

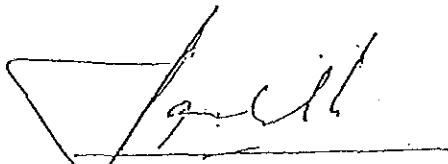
添付資料 - 1

S c o p e o f W o r k

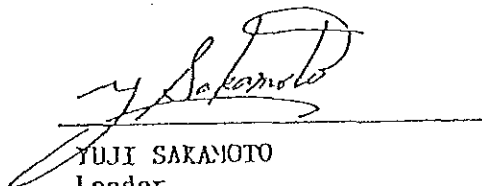
SCOPE OF WORK
FOR
THE FEASIBILITY STUDY
ON
THE ARIARI RIVER BASIN INTEGRATED AGRICULTURAL DEVELOPMENT PROJECT
IN
THE REPUBLIC OF COLOMBIA

AGREED UPON BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY
AND
INSTITUTO COLOMBIANO DE HIDROLOGIA,
METEOROLOGIA Y ADECUACION DE TIERRAS

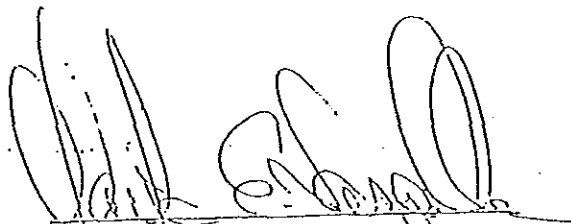
Bogotá, February 10 1988



ENRIQUE SANDOVAL
Director General
Instituto Colombiano de Hidrología,
Meteorología y Adecuación de Tierras,
"HIMAT"



YUJI SAKAMOTO
Leader
Preliminary Survey Mission
Japan International Cooperation
Agency "JICA"



MARTA E. LASPRILLA MICHAELS
Jefe de la División de
Cooperación Técnica Internacional
DEPARTAMENTO NACIONAL DE PLANEACION
"D.N.P."

I. INTRODUCTION

In response to the request of the Government of the Republic of Colombia, the Government of Japan decided to conduct the Feasibility Study on the Ariari River Basin Integrated Agricultural Development Project (hereinafter referred to as "the Study"), in accordance with the Agreement on Technical Cooperation between the Government of Japan and the Government of the Republic of Colombia, signed on 22 December, 1976 (hereinafter referred to as "the Agreement").

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA") official agency responsible for the implementation of the technical cooperation programme of the Government of Japan, will undertake the Study in close cooperation with the authorities of the Republic of Colombia.

Instituto Colombiano de Hidrología, Meteorología y Adecuación de Tierras (hereinafter referred to as "HIMAT") shall act as the counterpart agency to the Japanese Study Team and also as the coordinating body in relation to other governmental and non-governmental organizations concerned for the smooth conduct of the Study.

The present document sets forth the Scope of Work for the Study.

II. OBJETIVES OF THE STUDY

The objectives of the Study are:

- 1) to formulate the optimum agricultural development plan in the study area.
- 2) to verify technical and economic feasibility of the selected project in the study area.
- 3) to transfer the relevant technology to Colombian counterparts in the course of the Study.

III. SCOPE OF THE STUDY

1. Study Area

The study area covers the right bank of Guape and Ariari river about 43,000 ha.

The project area for the feasibility study will be selected within the study area.

2. Scope of the Study

The contents of the Study are as follows:

- (1) To collect and review the existing data and informations relevant to the Study on the following items:
 - (a) Topography,
 - (b) Meteorology and hydrology,
 - (c) Geology and soil mechanics,
 - (d) Soils,
 - (e) Natural environment,
 - (f) Agriculture (including stockbreeding),
 - (g) Agro-economy and institutions including marketing,
 - (h) Land use,
 - (i) Irrigation and drainage conditions,
 - (j) Infrastructure,
 - (k) Regional and national economy, and
 - (l) Regional and national development plans relevant to the agricultural sector.
- (2) To carry out field survey and investigation on the following items:
 - (a) Geology and soil mechanics,
 - (b) Meteo-hydrology,
 - (c) Soil, land use and land suitability,
 - (d) Topographic survey of proposed major structures,
 - (e) Present farming practices and production,
 - (f) Agro-economy and institutions,
 - (g) Irrigation and drainage systems,
 - (h) Regional economy and marketing, and
 - (i) Construction materials and its cost.

- (3) To establish basic concepts for the project,
 - (a) Delineation of the project area,
 - (b) Outline of the proposed agricultural development plan,
 - (c) Basic plan of major structures, and
 - (d) Strategy for implementation.
- (4) To formulate an appropriate development plan of the selected project,
 - (a) Final delineation of the project area,
 - (b) Land use planning,
 - (c) Formulation of agricultural development plan including:
 - i) Establishment of most promising cropping pattern and farming plan,
 - ii) Irrigation and drainage system planning,
 - iii) Farm road planning,
 - iv) Protection from inundation,
 - v) Agroindustry, marketing and other supporting services,
 - vi) others
 - (d) Layout of the agricultural facilities and preliminary design of major structures,
 - (e) Establishment of implementation plan and schedule,
 - (f) Cost and benefit estimation,
 - (g) Socio-economic evaluation, and
 - (h) Environmental evaluation

IV. STUDY SCHEDULE

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

V. REPORTS

JICA shall prepare and submit the following reports in English to the Government of Colombia.

- (1) Inception Report
Twenty (20) copies at the commencement of the Study.
- (2) Progress Report (1)
Twenty (20) copies at the end of the field survey in Phase I.

(3) Interim Report

Twenty (20) copies at the end of Phase I.

(4) Progress Report (2)

Twenty (20) copies at the end of the field survey in Phase II.

(5) Draft Final Report

Twenty (20) copies at the end of the home office work in Phase II.

The Government of Colombia will provide JICA with its comments on the Draft Final Report through JICA office in Bogota within one (1) month after receipt of this Report.

(6) Final Report

Fifty (50) copies within two (2) months after receipt of the comments from the Government of Colombia on the Draft Final Report.

VI. UNDERTAKING OF THE GOVERNMENT OF COLOMBIA

1. To facilitate smooth conduct of the Study, the Government of Colombia shall accord to the Japanese Study Team and its members such privileges and immunities as provided for in articles V.2 (b), VI (excluding 2 (c)), VII and IX of the Agreement.
2. HIMAT shall take necessary measures in cooperation with other relevant organizations:
 - 1) To secure the safety of the Japanese Study Team,
 - 2) To secure permission for entry into private properties or restricted areas for the conduct of the Study,
 - 3) To secure permission for the Japanese Study Team to take all data and documents (including Aero-photo - graphs and Maps) related to the Study out of Colombia to Japan.

3. HIMAT shall, at its own expense, provide the Study Team with the following in cooperation with other relevant organizations:

- 1) Available data and information related to the Study,
- 2) Additional survey related to the Study if necessary,
- 3) Counterpart personnel,
- 4) Suitable office space with necessary equipment,
- 5) Appropriate number of vehicles with drivers in the study area.
- 6) Credentials or identification cards.

VII. UNDERTAKINGS OF JICA

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

1. To dispatch, at its own expense, the Study Team to Colombia.
2. To pursue technology transfer to Colombian counterparts in the course of the Study.






VIII. CONSULTATION

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

IX. TRANSLATION

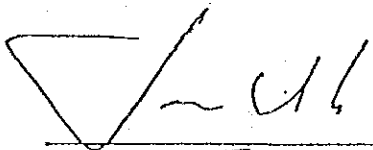
The Scope of Work is made both in English and in Spanish. In case any discrepancy of translation arises between two languages, the English version shall prevail.

TENTATIVE SCHEDULE

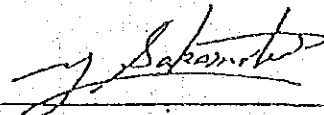
		MONTH IN ORDER														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		← Phase I →						← Phase II →								
Work in Colombia																
	Work in Japan															
Reports		△ Inc/R			△ P/R(1)		△ Int/R		△ P/R(2)		△ D.F.R.		⊙ Comaris		△ F.R.	

MINUTES OF MEETING
FOR
THE FEASIBILITY STUDY
ON
THE ARIARI RIVER BASIN INTEGRATED AGRICULTURAL DEVELOPMENT PROJECT
IN
THE REPUBLIC OF COLOMBIA.

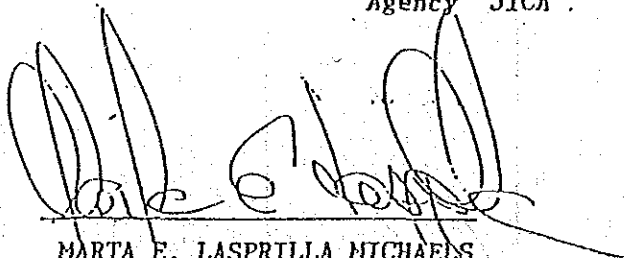
Bogotá, February 10 1988



ENRIQUE SANDOVAL
Director General
Instituto Colombiano de Hidrología,
Meteorología y Adecuación de Tierras,
"IDMAT"



YUJI SAKAMOTO
Leader
Preliminary Survey Mission
Japan International Cooperation
Agency "JICA".



MARTA E. LASPRILLA MICHAELS
Jefe de la División de
Cooperación Técnica Internacional
DEPARTAMENTO NACIONAL DE PLANEACION
"D.N.P."

The preliminary survey mission for the Ariari River Basin integrated Agricultural Development Project sent by JICA had a series of discussions on the above mentioned project with the relevant officials of HIMAT from 2 to 10 February 1988. The followings are summarized conclusions of the discussions.

1. HIMAT requested the preliminary survey Mission to carry out, at its own expenses, the following studies in relation to the Scope of Work VI, 3, 2).
 - 1) Preparation of topographic maps.
 - 2) Soil survey.
 - 3) Geotechnical survey.
2. HIMAT confirmed to the Mission in respect of the Scope of Work, VI, 3, 5), that this Institute will assure the availability of one vehicle for the Study Team. However, if more vehicles will be necessary, HIMAT expects JICA to arrange them. In this case, HIMAT will provide at its own expenses drivers and fuels.
3. Both the Mission and HIMAT confirmed the necessity to install strategically 4 pluviographs and 1 Water-level recorder, to complete the hidro-meteorological analysis of the project. HIMAT requested JICA to provide the above-mentioned equipment for this analysis, thus complementing it with the other equipment such as anemometer, wind vane and heliograph. HIMAT will be fully responsible for the installation, operation and maintenance of the equipment..
4. The Mission permits HIMAT to present the following reports in Spanish in the course of the Feasibility Study, together with those promised in the Scope of Work.

- 1) Inception Report, twenty copies;
- 2) Summary of Interim Report, twenty copies;
- 3) Draft Final Report (main volume), twenty copies,
and
- 4) Final Report (main volume), fifty copies.

HIMAT requested the Mission to include also the Spanish version of the Progress Report and the main volume of the Interim Report.

添付資料 — 2

M i n u t e s o f M e e t i n g
o n
T h e I n c e p t i o R e p o r t

MINUTES OF MEETING
FOR
THE FEASIBILITY STUDY
ON

THE ARIARI RIVER BASIN INTEGRATED
AGRICULTURAL DEVELOPMENT PROJECT

AGREED UPON

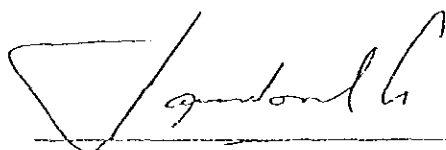
BETWEEN

JAPAN INTERNATIONAL COOPERATION AGENCY

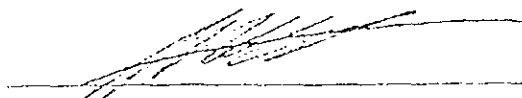
AND

INSTITUTO COLOMBIANO DE HIDROLOGIA, METEOROLOGIA Y ADECUACION DE TIERRAS

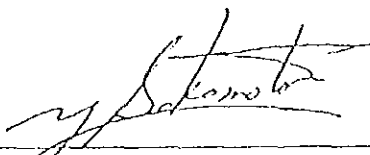
Bogotá, August 26.1988



Enrique SANDOVAL GARCIA
Director General,
Instituto Colombiano
de Hidrología, Meteorología
y Adecuación de Tierras
(IHAT)



Shoji KANATSU
Leader of the Feasibility
Study Team, Japan International
Cooperation Agency (JICA)



Yuji SAKANOTO
Leader of the Advisory Team, JICA

In accordance with the Scope of Work for the Feasibility Study on the Ariari River Basin Integrated Agricultural Development Project (hereinafter referred to as "the Study"), the Government of Japan dispatched through Japan International Cooperation Agency (JICA) the Advisory Team headed by Mr. Yuji Sakamoto and the Study Team headed by Mr. Shoji Kanatsu for the implementation of the Study to the Republic of Colombia. At the commencement of the Study, the Study Team presented officially twenty(20) copies of the Inception Report and explained the basic consideration and study methodology of the Report at the presence of Colombian organization represented by Instituto Colombiano de Hidrologia, Meteorología y Adecuación de Tierras (HIMAT) on August 23, 1988. As a result of explanation and exchange of opinions on the Report, the following has been agreed upon by the Colombian side and Japanese side.

1. The Colombian side has agreed upon the contents of the Inception Report which had been prepared in due compliance with the conditions as stipulated in the Scope of Work.
2. Both sides will collaborate for the efficient development of the Study so that the objective of the Study would be attained as described in the Inception Report.
3. Present Minutes of Meeting is made both in English and in Spanish. If any discrepancy on interpretation arises between both languages, the English expression shall be employed.

Attachment : List of attendants for the Meeting.



ANNEX

Participants of IINAT

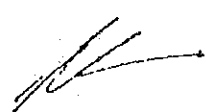
Name	Charge
Dr. Enrique SANDOVAL GARCIA	General Director
Dr. Carlos RAMIREZ	Dupty Director of operation and Maintenance
Dr. Jaime H. LAMO J.	Chief of Planning Department
Dr. Francisco RUEDA	Chief of Study Division
Dr. Hermenegildo ORTIZ	Chief of Feasibility Study Section
Dr. Juan F. GALINDO	Adviser to Director General
Dr. Alvaro LUNA	Chief of Project Identification Section
Dr. Fernando VELASCO	Professional Specialist
Dr. Luis Eduardo BETANCOURT	Professional Specialist
Dr. Myriam Eugenia CASTILLO	Professional Specialist
Dr. Alvaro LANCHEROS	Professional Specialist
Dr. Luis Enrique CORTES	Professional Specialist
Dr. Martha L. CASTAÑEDA	Professional Specialist
Dr. Martha L. QUINTERO	Professional Specialist

Participants of the Study Team

Hr. Shoji KANATSU	Team Leader/General Coordination
Hr. Gunjiro OZAWA	Dupty Team Leader/Irrigation and Drainage
Hr. Yujiro ITAKURA	Meteorology and Hydrology
Hr. Katsuhito YOSHIDA	Topography and Geology/Mapping Supervision

Participants of the Advisory Team

Hr. Yuji SAKANOTO	Team Leader
Hr. Akihide ENOKI	Coordination



添付資料 — 3

M i n u t e s o f M e e t i n g
o n
T h e P r o g r e s s R e p o r t
(I)

MINUTES OF MEETING

FOR

THE FEASIBILITY STUDY

ON

THE ARIARI RIVER BASIN INTEGRATED AGRICULTURAL DEVELOPMENT PROJECT


AGREED UPON BETWEEN

JAPAN INTERNATIONAL COOPERATION AGENCY

AND

INSTITUTO COLOMBIANO DE HIDROLOGIA, METEOROLOGIA Y ADECUACION DE TIERRAS

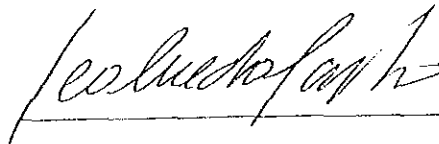
Bogotá, October 28, 1988



Carlos RAMIREZ
Deputy Director of
Technical Operation,
Instituto Colombiano de
Hidrología, Meteorología y
Adecuación de Tierras
(HIMAT)



Gunjiro OZAWA
Deputy Team Leader of
Feasibility Study Team,
Japan International
Cooperation Agency
(JICA)



Francisco RUEDA
Chief of Integrated
Study Division,
HIMAT

The phase I field work for Feasibility Study on The Ariari River Basin Integrated Agricultural Development Project (hereinafter referred to "the Study") has been conducted starting on August 21, 1988 in the Republic of Colombia and the result of the said work has been compiled in the Progress Report (I). On October 25, 1988 the Study Team submitted 20 copies of the Progress Report (I) to HIMAT and explained its contents. Subsequently, an exchange of opinions has been made between HIMAT and the Study Team and the both parties agreed on as follows:

1. The Progress Report (I) has been prepared in due compliance with the methodology and program of the Study presented in the Inception Report.
2. The basic development concepts proposed in the said Report have been established as a result of an appropriate analysis and diagnosis of the study area as well as taking account of the objectives of the Study.
3. The development plan to be established in the course of the home office work of the phase I in Japan shall be made on the basis of the basic development concepts.
4. The subsequent work of the Study shall be conducted in close communication between HIMAT and the Study Team so that the objectives of the Study may be accomplished as stipulated in the Scope of the Work for the Study.

Attachment : List of attendants for the Meeting.

Participants of HIMAT

Name	Charge
Dr. Francisco Rueda	Chief of Integrated Study Division
Dr. Hermenegildo ORTIZ	Chief of Feasibility Study Section
Dr. Fernando VELASCO	Professional Specialist
Dr. Augusto ACOSTA	Professional Specialist
Dr. Myriam E. CASTILLO	Professional Specialist
Dr. Martha L. CASTAÑEDA	Professional Specialist
Dr. Luis E. ORTIZ	Professional Specialist

Participants of the Study Team


Name	Charge
Mr. Gunjiro OZAWA	Deputy Team Leader/Irrigation and Drainage
Mr. Yujiro ITAKURA	Meteorology and Hydrology
Mr. Nobuharu MORITA	Agriculture and Crop Production
Mr. Tamio OHTA	Agro-economy
Mr. Katsuhito YOSHIDA	Topography and Geology/Mapping Supervision

添付資料 — 4

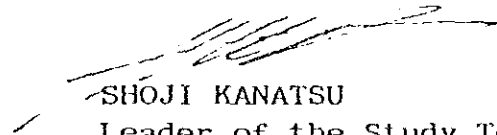
M i n u t e s o f M e e t i n g
o n
T h e I n t e r i m R e p o r t

MINUTES OF MEETING
FOR
THE FEASIBILITY STUDY
ON
THE ARIARI RIVER BASIN INTEGRATED AGRICULTURAL DEVELOPMENT PROJECT
AGREED UPON BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
AND
INSTITUTO COLOMBIANO DE HIDROLOGIA, METEOROLOGIA
Y ADECUACION DE TIERRAS (HIMAT)

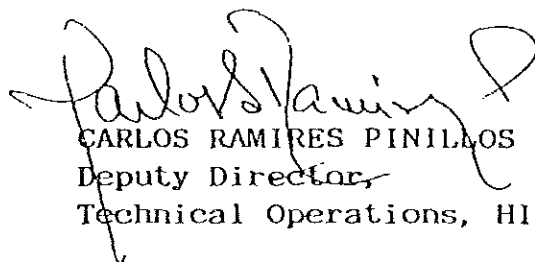
BOGOTA, FEBRUARY 9, 1989



ENRIQUE SANDOVAL GARCIA
General Director
HIMAT



SHOJI KANATSU
Leader of the Study Team
JICA



CARLOS RAMIRES PINILLOS
Deputy Director,
Technical Operations, HIMAT

The phase I feasibility study for the Ariari River Basin Integrated Agricultural Development Project (hereinafter referred to as "the Study") was conducted between August, 1988 and January, 1989 and the result of the said study was presented in the Interim Report.

On February 1, 1989, the Study Team submitted 20 copies of the Interim Report, both English and Spanish versions, to HIMAT and explained its content on the same and the next days in Bogota and on February 3 in Villavivencio at the presence of counterpart personnel of HIMAT and representatives of other public organizations related to the Study. Subsequently, an exchange of opinions had been made between the Colombian side and the Study Team followed by an agreement as given below.

1. The Interim Report has been prepared in due compliance of stipulations set forth in the Scope of the Work and the methodology and work program of the Study agreed between the Japanese Study Team and HIMAT.
2. The basic development concepts and the basic development plan have been established as a result of an appropriate analysis and diagnosis of the study area as well as taking account of the objectives of the Study and are accepted by the Colombian side as criteria for formulating the development plan of the Study.
3. In the phase II of the Study, supplementary and detailed studies shall be carried out on the basis of the basic development plan included in the Interim Report which was presented by the Study Team.
4. The present phase of the Study shall be conducted in close collaboration between the Study Team and counterpart personnel so that the objectives of the Study stipulated in the "Scope of the Work for the Study" may be attained.
5. The major comments and observations expressed by the Colombian side in relation with the Interim Report are summarized in the ANNEX I.

Participants of the meeting are given in the ANNEX II.

ANNEX I

COMMENTS AND OBSERVATIONS TO THE INTERIM REPORT

The Regional Bureau of INCORA made the following recommendations.

- a). To formulate a development plan that will contribute to the enhancement of living conditions of small farmers through an increase of their income level.
- b). To take, within the context of the development plan, account of existing processing facilities of agro-products in the departmental level.

The counterpart personnel of HIMAT recommended that:

- a), For introducing pepper, which constitute non-traditional crop for farmers in the study area, in the cropping plan, an analysis of actual and potential marketing would be made.
- b). The number of beneficiaries together with generated new employment with the Project shall be estimated.
- c). Pertaining to the land conservation and disaster prevention plan, the influence of the Ariari river on the right margin of the river near "Guillermo Leon Valencia" bridge and on the Trocha 5 (at the confluence of the Cano Venado with the Ariari river) would be analyzed.
- d). One copy for each land use plan and general plan with a scale of 1/50,000 or 1/25,000 would be attached to the Draft Final Report.

Representatives of ICA and Agricultural Bureau of the Departmental Office of Meta manifested that they would submit their comments or observations in writing later.

ANEXO Nº 2

PARTICIPANTES DEL HIMAT

NOOMBRE	CARGO
Dr. ENRIQUE SANDOVAL GARCIA	Director General
Dr. CARLOS RAMIREZ PINILLOS	Subdirector Operaciones Técnicas
Dr. FRANCISCO RUEDA PARDO	Jefe División Estudios Integrales
Dr. HERMENEGILDO ORTIZ T.	Jefe Sección Estudios Factibilidad
Dr. LUIS EDUARDO ORTIZ	Jefe Sección Identificación Proyectos
Dr. FERNANDO VELASCO	Profesional Especializado
Dr. LUIS E. BETANCOURT	Profesional Especializado
Dr. AUGUSTO ACOSTA	Profesional Especializado
Dra. MYRIAM E. CASTILLO	Profesional Universitario
Dr. ALVARO LANCHEROS	Profesional Especializado
Dra. MARTHA PRADA	Profesional Especializado
Dr. LUIS E. CORTES	Profesional Especializado
Dra. MARTHA L. CASTAÑEDA	Profesional Universitario
Dra. MARTHA L. QUINTERO	Profesional Especializado
Dr. ALFREDO SIERRA	Profesional Especializado

PARTICIPANTES DEL EQUIPO DE ESTUDIO

Mr. SHOJI KANATSU	Jefe Equipo/Coordinación General
Mr. GUNJIRO OZAWA	Jefe Equipo/Riego y Drenaje
Mr. TAMIO OHTA	Agro-economía
Mr. KATSUHITO YOSHIDA	Topografía y Geología/Supervisión de Levantamiento Cartográfico

添付資料 - 5

M i n u t e s o f M e e t i n g
o n
T h e P r o g r e s s R e p o r t
(I I)

MINUTES OF MEETING
ON
THE PROGRESS REPORT (II)

FOR

THE FEASIBILITY STUDY
ON
THE ARIARI RIVER BASIN INTEGRATED AGRICULTURAL DEVELOPMENT PROJECT

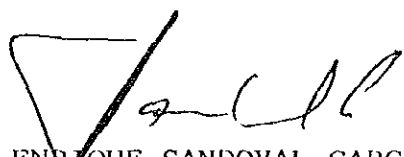
AGREED UPON BETWEEN

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

AND

INSTITUTO COLOMBIANO DE HIDROLOGIA, METEOROLOGIA
Y ADECUACION DE TIERRAS (HIMAT)

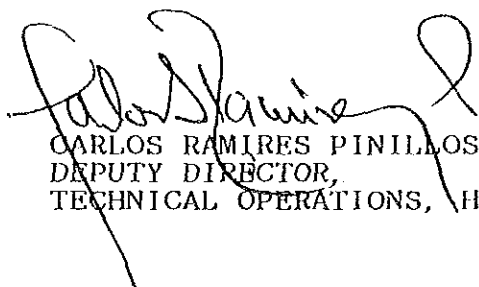
BOGOTA, MARCH 27, 1989



ENRIQUE SANDOVAL GARCIA
GENERAL DIRECTOR
HIMAT



SHOJI KANATSU
LEADER FOR THE STUDY TEAM
JICA



CARLOS RAMIRES PINILLOS
DEPUTY DIRECTOR,
TECHNICAL OPERATIONS, HIMAT

Having completed the work in Colombia corresponding the Phase II of the Feasibility Study on the Ariari Basin Integrated Agricultural Development Project (hereinafter referred to as "the Study"), the Study Team presented twenty (20) copies of the Progress Report (II) on March 21 and explained an essential portion of the same for the consideration of the Colombian side represented by HIMAT. As a result of an explanation and exchange of opinions on the Report realized on March 21 and 22, both Colombian side and Japanese Study Team have entered into an agreement as given below:

(1)-. The Progress Report (II) was prepared in due compliance of both the conditions stipulated in the Scope of the Work and methodology and program of the Study agreed upon between the Study Team and HIMAT, and consequently, it is acceptable to the Colombian side.

(2)-. The description on features of the study area as well as basic concepts and development plan, proposed project plan, methodology on economic and financial evaluation and the methodology for the Phase II home office work in Japan has been made and established as a result of an appropriate analysis of the study area together with bearing objectives of the Study in mind.

(3)-. The define development plan shall be formulated in the course of the Phase II home office work in Japan on the basis of the concepts and methodology in the Progress Report (II) which have been established in mutual consensus of the Study Team and HIMAT.

(4)-. Following an exchange of opinions between the members of the Study Team and counterpart personnel of HIMAT, the following aspects have been confirmed.

1. The irrigation plan (the size of irrigation canals) shall be incorporated after making a cost-benefit analysis on the basis of available discharge for the respective return period of 2, 5 and 10 years.
2. The four alternatives of the proposed land use plan presented additionally in the meeting will be analyzed for

the selection of the optimum one employing such parameters as: irrigation water requirement, available discharge, net returns and marketing conditions of crops, availability of labor force and machinery, farmers' cropping technology, etc.

3. Regarding the location of the diversion weir, the third plan (the lowest site) is considered to be the most adequate. At the same, in the facilities planning, it is recommended to analyze one alternative with "temporary" weir.
4. As soon as information on "valorization", which is being requested to INCORA by HIMAT, is obtained, it will be send to the Study Team in Japan.
5. HIMAT presented a report on environmental impact.
6. In view that an electric inter-connection is projected in the region by other organizations (ISA, ICEL), the generation of mini-hydroelectric power shall be excluded from the development plan of the Study.
7. The leader of the Study Team requested to take an advantageous measures for small farmers of the Ariari Project in relation to period and interest rate for the payment of "valorization".
8. The evaluation of the Project will be conducted in two manners: an agricultural development portion and other portion (rural infrastructure and land conservation and disaster prevention). The economic evaluation for the latter will be presented in the annex of the Final Report as a reference.

PARTICIPANTS OF THE MEETING

JAPANESE STUDY TEAM

Shoji KANATSU (Team Leader)
Gunjiro OZAWA (Deputy Team Leader, Irrigation and Drainage)
Yujiro ITAKURA (Meteorology & Hydrology)
Yasuhisa ENAKA (Soils and Land Use)
Nobuharu MORITA (Agricultural Technology and Crop Production)
Tamio OTA (Agro-economy)
Kazunari NAGATA (Facilities Planning)
Masashi ISHII (Facilities Design and Cost Estimates)
Yoshihisa UCHIDA (Project Evaluation)

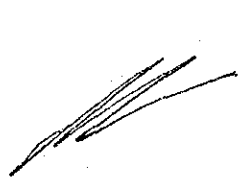
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DR. ALVARO LANCHEROS (Specialist-Hydrology & Meteorology)
DRA. MARTHA PRADA (Specialist-Facilities Planning)
DRA. MARTHA L. QUINTERO (Specialist-Project Evaluation)

Actual Land Use	Unit:ha	
	1st Semester	2nd Semester
Rice *	15,000	3,800
Upland Crops	2,400	8,700
Perennial Crops	4,500	4,500
Grass Land	13,000	13,000
Fallow Land	---	4,900
Sub Total	34,900	34,900
Othes	6,200	6,200
Total	41,100	41,100

* Include up-land rice

CS




Land Use Plan I-1 : Maximize the Paddy

	1st Semester	2nd Semester
Paddy	19,000	19,000
Upland Crops	1,200	1,200
Perennial Crops	4,500	4,500
Grass Land	10,200	10,200
Fallow Land	---	---
Sub Total	34,900	34,900
Othes	6,200	6,200
Total	41,100	41,100

Upland Crop 1st Semester: Maize 1,200 ha
 2nd Semester: Soybeen 600 ha
 Sorgum --- ha
 * Others 600 ha

* Maize, Sunflower,
 Kidney been etc.

Land Use Plan I-2 : Decrease Paddy in 2nd semester in Plan I-1

	1st Semester	2nd Semester
Paddy	19,000	15,000
Upland Crops	1,200	5,200
Perennial Crops	4,500	4,500
Grass Land	10,200	10,200
Fallow Land	---	---
Sub Total	34,900	34,900
Othes	6,200	6,200
Total	41,100	41,100

Upland Crop 1st Semester: Maize 1,200 ha
 2nd Semester: Soybeen 2,600 ha
 Sorgum 1,200 ha
 * Others 1,400 ha

* Maize, Sunflower,
 Kidney been etc.

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Land Use Plan II-1: Keep the existing rice field area

	1st Semester	2nd Semester
Paddy	15,000	15,000
Upland Crops	4,900	4,900
Perennial Crops	4,800	4,800
Grass Land	10,200	10,200
Fallow Land	---	---
Sub Total	34,900	34,900
Othes	6,200	6,200
Total	41,100	41,100

Upland Crop 1st Semester: Maize 4,900 ha
 2nd Semester: Soybeen 2,400 ha
 Sorgum 1,200 ha
 * Others 1,300 ha

* Maize, Sunflower,
 Kidney been etc.

Land Use Plan II-2: Decrease Paddy in 2nd semester in Plan II-1

	1st Semester	2nd Semester
Paddy	15,000	10,000
Upland Crops	4,900	9,900
Perennial Crops	4,800	4,800
Grass Land	10,200	10,200
Fallow Land	---	---
Sub Total	34,900	34,900
Othes	6,200	6,200
Total	41,100	41,100

Upland Crop 1st Semester: Maize 4,900 ha
 2nd Semester: Soybeen 5,000 ha
 Sorgum 3,000 ha
 * Others 1,900 ha

* Maize, Sunflower,
 Kidney been etc.

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添付資料－6

関係者名簿

作業監理委員会

委員長	坂元雄次	農林水産省北陸農政局信濃川水系 土地改良調査管理事務所長
委員	杉浦光男	農林水産省東海農政局木曾川水系 土地改良調査管理事務所調査課 調査計画専門官
委員	海野 亘	農林水産省東海農政局生産流通部 農産普及課課長補佐
委員	春田弘司	海外経済協力基金 業務第二部第三課長（平成元年1月以前）
委員	阪本光男	海外経済協力基金 業務第三部第三課（平成元年2月以降）

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地形・地質/
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吉 田 克 人

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Dr. Luis Eduardo ORTIZ

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