

## 付 属 資 料

- 1．ミニッツ（英文）
- 2．PDM 案
- 3．活動計画案
- 4．FUNICA について
- 5．MAG-FOR と IDR の CSGP に関する協定書



MINUTES OF DISCUSSIONS OF  
PREPARATORY STUDY TEAM ON  
JAPANESE TECHNICAL COOPERATION  
FOR  
THE PROJECT FOR THE MULTIPLICATION AND DISSEMINATION OF  
IMPROVED BREEDING CATTLE IN THE REPUBLIC OF NICARAGUA

The Japanese Preparatory Study Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") headed by Mr. Hidetaka FUNO, visited the Republic of Nicaragua in order to clarify the background of the proposed project entitled "The Project for the Multiplication and Dissemination of Improved Breeding Cattle in the Republic of Nicaragua" (hereinafter referred to as "the Project") and confirm the feasibility of implementing the Project.

During its stay in the Republic of Nicaragua, the Team had a series of discussions with the relevant authorities of the Nicaraguan Government, made field surveys and exchanged technical and administrative points of view necessary for sharing understanding of the Project.

As a result of the discussions, the Team and Nicaraguan authorities concerned agreed to report to their respective governments the matters referred to in the documents attached hereto.

The minute is done in duplicate in English and Spanish, each text is considered to be equally authentic. In case of any divergence of interpretation, the English text shall prevail.

Managua, October 29, 2002

Mr. Hidetaka FUNO  
Leader  
Preparatory Study Team  
Japan International Cooperation Agency  
Japan

Mr. José Augusto NAVARRO FLORES  
Minister  
Ministry of Agriculture Livestock and  
Forestry  
The Republic of Nicaragua

Mr. Sergio NARVAEZ SAMPSON  
Executive Director  
Institute of Rural Development  
The Republic of Nicaragua

Mr. Fco. Telemaco TALAVERA SILES  
President  
Agrarian National University  
The Republic of Nicaragua

## ATTACHED DOCUMENT

### 1. INTRODUCTION

The agriculture sector has played a crucial role in Nicaragua. More than 40% of the total labor population is engaged in work related to this sector, which has produced more than 30% of the Gross Domestic Product (hereinafter referred to as "GDP") and amounted approximately 80% of the country's total export.

In particular, the livestock industry, which shares 8.2% of GDP in Nicaragua, has contributed substantial earnings to the agricultural economy. In addition, only livestock products create an export surplus in Central American Common Market. Moreover, according to agricultural statistical analysis, about 70% of farmland could be potentially utilized as pasture land. Thus, the livestock industry, as an advantageous industry, is important in the country's effort to achieve balanced economic development.

However, about 90% of the livestock farmers are small and medium-scale having low productive and inadequate breeding methods due to deteriorating genetic characteristics of the breeding cattle, shortage of superior bulls and frozen semen and low efficiency of cattle reproduction with a low rate of artificial insemination (hereinafter referred to as "AI") applications. Consequently, current cattle production is still below 1970s' levels.

Therefore, improvement of the technologies of cattle reproduction, and distribution of improved breeding cattle through bulls and frozen semen for AI, are expected to increase the production and enhance the quality of livestock farm products. In the meantime, it would help to increase the income of the livestock farmers, especially for small and medium-scale farmers. This would contribute to the reduction of rural poverty, which is a major concern in Nicaragua.

Under such circumstances, in 2001, the Government of Nicaragua made an official request to the government of Japan for implementation of a project to improve productivity of livestock farming for small and medium-scale livestock farmers by introducing and extending superior methods for breeding and reproduction of cattle.

### 2. MUTUAL UNDERSTANDING AND RECOMMENDATION

- (1) The Ministry of Agriculture and Forestry (hereinafter referred to as "MAG-FOR") considers that restructuring of rural economy, promotions of agricultural and livestock industry, development of agricultural production techniques, and reinforcement of

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technical support and extension service for small-scale farmers are the most important in “the Agriculture, Livestock and Forestry Development Policy (2002 – 2003)”. The Project should support the above-mentioned policy in the field of livestock development.

(2) The Project should directly contribute to the improvement of cattle productivity in small and medium-scale livestock farmers. Therefore, the Project should be carefully designed emphasizing small and medium-scale livestock farmers’ needs.

(3) In view of the efficient use of input by the past technical cooperation as well as the major activities of the Project, which is to develop and diffuse breeding cattle for small and medium-scale livestock farmers, the Project sites are proposed to be the Agrarian National University (hereinafter referred to as “UNA”) and the Livestock Genetic Service Center (hereinafter referred to as “CSGP”).

(4) The Institute of Nicaraguan Agriculture Technology (hereinafter referred to as “INTA”) as well as livestock organizations (which including livestock cooperatives), and non-governmental organizations (hereinafter referred to as “NGOs”) have to play a main role in extension activities for the small and medium-scale livestock farmers. Therefore, both UNA and CSGP would have appropriate coordination with the Institute of Rural Development (hereinafter referred to as “IDR”), INTA, livestock organizations and NGOs in the Project. In addition, The Japan Overseas Cooperation Volunteers (hereinafter referred to as “JOCV”) will also play an important role as it is expected to work for extension activities and technology development under the coordination of concerned organizations in the Project

(5) In consideration of smooth commencement and implementation of the Project, the Nicaraguan side positively promised to allocate the budget timely and sufficiently through not only the government’s budget but also the cooperative fund of the Second Kennedy Round (hereinafter referred to as “2KR”) and the Foundation of Development for Agriculture, Livestock, and Forestry (hereinafter referred to as the “FUNICA”). Especially, IDR also positively promised that 2KR would be allocated to supply cattle, embryo and semen to the Project as well as to operate the micro-credit for small and medium-scale farmers to purchase improved breeding cattle provided by the Project.

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- (6) For successful and effective implementation of the Project, North and Central Regions, which included Atlantico Sur, Matagalpa, Boaco and Chontales were proposed by MAG-FOR as the target area of the Project. The target area of the Project will be further discussed and decided on the occasion of the Project Design Study, because it is far and wide.
- (7) CSGP is facing severe financial and institutional problems. The Central Bank of Nicaragua is demanding CSGP to return the land. In addition, MAG-FOR and IDR are planning to conclude an agreement to transform CSGP into a joint operating institution. In order to commence the Project, the Nicaraguan side should immediately solve the financial and institutional problems of CSGP.
- (8) For effective and efficient implementation of the Project, the schemes of the third-country experts dispatch and third-country training would be conducted between Nicaragua and the respective related countries such as Chile, Panama, Argentina and other Central and South American countries.

### **3. THE RESULT OF PCM WORKSHOP**

The Team held a planning workshop based on the Project Cycle Management Method (hereinafter referred to as "PCM") with Nicaraguan authorities and personnel concerned from October 25<sup>th</sup> to 26<sup>th</sup>, 2002. The number of the participants was forty (40). The list of the participants is shown in ANNEX 1. The workshop consisted of Stakeholders Analysis, Problems Analysis, Objectives Analysis, Project Selection and PDM formulation. The Objectives Tree and Project Selection is shown in ANNEX 2.

As a result of the workshop, the tentative Project Design Matrix (hereinafter referred to as "PDM") and Tentative Schedule of Implementation of the Technical Cooperation (hereinafter referred to as "TSI") were elaborated as shown in ANNEX 3 and 4 respectively.

### **4. MASTER PLAN OF THE PROJECT**

After a series of discussions, both sides agreed on the Master Plan of the Project, which is shown in ANNEX 5. The content of the Master Plan may be amended on the occasion of the Project Design Study.



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## 5. MEASURES TO BE TAKEN BY BOTH GOVERNMENTS

When the Project is realized, the necessary measures listed in ANNEX 6 should be taken by each Government.

## 6. CRITERIA FOR PROJECT APPRAISAL BY JAPANESE SIDE

The Official Development Assistance (hereinafter referred to as "ODA") Project of Japan should be carefully prepared in consideration of the criteria in ANNEX 7.

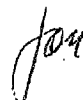
## 7. ADMINISTRATION OF THE PROJECT

The organization chart of the Project is shown in ANNEX 8. The administration of the Project may be changed over the course of future discussions before the signing of the Record of Discussions (hereinafter referred to as "R/D").

- (1) The Executive Director of IDR, as the Project Director, will bear overall responsibilities for the administration, implementation and supervision of the Project.
- (2) IDR, MAG-FOR and UNA will be in charge of implementing the Project.
- (3) INTA will be a collaborative organization of the Project.
- (4) The Vice-Minister of MAG-FOR, as the Project Manager, will be responsible for the managerial and technical matters of the Project.
- (5) The Dean of Animal Science Faculty of UNA, as the Project Coordinator, will be responsible for the coordinating the technical and administrative aspects of the Project.
- (6) The Japanese experts will provide necessary recommendations and advice for the Project Director, the Project Manager and the Project Coordinator on any matters concerning the implementation of the Project.
- (7) The Japanese experts will provide necessary guidance and advice for Nicaraguan counterparts and concerned personnel on technical matters concerning the implementation of the Project.

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(8) The Steering Committee will be set up in the Project and will work for planning, management, monitoring, coordination and evaluation of the Project activities.

The Steering Committee will be composed of:

- a. Chairperson: the Project Coordinator
- b. Counterparts personnel
- c. Representatives of MAG-FOR
- d. Representatives of IDR
- e. Representatives of INTA
- f. Representatives of CSGP
- g. Representatives of livestock organizations
- h. Representatives of NGOs
- i. Japanese experts and personnel concerned of JICA
- j. JOCV

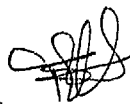
(9) For the effective and successful implementation of the Project, the Joint Coordinating Committee (hereinafter referred to as "JCC") will be established, whose functions and composition are described in ANNEX 9.

## 8. REQUIREMENT

CSGP will play an important role in the Project activities to produce and disseminate improved frozen semen and train AI technicians for small and medium-scale farmers. CSGP is currently facing financial and institutional problems. The Project Design Study Team will not be dispatched unless Nicaraguan side solves these problems. When these problems are solved, Nicaraguan government will officially inform Japanese government of the results through JICA Nicaragua Office.

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LIST OF ANNEXES

- ANNEX 1 LIST OF THE PARTICIPANTS AT THE PCM WORKSHOP  
ANNEX 2 OBJECTIVES TREE AND PROJECT SELECTION  
ANNEX 3 TENTATIVE PROJECT DESIGN MATRIX  
ANNEX 4 TENTATIVE SCHEDULE OF IMPLEMENTAION OF THE  
TECHNICAL COOPERATION  
ANNEX 5 MASTER PLAN OF THE PROJECT  
ANNEX 6 MEASURES TO BE TAKEN BY BOTH GOVERNMENTS  
ANNEX 7 CRITERIA FOR PROJECT APPRAISAL BY JAPANESE SIDE  
ANNEX 8 ORGANIZATIONAL CHART OF THE PROJECT  
ANNEX 9 JOINT COORDINATION COMMITTEE  
ANNEX 10 TENTATIVE LIST OF COUNTERPARTS AND OTHER PERSONNEL

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## LIST OF THE PARTICIPANTS AT THE PCM WORKSHOP

(at Managua, on October 25<sup>th</sup> and 26<sup>th</sup>)

No.	Name	Affiliation	Position
1	Denis J. Salgado	MAG-FOR	General Director
2	Omar García C.	MAG-FOR	Director, Animal Health
3	Mario González	MAG-FOR	Chief, Field Services
4	Orión Baldizón	MAG-FOR	Consultant
5	Ariel Cajina	UNA	Dean, FACA
6	Sandra María Lovo J.	UNA	Director, External Cooperation
7	Luis Toribio Sequeira	UNA	Chief, Veterinary Department
8	Bryan Mendieta	UNA	Chief, Animal Nutrition Area
9	Roberto Blandino	UNA	Extension Coordinator
10	Nelsón Osejo	UNA	Journalist
11	Jaime Gutiérrez A.	IDR	Executive Director
12	Perfecto Castillo	IDR	Officer in Charge of Genetic Improvement
13	Willy Flores Diaz	IDR	Technical Director
14	Martín Mena	INTA	National Researcher
15	José Esteban Porras R.	INTA	Researcher, Animal Production
16	Wilfredo Murillo G.	CSGP	Director
17	Jaime Largaespada	CSGP	Responsible of Production
18	Humberto J. Gutiérrez Pérez	CSGP	Chief, Sales and Training
19	Agustín Sequeira B.	Alianza Amerisque	President
20	Carlos Cajina	Asociación Ganaderos San José de los Remates	President
21	Pablo Medina C.	ASODEL	Director
22	Teofilo A. González	ASODEL	Engineer
23	Adán Espinales E.	Comunidad Jicaro Bonito ASODEL	Presidente, Jicaro Bonito Cooperative
24	Maximiliano Carrasco J.	Comunidad San Miguelito ASODEL	Group Coordinator
25	Gloria Molona	CANISLAC	Executive Director
26	José Javier Miranda	Coop. EL Manantial	Treasurer
27	Francisco Javier Lopez Mena	Coop. San Francisco de Asis R.L.	Responsible of Technical Training Area
28	Douglas Alemán B.	UNAG	Director
29	Mary Idania	UNAG	Technical Adviser
30	Shozo Tabuse	SREC	Adviser
31	Alejandro Maltez	SREC	Consultant for Japanese Cooperation
32	Maria Auxiliadora	SREC	Responsible of management
33	Kiyoharu Hoshikawa	JICA	JICA Coordinator
34	Tetsuya ODA	JICA	Project Formulation Adviser
35	Hidetaka FUNO	JICA	Leader, The Preparatory study Team
36	Norio SAITO	NLBC	Member, The Preparatory study Team
37	Daisuke TSUKAGUCHI	NLBC-TS	Member, The Preparatory study Team
38	Junko NOGUCHI	FASID	Member, The Preparatory study Team
39	Koji SUNAZAKI	JICA	Member, The Preparatory study Team
40	Keiko SUZUKI	JICA	Interpreter, The Preparatory study Team

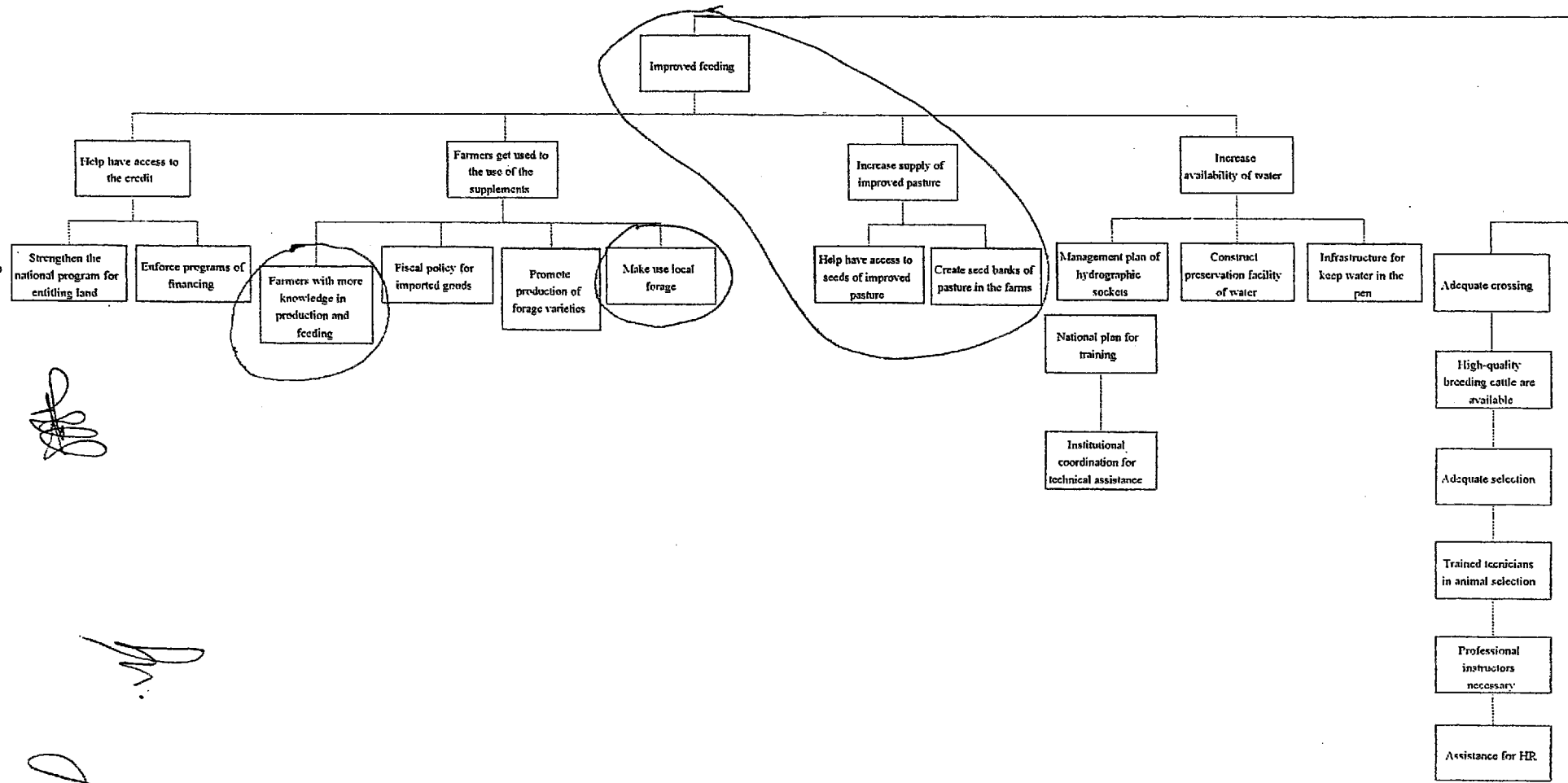
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ANNEX 2  
OBJECTIVES TREE AND PROJECT SELECTION

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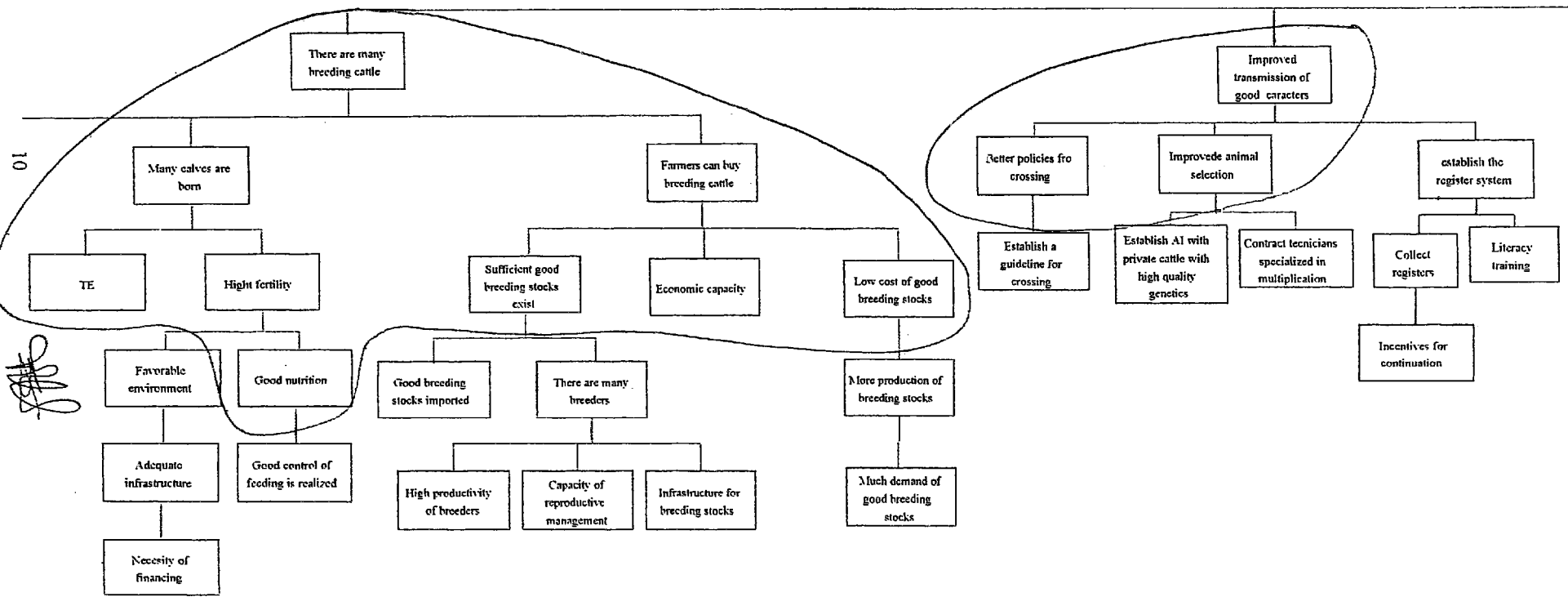
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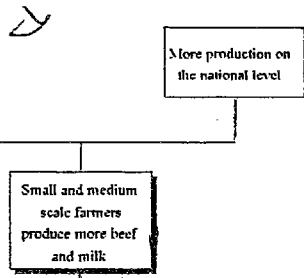
More production by the farmers

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Improved genetic quality of the herd

Increase AI (Efficient AI program)

Sufficient personnel specialized in AI

Monitoring and Evaluation

Obtain many doses of frozen semen of high quality

More farmers interested in AI

Obtain sufficient materials

Increase courses on AI

Elaborate AI manual

Budgeting monitoring programs

Prepare technicians

Improved breeding cattle are sufficient

More technicians specialized in semen

Market plan

Financing in the long term

Adequate prices of materials

Quality of materials

Buy materials directly without intermediates

Give incentives to farmers

Involve breeding sector-institutions in the AI program

Implement projects in the long term

Define influential areas by the program

Define beneficiary group

Define policies and strategies

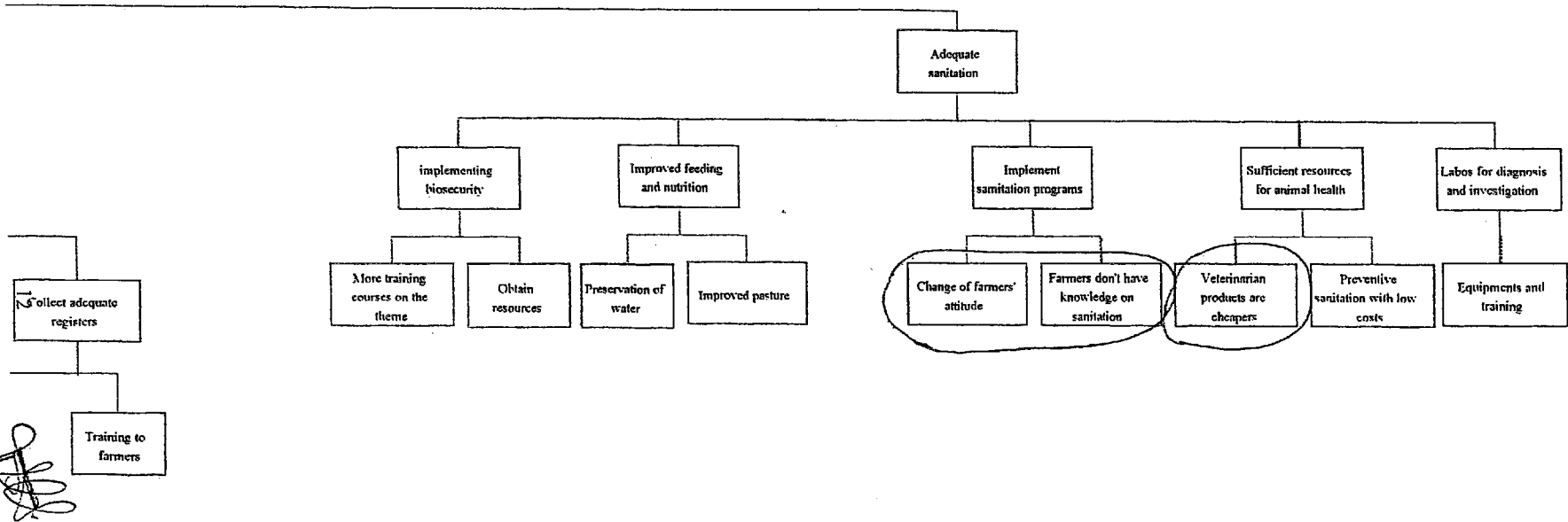
International coordination

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ANNEX 3

Tentative Project Design Matrix (PDM0)

Project Title: Project for Multiplication and Dissemination of Improved Breeding Cattle in the Republic of Nicaragua

Project Site: Agrarian National University (UNA)/Livestock Genetic Service Center (CSGP)

Target Area : North and Central Regions (Atlántico Sur, Matagalpa, Boaco and Chontales)

Target Group : Small and medium-scale livestock farmers

Term of Cooperation: 2003 - 2007

Date of Elaboration: October 26, 2002

Narrative Summary	Verifiable Indicator	Means of Verification	Important Assumptions
<b>Super Goal</b>	The amount of dairy and beef products is increased by Y% in Nicaragua by 2017.	- Trade statistics	
The amount of livestock farm products (dairy and beef products) is increased in Nicaragua.			
<b>Overall Goal</b>	The amount of cattle sale is increased by Y% in the target area by 2012.	- Livestock production statistics	- Domestic and international conditions of supply and demand of livestock farm productions are not fluctuated. - Project results are disseminated to other Regions in Nicaragua.
The amount of livestock farm products is increased in the target area.			
<b>Project Purpose</b>	Small and medium-scale farmers raise Y head of improved breeding cattle in the target area in 2007.	-Provision report of related organizations -Monitoring report of related organizations	- Farmers don't trade away cattle provided by the Project.
Small and medium-scale farmers raise improved breeding cattle in the target area.			
<b>Outputs</b>	1-1 Y normal embryos of improved breeding cattle are collected at UNA by 2007. 1-2 Y calves from improved breeding cattle are produced with ET techniques at UNA by 2007. 2-1 Y doses of frozen semen of improved breeding cattle are produced at CSGP by 2007. 2-2 Y people acquire AI techniques at CSGP by 2007. 3-1 The rate of AI in the target area is Y% by 2007. 3-2 Y model farmers acquire reproduction techniques by 2007.	1-1 Project activities report 1-2 Project activities report 2-1 Project activities report 2-2 Project activities report 3-1 Monitoring report of farmers 3-2 Monitoring report of farmers	- There is no serious livestock disease in Nicaragua.
1. Improved breeding cattle are produced using embryo transfer techniques at UNA. 2. Improved frozen semen is produced and AI technician are trained at CSGP. 3. Cattle reproduction techniques with improved breeding cattle are acquired by small and medium-scale livestock farmers.			
<b>Activities</b>	<b>Inputs</b>		- Counterparts and other Project staff remain in the Project. - There is no severe calamity (earthquake, drought, typhoons, etc.).
1. Transfer of reproductive techniques 1-1 Implementation of embryo transfer 1-2 Improvement of techniques for reproduction disorder control 1-3 Formulation of strategies for cattle breeding 2. Transfer of AI techniques 2-1 Improvement of frozen semen production techniques 2-2 Improvement of feeding management techniques for breeding cattle 2-3 Training of AI technicians 3. Dissemination of breeding cattle 3-1 Training of livestock organizations and farmers groups on cattle reproduction 3-2 Monitoring of reproduction by small and medium-scale farmers 3-3 Provision of improved breeding cattle to livestock farmers through livestock organizations and NGOs.	<b>Japanese side</b> 1. Dispatch of experts 1) Long term experts - Animal Reproduction - Artificial Insemination - Livestock Extension/Project Coordinator 2) Short term experts including third country experts, when necessity arises 2. Provision of machinery and equipment 3. Counterpart Training in Japan and the third countries 4. Provision of running expenses 5. Dispatch of JOCV	<b>Nicaraguan side</b> 1. Counterpart personnel and administrative personnel - Project Director - Project Manager - Project Coordinator - Counterpart Personnel - Administrative Staff - Drivers in official Use - Other necessary supporting Personnel 2. Provision of land, buildings, and facilities 3. Provision of running expenses of the Project including FUNICA and 2KR	
			<b>Preconditions</b>
			1. UNA and CSGP agree on their mutual cooperation in the Project activities. 2. Livestock cooperative groups cooperate with the Project. 3. Sufficient budget is allocated to the Project activities.

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TENTATIVE SCHEDULE OF IMPLEMENTATION OF THE TECHNICAL COOPERATION

1. Project Activity

Activities	Year	1st	2nd	3rd	4th
	<b>I. Improved breeding cattle are produced using embryo transfer techniques at UNA</b>				
1 Implementation of embryo transfer					
2 Improvement of techniques for reproduction disorder control					
3 Formulation of strategies for cattle breeding					
<b>II. Improved frozen semen is produced and AI technicians are trained at CSGP</b>					
1 Improvement of frozen semen production techniques					
2 Improvement of feeding management techniques for breeding cattle					
3 Training of AI technicians					
<b>III. Cattle reproduction techniques with improved breeding cattle are acquired by small and medium-scale livestock farmers</b>					
1 Training of livestock organizations and farmers groups on cattle reproduction					
2 Monitoring of reproduction by small and medium-scale livestock farmers					
3 Provision of improved breeding cattle to small and medium-scale livestock farmers through livestock organizations and NGOs					

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2. Technical Cooperation Program

Item	Year			
	1st	2nd	3rd	4th
<b>I. Japanese Side</b>				
1. Dispatch of Japanese experts				
(1) Dispatch of long term experts				
1) Animal Reproduction				
2) Artificial Insemination				
3) Livestock Extension				
4) Project Coordinator				
(2) Dispatch of short term experts (including third country expert)		When necessity arises		
2. Provision of machinery		When necessity arises		
3. Training counterpart personnel in Japan and the third countries		When necessity arises		
4. Dispatch of JOCV		When necessity arises		
5. Dispatch of study team		When necessity arises		
<b>II. Nicaraguan Side</b>				
1. Assignment of Nicaraguan side				
(1) Project Director				
(2) Project Manager				
(3) Project Coordinator				
(4) Counterpart personnel to the Japanese experts				
(5) Administrative staff				
(6) Drivers in official use				
(7) Other necessary supporting personnel				
2. Provision of land, buildings and other necessary facilities				
3. Provision of running expenses of the Project				

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**MASTER PLAN OF THE PROJECT**

**1. NAME OF THE PROJECT**

The Project for the Multiplication and Dissemination of Improved Breeding Cattle in the Republic of Nicaragua

Note: The Name of the project is subject to modification according to the Project Activities on the occasion of the Project Design Study.

**2. OBJECTIVE OF THE PROJECT**

**(1) Super Goal**

The amount of livestock farm products (dairy and beef products) is increased in Nicaragua.

**(2) Overall Goal**

The amount of livestock farm products is increased in the target area.

**(3) Project Purpose**

Small and medium-scale farmers raise improved breeding cattle in the target area.

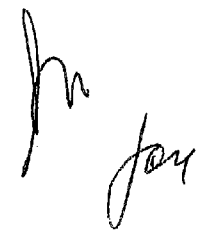
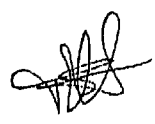
**3. OUTPUTS AND ACTIVITIES OF THE PROJECT**

**(1) Output of the Project**

- 1) Improved breeding cattle are produced using embryo transfer techniques at UNA
- 2) Improved frozen semen is produced and AI technician are trained at CSGP
- 3) Cattle reproduction techniques with improved breeding cattle are acquired by small and medium-scale livestock farmers.

**(2) Activities of the Project**

- 1) Transfer of reproductive techniques
  - a) Implementation of embryo transfer
  - b) Improvement of techniques for reproduction disorder control
  - c) Formulation of strategies for cattle breeding
  
- 2) Transfer of AI techniques
  - a) Improvement of frozen semen production techniques
  - b) Improvement of feeding management techniques for breeding cattle
  - c) Training of AI technicians



3) Dissemination of breeding cattle

- a) Training of livestock organizations and farmers groups on cattle reproduction
- b) Monitoring of reproduction by small and medium-scale livestock farmers
- c) Provision of improved breeding cattle to small and medium-scale livestock farmers through livestock organizations and NGOs

4. PROJECT SITE

UNA and CSGP

5. TARGET AREA

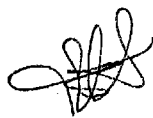
North and Central Regions (Atlantico Sur, Matagalpa, Boaco and Chontales)

Note: The target area of the Project will be further discussed and decided on the occasion of the Project Design Study.

6. TERM OF COOPERATION

Four (4) years from the date of the arrival of first Japanese expert (s) in Nicaragua after signing the R/D

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ANNEX 6

**MEASURES TO BE TAKEN BY BOTH GOVERNMENTS**

1. Measures to be taken by the Government of Japan

In accordance with the law and regulations in force in Japan, the Government of Japan would take, at its own expense, the following measures through JICA according to the normal processes under the Technical Cooperation scheme of Japan.

(1) Dispatch of experts

1) Long-term experts:

- a. Animal Reproduction
- b. Artificial Insemination
- c. Livestock Extension
- d. Coordinator

Note: Coordinator may serve concurrently as an expert in one of the above-mentioned technical fields.

2) Short-term experts:

Short-term experts will be dispatched, when necessity arises, for the smooth implementation of the Project within the framework of the Project.

(2) Acceptance of counterpart personnel in Japan for training

Acceptance of counterpart personnel for training in Japan will be arranged during the cooperation period.

(3) Provision of machinery and equipment

The Government of Japan will provide such machinery, equipment and other materials (hereinafter referred to as "the Equipment") necessary for the implementation of the Project. The Equipment for the implementation of the Project will be provided within budgetary limitations.

(4) Dispatch of third-country experts and acceptance of counterpart personnel for training in the third countries

Dispatch of experts from third countries as well as acceptance of counterpart personnel for training in third countries will be considered upon request.

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(5) Dispatch of JOCV

JOCV will be dispatched in accordance with Exchange of Notes between Japanese government and Nicaraguan government

2. Measures to be taken by the Government of Nicaragua

The Government of Nicaragua will take necessary measures to ensure that the self-reliant operation of the Project will be sustained during and after the period of Japanese technical cooperation through full and active involvement in the Project of all related authorities, beneficiaries and institutions.

(1) Provision of land, buildings and facilities

- 1) Land, buildings and facilities necessary for the Project
- 2) Rooms and space necessary for installation and storage of the Equipment
- 3) Office space and necessary facilities for the Japanese experts
- 4) Electricity, water supply and necessary telecommunication facilities including telephone, facsimile and e-mail services
- 5) Other facilities mutually agreed upon, if necessary

(2) Assignment of counterpart personnel

A sufficient number of full-time counterpart personnel (at least three for each Japanese expert) and an appropriate number of part-time counterparts will be assigned to the Project.

In addition, the Nicaraguan counterparts who have received training in Japan and third countries as mentioned above will be continuously assigned to the MAG-FOR, IDR, UNA and INTA to ensure the sustainability of the Project activities. The tentative list of counterpart and other personnel is listed in ANNEX 10.

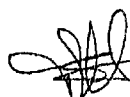
(3) Assignment of administrative and technical staff

A sufficient number of administrative and technical staff members will be assigned for the smooth implementation of the Project.

(4) Budget allocation

The Nicaraguan side will secure the budget for the following items and is expected to

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take necessary measure to ensure the self-reliant operation of the Project during and after the period of Japanese technical cooperation.

- 1) Expenses necessary for domestic transportation of the Equipment provided through JICA under the Project in the Republic of Nicaragua, as well as for installation, operation and maintenance.
- 2) Expenses necessary for customs, duties, internal taxes and other charges imposed on the Equipment provided through JICA under the Project in the Republic of Nicaragua.
- 3) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the Project, other than the Equipment provided through JICA under the Project.
- 4) All running expenses necessary for the Project.

(5) Coordination with related institutions

Cooperation and coordination with related partner organizations such as livestock organizations and NGOs will be maintained for smooth implementation of the Project.

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ANNEX 7

**CRITERIA FOR PROJECT APPRAISAL BY JAPANESE SIDE**

The ODA Projects of Japan should be carefully prepared in consideration of the following criteria.

(1) Consistency with the development priority of the Government of Nicaragua

The Project should be designed to directly contribute to the target in the National Development in the sector of livestock development.

(2) Contribution to clear and wide target group

The Project should be designed to deliver its achievements directly and / or indirectly to the beneficiary groups. The beneficiary groups should be carefully and clearly identified before the Project starts and they should be designated from wider range of people.

(3) Sustainability of the Project

The most important aims of the Japan's ODA is to support the self-reliant development efforts of Nicaragua. In the Record of Discussions (R/D), the fundamental agreement of the Project, it is clearly stated that the Government of Nicaragua will implement the Project in cooperation with the Government of Japan.

It is the principle of the Japan's Technical Cooperation Program that only the following expenses will be borne by the Government of Japan within the budget limitation, and all other necessary budget will be borne by the Government of Nicaragua:

- Service of Japanese experts,
- Training of personnel of Nicaragua and
- Provision of machinery, equipment and materials.

Therefore, the scale of the Project should be designed according to the financial capacity of the Nicaraguan side.

(4) Appropriateness of the technology to be dealt with

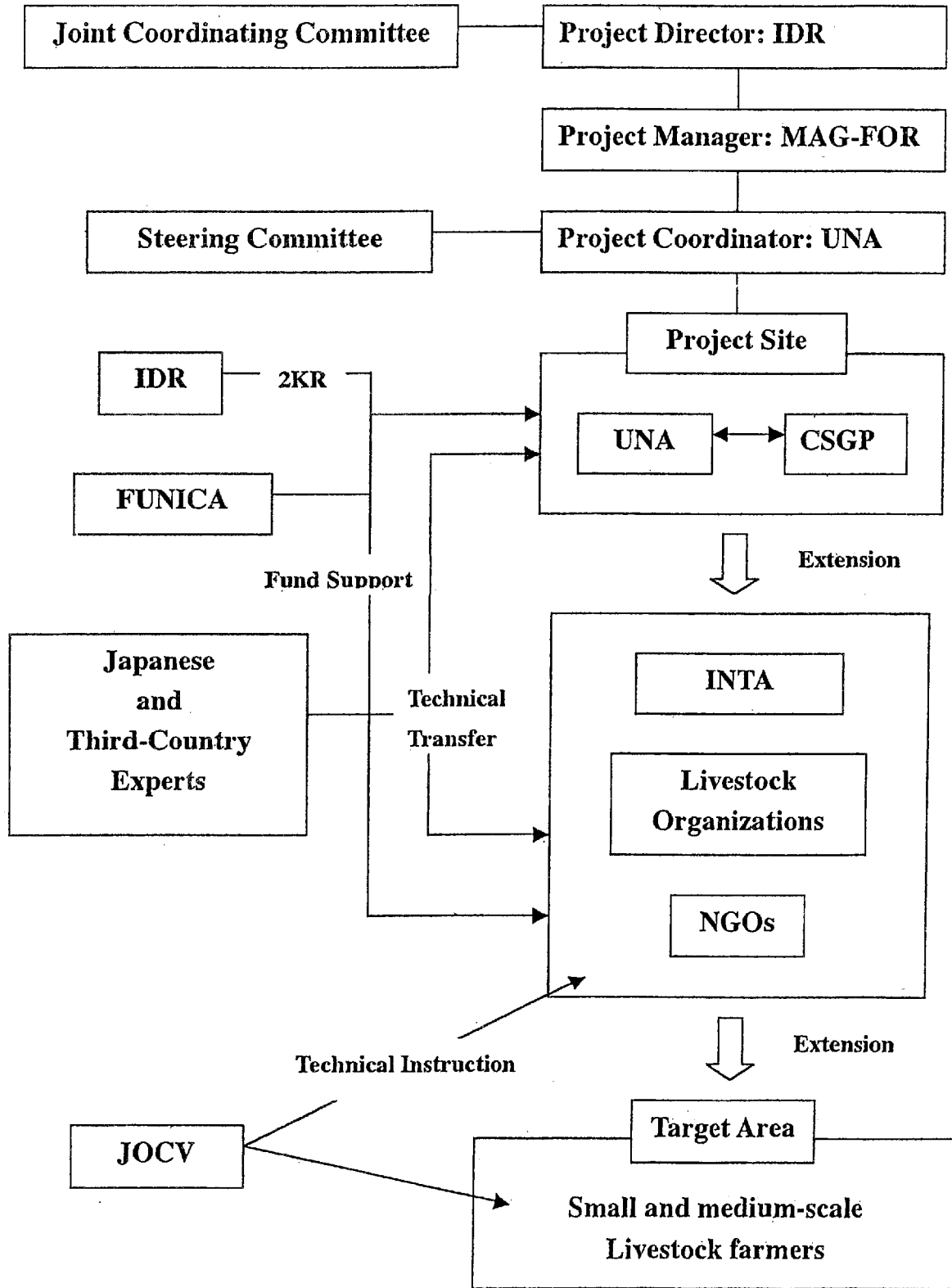
The Project should be designed with effectiveness and efficiency to deliver the maximum benefit to the target group from the limited input. The contents of the Project would be carefully prepared to suit with the use of the final target groups of the Project, and not to hunt for the latest technologies which are not appropriate to the target groups.

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ORGANIZATIONAL CHART OF THE PROJECT



eg

*[Handwritten signatures and initials]*



## ANNEX 9

### JOINT COORDINATING COMMITTEE

#### 1. FUNCTION

The Joint Coordinating Committee composed of those members as listed in 2 below will meet at least once a year and whenever the need arises.

- (1) To formulate the Annual Work Plan under the framework of the Record of Discussions
- (2) To review the overall progress of the technical cooperation program as well as achievement of the Annual Work Plan of the Project
- (3) To review those measures taken by the Government of Japan:
  - 1) Dispatch of Japanese experts
  - 2) Acceptance of Nicaraguan counterpart personnel in Japan and third countries for training
  - 3) Provision of machinery and equipment
- (4) To review those measures taken by the Government of Nicaragua:
  - 1) Allocation of necessary budget (including local cost expenditures)
  - 2) Allocation of necessary counterpart personnel
  - 3) Utilization and administration of machinery and equipment provided by the Government of Japan
- (5) To make recommendations to the respective Governments on:
  - 1) Budgetary matters
  - 2) Recruitment and appointment of Nicaraguan counterpart personnel
  - 3) Selection and effective utilization of machinery and equipment
  - 4) Appropriate dispatch of Japanese experts
  - 5) Acceptance of Nicaraguan counterpart personnel in Japan and third countries for training
- (6) Others

#### 2. COMMITTEE COMPOSITION

##### (1) Chairperson:

The Executive Director of IDR as the Project Director

##### (2) Members:

###### 1) Nicaragua side

a. The Vice-Minister of MAG-FOR as the Project Manager

- b. Director or Representative of MAG-FOR
- c. President of UNA
- d. Dean of Animal Science Faculty of UNA as the Project Coordinator
- e. Director or Representative of IDR
- f. Director or Representative of INTA
- g. Head or Representative of CSGP

2) Japanese side:

- a. Experts assigned to the Project
- b. Other Japanese experts and personnel concerned dispatched by JICA
- c. Resident Representative of JICA Nicaragua Office

Notes:

1. Officials of the Embassy of Japan may attend the Joint Coordinating Committee meeting as observers.
2. Persons who are nominated by the Chairperson may attend the Joint Coordinating Committee meeting.
3. Representatives of livestock organizations and NGOs may attend the Joint Coordinating Committee as observers.



## TENTATIVE LIST OF COUNTERPART AND OTHER PERSONNEL

No.	Counterpart/Field	Name	Position
1	Project Director	Sergio Narváez	Executive Director, IDR
2	Project Manager	Roberto Bendaña McEwan	Vice-Minister, MAG-FOR
3	Project Coordinator	Ariel Cajina	Dean, Faculty of Animal Science, UNA
4	Animal Reproduction	Rosita Rodriguez	Professor-Researcher, Veterinary Department, Animal Reproduction Area, UNA
5	Animal Reproduction	Luis Toribio	Professor-Researcher, Chief of Veterinary Department, Animal Reproduction Area, UNA
6	Animal Reproduction	Ronald Blandon	Professor-Researcher, Veterinary Department, Animal Health Area, UNA
7	Artificial Insemination		
8	Artificial Insemination		
9	Artificial Insemination		
10	Livestock Extension		MAG-FOR
11	Livestock Extension		IDR
12	Livestock Extension		INTA
13	Administrative staff		
14			
15			
16	Driver		
17			
18			
19	Other Necessary Supporting personnel		
20			
21			

PDM0

プロジェクト名： ニカラグア国牛優良種畜増殖普及計画（仮称）プロジェクト活動地域： 国立農科大学及び家畜繁殖センター対象地域： 中央・北部地域（アトランティコ・スール自治地域、マタガルバ県、ボアコ県、チョンタレス県）ターゲットグループ： 中小規模畜産生産者プロジェクト期間： 2003～2007年作成日： 2002年11月26日

プロジェクトの要約	指標	入手手段	外部条件
スーパーゴール ニカラグアの畜産生産量が増加する	2017年までにニカラグアの畜産生産量（乳製品・肉）がY%増加する	- 畜産生産物の統計	
上位目標 対象地域の畜産生産量が増加する	2012年までに対象地域の畜産生産量（乳製品・肉）がY%増加する	- 畜産生産物の統計	- 畜産製品の国内需給の条件が変動しない - プロジェクトの成果がニカラグアの他の地域へ普及される
プロジェクト目標 対象地域の中小規模生産者の優良種畜の飼育数が増加する	2007年までに対象地域の中小規模生産者がY頭の優良取畜を飼育している	- 関連機関の供与記録報告書 - 関連機関の供与記録報告書	- 生産者がプロジェクト内で供与された種畜を転売しない
成果 1. UNAにおいて受精卵移植技術を用いて優良種畜が生産される 2. CSGPにおいて優良凍結精液が製造され、人工受精技術者が養成される 3. 中小生産者が優良種畜の繁殖技術を身に付けている	1-1 2007年までにUNAで優良種畜の正常受精卵がY個採取される 1-2 2007年までにUNAで受精卵移植技術を用いて優良種畜から子牛がY頭出産される 2-1 2007年までにCSGPで優良種畜の凍結精液がY個生産される 2-2 2007年までにCSGPでY名が人工受精技術を習得している 3-1 2007年までに対象地域において人口受精率がY%となる 3-2 2007年までに対象地域のモデル中小規模生産者Y名が家畜繁殖技術を習得している	1-1 プロジェクト活動報告書 1-2 プロジェクト活動報告書  2-1 プロジェクト活動報告書 2-2 プロジェクト活動報告書 3-1 生産者のモニタリング報告書 3-2 生産者のモニタリング報告書	- ニカラグアで深刻な家畜の疫病が流行しない
活動	投入		- カウンターパート他関係者がプロジェクトに留まる - 大きな自然災害（地震、干ばつ、台風等）が生じない
1. 家畜繁殖 1.1 受精卵移植の実施 1.2 家畜繁殖障害（感染性、卵巣機能障害、栄養不良）の改善 1.3 牛改良増殖方針の策定 2. 家畜人工授精 2.1 凍結精液製造技術の改善 2.2 種畜の飼養管理技術の改善 2.3 人工授精技術者の研修の実施 3. 普及 3.1 畜産団体及び畜産農家を対象とする繁殖改善、飼養管理改善に関する研修の実施 3.2 牛の繁殖状況等の現況調査とモニタリングの実施 3.3 畜産団体、ブリーダー、NGO等による優良種畜の普及ルートの開発	日本側 1. 専門家派遣 1) 長期専門家 - 家畜繁殖 - 家畜人工授精 - 畜産普及/業務調整 2) 短期専門家（第三国専門家を含む） - 必要に応じて 2. 機材供与 3. カウンターパート研修（第三国研修を含む） 4. プロジェクト運営費 5. 青年海外協力隊派遣	ニカラグア側 1. カウンターパート及び要員の配置 - プロジェクト・ディレクター - プロジェクト・マネージャー - プロジェクト調整員 - カウンターパート - マネジメント人員 - 公用運転手 - 他、必要に応じた人員配置 2. 土地、建物、施設の提供 3. プロジェクト運営費（FUNICAや2KR見返り資金を含む）	前提条件 1. UNAとCSGPがプロジェクトで相互協力する 2. 畜産団体の協力が得られる 3. プロジェクト活動に十分な予算が充てられる

(略語) UNA: Universidad Nacional Agraria (国立農科大学)、CSGP: Centro de Servicio Genético Pecuário (家畜繁殖センター)、FUNICA: Fundación para el Desarrollo Agrícola, Ganadero y Forestal (農牧業開発基金)





平成14年10月25日

## FUNICAについて

田臥 彰三

1. FUNICA設立までの経緯：

1996から97年まで世銀は、INTA (Instituto Nacional de Tecnología Agropecuaria) に対し、その業務を民営化する目的から、技術支援のパイロット・プロジェクトの実施に資金提供を行った。1998年世銀が行った評価の中で、本プロジェクトはINTAが成功を取めたものの一つとして位置づけた。この為、同銀は、同パイロット・プロジェクトを全国レベルの本格案件として、更に資金提供を行うことを決定し、2000年7月24日ニカラグア政府と、開始後10年間の支払い免除条件付き40年借款で、IDA国際開発協会を通じ、23.6百万ドルの融資契約に署名した。尚、本プロジェクトは、農業調査、及び技術革新ネットワーク作りを目的としたものである。

その後、IFAD国際農業開発基金が、本プロジェクトの実施にあたり、10百万ドルの供与を行い、同様に、COSUDEスイス開発協力事業団も世銀を通じて4百万ドルの資金提供を行った。

これら資金に基づいて、各フェーズ4年間の4つのフェーズからなる合計で16年間の長期プログラム (PNTFTA Programa Nacional de Tecnología y de Formación Técnica Agropecuaria 農牧技術形成国家プログラム) が開始された。農牧技術プロジェクトPTA (Proyecto de Tecnología Agropecuaria) はPNTFTAの第1フェーズである。

同資金に基づいて設立されたものの中にFAITAN (Fondo de Apoyo a la Investigación Tecnológica Agropecuaria y Forestal de Nicaragua ニカラグア農林牧畜技術調査支援基金) とFAT (Fondo de Asistencia Técnica 技術援助基金) がある。これら2つの基金は当国の生産者の技術ニーズに応える為農業調査プロジェクトに対し資金提供を行う。両基金の資金は、中小規模の生産農家が研修や農業調査の結果にアクセスし易くする目的で融資される。また、持続的農業、及び彼らの農場を収益性の高いものとする目的の為に融資される。

世銀の助言に従い、これら基金を管理し、また資金提供したプログラムやプロジェクトが成果を上げることを担保させる目的で、独立法人の資格を持つFUNICAが設立された。FUNICAは、独立した評議会として機能し、農業生産者組織、大学、NGO、その他、農業調査、教育、研修を行う公的・私的機関の代表者によって構成される。

2. FUNICAの現状：

(1) 名称：FUNICA (Fundación para el Desarrollo Tecnológico Agropecuario y Forestal de Nicaragua ニカラグア農林業技術開発の為の財団基金)

同基金は、非政治的な非営利の市民組織で、法人格を持つ独立法人である。

(2) 目的：農牧林業分野における技術的な支援と技術移転、及び調査の促進、政策立案を目的としている。

(3) 組織：会員会議 (Asamblea de Socios) がFUNICAの最終意思決定を行う。第1回会議は2000年11月1日に開催され、以下の設立メンバーによって構成された。

- 公的機関 : MAGFOR、INTA、INATEC (職業訓練庁)
- 大学関係 : UNAN-MANAGUA、UNAN-LEON、UNA、UCA
- NGO団体 : CESADE、CEPAD、CIPRES
- 農牧業生産者組合 : UNAG、UPANIC、UNICAFE、ANPROSOR、ANAR、APENN
- その他 : ANIFODA、CIAN

FUNICAは、理事会を持つ。これは、会員会議のメンバー全員の直接投票により選出された。理事会は以下の構成となっている。

INTA : 理事長、UNAG : 副理事長、UNA : 総務担当理事、UNAN-LEON : 財務担当理事、MAGFOR : 首席理事、UNICAFE : 次席理事、CESADE : 第3理事、UPANIC : 第4理事、CIAN : 第5理事、UNAN-MANAGUA : 会計担当、UCA : 会計担当、INATEC : 会計担当。

FUNICA理事会は、企画、及び業務実施の為事務局を持つ。同事務局は、業務実施における資金の取扱については基金財団FAITAN、及びFATの支援を受けている。各財団には、調整員、プロジェクト・オフィサー、支援要員などが働いている。

2002年10月の時点でFUNICAは実質的な事務を行う職員が12名おり、以下のとおりの人員配置となっている。

- 事務局 : 4人 (事務長1名、評価・フォローアップ担当1名、広報担当1名、事務担当1名)
- FAITAN : 3人 (調整員1名、プロジェクト・オフィサー2名)
- FAT : 5人 (調整員1名、プロジェクト・オフィサー2名、評価・フォローアップ担当1名、事務員1名)

FUNICAが、農牧技術の普及の為にツールとして使うFAITAN、及びFATについて以下に簡単に記す。

### 3. FATの現状 :

FATは、中小規模の農牧業生産者の技術的需要と、市町村や国家的レベルでの技術支援の供給をより良い形で結びつけたり、容易にしたりする為のツールである。

FATの目的は、農業生産者の家族がニーズに合ったオファーに基づく技術支援のサービスを受けられるようにすることである。

FATは、5つの融資方針からなる総合的技術援助の考えに根拠を置く。生産者は、経営強化が望める技術支援のサービスを受ける目的で、この方針に一致させることになる。FATの融資方針は以下のとおり。

- (1) 組織の強化と促進に繋がるもの
- (2) 事前的な投資、及び特殊な調査を必要とするもの
- (3) 技術支援 (総合的、または特化した技術) を必要とするもの
- (4) 地方の能力強化に繋がるもの
- (5) 新技術採用を支援する小額投資

第1フェーズにおいて、FATが関わる地域は、チナンデーガ、レオン両県の北部の市町村、及びマナグァ県に在るサン・フランシスコ村である。



#### 案件の審査、承認、及び実施に係るメカニズム：

FATは提案される案件を受け付ける事務所（ORPs Oficina Receptores de Propuestas）を持っている。同事務所において、技術支援の提案書を提出したり、形成の為のプロセスについて情報を得ることができる。ORPsには一度提案書を受け付けられると、分析され、各レベルで判断基準が定められている3段階のレベルでの承認が用意されている。これは以下のとおり。

- 地方選考審査委員会（Comité de Selección y Adjudicación Local CSAL）は市町村レベルで開催され、5千ドル以下の額を承認する権限を有する。
- 地域選考審査委員会（Comité de Selección y Adjudicación Regional CSAR）はレオン市に在るFAT/FUNICA事務所において開催され、5千ドル以上1万5千ドル以下の額について承認する権限を有する。
- 技術評議委員会（Comité Técnica de Contratación de Consejo de Administración CTC）はFUNICAの事務所において開催され、1万5千ドル以上の額について承認の権限を有する。

提案書承認後は、直接生産者と技術サービスについての契約に取りかかり、本案の実施の手続きが開始される。サービスの提供者と生産者との間で契約書がサインされ、本契約書が成立した際は、融資の方針に従いFATの基準を適用しつつ、支払い手続きが行われる。

2002年10月までFATは技術支援提案書について1件も承認した経緯はない。FUNICA設立から2002年まで、FATは本基金の実施に必要な基盤整備を行ってきた。この間、2003年に実施が見込まれる提案書を接受したり、分析する過程にあったといえる。

#### 4. FAITANの現状：

FAITANは、事前に定められた目的を達成する為に技術的メリットを基にして選考審査した提案書の中から、入札に抛り融資資金を指定するメカニズムを持つ。融資資金は、配分された枠内で無償供与される。

FAITANは、採用・適用される調査プロジェクトの財政支援を目的として、3.7百万ドルが2001年から2004年までの期間の予算額として決められている。

FAITANは以下の枠組みにおいて入札を公示する。

- (1) 自由なテーマ調査プロジェクト
- (2) 調査の為に戦略的協調

自由なテーマの枠組みで提案されるプロジェクトは、以下について生産者が抱える問題を解決するようにならなければならない。

- (1) 生産分野
- (2) 自然資源の保護と対処の範囲
- (3) ポストハーベスト
- (4) 生産物への付加価値
- (5) 商業ベース化

このタイプのプロジェクトにおいては、地域、目的、テーマ、解決すべき問題点の選択

はすべて提案者に委ねられる。FAITANは、8万ドルを上限として総額の内75%までを融資する。

提案される自由なテーマプロジェクトの選考・評価プロセス：

上記プロセスは以下の2つのフェーズで実施される。1) 事前評価、2) 最終評価、協議、及び提案についての入札。調査提案の評価の為、農牧業、林業分野において国内または国際的に評判が高いプロのグループが居る。彼らの主要な役割は、技術的メリットによって融資すべきプロジェクトについて優先順位をつけたリストでもってFUNICAに推薦することである。

2001年FAITANは、50万ドルに及ぶ額で自由なテーマについての調査プロジェクトへの資金融資を承認した。審査されたプロジェクトは以下の通り。

No.	プロジェクト名	裨益機関名
1	松ゾウムシ防除の為の技術開発	エステリ農業学校
2	乾燥地域に於ける井戸の掘削技術	CESADE
3	持続的農業技術開発 (於サン・フランシスコ)	UNA
4	淡水エビ養殖技術 (於リオ・サン・ファン)	ACRA
5	アボカドの病虫害防除 (於ソレティナメ)	MUSAS

以上

24/09/02

BORRADOR

CONVENIO <sup>MAGFOR-IDR</sup>  
ENTRE EL MINISTERIO AGROPECUARIO Y FORESTAL  
(MAGFOR) Y EL INSTITUTO DE DESARROLLO RURAL (IDR)

CONSIDERANDO: <sup>基礎事項</sup>

1.- Que el Centro de Servicios Genético Pecuarios (CSGP), antes Centro Nacional de Mejoramiento Genético (CENAMEGE) que fue establecido en la Empresa Nacional de Inseminación de Reforma Agraria, al crearse el Ministerio de Agricultura y Ganadería (MAG) y posteriormente el Ministerio Agropecuario y Forestal (MAGFOR), pasó de manos del MIDA - INRA en forma sucesiva y sin solución de continuidad a estos Ministerios, por lo que el Ministerio Agropecuario y Forestal (MAGFOR) es el actual dueño de dicho centro. CSGP(旧CENAMEGE)は、既にMAGFORの手に移っている

2.- Que es interés prioritario del Gobierno de la República fomentar la ganadería de carne y leche, apoyando el desarrollo de conglomerados emergentes de las industrias cárnicas y lácteas. Nicaragua 政府は、肉と牛乳の畜産を奨励し、新しい肉用・乳用牛種を育成することの優先に関心を持っている。

2.- Que el IDR es el ejecutor de los principales proyectos ganaderos existentes en el país tales como: "Proyecto de Desarrollo Lechero", "Proyecto de Rehabilitación Arrocerá y Desarrollo Campesino" y "Proyecto de Repoblación Ganadera" y otros proyectos de apoyo a la producción agropecuaria, los cuales incluyen componentes de mejoramiento Genético e Inseminación Artificial en ganadería bovina y que además está en proceso el diseño del "Programa de Reconversión Competitiva de la Ganadería" (PRCGB). IDRは、肉用牛の育成と乳用牛の繁殖促進策である。このうち、肉用牛の育成は「肉用牛育成プロジェクト」、乳用牛の繁殖促進は「乳用牛繁殖プロジェクト」として、それぞれ、IAの枠組みで実施されている。また、肉用牛の繁殖促進策は「肉用牛繁殖促進プロジェクト」(PRCGB)として、現在設計中である。

3.- Que los terrenos en que están construidas las instalaciones del CSGP son propiedad del Banco Central de Nicaragua. CSGPの土地は、中央銀行の所有である。

Por tanto el Ministerio Agropecuario y Forestal (MAGFOR) y el Instituto de Desarrollo Rural (IDR) acuerdan en celebrar el siguiente:

CONVENIO: <sup>条項</sup>

1.- El MAGFOR, a partir de la firma de este Convenio delega en el IDR la administración y manejo del Centro de Servicios Genético Pecuarios (CSGP). Por tanto en el presente acto el MAGFOR hace entrega al IDR de: MAGFORはIDRにCSGPの管理・運営を委託し、(従ってIDRに引き継ぐ)

- a) Los inmuebles y equipos, en buen estado y funcionamiento, que se listan en el Anexo I que forma parte integral de este Convenio. 当該施設の設備等については、本協定の付録Iに記載されている。
- b) Las tierras propiedad del BCN que son utilizadas por el CSGP para las actividades que le son propias. (中央銀行の所有する土地をCSGPが利用しているもの)。
- c) Listado de personal con sus hojas de vida. 人員名簿とその履歴情報。

24/09/02

添付の設備・施設を"出さ"人員の"海"に"戻"す。IDRは下記を"受"ける。

2.- El IDR recibe en posesión y uso los bienes muebles e inmuebles del CSGP indicados en el Anexo I y el listado de personal señalado en el literal c) anterior, comprometiéndose a:

- a) Utilizar las instalaciones y equipos recibidos en los diferentes proyectos de mejoramiento genético, en forma apropiada y para los propósitos para los que fueron construidos o adquiridos. } 受け取った設備・施設を"と"して"目的"の"改善"改善のために"適切"に"利用"する。
- b) Continuar con los proyectos de Inseminación Artificial existentes en las diferentes regiones del país mejorando su desempeño y efectividad. } 現行のAIの"外"に"他"の"地域"で"効率"良く"実施"する。
- c) Manejar en buen estado los bienes y equipos recibidos dándole el mantenimiento adecuado a cada uno de ellos. } 受け取った設備・施設に"適切"な"メンテ"ンテ"ン"を行い、"良好"な"状態"に"維持"する。
- d) Apoyar los proyectos de Mejoramiento Genético e Inseminación Artificial que instituciones del Sector Privado desarrollen en el país. } 民間の"機関"が"国内"で"実施"する"改善"改善・AIの"外"に"支援"する。

3.- El MAGFOR faculta al IDR a realizar las mejoras que sean necesarias para el desarrollo del CSGP, ya sea con recursos propios o mediante convenios de cooperación con instituciones que den apoyo al mejoramiento genético bovino, tales como universidades y organismos gubernamentales y no gubernamentales, nacionales e internacionales, que ayudan a la producción agropecuaria del país. MAGFORはIDRに"付"き、IDRが"国内"海外の"大学"、"政府"機関、"NGO"等の"協力"を受け、又は"自己"で"CSGP"の"発展"に"必要"な"改善"を"行う"ことも"許可"する。

4.- El Periodo de validez de este Convenio será de diez años, prorrogables a conveniencia de las partes, a partir de la firma del mismo.

本協定の"有効"期間は"10年"です。"両者"の"合意"がある"限り"この"期間"を"延長"できます。En fe de lo cual firmamos el presente CONVENIO en dos tantos de un mismo tenor a los xxxxxx días del mes de Septiembre del año Dos mil dos.

Por el MAGFOR

Por el IDR

Ing. José Augusto Navarro  
天原

Ing. Sergio Narváez S.  
高橋