

**MINUTES OF MEETINGS
BETWEEN
THE AUTHORITIES CONCERNED
OF
THE REPUBLIC OF PARAGUAY
AND
JAPAN INTERNATIONAL COOPERATION AGENCY
ON
THE TECHNICAL COOPERATION
FOR
THE PROJECT FOR THE INTEGRAL DEVELOPMENT OF THE ADJACENT
ZONES TO YACYRETA DAM RESERVOIR AND TEBICUARY RIVER BASIN**

The Japanese Detailed Planning Survey Team (hereinafter referred to as "the Team"), organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Dr. Narihida Nagayo, visited the Republic of Paraguay (hereinafter referred to as "Paraguay") from January 25th to February 11th, 2016 for the purpose of formulating a technical cooperation project, "The Project for the Integral Development of the Adjacent Zones to Yacyreta Dam Reservoir and Tebicuary River Basin" (hereinafter referred to as "the Project for the Study") in response to the request made by the Government of the Republic of Paraguay (hereinafter referred to as "GoP") toward the Government of Japan (hereinafter referred to as "GoJ"). During its stay in Paraguay, the Team exchanged views and opinions with the authorities concerned of GoP through a series of meetings and field studies.

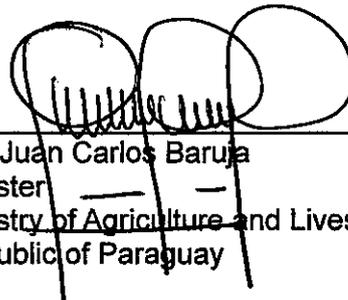
As a result, both sides have reached a mutual understanding on the matters referred to in the document attached hereto.

Done in duplicate in the Spanish and English languages, both are equally authentic. In case of any divergence of interpretation, the English text shall prevail.

Asuncion, February 10th, 2016



Ing. Satoru Fujita
Cooperation Planning
Detailed Planning Survey Team,
Japan International Cooperation Agency



Ing. Juan Carlos Baruja
Minister
Ministry of Agriculture and Livestock,
Republic of Paraguay

THE ATTACHED DOCUMENT

Both sides agreed to approve, in principle, on the framework and implementation plan of the Project for the Study which will be detailed. The Draft Record of Discussions (hereinafter referred to as "R/D") is attached as Annex 6.

After going through the JICA's and MAG's internal approval, the final document of R/D with the implementation plan will be prepared. The framework of the Project for the Study will be finally determined when R/D is signed by the Chief Representative of JICA Paraguay Office and the representatives of GoP.

I. Outline of the Project for the Study

1. Title of the Project for the Study

GoP requested to GoJ for formulating an integral development plan of the adjacent zones to the Yacyreta Dam Reservoir and the Tebicuary river basin. After receiving the request, the Ministry of Agriculture and Livestock (hereinafter referred to as "MAG") and JICA reached a consensus through discussions in the first half of 2015 that the study target area will be limited only the adjacent zones to the Yacyreta Dam Reservoir from the viewpoints of cost-effectiveness. This consensus has been reconfirmed at the meeting held during the detailed planning survey.

The title project for the study should be changed to "The Project for Study on Integrated Development of the Adjacent Zones to the Yacyreta Dam Reservoir" from "The Project for the Integral Development of the Adjacent Zones to the Yacyreta Dam Reservoir and the Tebicuary River Basin", considering the project objectives and contents. JICA will take procedure with GoJ to obtain an approval for this change.

2. Term of the Cooperation

Two (2) years. The Project for the Study will be started in July or August, 2016.

3. Site of the Project for the Study

Adjacent Zones to the Yacyreta Dam Reservoir in Itapua and Misiones Departments, Paraguay. The map of the site of the project for the Project is shown in Annex 1.

4. Output and Outcomes of the Project for the Study

<Main Objectives of the Project for the Study >

An integrated development plan of the adjacent zones to the Yacyreta Dam Reservoir, which utilizes water resources of the Yacyreta Dam Reservoir, through public-private sector collaboration.

<Expected Utilization of the Proposed Plan in the Future>

(1) Various projects and programs formulated within the master plan, action plan,

and feasibility study will be executed basically after the completion of the Project for the Study.

(2) Agricultural production and productivity in the site of Project for the Study will be increased/improved by the implementation of irrigation and drainage project that water resources are effectively used. Furthermore, the implementation of the project will contribute to strengthening and creation of agricultural value chain and employment/income opportunities in the site of the Project for the Study, and then, livelihood of agricultural producers including small-scale farmers and local residents will be improved.

<Expected Outputs>

- (1) An integrated development master plan, which includes development of small-scale farmers in the site of the Project for the Study, is formulated under public-private sector collaboration.
 - (2) An action plan for realizing the above master plan is prepared under public-private sector collaboration.
 - (3) An irrigation and drainage plan for effective use of water resources is prepared as a feasibility study.
 - (4) An environmental impact assessment report is prepared.
5. Activities (Detailed Activities are shown in Annex 2)
- (1) Development of an integrated development master plan of the adjacent zones to the Yacyreta Dam Reservoir
 - (2) Development of an action plan for realizing the above master plan
 - (3) Development of a feasibility study on irrigation and drainage plan
 - (4) Consensus building among persons/organizations concerned
6. Responsible and implementing organization of the Project for the Study
- (1) Responsible organization: The Ministry of Agriculture and Livestock (MAG)
 - (2) Implementing organizations:
 - The Ministry of Agriculture and Livestock (MAG)
 - The Ministry of Public Works and Communication (MOPC)
 - The Secretary of Environment (SEAM)
 - The Departmental Government of Itapua
 - The Departmental Government of Misiones
7. Proposed organization structure for the Project for the Study (in Annex 3)

(1) Joint Coordinating Committee

For effective implementation of the Project for the Study, both sides agreed to establish a Joint Coordinating Committee (herein after referred to as "JCC"). JCC will meet at least twice a year and whenever necessity arises.

The proposed members for the JCC from organizations concerned (Presidency of the Republic of Paraguay, Ministry of Agriculture and Livestock, Ministry of Public



Works and Communication, Secretary of Environment, Departmental Government of Itapua, Departmental Government of Misiones). The proposed members for the JCC are shown in Annex 4.

(2) Project Coordinator (PC):

Director General, General Directorate of Planning, the Ministry of Agriculture and Livestock

(3) Project Assistant Coordinator

Director, Department of Technical Cooperation and International Relations, General Directorate of Planning, the Ministry of Agriculture and Livestock

(4) Project Manager (PM):

A representative of MAG

II. Relevant Conditions to Consider for Implementation of the Project for the Study

(1) Implementation Structure of the Project for the Study

In order to realize the results of the development study, the central government of Paraguay and the departmental governments concerned are required to decide policies such as 1) how to deal with large-scale land ownership issues, 2) how to develop conditions that small-scale farmers can participate in, and 3) how to develop various institutional systems necessary for implementing the public irrigation development, which is first time in Paraguay. It is also required strong implementing structure for the Project for the Study for effective implementation of the results of the Project for the Study. Therefore, a JCC of the Project for the Study will be established through consultation with the organizations concerned and JICA Paraguay office, before the signing of Record of Discussions on the Project for the Study.

Roles of JCC, Project Coordinator (PC), and Project Management Unit (PMU) are as follows.

A) Joint Coordinating Committee (JCC)

1) Roles

JCC shall be established in order to facilitate inter-organizational coordination and to analyze, suggest, and approve the reports such as Inception Report, Progress Report, Draft Final Report and Final Report. JCC will meet at least twice a year and whenever necessity arises.

2) Membership

Decision makers in the organizations concerned

B) Project Coordinator (PC)

1) Roles

Project Coordinator will facilitate coordination among related ministries/organizations of GoP and between JCC and Project Management Unit (PMU), report to JCC, and make necessary decision for effective implementation of the activity of PMU.

C) Project Assistant Coordinator

1) Roles

Project Assistant Coordinator serves as link with the Project Management Unit and represent to Proyecto Coordinator when necessary.

D) Project Management Unit (PMU)

1) Roles

Project Management Unit headed by Project Manager (PM) will implement and monitor the activities of the Project for the Study in line with the decision made by JCC and PC. PMU will report to PC about progress of the activities.

2) Membership

Project Manager: A representative of MAG

Counterpart Personnel: Technical-level officers of MAG and the organizations concerned

(2) Assignment of Technical Coordinator and counterpart personnel and budget arrangement

MAG shall assign a technical coordinator and counterpart personnel who will work with Japanese experts closely before the commencement of the Project for the Study. The role of the technical coordinator is to coordinate with the project manager for the study about the operational activities and coordinate with the technical counterpart team. MAG shall coordinate with the organizations concerned in order that the organizations concerned (Ministry of Public Works and Communication, Secretary of Environment, Departmental Government of Itapua, Departmental Government of Misiones, and Yacyreta Binational Entity).

In addition, MAG will coordinate so as each organization concerned will allocate necessary resources and budget for activities of counterpart personnel such as travel expenses and allowances for better coordination/collaboration with Japanese expert in the Project for the Study.

MAG shall take responsibility for communicating and coordinating with organizations concerned, because cooperation among organizations of central government, departmental governments and Municipal governments are required for effective implementation of the Project for the Study.

(3) Arrangement of suitable office spaces for the Project for the Study

MAG shall arrange suitable office spaces for Project for the Study with necessary facilities in 2 locations (in Asuncion and a location adjacent to the Yacyreta Dam Reservoir) before the commencement of the Project for the Study.



(4) Examination of possible funding resources

Planning of irrigation system up to secondary canal will be carried out in the feasibility study on irrigation and drainage in order that GoP can smoothly proceed to realization of a project which will be suggested by the Project for the Study. It is suggested that GoP analyze possible funding sources during the Project for the Study.

(5) Analysis of basic policies of the Project for the Study which will benefit small-scale farmers and local residents

Reduction of poverty and livelihood improvement of small-scale farmers are major important policies of the current government of Paraguay, therefore, it is necessary to formulate integrated development master plan which can provide benefit of integrated development to larger number of small-scale farmers and local residents. However, there are large-scale land owners in the site of the Project for the Study therefore, it is necessary to implement a policy that will facilitate participation of small-scale farmers in development of irrigated agriculture in order to make larger impact of the project. For this reason, MAG will prepare a proposal on basic guideline on integrated development which can benefit larger number of small-scale farmers in the territory, through discussions with other governmental organizations. This basic guideline will be presented to the JICA Paraguay office before the commencement of the Project for the Study.

(6) Survey on information of land tenure.

MAG shall collect and arrange existing data and information on landowners, land area, and land locations, etc. in the influenced area before the commencement of the Project for the Study.

(7) Collection and arrangement of laws and regulations related to establishment of irrigation water management system

In order to examine and make recommendations effectively for establishing irrigation water management system and irrigation water charge collection system, during the implementation of the Project for the Study, MAG shall collect and arrange existing laws, regulations, organization in charge and implementing structures related irrigation water management in cooperation with the governmental organizations concerned in Paraguay, before the commencement of the Project for the Study.

(8) Clarification of water use right from the Yacyreta Dam Reservoir

MAG, before the commencement of the Project for the Study and jointly with organizations concerned (Ministry of Public Works and Communication, Secretary of Environment, and Yacyreta Binational Entity, etc.) shall start analysis on right of water use (108m³/s) from the Yacyreta Dam Reservoir, and jurisdiction, competence, administrative procedures, and coordinating methods on provision of water use license by organizations concerned.

(9) Quantity of water available for irrigation which should be considered in the Project for the Study

At the meeting held with the Yacyreta Binational Entity, the detailed survey team of JICA obtained information that a few farmers are carrying out irrigated rice cultivation (around 12,000ha) having an authorization on water use (around 11m³/s) from the Yacyreta Binational Entity. Farming and land use plan, and irrigation and drainage plan differs widely by the available water amount for irrigation, in other words, planning will be carried out with use of water of 108m³/s or 97m³/s (the amount of water which is obtained by subtracting the amount of vested water 11m³/s). Therefore, it is requested to GoP report to the JICA Paraguay office about quantity of water available for irrigation for considering at the Project for the Study before the commencement of the Project for the Study.

(10) Elaboration of EIA Report, and an acquisition of the environmental license from SEAM

In order to comply with environmental impact assessment laws and regulations in Paraguay, as well as with environmental consideration guidelines by JICA, a proponent of the large-scale agricultural development project should elaborate on the EIA report during the feasibility study phase. The JICA project team will support an initiative to elaborate on the EIA report, complying to the regulations in both countries. Before the construction phase of the project, however, MAG is responsible for submitting the EIA report to SEAM to obtain the environmental license in a timely manner.

(11) Schedule of the Project for the Study

In view of timely implementation of the Project for the Study, JICA and the GoP confirmed to start the Project for the Study as soon as signing of R/D and finalizing procurement process by JICA side. Tentative work schedule of the Project for the Study is shown in Annex 5.

III. Site and Scope of the Project for the Study

The site of the Project for the Study is irrigable area by the granted water use (108m³/s) from the Yacyreta Dam Reservoir. The scopes of the Project for the Study include development study of infrastructures such as irrigation and drainage and rural roads, study on needs of drinking water, farming plan, technical support on farming (including aquaculture) and plan of strengthening and building value chain of products to be produced from irrigated farm lands.

Annex 1 Map of the Site of the Project for the Study

Annex 2 Details of the Activities of the Project for the Study

Annex 3 Proposed Organization Chart of the Project for the Study

Annex 4 List of Proposed Members of Joint Coordinating Committee

Annex 5 Tentative Work Schedule

Annex 6 Draft Record of Discussions (R/D)



Annex 2: Detailed Activities of the Project for the Study

Activity 1: Development of an integrated development master plan of the adjacent zones to the Yacyreta Dam Reservoir

- 1-1 To collect and analyze information of policies, plans, laws and institutional systems with regard to (1) water resources and irrigation/drainage development, (2) land tenure, (3) agricultural development, (4) processing and marketing of agricultural produce, (5) agricultural finance and so forth.
- 1-2 To conduct field survey with regard to (1) natural conditions, (2) socio-economic conditions, (3) land tenure, (4) land use, (5) agricultural production, (6) processing and marketing of agricultural produce, (7) agricultural finance, (8) irrigation/drainage and other infrastructure facilities for agricultural production, and so forth.
- 1-3 To review and analyze unit water requirement after analyzing present water use situations and available water resources for irrigation.
- 1-4 To conduct discussions with organizations concerned at the central, departmental and municipal levels; interviews with local residents, agricultural sector organizations, private companies and others to identify the necessities and intentions of irrigation and agricultural development.
- 1-5 To formulate an integrated development master plan, which includes:
 - Basic development concepts for the site of the Project for the Study and beneficiaries
 - Basic concepts for land tenure and land use
 - Basic concepts for water resources utilization and management
 - Basic development concepts for agricultural production and value chain (including aquaculture)
 - Basic development concepts for infrastructure facilities for production, processing and marketing of agricultural produce
 - Environmental and social considerations
 - Organizational system for implementation of the master plan in view of public-private partnerships

Activity 2: Development of an action plan for realizing the above master plan

- 2-1 To determine execution targets by component of the master plan
- 2-2 To formulate an action plan comprising project components and their implementation plan (budget, schedule, etc.) to accomplish the targets set above
- 2-3 To examine roles and tasks of each stakeholder in view of public-private partnerships
- 2-4 To examine a monitoring system for implementation of the action plan

Activity 3: Development of a feasibility study on irrigation and drainage plan

- 3-1 To conduct supplemental field surveys to formulate a facility development plan for

irrigation and drainage system

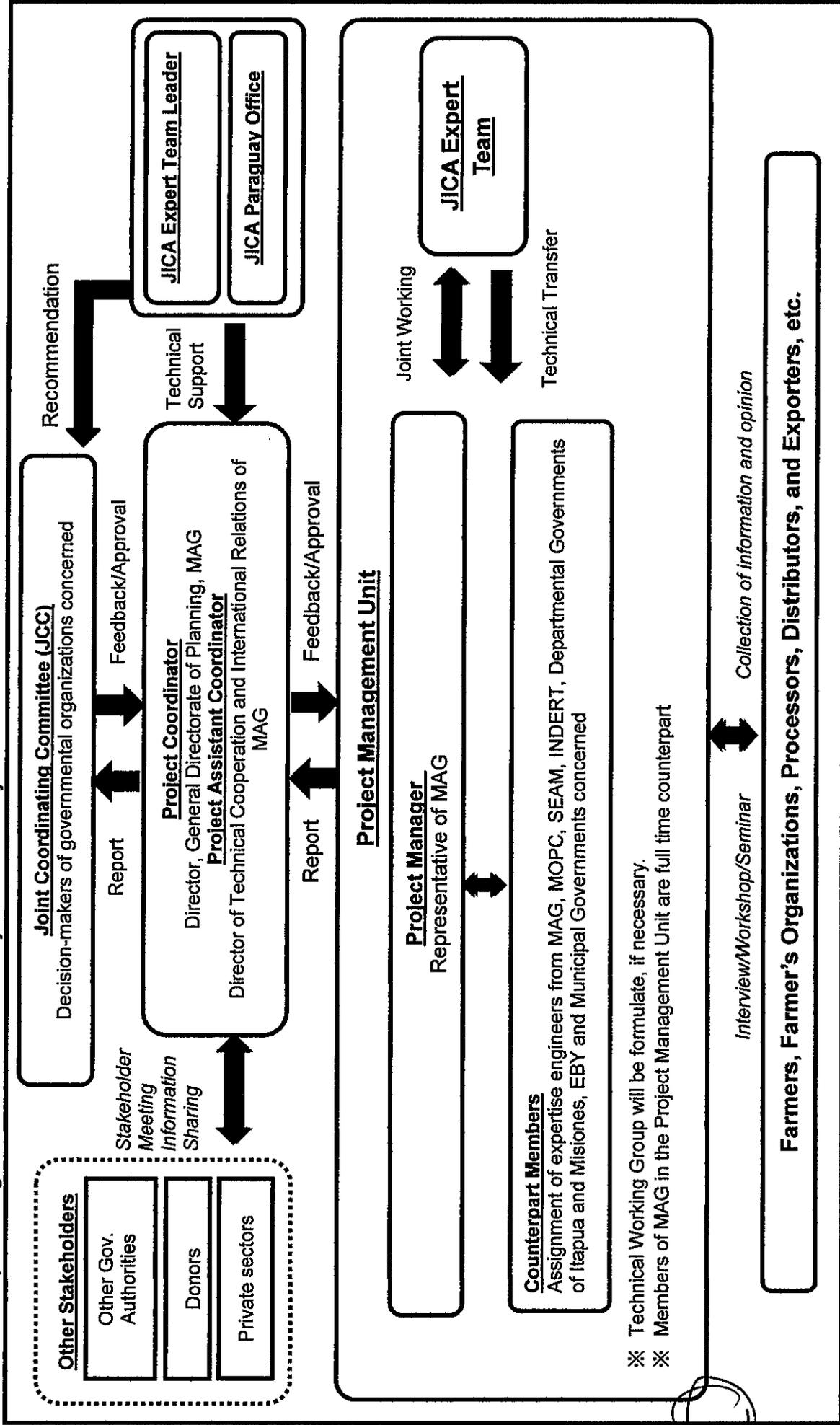
- 3-2 To examine and review functions of a water intake and its canal under the control of "Yacyreta Binational Entity"
- 3-3 To prepare basic design documents of primary and secondary irrigation canal system
- 3-4 To prepare basic design documents of primary and secondary drainage canal system
- 3-5 To prepare basic design documents of necessary roads for maintenance of the canal system and others.
- 3-6 To formulate a land use plan
- 3-7 To formulate a farming plan
- 3-8 To formulate an operation and management plan for various facilities
- 3-9 To examine system and organization for appropriate water management as well as organization for facility operation and management
- 3-10 To prepare a rough estimate of the plan of irrigation/drainage system and roads
- 3-11 To conduct economic and financial analyses
- 3-12 To conduct environmental and social consideration study, which includes:
 - ♦ Systematic comparison of alternatives taking into account Strategic Environmental Assessment (SEA)
 - ♦ Scoping of evaluation parameters and methodology to the irrigation and drainage prioritized development.
 - ♦ Elaboration of a draft environmental assessment report
 - ♦ Assistance to establish a brief Resettlement Action Plan (RAP)
- 3-13 To propose a public implementation system and project promotion system for irrigation and drainage facility development
- 3-14 To propose a water rights system and an irrigation water charge collection system

Activity 4: Consensus building among persons/organizations concerned

- 4-1 To conduct stakeholder analyses
- 4-2 To establish a public-private partnerships system for planning, coordination and implementation of the project
- 4-3 To hold various workshops and seminars for formulation and consensus building of the master plan and the action plan
- 4-4 To establish a promotion council by the authorities and persons concerned toward the irrigation and drainage facility development
- 4-5 To obtain approval at the JCC on the integrated development master plan and the feasibility study on irrigation and drainage facility development plan



Annex 3: Proposed Organization Chart of the Project for the Study



Annex 4: List of Proposed Members of Joint Coordinating Committee

Members in the lists shown below will be decided by the Minister of Agriculture and Livestock through discussion with governmental organizations concerned and JICA Paraguay office.

List of Members (proposed)

1. Chairman

- Representative of the Presidency of the Republic of Paraguay

2. Vice chairman

- The Minister of Agriculture and Livestock

3. Members of Paraguayan side

- Minister/representative of Public Works and Communication
- Minister-Executive Secretary/representative of the Secretary of Environment (SEAM)
- Governor/representative of Department of Itapua
- Governor/representative of Department of Misiones

4. Member of Japanese side

- Team Leader of JICA Mission
- Chief Representative of JICA Paraguay office
- Officials of Embassy of Japan (as Observer)
- Other persons appointed by JICA, if necessary

5. Other persons appointed by the chairman, if necessary (other ministries, donor agencies, and private enterprises, etc.)



Annex 6

(DRAFT)

RECORD OF DISCUSSIONS

ON

**THE PROJECT FOR STUDY ON
INTEGRATED DEVELOPMENT
OF THE ADJACENT ZONES TO THE YACYRETA DAM
RESERVOIR**

IN

THE REPUBLIC OF PARAGUAY

AGREED UPON BETWEEN

THE MINISTRY OF AGRICULTURE AND LIVESTOCK

AND

JAPAN INTERNATIONAL COOPERATION AGENCY

Asuncion, Date, 2016

Mr. Hideyuki Yoshida
Chief Representative
Paraguay Office,
Japan International Cooperation Agency

Ing. Juan Carlos Baruja
Minister
Ministry of Agriculture and Livestock,
Republic of Paraguay



Based on the minutes of meetings on the Project for the Integral Development of the Adjacent Zones to the Yacyreta Dam Reservoir and the Tebicuary River Basinsigned on February 10th 2016 between the Ministry of Agriculture and Livestock (hereinafter referred to as "MAG") and the Japan International Cooperation Agency (hereinafter referred to as "JICA"), during the stay of the Detailed Planning Survey Team, JICA held a series of discussions with MAG and relevant organizations to develop a detailed plan of the Project for the Study.

Both parties agreed the details of the Project for the Study and the main points discussed as described in Appendix 1 and Appendix 2 respectively, and to request their respective governments to proceed with the necessary procedures for implementation of the Project for the Study.

Both parties also agreed that MAG, the counterpart to JICA, will be responsible for the implementation of the Project for the Study in cooperation with JICA, coordinate with other relevant organizations and ensure that the self-reliant operation of the Project for the Study is sustained during and after the implementation period in order to contribute toward social and economic development of the Republic of Paraguay.

The Project for the Study will be implemented within the framework of the Agreement on Technical Cooperation signed at Asunción on February 8, 1979 (hereinafter referred to as "the Agreement") and the Note Verbales exchanged on September 8, 2015 between the Government of Japan (hereinafter referred to as "GoJ") and the Government of the Republic of Paraguay (hereinafter referred to as "GoP").

Appendix 1: Description of the Project for the Study

Appendix 2: Main Points Discussed

Appendix 3: Minutes of Meetings on the Project for the Integral Development of the Adjacent Zones to the Yacyreta Dam Reservoir and the Tebicuary River Basin



Appendix 1

DESCRIPTION OF THE PROJECT FOR THE STUDY

Both parties confirmed that there is no change in the Description of the Project for the Study agreed on in the minutes of meetings on on the Project for the Integral Development of the Adjacent Zones to the Yacyreta Dam Reservoir and the Tebicuary River Basin signed on February 10th, 2016.

I. BACKGROUND

Agriculture and livestock is one of the most important industries in Paraguay, and, this sector accounts for the 30% of the GDP and 40% of the export. Despite a tendency of reduction of poverty rate in Paraguay (Population rate living below National Moderate Poverty Line) from 44% in 2003 to 23.8% in 2013, the poverty rate in rural area is still high (33.8%) comparing the poverty rate in urban area (17.0%).

Land holding in Paraguay is uneven significantly. Although 86% of the agricultural households own by small-scale producers who have less than 20ha of land, and total agricultural land area which small-scale producers owns is only 10% of total agricultural land area. For reducing poverty of small-scale producers, therefore, it is required not only improvement of productivity of agriculture and livestock production, but also integrated development, which includes creation of employment opportunities in the areas of processing, distribution and commercialization.

One of the priority issues of the president Cartes administration, which administration started in 2013, is reduction of poverty. The Strategic Framework for Agriculture 2014/2018 indicates several strategic pillars such as "Development of Agricultural Competitiveness" and "Development of Family Farming and Food Security", and the Government of Paraguay is promoting improvement of productivity of family farming and increase of employment opportunity in rural area. Especially, various projects and programs are implementing for improving agricultural productivity considering importance of development of infrastructures including irrigation.

Construction of the Yacyerta Dam was completed in 1994 at adjacent area of the low-lying area along with the right bank of the Parana river in the departments of Misiones and Itapua in Paraguay. Water level of the Dam reservoir reached the planned normal water level in 2011. Paraguay has right of water use (water right) at its maximum 108m³/sec based on the Yacyreta agreement which was signed by the governments of Paraguay and Argentina in 1973. However, such available water resources are not utilized yet effectively.

On the other hand, rice cultivation has been expanded in a part of the adjacent area of the Yacyreta dam reservoir and in the watershed of Tebicuary river in recent years.

(mainly production of long-grain type of rice for exporting to Brazil). It is expected that rice becomes major exporting commodity next to soybean, wheat, and meat. Rice is one of few commodities (crops) which are produced, processed, milled domestically in Paraguay. Rice cultivation may contribute creation of employment opportunity in rural area and poverty reduction of rural area through creation of rice value chain with participation of small-scale farmers. Therefore, a national rice development plan is under elaboration with industry government-academia collaboration.

Knowledge and knowhow on the sustainable use of regionally available water resources is required because of several challenges facing at present such as further improvement of legal arrangement (laws and regulations) related with use and control of water resources, lack of water resources due to rapid expansion of irrigated rice cultivation areas with initiative of private sector.

Under these circumstances, the Government of Paraguay requested to the Government of Japan, that has the experience of the implementation of a development study "The Master Plan Study on the Irrigation and Drainage Project in the Adjacent Area to the Yacyreta Dam 1983-1985", implementation of "the Project for the Integral Development of the Adjacent Zones to Yacyreta Dam Reservoir and Tobicuary River Basin" in order forwarding to poverty reduction of rural area and sustainable regional development through formulation of an integrated development plan with effective use of available water resources and promotion of rice cultivation.

II. OUTLINE OF THE PROJECT FOR THE STUDY

1. Title of the Project for the Study

The Project for Study on Integrated Development of the Adjacent Zones to the Yacyreta Dam Reservoir

2. Expected Goals which will be attained after implementing the Proposed Plan

<Main Objectives of the Project for the Study >

An integrated development plan of the adjacent zones to the Yacyreta Dam Reservoir, which utilizes water resources of the Yacyreta Dam Reservoir, is formulated, through public-private sector collaboration.

<Expected Utilization of the Proposed Plan in the Future >

(1) Various projects and programs formulated within the master plan, action plan, and feasibility study will be executed basically after the completion of the Project for the Study.

(2) Agricultural production and productivity in the site of the Project for the Study will be increased/improved by the implementation of irrigation and drainage project that water resources are effectively used. Furthermore, the implementation of the project will contribute to strengthening and creation of agricultural value chain and employment/income opportunities in the site of the Project for the Study, and then,

livelihood of agricultural producers including small-scale farmers and local residents will be improved.

3. Expected Outputs

- (1) An Integrated Development Master Plan, which includes development of small-scale farmers in the site of the project for the Study, is formulated under public-private sector collaboration.
- (2) An Action Plan for realizing the above Master Plan is prepared under public-private sector collaboration.
- (3) An irrigation and drainage plan for effective use of water resources is prepared in the feasibility study.
- (4) An Environmental Impact Assessment Report is prepared.

4. Activities

Activity 1: Development of an integrated development master plan of the adjacent zones to the Yacyreta Dam Reservoir

- 1-1 To collect and analyze information of policies, plans, laws and institutional systems with regard to (1) water resources and irrigation/drainage development, (2) land tenure, (3) agricultural development, (4) processing and marketing of agricultural produce, (5) agricultural finance and so forth.
- 1-2 To conduct field survey with regard to (1) natural conditions, (2) socio-economic conditions, (3) land tenure, (4) land use, (5) agricultural production, (6) processing and marketing of agricultural produce, (7) agricultural finance, (8) irrigation/drainage and other infrastructure facilities for agricultural production, and so forth.
- 1-3 To review and analyze unit water requirement after analyzing present water use situations and available water resources for irrigation.
- 1-4 To conduct discussions with organizations concerned at the central, departmental and municipal levels; interviews with local residents, agricultural sector organizations, private companies and others to identify the necessities and intentions of irrigation and agricultural development.
- 1-5 To formulate an integrated development master plan, which includes:
 - ♦ Basic development concepts for the site of the Project for the Study and beneficiaries
 - ♦ Basic concepts for land tenure and land use
 - ♦ Basic concepts for water resources utilization and management
 - ♦ Basic development concepts for agricultural production and value chain (including aquaculture)
 - ♦ Basic development concepts for infrastructure facilities for production, processing and marketing of agricultural produce
 - ♦ Environmental and social considerations
 - ♦ Organizational system for implementation of the master plan in view of public-private partnerships



Activity 2: Development of an action plan for realizing the above master plan

- 2-1 To determine execution targets by component of the master plan
- 2-2 To formulate an action plan comprising project components and their implementation plan (budget, schedule, etc.) to accomplish the targets set above
- 2-3 To examine roles and tasks of each stakeholder in view of public-private partnerships
- 2-4 To examine a monitoring system for implementation of the action plan

Activity 3: Development of a feasibility study on irrigation and drainage plan

- 3-1 To conduct supplemental field surveys to formulate a facility development plan for irrigation and drainage system
- 3-2 To examine and review functions of a water intake and its canal under the control of "Yacyreta Binational Entity"
- 3-3 To prepare basic design documents of primary and secondary irrigation canal system
- 3-4 To prepare basic design documents of primary and secondary drainage canal system
- 3-5 To prepare basic design documents of necessary roads for maintenance of the canal system and others.
- 3-6 To formulate a land use plan
- 3-7 To formulate a farming plan
- 3-8 To formulate an operation and management plan for various facilities
- 3-9 To examine system and organization for appropriate water management as well as organization for facility operation and management
- 3-10 To prepare a rough estimate of the plan of irrigation/drainage system and roads
- 3-11 To conduct economic and financial analysis
- 3-12 To conduct environmental and social consideration study, which includes:
 - ♦ Systematic comparison of alternatives taking into account Strategic Environmental Assessment (SEA)
 - ♦ Scoping of evaluation parameters and methodology to the irrigation and drainage prioritized development.
 - ♦ Elaboration of a draft environmental assessment report
 - ♦ Assistance to establish a brief Resettlement Action Plan (RAP)
- 3-13 To propose a public implementation system and project promotion system for irrigation and drainage facility development
- 3-14 To propose a water rights system and an irrigation water charge collection system

Activity 4: Consensus building among persons/organizations concerned

- 4-1 To conduct stakeholder analyses
- 4-2 To establish a public-private partnerships system for planning, coordination and implementation of the project
- 4-3 To hold various workshops and seminars for formulation and consensus building



Beats

of the master plan and the action plan

- 4-4 To establish a promotion council by the authorities and persons concerned toward the irrigation and drainage facility development
- 4-5 To obtain approval at the JCC on the integrated development master plan and the feasibility study on irrigation and drainage facility development plan

5. Input

(1) Input by JICA

(a) Dispatch of Mission

- Team Leader/Development of Regional Agriculture
- Agriculture/Farming Management
- Land-use Planning
- Processing and Marketing
- Irrigation and Drainage Planning
- Hydrological analysis (water balance)
- Road Planning
- Structure Design
- Irrigation Water Management/Organization/Institution
- Cost Estimation/Procurement Planning
- Economic Evaluation
- Environmental and Social Considerations

(b) Equipment necessary for the implementation of the Project for the Study

Input other than indicated above will be determined through mutual consultations between JICA and MAG during the implementation of the Project for the Study, as necessary.

(2) Input by MAG

MAG will take necessary measures to provide at its own expense:

- (a) Services of Paraguayan counterpart personnel and administrative personnel as referred to in II-6.;
- (b) Suitable office space with necessary equipment;
- (c) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project for the Study other than the equipment provided by JICA;
- (d) Information as well as support in obtaining medical service;
- (e) Credentials or identification cards;
- (f) Available data (including maps and photographs) and information related to the Project for the Study;
- (g) Running expenses necessary for the implementation of the Project for the Study;
- (h) Expenses necessary for transportation within Paraguay of the equipment

referred to in II-5. (1) as well as for the installation, operation and maintenance thereof; and

- (i) Necessary facilities to members of the JICA missions for the remittance as well as utilization of the funds introduced into the Republic of Paraguay from Japan in connection with the implementation of the Project for the Study

6. Implementation Structure

The organization chart of the Project for the Study is given in the Annex 1. The roles and assignments of relevant organizations are as follows:

- (1) Administration of the Project for the Study
 - (a) Responsible Organization: The Ministry of Agriculture and Livestock (MAG)
 - (b) Project Coordinator: General Director of Planning, MAG.
 - (c) Project Assistant Coordinator: Director, Department of Technical Cooperation and International Relations, General Directorate of Planning, MAG.
 - (d) Project Manager: Representative appointed by MAG.

- (2) Implementing organizations
 - Ministry of Agriculture and Livestock
 - The Secretary of Environment
 - The Departmental Government of Itapua
 - The Departmental Government of Misiones

- (3) [Assignment of personnel]
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- (4) JICA Mission
The JICA mission will give necessary technical guidance, advice and recommendations to MAG and other organizations involved in the Project for the Study on any matters pertaining to the implementation of the Project for the Study.

- (5) Joint Coordinating Committee
Joint Coordinating Committee (JCC) will be established in order to facilitate inter-organizational coordination. JCC will meet at least twice a year and whenever necessity arises. A list of proposed members of JCC is shown in the Annex 2.

7. Site(s) of the Project for the Study and Beneficiaries

The site of the Project for the Study is adjacent zones to the Yacyreta Dam Reservoir in Itapua and Misiones departments in Paraguay. The map of the site of

the Project for the Study is shown in Annex 3.

8. Duration

Two years. Tentative schedule of the Project for the Study is shown in Annex 4. The schedule is subject to change when both parties agreed upon any necessity that will arise during the course of the Project for the Study.

9. Reports

JICA will prepare and submit the following reports to the MAG in English and Spanish.

- (1) Twenty (20) copies of Inception Report at the commencement of the Project for the Study
- (2) Twenty (20) of Progress Report (1) at the time about 8 months after the commencement of the Project for the Study
- (3) Twenty (20) copies of Progress Report (2) at the time of 15 months after the commencement of the Project for the Study
- (4) Twenty (20) copies of Draft Final Report at the end of the last work period in Paraguay.
- (5) Twenty (20) copies of Final Report at the end of the period of the Project for the Study.

10. Environmental and Social Considerations

- (1) MAG agreed to abide by "JICA Guidelines for Environmental and Social Considerations" in order to ensure that appropriate considerations will be made for the environmental and social impacts of the Project.
- (2) Draft terms of reference for environmental and social considerations are shown in Annex 5.

III. UNDERTAKINGS OF MAG AND GOP

1. MAG and GoP will take necessary measures to:

- (1) ensure that the technologies and knowledge acquired by the Republic of Paraguay nationals as a result of Japanese technical cooperation contributes to the economic and social development of the Republic of Paraguay, and that the knowledge and experience acquired by the personnel of the Republic of Paraguay from technical training as well as the equipment provided by JICA will be utilized effectively in the implementation of the Project for the Study; and
- (2) grant privileges, exemptions and benefits to members of the JICA missions referred to in II-5. (2) above and their families, which are no less favorable than those granted to experts and members of the missions and their families of third countries or international organizations performing similar missions in the Republic of Paraguay.



- (3) other privileges, exemptions and benefits will be provided in accordance with the Agreement between the GoJ and the GoP.

IV. MONITORING AND EVALUATION

JICA will conduct the following evaluations and surveys to verify how the proposed plan is utilized and draw lessons. The MAG is required to provide necessary support for them.

- (1) Ex-post evaluation three (3) years after the completion of the Project for the Study, in principle
- (2) Follow-up surveys on necessity basis

V. PROMOTION OF PUBLIC SUPPORT

For the purpose of promoting support for the Project for the Study, MAG will take appropriate measures to make the Project for the Study widely known to the people of the Republic of Paraguay.

VI. MISCONDUCT

If JICA receives information related to suspected corrupt or fraudulent practices in the implementation of the Project for the Study, MAG and relevant organizations will provide JICA with such information as JICA may reasonably request, including information related to any concerned official of the government and/or public organizations of the Republic of Paraguay.

MAG and relevant organizations will not, unfairly or unfavorably treat the person and/or company which provided the information related to suspected corrupt or fraudulent practices in the implementation of the Project for the Study.

VI. MUTUAL CONSULTATION

JICA and MAG will consult each other whenever any major issues arise in the course of implementation the Project for the Study.

VII. AMENDMENTS

The record of discussions may be amended by the minutes of meetings between JICA and MAG. The minutes of meetings will be signed by authorized persons of each side who may be different from the signers of the record of discussions.

- Annex 1 Organization Chart of the Project for the Study
- Annex 2 A List of Proposed Members of Joint Coordinating Committee
- Annex 3 The Map of the Site of Project for the Study
- Annex 4 Tentative Schedule of the Project for the Study
- Annex 5 Draft Terms of Reference for Environmental and Social Considerations on the Project for the Study



Annex 5 Draft Terms of Reference for Environmental and Social Considerations on the Project for the Study

Terms of Reference for Environmental and Social Considerations on the Project for Study on Integrated Development of the Adjacent Zones to Yacyreta Dam Reservoir

1.1 PURPOSE

The Government of Paraguay and the Japan International Cooperation Agency (JICA) require a preparation of an Environmental Impact Assessment (EIA), during the feasibility study (FS) and prior to the construction of the irrigation, drainage and maintenance road facility development.

Main and related legal regulations and guideline requirements of the EIA process are summarized as:

Paraguayan legal regulation:

- (a) Law N° 294/93 ¹
- (b) Modification Law N° 345/94
- (c) Decree N° 14.281/96
- (d) Law N° 1561 / 00 ²
- (e) Decree N° 453/13
- (f) Regulation, N° 954/13
- (g) Resolution SEAM, N° 244/13

Japanese guideline:

- (a) JICA Guidelines for Environmental and Social Considerations, April 2010.

This Terms of Reference (ToR) defines the scope of work which the Consultant should undertake in compiling the EIA report. Public consultation is an integral part of the EIA Process according to the EIA regulations in Paraguay.

1.2 SPECIFIC OBJECTIVES

The Consultant should undertake surveys, conduct studies, assist Ministry of Agriculture and Livestock (MAG) and related other government institutions such as Ministry of Public Works and Communication (MOPC) in consultations with the other related stakeholders, including local governments and communities, and compile the EIA report. The EIA should cover at least both (1) construction and (2) operation phase activities and will include, but not to be limited to, an assessment of the environmental and social impacts relating to the:

- (a) physical and geographical suitability of the proposed facility, and borrowing pit and

¹ Environmental Impact Evaluation

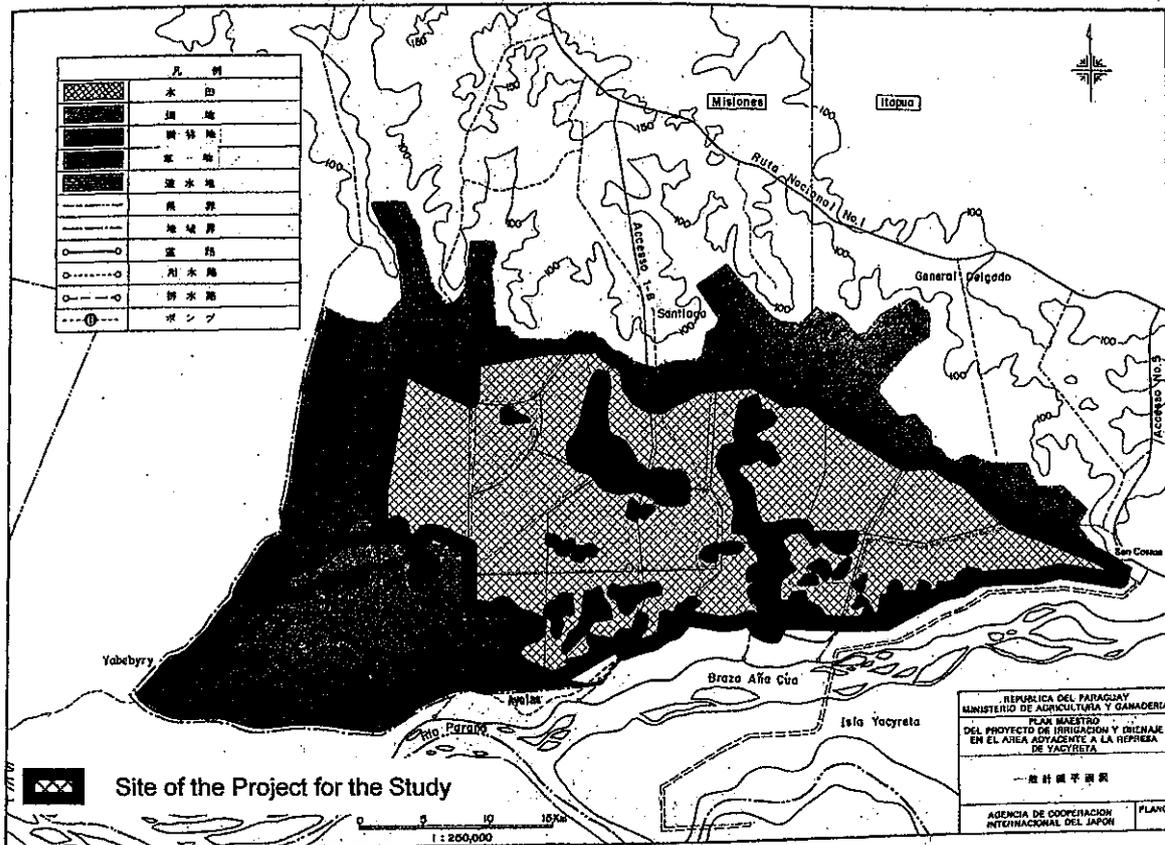
² National Environmental System and SEAM

- haulage routes;
- (b) land acquisition and displacement of people;
- (c) earth and sand transfer and disposal plan to be employed;
- (d) pollution abatement options to be employed;
- (e) management control and operational practices of the irrigation and drainage facilities to be employed;
- (f) monitoring system during construction and for a long term operation.

1.3 STUDY AREA

The study area for the feasibility study will be possible irrigation farmland and surrounding areas, at where utilizing the 108 m³/s of water from the Yacyreta Dam Reservoir. More specifically, the study area is adjacent and down-stream area of Yacyreta Dam Reservoir, located in Misiones and Itapúa Prefecture.

Map of a possible irrigation farmland and surrounding areas



1.4 PUBLIC CONSULTATION

A credible Public Consultation is crucial to the successful completion of the assignment and preparing an acceptable Environmental Management Plan (EMP) and Resettlement Action Plan if required.

1.5 SCOPE OF WORK

(1) Scope or work for Strategic Environmental Assessment (SEA) before EIA study

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The Consultant should conduct the following activities:

- Study development plan and programs
- Select group of projects in order to realize development plans and programs
- Conduct preliminary Scoping (identification of evaluation parameters and method in order to select feasibility study projects)

(2) Scope of work at EIA study and reporting:

1.5.1 - Project Description

The Consultant should provide a description of the scope and physical characteristics of the proposed facility.

1.5.2 - Project Alternatives

The Consultant should make a systematic comparison of alternatives, including "Do Nothing Option", taking into account environmental and social factors.

1.5.3 - Existing Environment and Baseline Data Collection

The Consultant will define the study area taking into account the probable regions of both direct and indirect influence of the project.

The Consultant will collect baseline data on relevant physical, biological and socio-economic conditions, such as land use, natural environment and a presence of indigenous people.

1.5.3.1 - physical factors

Geology, topography, soils, climate and meteorology, surface and groundwater hydrology, existing water quality status.

1.5.3.2 - biological factors

Existing inventory of flora and fauna, sensitive habitats and endangered species, protected areas, and forest lands.

1.5.3.3 - socio-economic conditions - human factors

Population, employment, distribution of income, goods and services, presence of tribal and/or indigenous groups. Land features: land ownership, land-use and zoning, proximity of site to residential and economic locations and archaeological and historical properties.

1.5.4 - Assessment of Potential Impacts

The Consultant shall identify the divergence of the JICA environmental consideration guidelines (April 2010) and Paraguayan legal regulations, and find a resolution method. The Consultant shall identify positive and negative impacts likely to result from the proposed project, interpreting "environmental" throughout the EIA study to include socio-economic impacts as well as impacts on the natural environment.

Following this, the Consultant should describe the likely changes in the prevailing

environmental conditions that may be brought about by establishing the proposed irrigation and drainage facility.

1.5.5 - Analysis and Evaluation of Risks

The Consultant shall identify the impacts that can translate to potential risks and conduct "scoping (identifying evaluation parameters and methodology)" in the (1) construction and (2) operation phases, and risk analysis performed.

Special attention should be paid to a possible impact from irrigation facility, from large scale land use changes, soil contamination from pesticide use, water contamination by fertilizer use, and from drainage water discharge to the surface water hydrology - Yabebyry River and Atinguy River.

1.5.6 - Formulation of Environmental Management Plan (EMP)

1.5.6.1 - Mitigation Plan

For each significant negative impact or major risk, the Consultant should recommend and describe a measure to avoid or mitigate (reduce to acceptable levels) or when unavoidable, to compensate for the damage.

If the project causes large-scale involuntary resettlement, the consultant should prepare a separate Resettlement Action Plan (RAP). The complete set of recommended measures -in the EMP - should also be presented in a summary table. Allocation of institutional responsibilities, budget and financial resources should be clearly specified, according to the Paraguayan legal regulations.

1.5.6.2 - Management Plan

The consultant shall prepare an environmental management plan for the proposed facility.

1.5.7 - Environmental Monitoring Plan

During (1) construction and (2) operation of the facility, all of mitigation measures have to be preserved and monitored to evaluate impact in comparison to criteria and/or environmental standards. The recommendation for environmental monitoring plan should be proposed

1.5.8 - Public Consultation

The stakeholder meeting will be held after completion of Draft EIA Report and the opinions from the stakeholder at the meeting will be reflected in the Final EIA Report.

1.6 REPORT

The EIA Report should be concise and limited to significant environmental issues.

The format is as follows:

- Executive Summary



- Legal and Administrative Requirements ³
- Project Description
- Scoping
- Project Alternatives ⁴
- Baseline Environmental Conditions ⁵
- Assessment of Environmental Impacts ⁶
- Mitigation, Management and Monitoring ⁷
- Conclusions and Recommendations ⁸
- Results of Public Consultation
- Appendices (supporting data, information and surveys, - list of EIA papers and references)

end.

³ purpose of the EIA, EIA preparation process, legal actions required by government to approve action.
⁴ description of proposed project, discussion of reasonable alternatives, decision making process followed during project definition
⁵ description of baseline environmental conditions in the vicinity of the proposed site
⁶ identification of positive and negative impacts, assessment of significance (quantitative and qualitative), identification of key issues
⁷ including institutional responsibilities and procedures for reporting and analysis
⁸ key conclusions, positive and negative impacts of the proposed facility, recommendations in relation to acceptability of environmental impacts and conditions for project approval and/or reasons for project disapproval

Main Points Discussed

1. Implementation Structure of the Project for the Study

In order to realize the results of the development study, the central government of Paraguay and the departmental governments concerned are required to decide policies such as 1) how to deal with large-scale land ownership issues, 2) how to develop conditions that small-scale farmers can participate in, and 3) how to develop various institutional systems necessary for implementing the public irrigation development, which is first time in Paraguay. It is also required strong implementing structure for the Project for the Study for effective implementation of the results of the Project for the Study. Therefore, a JCC of the Project for the Study will be established through consultation with the organizations concerned and JICA Paraguay office, before the signing of Record of Discussions on the Project for the Study.

Roles of JCC, Project Coordinator (PC), and Project Management Unit (PMU) are as follows.

A) Joint Coordinating Committee (JCC)

1) Roles

JCC shall be established in order to facilitate inter-organizational coordination and to analyze, suggest, and approve the reports such as Inception Report, Progress Report, Draft Final Report and Final Report. JCC will meet at least twice a year and whenever necessity arises.

2) Membership

Decision makers in the organizations concerned

B) Project Coordinator (PC)

1) Roles

Project Coordinator will facilitate coordination among related ministries/organizations of GoP and between JCC and Project Management Unit (PMU), report to JCC, and make necessary decision for effective implementation of the activity of PMU.

C) Project Assistant Coordinator

1) Roles

Project Assistant Coordinator serves as link with the Project Management Unit and represent to Projecto Coordinator when necessary.

D) Project Management Unit (PMU)

1) Roles



Project Management Unit headed by Project Manager (PM) will implement and monitor the activities of the Project for the Study in line with the decision made by JCC and PC. PMU will report to PC about progress of the activities.

2) Membership

Project Manager: A managerial person of the implementing organization of the Project for the Study

Counterpart Personnel: Working-level officers of MAG and the organizations concerned

2. Assignment of Technical Coordinator and counterpart personnel and budget arrangement

MAG shall assign a technical coordinator and counterpart personnel who will work with Japanese experts closely before the commencement of the Project for the Study. The role of the technical coordinator is to coordinate with the project manager for the study about the operational activities and coordinate with the technical counterpart team. MAG shall coordinate with the organizations concerned in order that the organizations concerned (Ministry of Public Works and Communication, Secretary of Environment, Departmental Government of Itapua, Departmental Government of Misiones, and Yacyreta Binational Entity).

In addition, MAG will coordinate so as each organization concerned will allocate necessary resources and budget for activities of counterpart personnel such as travel expenses and allowances for better coordination/collaboration with Japanese expert in the Project for the Study.

MAG shall take responsibility for communicating and coordinating with organizations concerned, because cooperation among organizations of central government, departmental governments and Municipal governments are required for effective implementation of the Project for the Study.

3. Arrangement of suitable office spaces for the Project for the Study

MAG shall arrange suitable office spaces for Project for the Study with necessary facilities in 2 locations (in Asuncion and a location adjacent to the Yacyreta Dam Reservoir) before the commencement of the Project for the Study.

4. Examination of possible funding resources

Planning of irrigation system up to secondary canal will be carried out in the feasibility study on irrigation and drainage in order that GoP can smoothly proceed to realization of a project which will be suggested by the Project for the Study. It is suggested that GoP analyze possible funding sources during the Project for the Study.

5. Analysis of basic policies of the Project for the Study which will benefit small-scale

farmers and local residents

Reduction of poverty and livelihood improvement of small-scale farmers are major important policies of the current government of Paraguay, therefore, it is necessary to formulate integrated development master plan which can provide benefit of integrated development to larger number of small-scale farmers and local residents. However, there are large-scale land owners in the site of the Project for the Study therefore, it is necessary to implement a policy that will facilitate participation of small-scale farmers in development of irrigated agriculture in order to make larger impact of the project. For this reason, MAG will prepare a proposal on basic guideline on integrated development which can benefit larger number of small-scale farmers in the territory, through discussions with other governmental organizations. This basic guideline will be presented to the JICA Paraguay office before the commencement of the Project for the Study.

6. Survey on information of land tenure.

MAG shall collect and arrange existing data and information on landowners, land area, and land locations, etc. in the influenced area before the commencement of the Project for the Study.

7. Collection and arrangement of laws and regulations related to establishment of irrigation water management system

In order to examine and make recommendations effectively for establishing irrigation water management system and irrigation water charge collection system, during the implementation of the Project for the Study, MAG shall collect and arrange existing laws, regulations, organization in charge and implementing structures related irrigation water management in cooperation with the governmental organizations concerned in Paraguay, before the commencement of the Project for the Study.

8. Clarification of water use right from the Yacyreta Dam Reservoir

MAG, before the commencement of the Project for the Study and jointly with organizations concerned (Ministry of Public Works and Communication, Secretary of Environment, and Yacyreta Binational Entity, etc.) shall start analysis on tight of water use (108m³/s) from the Yacyreta Dam Reservoir, and jurisdiction, competence, administrative procedures, and coordinating methods on provision of water use license by organizations concerned.

9. Quantity of water available for irrigation which should be considered in the Project for the Study

At the meeting held with the Yacyreta Binational Entity, the detailed survey team of JICA obtained information that a few farmers are carrying out irrigated rice cultivation (around 12,000ha) having an authorization on water use (around 11m³/s) from the Yacyreta Binational Entity. Farming and land use plan, and irrigation and drainage plan differs widely by the available water amount for irrigation, in other words, planning will

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be carried out with use of water of 108m³/s or 97m³/s (the amount of water which is obtained by subtracting the amount of vested water 11m³/s). Therefore, it is requested to GoP report to the JICA Paraguay office about quantity of water available for irrigation for considering at the Project for the Study before the commencement of the Project for the Study.

10. Schedule of the Project for the Study

In view of timely implementation of the Project for the Study, JICA and the GoP confirmed to implement the Project for the Study as soon as signing of R/D and finalizing procurement process by JICA side. Tentative work schedule of the Project for the Study is shown in Annex 4.

11. Countermeasures for Climate Change

The Project for the Study is expected to contribute to the adaptation to climate change. Paraguay economy is very vulnerable to climate change because of its heavy dependence on agricultural commodities production and because a large part of agriculture relies on rainfall for water supply (Of the total cropland in use in the country, only 2.1% of it is under irrigation). Actually, severe droughts hit in 2009, 2012 and reduced the agricultural production and exports significantly (around 40% - 50% decrease in production in 2009 and 2012). Irrigation development in the adjacent zones to the Yacyreta dam reservoir will contribute to ensuring stable agricultural production and increase resilience against droughts.



Appendix 3: Minutes of Meetings on the Project for the Integral Development of the Adjacent Zones to the Yacyreta Dam Reservoir and the Tebicuary River Basin

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