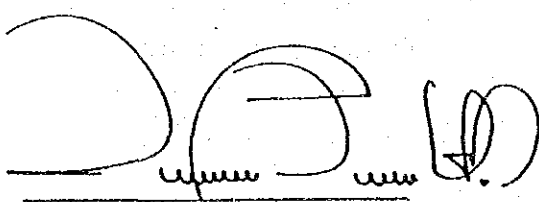


## APPENDICES

**A. 1 SCOPE OF WORK**

SCOPE OF WORK  
FOR  
THE FEASIBILITY STUDY  
ON  
THE QUINDIO BASIN.  
INTEGRATED AGRICULTURAL DEVELOPMENT PROJECT  
IN  
THE REPUBLIC OF COLOMBIA  
AGREED UPON BETWEEN  
REGIONAL AUTONOMOUS CORPORATION OF QUINDIO  
AND  
JAPAN INTERNATIONAL COOPERATION AGENCY


Bogotá, September 27, 1989



Dr. Julian Serna Giraldo  
General Director -  
Regional Autonomous  
Corporation of Quindío  
(CRQ)



Dr. Hiroshi Nakamichi  
Leader,  
Preliminary Survey Team  
Japan International  
Cooperation Agency (JICA)



Dra. Martha de Arrieta  
Head,  
International Technical  
Cooperation Division,  
National Planning  
Department (DNP)

## I. Introduction

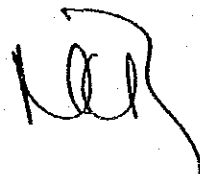
In response to the request of the Government of the Republic of Colombia (hereinafter referred to as "the Government of Colombia"), the Government of Japan decided to conduct the Feasibility Study on the Quindio Basin Integrated Agricultural Development Project (hereinafter referred to as "the Study"),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

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

Regional Autonomous Corporation of Quindio (hereinafter referred to as "CRQ") 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.

## II. OBJECTIVE OF THE STUDY

The objective of the Study is to formulate a feasibility study on the integrated agricultural development plan in the Quindio Basin taking into consideration the result of the Master Plan Study on the Quindio Basin Integrated Agricultural Development Project (hereinafter referred to as "the Master Plan Study")



### III. STUDY AREA

The Study covers principally the Quindio basin with emphasis on the agricultural development areas of about 7.000 ha and further area concerned to the items mentioned in IV SCOPE OF THE STUDY.

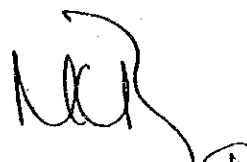
### IV. SCOPE OF THE STUDY

The contents of the Study are as follows:

1) To collect and review the existing data and information relevant to the Study on the following items:

- (a) Metereology and hydrology,
- (b) Topography,
- (c) Geology and hydrogeology,
- (d) Soil,
- (e) Irrigation and drainage,
- (f) Water quality,
- (g) Agriculture and livestock,
- (h) Agroindustries and marketing,
- (i) Supporting services (cooperatives, associations, farmers' group and other institutional supports),
- (j) Existing development plans relevant to the agricultural sector including the Master Plan Study,
- (k) Socio - economic conditions including politics concerned,
- (l) Natural resources and environmental condition,
- (m) Others

2) To carry out field survey and investigation on the following items:



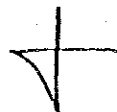
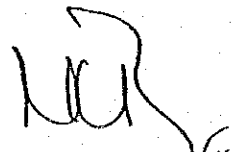
- (a) Metereology and hydrology,
- (b) Topography,
- (c) Geology and Hydrogeology,
- (d) Soil and land suitability,
- (e) Land use and land holding,
- (f) Irrigation and drainage ,
- (g) Water quality,
- (h) Coffee waste water treatment system,
- (i) Present farming system and cultivation,
- (j) Farmers' intention and requirements,
- (k) Agroindustries and marketing,
- (l) Supporting services,
- (m) Construction materials and cost,
- (n) Others

-3) To establish basic concepts for the project as follows:

- (a) Delineation of the project area,
- (b) Criterias for the project formulation,
- (c) Outline of the project to be proposed,
- (d) Strategy for the project implementation,

4) To formulate the Feasibility Study on the Quindio Basin Integrated Agricultural Development Project as follows:

- (a) Land use plan,
- (b) Farming system and cropping patterns including crop diversification and livestock improvement,
- (c) Irrigation, drainage and farm road development,
- (d) Land conservation plan,
- (e) Agroindustries and marketing system,
- (f) Supporting services including cooperatives, associations, farmers group and other institutional supports,

- (g) Recommendations for small and medium size farmers,
- (h) Layout and preliminary design of major agricultural facilities,
- (i) Pilot plan for coffee waste water treatment,
- (j) Cost and benefit estimation,
- (k) Project implementation schedule and organizations,
- (l) Socio-economic evaluation
- (m) Environmental evaluation

V. STUDY SCHEDULE

The Study will be carried out in accordance with the attached Tentative Schedule.

VI. REPORTS

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

- 1) Inception Report  
Twenty (20) copies at the commencement of the Study
- 2) Progress Report (I)  
Twenty (20) copies at the end of the phase I field survey
- 3) Interim Report  
Twenty (20) copies at the commencement of the phase II
- 4) Progress Report (II)  
Twenty (20) copies at the end of the phase II field survey
- 5) Draft Final Report  
Forty (40) copies at the end of the phase II  
The Government of Colombia will provide JICA with its comments on the Draft Final Report through JICA Colombia office within one (1) month after receipt of this report

6) Final Report

Forty (40) copies within two (2) months after receipt of the comments from the Government of Colombia on the Draft Final Report

VII. 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) CRQ shall take necessary measures in cooperation with other relevant organizations.

- (1) To secure the safety of the Japanese Study Team,
- (2) To secure premission 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 maps and aerophotographs) related to the Study out of Colombia to Japan.

3) CRQ shall, at its own expense, provide the Japanese 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) Credencial of identification cards.





#### VIII. UNDERTAKING 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 the Republic of Colombia.
- 2) To pursue technology transfer to Colombian counterparts in the course of the Study.

#### IX. CONSULTATION

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

#### X. TRANSLATION

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

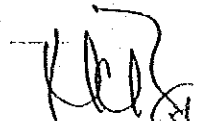


T E N T A T I V E S C H E D U L E

Month in Order	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Phase	← phase I → * ← phase II →													
Field Work in Colombia														
Home Office Work in Japan														
Reports														
	Δ Ic/R	Δ P/R(I)	Δ P/R(I)	Δ It/R	Δ It/R	Δ P/R(II)	Δ P/R(II)	Δ DF/R	Δ DF/R	Δ F/R	Δ F/R	Δ F/R	Δ F/R	Δ F/R
	comments													

Ic/R : Inception Report    P/R : Progress Report    It/R : Interim Report

DF/R : Draft Final Report    F/R : Final Report

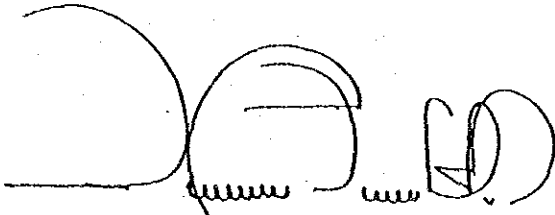



**A. 2 MINUTES OF MEETING (1)**



MINUTES OF MEETING  
OF  
THE SCOPE OF WORK FOR THE FEASIBILITY STUDY  
ON  
THE QUINDIO BASIN INTEGRATED AGRICULTURAL  
DEVELOPMENT PROJECT  
IN  
THE REPUBLIC OF COLOMBIA

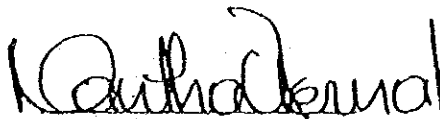
Bogotá, September 27, 1989



Dr. Julian Serna Giraldo  
General Director  
Regional Autonomous  
Corporation of Quindio  
(CRQ)



Dr. Hiroshi Nakamichi  
Leader,  
Preliminary Survey Team  
Japan International  
Cooperation Agency



Dra. Martha de Arrieta  
Head,  
International Technical  
Cooperation Division,  
National Planning  
Department (DNP)

In response to the request of the Government of Colombia, the Government of Japan has dispatched a preliminary Survey Team to Colombia for the Feasibility Study on the Quindio Basin Integrated Agricultural Development Project from September 18, 1989.

The preliminary Survey Team headed by Dr. Hiroshi NAKAMICHI and Colombian counterpart officials headed by Dr. Julian Serna Giraldo, General Director of C.R.Q., had a series of discussions and exchanged their views on the Scope of Work for the Feasibility Study. The field survey was also carried out with good relationship and safety condition.

As a result of the discussions, both sides have agreed upon the Scope of Work, and the following is an additional conclusion of the meeting. List of attendants is attached in annex I.

1. Both sides confirmed the necessity and justification of the project as follows:
  - 1) Rectification of disparity which exists between large farmers and medium or small farmers, and also between coffee area and marginal coffee area.
  - 2) Rationalization of land use by means of crop diversification.
  - 3) Conservation of water resources and soil.
  
2. Both sides also confirmed the areas and projects to be studied as follows.
  - 1) Study Area
    - Upper Area (Circasia, Pijao, Genova)
    - Coffee Area (Cristales)
    - Lower Area (Quindio River right margin, Quindio River left margin)

2) Project Formation

Upper and Lower Area: Crop Diversification, Irrigation and Drainage, Soil Conservation, Supporting Service, Agro-products Processing, Acuaculture, and so on.

Coffee Area: Pilot project for coffee waste water treatment.

3. Both sides agreed that the environmental impact would be evaluated in the Study, without assigning an expert on it.

4. Both sides agreed that the following reports would be prepared and submitted to the Colombian side in Spanish additionally.

Inception Report

Progress Report (I) (Summary)

Interim Report (Main Volume)

Progress Report (II) (Summary)

Draft Final Report (Main Volume)

Final Report (Main Volume)

5. C.R.Q. requested to provide the equipment required for the study, as attached in annex II.

6. C.R.Q. requested to send the Feasibility Study Team to Colombia as soon as possible, and also to provide Colombian counterpart personnel with efficient technology transfer by means of training courses in Japan.

7. C.R.Q. requested to prepare topographic maps of the Department of Quindio with scale 1:5.000, by using aerophotos supplied from Colombian side.

ANNEX I

List of Attendants

COLOMBIAN SIDE

Regional Autonomous Corporation of Quindio (C.R.Q.)

Mr. Julian Serna Giraldo	General Director C.R.Q.
Mr. Oriando Jaramillo Jaramillo	General Secretary C.R.Q.
Mr. Aureliano Sabogal	Chief, Division of Natural Resources
Mr. Luis Fernando Maya G.	Chief, Water Section
Mr. Miguel Angel Gaviria O.	Chief, Control and Vigilant
Mr. Fernan Castaño Mejia	Chief, Reforestation Section
Mr. Juan Pablo Hernandez	D.R.I. Office - C.R.Q.
Mr. Fernando Sanchez	Water Laboratory C.R.Q.
Mr. Arturo Celis Beltran	Translator

JAPANESE SIDE

Dr. Hiroshi Nakamichi	Leader	Ministry of Agriculture, Forestry and Fisheries
Mr. Kiyoshi Horii	Agricultural Land Improvement	Ministry of Agriculture, Forestry and Fisheries
Mr. Hisao Miyoshi	Agriculture	Ministry of Agriculture, Forestry and Fisheries
Mr. Akihide Enoki	Coordination	Japan International Cooperation Agency (JICA)
Mr. Yoshitaka Nagashima		II Secretary, Embassy of Japan
Mr. Isamu Matsumoto		HIMAT (Advisor), JICA Expert
Mr. T. Muramatsu		Translator



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ANEX II

EQUIPMENT REQUESTED TO JICA

- Espectophotometer of Atomic Absortion
- Equipment for determination of Total Organic Carbon
- 2 Portable Ph meter
- 2 Portable Oxygen meter
- 1 Portable COD meter
- 500 Graphs for Limnographs
- 2 Sets of weights for Limnographs
- Climatologic Stations
- Vehicles

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**A. 3 MINUTES OF MEETING (2)**

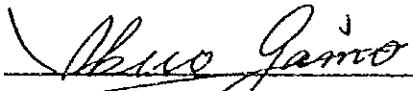
MINUTA DE REUNION  
PARA  
EL ESTUDIO DE FACTIBILIDAD  
SOBRE  
EL DESARROLLO AGRICOLA INTEGRADO  
DE  
LA CUENCA DEL QUINDIO

ENTRE  
LA AGENCIA DE COOPERACION INTERNACIONAL DEL JAPON  
(JICA)  
Y  
LA CORPORACION AUTONOMA REGIONAL DEL QUINDIO  
(CRQ)

Bogotá, Septiembre 27, 1990

  
Dr JULIAN SERNA GIRALDO

Director General  
CORPORACION AUTONOMA  
REGIONAL DEL QUINDIO  
(CRQ)

  
Sr IKUO GAMO

Representante Residente  
Oficina de Bogotá  
AGENCIA DE COOPERACION  
INTERNACIONAL DEL JAPON  
(JICA)

  
Dra YOLANDA RAMIREZ

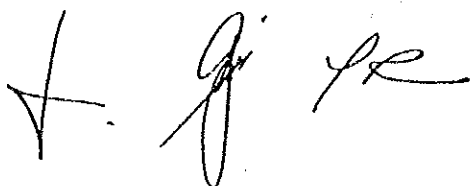
Jefe  
División Cooperación  
Técnica Internacional  
DEPARTAMENTO NACIONAL  
DE PLANEACION  
(D.N.P.)

En la reunión entre el Equipo de JICA y la contraparte Colombiana sostenida el 10 de Agosto de 1990, la parte Colombiana solicitó al Equipo del Estudio implementar una prueba de campo por medio de la instalación de plantas modelos para el sistema propuesto de tratamiento de aguas residuales del café, con el objeto de verificar la efectividad del sistema a un nivel realista que esté dentro del alcance del Estudio.

En respuesta a la solicitud, la parte Japonesa consideró cuidadosamente el tema y finalmente decidió implementar el estudio de campo con dos plantas modelo.

En consecuencia, el calendario del Estudio adjunto al alcance de trabajo para el Estudio firmado por ambas partes el 27 de Septiembre de 1989, será cambiado como sigue:

ITEM	TIEMPO (Mes de ejecución)
1. Explicación del Borrador del Informe Final	De principios del mes 12 a finales del mes 13
2. Entrega del Informe Final	Entre el mes 14 y el mes 18



**A. 4 LIST OF C. R. Q. PRINCIPALS AND  
COUNTERPART PERSONNEL**

List of C.R.Q. Principals and Counterpart Personnel

<u>POSITION</u>	<u>NAME</u>
Director General	Dr. Julian Serna Giraldo
Secretary General	Dr. Orlando Jaramillo Jaramillo
Project Coordinator	Dr. Aureliano Sabogal Ospina
Marine Biologist	Dr. Luis Fernando Maya Gomez
Agronomist	Dr. Miguel Angel Caviria
Chemist	Dr. Fernando Sanchez
Sanitary Engineer	Dr. Ismael Ramirez Gevara
Pedologist	Dr. Armando Rodoriguez J.
Economist	Dr. Juan de Jesus Castillo V.
Economist	Dr. Alejandro A. Arias
Economist	Dra. Ana Luisa Lopez
Agronomist	Dr. Alvaro Ceballo
Agronomist	Dr. Francisco Lagos
Civil Engineer	Dra. Alba Lucero Ordonez Arias
Sociologist	Dra. Aura Victoria Jaramillo
Translator	Dr. Arturo Celis Beltran

**A. 5 LIST OF ADOVISORY COMMITTEE MEMBER**

LIST OF ADOVISORY COMMITTEE MEMBERS

<u>Field IN CHARGE</u>	<u>NAME</u>	<u>POSITION</u>
Chairman	Hiroshi Nakamichi	Director, Construction Department, Agricultural Land Improvement Bureau, M. A. F. F.
Water Quality Improvement	Kazuyuki Ito	Chief Engineer of Research, The Japanese Association of Rural Sewerage

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**A.6 LIST OF STUDY TEAM MEMBERS**



List of Study Team Member

<u>ASSIGNMENT</u>	<u>NAME</u>
Team Leader General Coordination	Mr. Masahito Yamanaka
Sub-leader Land Improvement Project Evaluation	Mr. Takahisa Isozuka
Agricultural Technology & Crop Production	Mr. Hatashi Moriya
Agro-economy & Institution	Mr. Tamio Ota
Soil & Land Use	Dr. Michiaki Hosono
Water Quality Improvement	Mr. Eizabro Furutani
Hydrology/Facilities Design & Cost Estimation	Mr. Yujiro Itakura
Hydrology/Facilities Design & Cost Estimation	Mr. Kunio Takagaki

