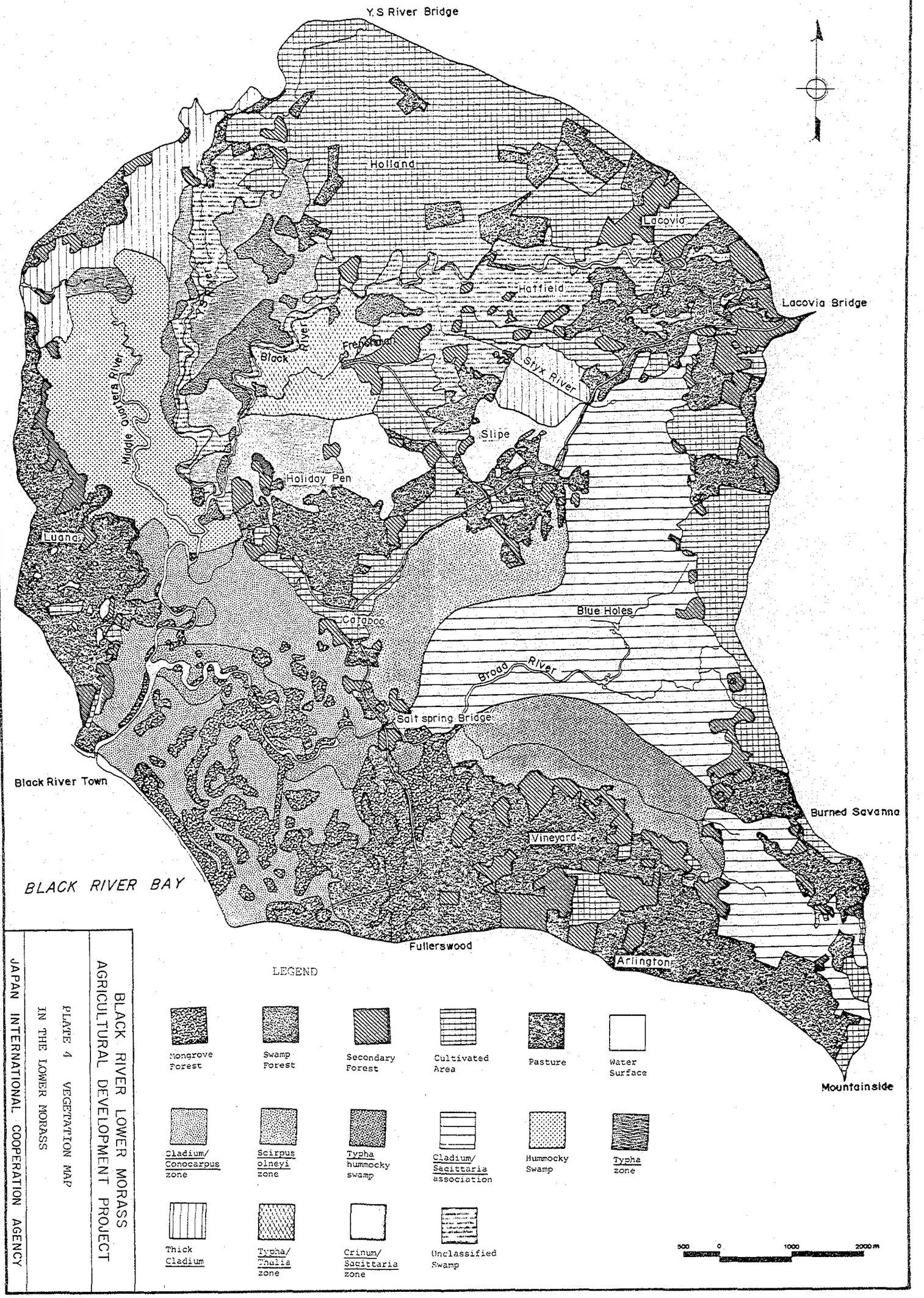
VIsw Land not suitable for cultivation due to extremely adverse soil factors and drainage hazards.

VII Land not suitable for agriculture due to marshy forest.

BLACK RIVER LOWER MORASS
AGRICULTURAL DEVELOPMENT PROJECT

PLATE 3
LAND CLASSIFICATION MAP FOR
UPLAND CROPS

JAPAN INTERNATIONAL COOPERATION AGENCY



BLACK RIVER LOWER MORASS
AGRICULTURAL DEVELOPMENT PROJECT

PLATE 4 VEGETATION MAP
IN THE LOWER MORASS

JAPAN INTERNATIONAL COOPERATION AGENCY

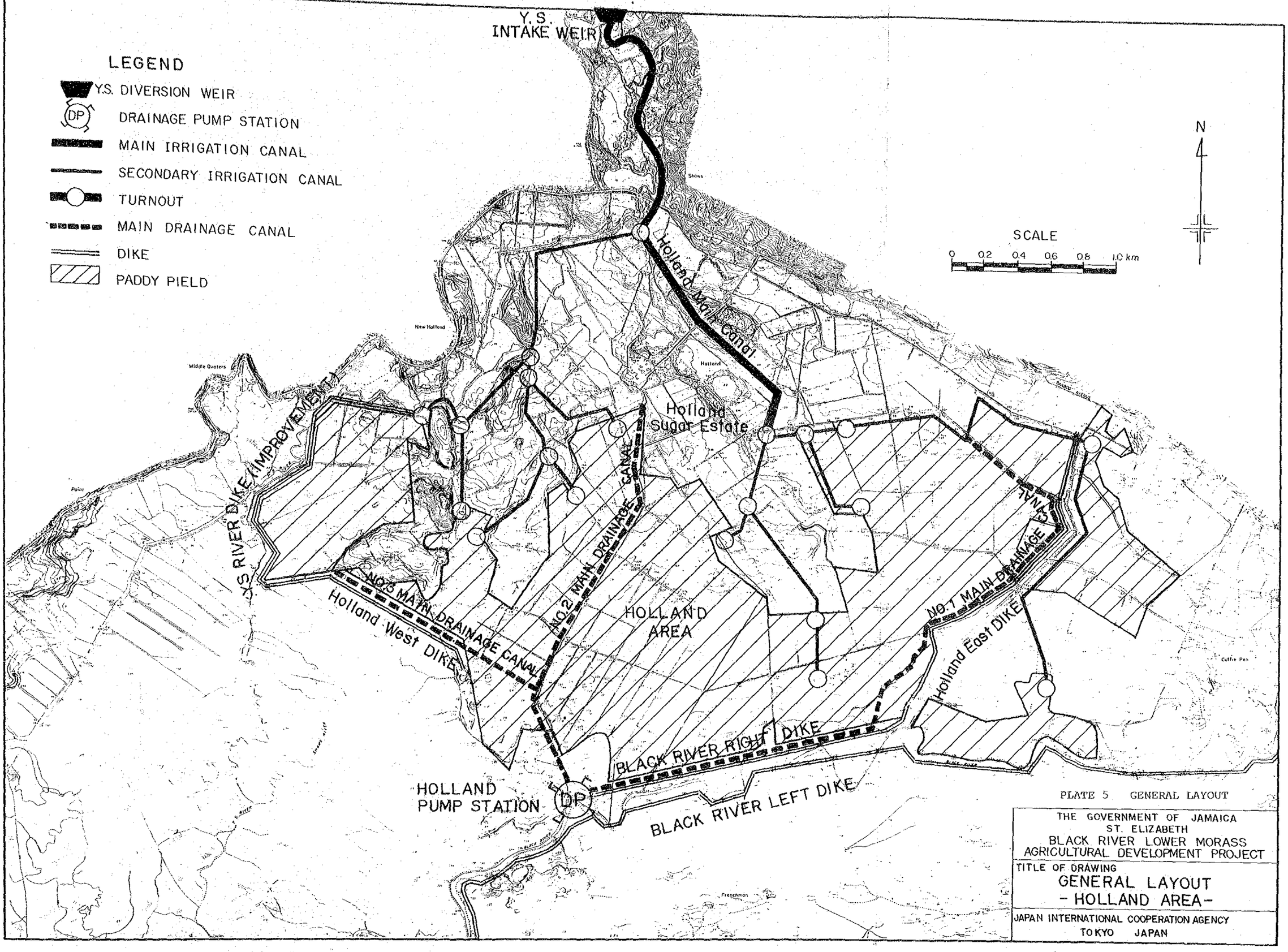


PLATE 5 GENERAL LAYOUT

THE GOVERNMENT OF JAMAICA ST. ELIZABETH BLACK RIVER LOWER MORASS AGRICULTURAL DEVELOPMENT PROJECT
TITLE OF DRAWING GENERAL LAYOUT - HOLLAND AREA -
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN

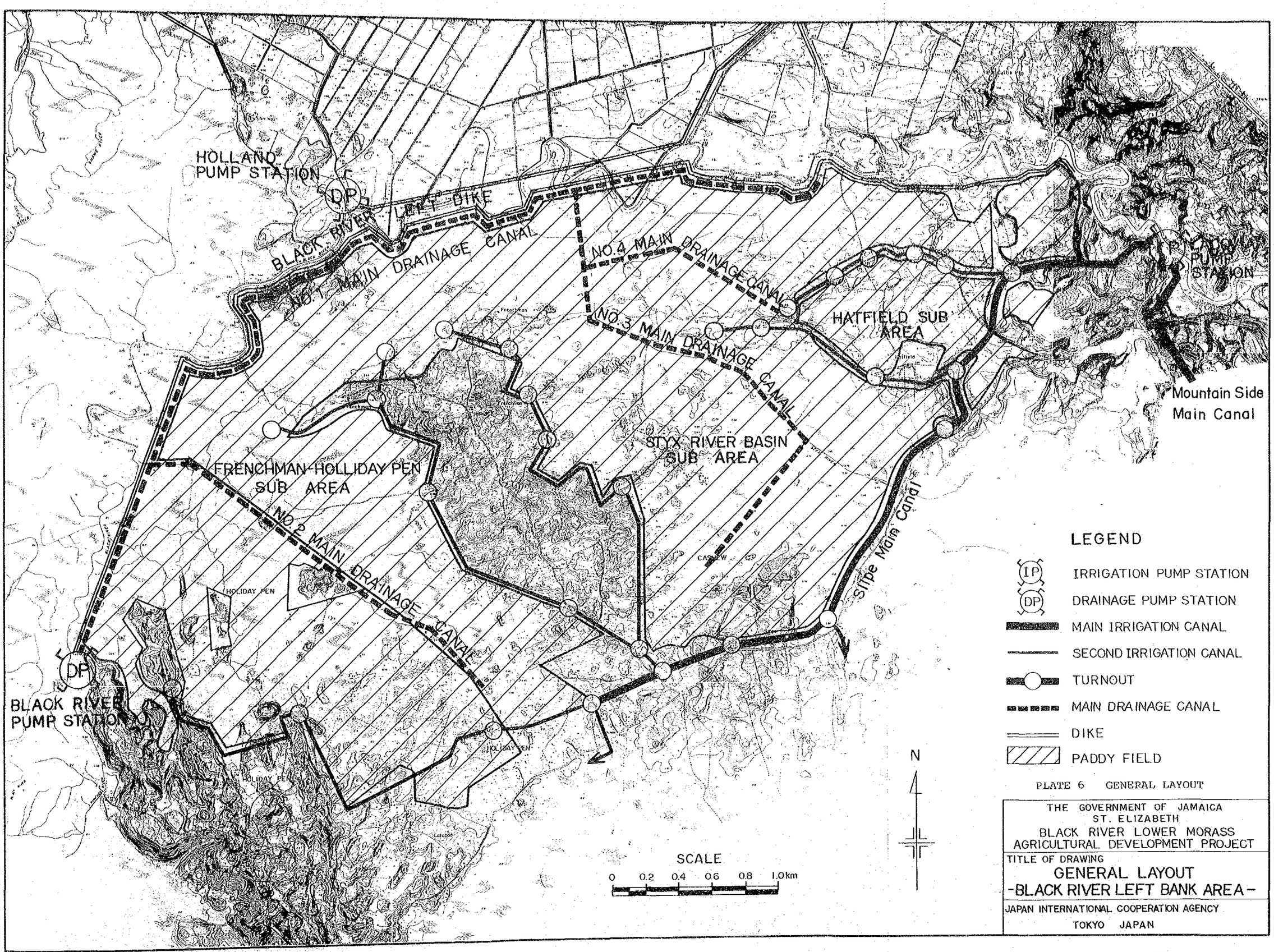


PLATE 6 GENERAL LAYOUT

THE GOVERNMENT OF JAMAICA
ST. ELIZABETH
BLACK RIVER LOWER MORASS AGRICULTURAL DEVELOPMENT PROJECT

TITLE OF DRAWING
GENERAL LAYOUT
-BLACK RIVER LEFT BANK AREA-

JAPAN INTERNATIONAL COOPERATION AGENCY
TOKYO JAPAN

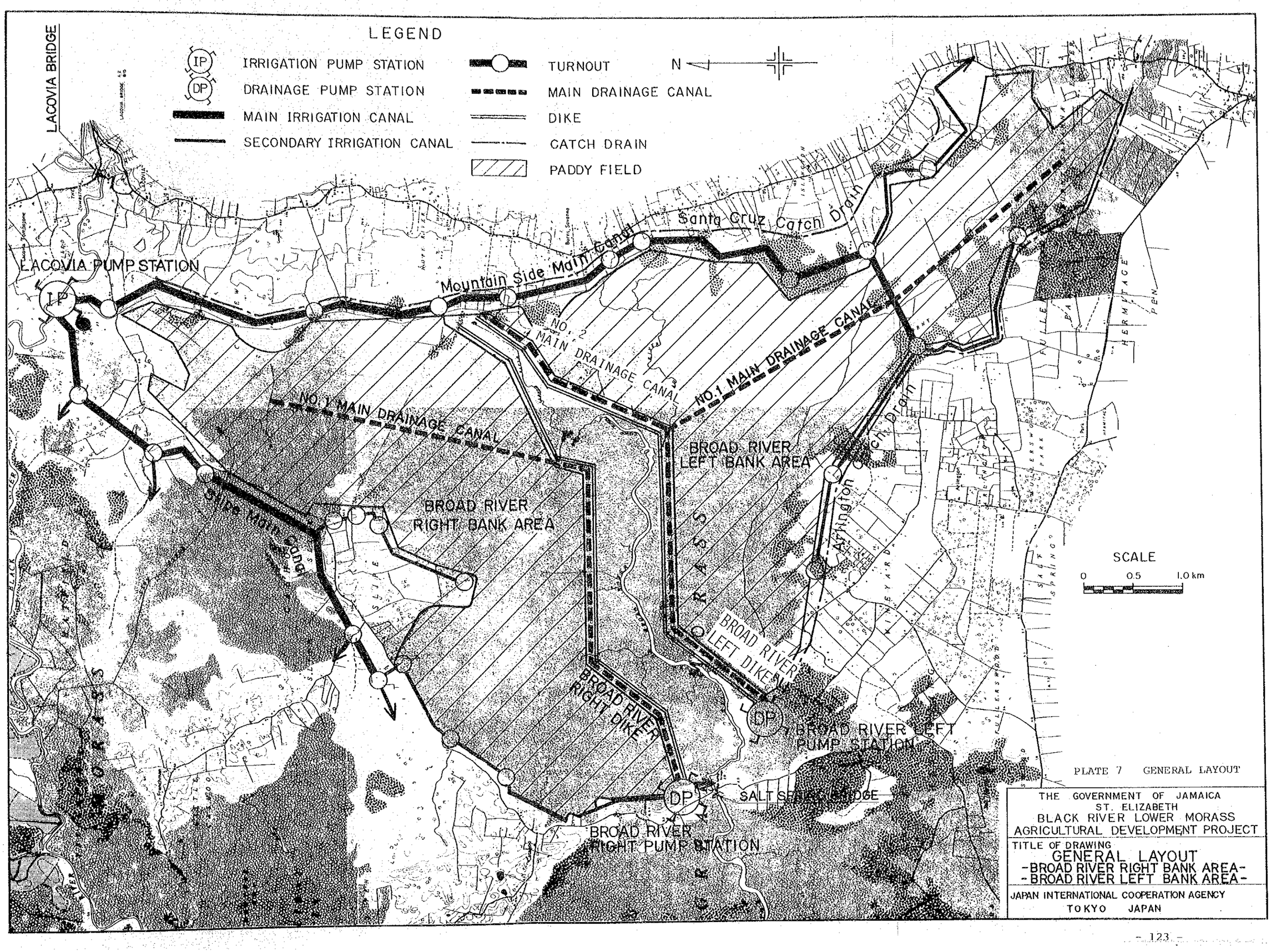


PLATE 7 GENERAL LAYOUT

THE GOVERNMENT OF JAMAICA
ST. ELIZABETH
BLACK RIVER LOWER MORASS
AGRICULTURAL DEVELOPMENT PROJECT

TITLE OF DRAWING
GENERAL LAYOUT
-BROAD RIVER RIGHT BANK AREA-
-BROAD RIVER LEFT BANK AREA-

JAPAN INTERNATIONAL COOPERATION AGENCY
TOKYO JAPAN

ATTACHMENT

ATTACHMENT 1

SCOPE OF WORK

FOR

THE FEASIBILITY STUDY

ON

BLACK RIVER LOWER MORASS AGRICULTURAL DEVELOPMENT PROJECT

IN

JAMAICA

AGREED UPON BETWEEN

NATIONAL PLANNING AGENCY

AND

THE JAPAN INTERNATIONAL COOPERATION AGENCY

KINGSTON, DECEMBER 13, 1983

Yvonne E. Roache

Yvonne E. ROACHE
for Chief Technical Director
National Planning Agency

Shingi Takahashi

Shingi TAKAHASHI
Leader of the Japanese
Study Team, JICA

I. INTRODUCTION

In response to the request of the Government of JAMAICA (hereinafter referred to as "JAMAICA"), the Government of Japan decided to implement the feasibility study on BLACK RIVER LOWER MORASS 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 programme of the Government of Japan, will undertake the Study in close cooperation with the authorities concerned of JAMAICA.

The present document sets forth the Scope of Work with regard to the abovementioned study.

II. OBJECTIVES OF THE STUDY

The objectives of the Study will be:

1. to formulate the Project and verify its technical and economic feasibility; and
2. to undertake on-the-job training and transfer the technology to the Jamaican counterpart personnel in the course of the Study.

III. OUTLINE OF THE STUDY

1. Study Area

The study area will be about 14,000 ha located in the alluvial plain of Black River downstream, and bounded on the north and west by the Black River - Santa Cruz Road, on the east by the Lacovia Bridge - Mountainside Road, and on the south by the Mountainside - Black River Road.

2. Scope of the Study

The scope of the Study to be conducted will be as follows:

1) Field Work

(1) Collection and review of the existing data and information for the Study:

A. natural condition

a. meteorology and marine meteorology

b. hydrology

c. topography

d. geography

e. geology

f. soil

B. general condition

a. land use

b. land tenure

c. water utilization

d. transportation and communication

e. electricity

f. socio-economy

g. social infrastructure

h. natural resources

i. environmental aspect

C. agriculture:

a. farm household

b. farm management

c. crop yield and production

d. agricultural machinery

e. animal husbandry

f. inland water fishery

g. water resources

h. groundwater

i. irrigation water requirement

j. custom of water use and water rights

D. agro-economy:

a. marketing and prices

b. agricultural production cost and production value

c. farm economy

E. agricultural supporting system:

a. farmers organization

b. agricultural techniques and its extension

c. agricultural credit

d. experiment and research activities

e. agricultural training

F. agricultural infrastructure:

a. irrigation and drainage system

b. land reclamation

c. land consolidation

d. farm road

e. milling and storage facilities

f. agro-industry

(2) Necessary field surveys for project planning.

(3) Formulation of basic development concepts for the Project

(4) Preparation for preliminary design of project works and provisional determination of key dimensions thereof.

2. Home Office Work in Japan:

(1) Detail study and analysis of the data and information obtained through the field work.

(2) Finalization of the optimum development concept for the project.

(3) Formulation of the Project:

A. land use plan

B. land resettlement plan

C. farming programme and cropping pattern

D. estimation of crop yield, crop production, production cost and value

E. irrigation and drainage plan

F. plan and preliminary design of irrigation and drainage facilities, and other agricultural infrastructures

G. construction plan of project works

H. plan for operation and maintenance system of facilities

I. implementation schedule of the Project

J. estimation of the project cost

K. agricultural supporting services

L. organization for the Project during and after construction

(4) Evaluation of the Project:

A. economic evaluation by means of IRR

B. analysis of typical farm budget

C. other benefits

(5) Specific recommendation

IV. WORK SCHEDULE

The Study will be conducted in accordance with tentative working schedule attached herewith.

V. REPORTS

JICA will prepare and submit the following reports in English to JAMAICA:

1. Plan of Operation

twenty (20) copies at the commencement of the Study.

2. Progress Report

twenty (20) copies at the end of each field work.

3. Interim Report

twenty (20) copies at the beginning of the Phase II study.

4. Draft Final Report

twenty (20) copies at the completion of the Phase II study. Within a month after the presentation of Draft Final Report, JAMAICA will forward the final comments on the Draft Final Report to JICA through the Embassy of Japan.

5. Final Report

fifty (50) copies within two (2) months after receiving comments on the Draft Final Report.

VI. UNDERTAKING OF JAMAICA

1. To facilitate smooth conduct of the Study, JAMAICA 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 Jamaica for the duration of their assignment therein, and exempt them from alien registration requirements and consular fees:

3) To exempt the members of the Japanese study team from taxes, duties, fees and any other charges on equipment, machinery and other materials brought into Jamaica for the conduct of the Study;

4) To exempt the members of the Japanese study team from income tax and charges of any kind 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 remittace as well as the utilization of funds introduced into Jamaica 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 necessary data and documents related to the Study out of Jamaica to Japan by Japanese study team;

8) To secure permission to use survey equipment including walkie talkie (subject to agreement on specification) for the conduct of the Study;

9) To facilitate the quick and smooth custom clearance of the survey equipment and materials brought into Jamaica by Japanese study team for their field study;

10) To provide vehicles for the field operation;

11) To recruit local staff such as secretaries, typists, labourers and drivers; and

12) To arrange medical services for the team during its stay in Jamaica, if necessary.

2. The Government of JAMAICA 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 willful misconduct on the part of the members of the Japanese study team.

3. National Planning Agency (hereinafter referred to as NPA) 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. NPA 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) counterpart personnel;
   3) suitable office with necessary equipment both near the project site and in Kingston; and
   4) credentials or identification cards.

VII. UNDERTAKING OF THE GOVERNMENT OF JAPAN

For the implementation of the Study, the Government of Japan, through JICA, will take necessary measures:

1. To despatch, at its own expense, study teams to Jamaica;
2. To pursue technology transfer to the Jamaican counterpart personnel in the course of the Study; and
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.

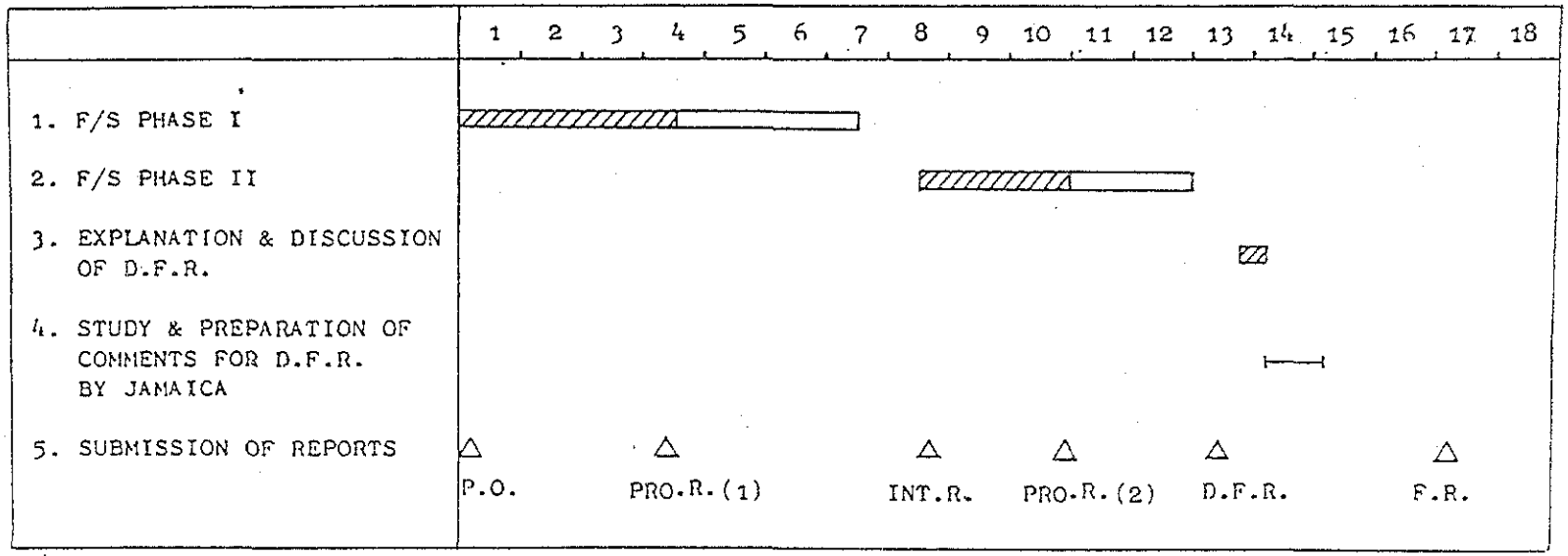
VIII. JICA and NPA will consult with each other in respect of any matter that may arise from or in connection with the Study.

(Attached Sheet)

TENTATIVE WORKING SCHEDULE FOR FEASIBILITY STUDY

ON

BLACK RIVER LOWER MORASS AGRICULTURAL DEVELOPMENT PROJECT



REMARKS: in JAMAICA

in JAPAN

P.O. : PLAN OF OPERATION
PRO.R. : PROGRESS REPORT
INT.R. : INTERIM REPORT
D.F.R. : DRAFT FINAL REPORT
F.R. : FINAL REPORT

MINUTES OF MEETING

ON

THE BLACK RIVER LOWER MORASS AGRICULTURAL DEVELOPMENT PROJECT

In response to the request for technical assistance for a feasibility study on the Black River Lower Morass Agricultural Development Project (the Project) by the National Planning Agency (NPA) in Jamaica, Japan International Cooperation Agency (JICA), governmental agency in Japan, despatched the Study Team for the Scope of Work of the Feasibility Study on the Project (the Study Team) headed by Mr. Shingi TAKAHASHI from November 30 to December 15, 1983.

During the stay in Jamaica the Study Team conducted field reconnaissance survey of the project area and discussed and exchanged views on the Scope of Work of the Feasibility Study on the Project with the representatives of the agencies concerned.

The main items which both sides agreed and understood are as follows:

1. Formation of Basic Development Concepts of the Project

The basic development concepts of the Project will be examined on several alternatives and finalized on the basis of the optimum development concepts agreed through discussions and meetings between the Japanese study team and the Jamaican counterpart personnel concerned.

2. Method for Economic Evaluation of the Project

As regard to the method for economic evaluation of the Project stated in Scope of Work (S/W), IRR means Economic Internal Rate of Return, which is a measure of the rate of return on the investment.

Furthermore, economic evaluation is to be conducted not only by means of IRR, but also by additional economic analysis on benefits obtained as a result of the Project, for instance, rising of foreign exchange balance, increase of employment opportunities, etc.

3. Implementation Schedule

JICA will inform the NPA at least one month in advance of the commencement of the study. However, the study is likely to begin early in 1984 just as soon as the Japanese Government is able to conclude preparation of the budget for the study.

4. Provisions of Vehicles

The expression "equipment", to be provided by the Government of Japan in S/W, includes vehicles and/or boats necessary for the Study.

The Government of Jamaica will provide vehicles necessary for the field operation of Jamaican counterpart personnel, and the Government of Japan will provide vehicles (4-wheel-drive cars) including boats necessary for the activities of the Japanese study team.

The above-mentioned provision of vehicles by Japan does not necessarily mean purchase in Japan and transportation to Jamaica, but may include procurement in Jamaica at Japan's expense.

5. Selection of Counterpart Personnel

Immediately after the Japanese study team is fixed, JICA will send a list of the members to NPA.

NPA will select appropriate counterpart personnel from the relevant Jamaican agencies in accordance with the composition of the Japanese study team.

6. Frequency of Walkie Talkie

For the purpose of obtaining permission for using a walkie talkie, the Japanese study team is to inform the frequency range of the instrument to be used to the Government of Jamaica as early as possible.

Signed in Kingston on
December 13, 1983

Shingi Takahashi
Shingi TAKAHASHI
Leader of the Japanese Study
Team, JICA

Yvonne E. Roache
Yvonne E. ROACHE
for Chief Technical Director
National Planning Agency

ATTACHMENT 2

ADVISORY TEAM MEMBERS, STUDY TEAM MEMBERS AND COUNTER PART PERSONNEL

A. Advisory Committee Members of Government of Japan

1.	Mr. S. Takahashi	Chairman of Committee, Director Land Reclamation Corporation
2.	Mr. M. Okada	Deputy Director, Land Improvement Div. Hokkaido Regional Development Authority
3.	Mr. A. Nishizawa	Deputy Director, Regional Planning Dept. Hokuriku Regional Agricultural Administration Office, MAFF
4.	Mr. T. Kawaguchi	Senior Coodinator, Regional Planning Dept. Tohoku Regional Agricultural Administration Office,MAFF
5.	Mr. H. Tanimoto	Deputy Director, Dept. of Investigation and Development,OECF

B. Scope of Works Mission

1.	Mr.S. Takahashi	Team Leader,Director Land Reclamation Corporation
2.	Mr. M. Okada	Deputy Director, Land Improvement Div. Hokkaido Regional Development Authority
3.	Mr. A. Nishizawa	Deputy Director, Regional Planning Dept. Hokuriku Regional Agricultural Administration Office, MAFF
4.	Mr. N. Matsuda	Coordinator, Technical Affairs Div. Agriculture, Forestry and Fisheries Planning Dept. JICA

C. First Advisory Team Members

1.	Mr. S. Takahashi	Team Leader, Director Land Reclamation Corporation
2.	Mr. M. Aoki	Coodinator, Technical Affairs Div. Agriculture, Forestry and Fisheries Planning Dept. JICA

D. Second Advisory Team Members

1.	Mr. T. Kawaguchi	Team Leader, Tohoku Regional Agricultural Administration Office, MAFF
2.	Mr. N. Matsuda	Coordinator, Technical Affairs Div. Agriculture, Forestry and Fisheries Planning Dept. JICA

E. Phase I Study Team Members

1.	Mr. S. Yano	Team Leader
2.	Mr. M. Kodama	Hydrologist
3.	Dr. S. Terasawa	Soil Chemist
4.	Mr. Y. Hayashi	Survey Engineer
5.	Mr. K. Toyota	Surveyor
6.	Mr. K. Osakabe	"
7.	Mr. R. Itoh	"

F. Phase II Study Team Members

1.	Mr. S. Yano	Team Leader
2.	Mr. T. Kawakatsu	Co-Team Leader/Irrigation Engineer
3.	Dr. Y. Mochizuki	Drainage Planning Engineer
4.	Mr. M. Kodama	Meteo - Hydrologist
5.	Dr. S. Terasawa	Soil Chemist
6.	Mr. T. Sumitomo	Land Reclamation Engineer
7.	Mr. S. Mori	Design Engineer
8.	Dr. S. Fujii	Agronomist
9.	Mr. I. Ikarashi	Hydrogeologist
10.	Mr. A. Yamada	Soil Mechanical/Construction Planner
11.	Dr. T. Iwano	Environmentalist
12.	Mr. Y. Sekiguchi	Agro-economist
13.	Dr. H. Kohno	Inland Fishery Expert

G. Phase I Counterpart and Attendants to Meeting

1.	Mr. Trevor F. Clarke	Director, Planning and Policy MOA
2.	Mr. J.E. Pusey	Agricultural Engineer, Consultant
3.	Mr. Michael White	Hydrologist, Consultant
4.	Mr. Keiffer Thomas	Topographic Surveyor, Survey Dept. MOA
5.	Mr. Glendon Richard	Asst. " " "
6.	Mr. Skivy Stewart	Regional Soil Surveyor RPPU, MOA
7.	Mr. Maruf Ahmed	UNV - Soil Surveyor RPPU, MOA
8.	Miss Arnella Williams	Sociologist RPPU, Central Region MOA
9.	Mr. Rowland Girvan	Asst. Director, Survey Dept.
10.	Mr. Harry R. Barrett	Topographical Planner, RPPU, Cr. MOA

11.	Mr. James Bayer	Planning Consultant, Central Region MOA
12.	Mr. Irick W. Kerr	Project Analyst/Economist MOA
13.	Mr. John Kasantroeno	Team Leader, Meyersfield Development Project

H. Phase II Counterpart and Attendants to Meeting

1.	Mr. Trevor F. Clarke	Director, Planning and Policy MOA
2.	Mr. J.E. Pusey	Agricultural Engineering, Consultant
3.	Mr. Owen Batchelor	Rural Development Specialist, MOA
4.	Mr. Michael White	Hydrologist, Consultant
5.	Mr. H.W. Gray	Director, Engineering Division,MOA
6.	Mr. R. Girvan	Asst. Director, Survey Dept. MOA
7.	Mr. Skivy Stewart	Regional Soil Surveyor, RPPU, MOA
8.	Mr. Maruf Ahmed	UNV - Soil Surveyor UNDP
9.	Mr. Glendon Richard	Asst. Topo-surveyor, Survey Dept.
10.	Miss M. Lewis	Agronomist, RDU, MOA
11.	Mr. V. Lyttle	Agro-Economist, RDU, MOA
12.	Miss Arnella Williams	Sociologist, RPPU, Central Region, MOA
13.	Mr. D.A. Robinson	Rural Planner, Central Region, MOA
14.	Mr. J. Mehra	Engineering Consultant, NWC
15.	Miss K. Roberts	Manager, Resource & Project Planning,NWC
16.	Mr. D. Henry	Agronomist, NWC

I. Draft Final Report Explanation Team Members

1.	Mr. Shingi Takahashi	Team Leader, Director Land Reclamation Corporation
2.	Mr. Toshiyuki Kuroyanagi	Technical Affairs Div. Agriculture, Forestry and Fisheries Planning and Survey Dept. JICA
3.	Mr. Shinichi Yano	Team Leader of JICA F/S Study Team
4.	Mr. Takao Kawakatsu	Co-Team Leader of JICA F/S Study Team

ATTACHMENT 3

Minutes of Understanding Between the
Ministry of Agriculture and the Japan
International Cooperation Agency
Feasibility Study Team

Minutes of Understanding between the Ministry of Agriculture and the Japan International Cooperation Agency Technical Mission on the Black River Lower Morass Agricultural Development Project

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On the completion of the Phase I Section of the feasibility report on the Black River Lower Morass Agricultural Development Project, the Japan International Cooperation Agency Mission and the Ministry of Agriculture met at the Ministry of Agriculture on March 27, 1984 to discuss the Progress Report of the Mission.

It was agreed at this meeting that the Mission had completed its terms of reference satisfactorily.

A request will be submitted by the Ministry of Agriculture to the Japan International Cooperation Agency in Japan for a Technical Expert in Shrimp Culture and Fish farming Systems to be included in the Mission which will be arriving in Jamaica in June 1984 to study the possibility of Shrimp Rearing and Fish Farming in the Zone II Section of the area under investigation.

The Ministry of Agriculture also requested that the Prefeasibility Study should be completed by October 1984.

Signature: .....

Dr. Percival Broderick,
Hon. Minister of Agriculture
Jamaica.

Date: 28/2/1984

Signature: .....

Mr. S. Yano,
Team Leader
Feasibility Study Team
Japan International
Cooperation Agency.

Date: .....

Signature: .....

Witness: Mr. Lincoln McIntosh,
National Planning Agency's Representative

Date: .....

MINUTES OF UNDERSTANDING BETWEEN THE MINISTRY OF AGRICULTURE AND THE JAPAN INTERNATIONAL COOPERATION AGENCY FEASIBILITY STUDY TEAM ON THE BLACK RIVER LOWER MORASS AGRICULTURAL DEVELOPMENT PROJECT

Prior to commencement of the Phase II field survey of the feasibility study on the Black River Lower Morass Agricultural Development Project, the Japan International Cooperation Agency (JICA) and the Ministry of Agriculture met at the Ministry of Agriculture on June 27, 1984 to discuss the Revised Plan of Operation prepared by JICA.

It was confirmed at this meeting that the Revised Plan of Operation was satisfactory and was accepted by the Ministry of Agriculture.

Yvonne E. Roache

Mrs. Yvonne E. Roache
Director of Planning
Planning Institute of Jamaica.

DATE: 2 Jul '84

S. Yano

Mr. S. Yano
Team Leader
Feasibility Study Team
Japan International
Cooperation Agency.

DATE: 2 Jul '84

Witness: Mr. Trevor F. Clarke
Director Planning
and Policy
Ministry of Agriculture

Shingi Takahashi

Mr. S. Takahashi
Leader of Advisory Team
for Feasibility Study

MINUTES OF UNDERSTANDING

BLACK RIVER LOWER MORASS AGRICULTURAL DEVELOPMENT PROJECT

This is to confirm that the PLANNING INSTITUTE OF JAMAICA (PIOJ) and the JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) have done a review of the Pre-feasibility Study Scope of Work on the Black River Lower Morass Agricultural Development Project and have reached agreement on the following aspects:

(a) The Plan of Operation is on schedule and the pre-feasibility study should be presented to the Government of Jamaica by end October 1984.

(b) The Scope of Work objectives are being accomplished.

(c) The Profile of the Project indicates that the project is technically and economically sound and demonstrates a satisfactory rate of return for the investment to be made.

(d) Recommendations and planning will be included in the pre-feasibility on the requirements for paddy and soya bean production components such as inputs and milling facilities.

(e) Recommendations will be made in the final feasibility report on sub-plans for social infrastructure such as housing, health services, electricity, schools and community facilities.

(f) The Pre-feasibility Study will be presented to the Government of Jamaica for an investment decision to be taken within thirty (30) days from the date of presentation of report.

(g) The Final Feasibility Report will be presented by the end of June 1985.

YVONNE E. ROACHE (MRS.)
ON BEHALF OF
DIRECTOR GENERAL
PLANNING INSTITUTE OF JAMAICA

S. YANO
TEAM LEADER
FEASIBILITY STUDY TEAM
JAPAN INTERNATIONAL COOPERATION AGENCY

TREVOR F. CLARKE
DIRECTOR, PLANNING AND POLICY DIVISION
MINISTRY OF AGRICULTURE

TATEO KAWAGUCHI
ASSISTANT CHIEF, REGIONAL PLANNING DIVISION
PLANNING DEPARTMENT
MINISTRY OF AGRICULTURE, FORESTRY & FISHERIES
(JAPAN)

11/10/84
DATE

DATE 11 oct 1984

MINUTES OF UNDERSTANDING
BLACK RIVER LOWER MORASS
AGRICULTURAL DEVELOPMENT
PROJECT

This is to confirm that the PLANNING INSTITUTE OF JAMAICA (PIOJ), on behalf of the Government of Jamaica, and the JAPAN INTERNATIONAL COOPERATION AGENCY (JICA), have done a review of the FEASIBILITY REPORT (DRAFT) on the Black River Lower Morass Agricultural Development Project and we confirm our understanding as set out below:

(a) The development strategy of Alternative I (total development) is accepted but that implementation should proceed as follows:

(i) Phase one would involve the development of Alternative three i.e. the right and left banks of the Black River (the Holland area as well as Hatfield, Styx River basin, and Frenchman-Holiday Pen).

(ii) Phase two - the development of the right and left banks of the Broad River - would await further studies on the effects of the drainage on the hydrological regime of the area, particularly on the groundwater of the Pedro Plains and salt water intrusion.

(b) JICA will recommend the development of a commercial rice research programme on the peat lands at Brumdec.

(c) JICA will make recommendations for adequate protection and management of the ecology and environment both during the construction phase and after, as discussed.

JICA will proceed to prepare the (Final) Feasibility Report, based on the points of understanding listed above, by June 30, 1985.

Marjorie Henriques

Marjorie Henriques (Mrs.)
on behalf of
Director General,
Planning Institute of Jamaica

S. Yano
Leader,
Feasibility Study Team,
Japan International Cooperation Agency

Trevor T. Clarke
Director, Technical Services,
Special Projects & Programmes
Ministry of Agriculture

S. Takahashi
Leader of the Advisory Team
of the Japan International
Cooperation Agency

25.3.1985
Date

25th Mar '85
Date