

Project on Improvement of Agricultural Extension  
System for Grain Production  
in the Republic of Cuba  
(SEGRANOS)

Terminal Evaluation Report

July 2022

Japan International Cooperation Agency (JICA)  
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**Project on Improvement of Agricultural Extension System for Grain  
Production in the Republic of Cuba  
(SEGRANOS)**

**Terminal Evaluation Report**

July 8<sup>th</sup>, 2022  
La Habana City

Joint Terminal Evaluation Team

## Table of Contents

List of Abbreviations .....	iii
1. Introduction .....	1
1-1. Background .....	1
1-2. Objectives of the Terminal Evaluation.....	1
1-3. Members of the Joint Evaluation Team .....	1
1-4. Schedule of the Terminal Evaluation.....	1
1-5. Outline of the Project .....	2
1-6. Methodology of the Terminal Evaluation .....	3
2. Achievement of the Project .....	4
2-1. Inputs.....	4
2-2. Achievement of the Outputs .....	5
2-3. Achievement of the Project Purpose .....	10
2-4. Implementation Process .....	12
3. Evaluation Results by Six Criteria .....	12
3-1. Relevance .....	12
3-2. Coherence.....	13
3-3. Effectiveness.....	15
3-4. Efficiency .....	15
3-5. Impact.....	17
3-6. Sustainability .....	18
3-7. Conclusion.....	20
4. Recommendations.....	20
4-1. Recommendations to the Government of Cuba.....	20
5. Lesson Learned.....	21
5-1. Lessons Learned to JICA .....	21

### Annexes:

1. Schedule of the Terminal Evaluation
2. Project Design Matrix
3. Plan of Operation
4. Evaluation Grid
5. Assignment of the JICA Experts
6. List of the Equipment
7. Assignment of the Personnel by the Cuban Side

## List of Abbreviations

Abbreviations	Spanish	English
EEUU	Estados Unidos	United States
EU	Unión Europea	European Union
EAIG	Empresa Agro Industrial de Granos	Public Company of Agro Industrial Grain
ETIG	Estación Territorial de Investigaciones del Granos	Territorial Station of Investigation of Grains
FAO	Organización de las Naciones Unidas para la Agricultura y la Alimentación	Food and Agriculture Organization of the United Nations
FIDA	Fondo Internacional de Desarrollo Agrícola	International Fund for Agricultural Development
FVC	Cadena de Valor Alimentaria	Food Value Chain
GAG	Grupo Empresarial Agrícola	Agricultural Public Company Group
ICT	Tecnologías de la información y la comunicación	Information Communication Technology
IIGRANOS	Instituto de Investigación de Granos Básicos	Institute of Investigation of Basic Grains
JICA	Agencia de Cooperación Internacional de Japón	Japan International Cooperation Agency
MINAG	Ministerio de la Agricultura	Ministry of Agriculture
MLC	Moneda Libremente Convertible	Freely Convertible Currency
PDM	Matriz de Diseño de Proyecto	Project Design Matrix
PO	Plan de Operación	Plan of Operation
SDC	Agencia Suiza para el Desarrollo y la Cooperación	Swiss Agency for Development and Cooperation
SEGRANOS	Proyecto para el Mejoramiento del Sistema de Extensioón Agrícola para la Produccioón de Granos Básicos en Cuba	Project on Improvement of Agricultural Extension System for Grain Production
UNDP	Programa de las Naciones Unidas para el Desarrollo	United Nations Development Program
USB	Bus de Serie Universal	Universal Serial Bus
VPN	Red Privada Virtual	Virtual Private Network

## 1. Introduction

### 1-1. Background

The Project on Improvement of Agricultural Extension System for Grain Production in the Republic of Cuba (hereinafter referred to as “the Project”) was launched in January 2017 under the Agreement on Technical Cooperation between the Government of Japan and the Government of Cuba. Since the Project has reached the end of the Project period, Japan International Cooperation Agency (hereinafter referred to as “JICA”) has determined to conduct a Terminal Evaluation to meet the following objectives.

### 1-2. Objectives of the Terminal Evaluation

The objectives of the Terminal Evaluation are as follows:

- (1) To verify the achievements of the Project referring to actual inputs, achievement of outputs, and the project purpose based on the Project Design Matrix (hereinafter referred to as “PDM”) and Plan of Operation (hereinafter referred to as “PO”), and to evaluate the Project based on the six evaluation criteria (Relevance, Coherence, Effectiveness, Efficiency, Impact, and Sustainability);
- (2) To make recommendations for the actions to be taken in the future; and
- (3) To sign the Minutes of Meetings by summarizing the points agreed upon among the project stakeholders of both Japanese and Cuban sides.

### 1-3. Members of the Joint Evaluation Team

The members of the Joint Terminal Evaluation Team (hereinafter referred to as “the Team”) are as follows;

Table 1-1 Members of the Joint Evaluation Team

Name	Role	Position/organization
Ohshima Ayumu	Leader	Deputy Director General, Economic Development Department, JICA
Mizobe Tetsuo	Agricultural Extension/ FVC	Professor, College of Biological Resources Sciences, Nihon University
Ichikawa Yoko	Evaluation Planning	Program Officer, Team 3, Agricultural and Rural Development Group 1, Economic Development Department, JICA
Noguchi Junko	Evaluation Analysis	Senior Researcher, Foundation for Advanced Studies on International Development
Yagi Yuko	Interpreter	Freelance interpreter.
Almenares Garlobo, Guillermo	Evaluation Analysis	Director, Institute of Investigations of Tropical Fruits

### 1-4. Schedule of the Terminal Evaluation

A series of meetings and discussions were held from 27<sup>th</sup> June to 7<sup>th</sup> July 2022 among the Cuban government authorities and organizations relevant to the implementation of the Project, members of the

Project, and the Team. The detailed schedule is shown in Annex 1.

## **1-5. Outline of the Project**

### **1-5-1. Background**

In the Republic of Cuba, limited food self-sufficiency was an issue, the Government of Cuba put priority to increase staple food production as its policy. In 2008, Decree-Law 259 of July 2008 and Decree-Law 300 of 2012 were introduced, which authorize the delivery of idle land in usufruct for food production. Taking advantage of the support from the government, the number of small-scale individual farmers drastically increased. Nevertheless, opportunities for individual farmers to obtain agricultural training and technologies were still limited. Furthermore, the extension system at the national level was not yet developed adequately. To increase agriculture production, it was essential to develop agriculture extension systems through technical training for farmers as well as Extension Officers to facilitate agricultural extension.

The Government of Japan has been cooperating with the Government of Cuba to increase rice production since 2003. The preceding project, "Project for Extension and Diffusion of Technologies for Certified Rice Seed Production in the Central Zone of Cuba" (2012-2016) aimed to increase certified seeds to increase rice production. Furthermore, the project has contributed to establishing an agriculture extension system in the target areas (Provinces of Cienfuegos, Villa Clara, Sancti Spiritus, Ciego de Ávila, and Camagüey) to strengthen the diffusion of certified seed production. In the project, the Institute of Investigation of Grains (hereinafter referred to as "IIGRANOS"), Territorial Stations of Investigations of Grains (hereinafter referred to as "ETIG"), and the Agro-industrial Public Corporation of Grains (hereinafter referred to as "EAIG") collaborated to organize a series of training for better seed production. Taking over the project, it was expected to extend its outputs to other areas of the country. Under this situation, the Government of Cuba requested the Government of Japan the technical cooperation for strengthening the agricultural extension system for basic grain production.

### **1-5-2. Summary of the Project**

The following is the summary of the Project described in the PDM ver. 5 revised in January 2022. PDM and PO are shown as Annexes 2 and 3, respectively.

Table 1-3 Summary of the Project

Duration of the Project	January 2017 to August 2022.
Counterpart Agency	MINAG <sup>1</sup> , GAG <sup>2</sup> , and IIGRANOS.
Target Group	IIGRANOS, technical staff of public corporations, and Farmer Extensionists of 8 provinces and Special Municipality of Especial Isla de la Juventud.

<sup>1</sup> Ministerio de la Agricultura.

<sup>2</sup> Grupo Empresarial de Agrícola.

Target Area	8 provinces (Piñar de Río, Matanzas, Cienfuegos, Villa Clara, Sancti Spíritus, Ciego de Ávila, Camaguey and Gramma), Special Municipality of Especial Isla de la Juventud, and IIGRANOS. 6 provinces as the impact area (Artemisa, Mayabeque, Holguín, Las Tunas, Santiago de Cuba, Guantánamo)
Overall Goal	The agricultural extension service for grain production is improved.
Project Purpose	The system for agricultural extension service for grain production is improved.
Outputs	<ol style="list-style-type: none"> <li>1. Capacity building for staff of IIGranos, extension staff (herein after referred to as “Extension Officer”) at ETIG, and UCTB<sup>3</sup> in INCA<sup>4</sup> and leading farmers on planning, managing and implementing agricultural extension service will be promoted.</li> <li>2. Tools and educational materials for agricultural extension service will be developed.</li> <li>3. The system on human resource development for agricultural extension will be formulated and examined.</li> </ol>

Note: These objectives and outputs are from the PDM attached to the Record of Discussions signed in September 2016. Since then, the English PDM has not been revised, while the Spanish PDM was revised five times.

In the terminal evaluation, the achievements are verified based on the latest version 5, in which Output 1 is set as “capacity building for staff of IIGranos, Extension Officers of ETIG, technical staff of EAIG and Farmers Extensionists on planning, managing and implementing agricultural extension service will be promoted.”

## 1-6. Methodology of the Terminal Evaluation

The Terminal Evaluation of the Project was conducted following JICA Project Evaluation Guideline. The definition of the six evaluation criteria is given below. The Project is evaluated by each criterion except impact, on a five-point scale (high – relatively high – fair – relatively low - low).

- Relevance: The extent to which the intervention objectives and design respond to beneficiaries, global, country, and partner/institution needs, policies, and priorities, and continue to do so if circumstances change.
- Coherence: The compatibility of the intervention with other interventions in a country, sector, or institution
- Effectiveness: The extent to which the intervention achieved, or is expected to achieve, its objectives, and its results, including any differential results across groups.
- Efficiency: The extent to which the intervention delivers, or is likely to deliver, results in an economic and timely way.
- Impact: The extent to which the intervention has generated or is expected to generate

<sup>3</sup> Unidad Científico Técnica de Base.

<sup>4</sup> Instituto Nacional de Ciencias Agrícolas.

significant positive or negative, intended or unintended, higher-level effects.

Sustainability: The extent to which the net benefits of the intervention continue, or are likely to continue.

The framework for the evaluation survey is shown in the Evaluation Grid (Annex 4). Data and information were collected through document reviews, questionnaires, interviews, and observations.

## **2. Achievement of the Project**

### **2-1. Inputs**

#### **2-1-1. Inputs by the Japanese Side**

##### **(1) Assignment of the Experts**

One Chief Advisor was dispatched on a long-time basis for three years (January 2017 to January 2020). Besides, 11 experts have been assigned during the Project period. Eight of them have been dispatched to Cuba on a short-time basis a total of 56 times. Due to the pandemic of COVID-19, travels were suspended from April 2020 to May 2021, and the experts were engaged in the activities remotely. Details are shown in Annex 5.

##### **(2) Training**

Four training courses in Japan were planned, and two courses were conducted in 2017 and 2019 because of the pandemic of COVID-19. Fifteen and 15 participated in these two training courses, respectively, and learned about the Japanese agricultural extension system, extension human resource development, strategic planning and evaluation, etc. The participants were from IIGRANOS, ETIGs, EAIGs, and GAG. As alternatives to the third and fourth courses, the in-country training was conducted after January 2022, and the third country training courses are to be carried out in Peru, Honduras, and Mexico from June to July 2022.

##### **(3) Provision of the Equipment**

Agricultural equipment was provided in 2018 and 2019, behind schedule, due to the budget shortage on the JICA side. Also, procurement of the equipment for VPN (Virtual Private Network) was planned and is to arrive in July 2022, behind schedule due to the procurement complexity in Cuba. Besides, office supplies and vehicles were provided. The list of the provided equipment is shown in Annex 6.

##### **(4) Project Operation Expenses**

Operational expenses for Experts' domestic travel and communication in the country, part of training operation costs, part of printing materials, and part of communication expenses for the counter personnel have been borne by the Japanese side.

#### **2-1-2. Inputs by the Cuban Side**



## (1) Counterpart Personnel

IIGRANOS has assigned a total of 12 counterpart personnel as the Project Director, Project Manager, members in charge of project coordination, training, agricultural extension, follow-up and monitoring, agricultural machinery, ICT design, etc. Also, IIGRANOS has assigned a total of 30 Extension Officers to cover 15 provinces. When they left their posts, new members were assigned but as of July 2022, there are 21 Extension Officers. The list of the counterpart personnel and the Extension Officers is attached as Annex 7.

## (2) Equipment and Operational Expenses

IIGRANOS covered part of the operating costs for the project office and provided vehicles including drivers and fuel. In addition, construction of the training building has begun, but is not yet complete. Also, other operational expenses, especially for Farmers Extensionists' meetings and training of ETIG Extension Officers and the printing of training materials were partially borne by IIGRANOS, such as the venue costs. Besides, the commuting and lunch expenses of JICA Experts have been borne by IIGRANOS.

## 2-2. Achievement of the Outputs

### 2-2-1. Output 1

Output 1 is set as “capacity building for staff of IIGranos, Extension Officers of ETIG, technical staff of EAIG and Farmers Extensionists on planning, managing and implementing agricultural extension service will be promoted.” As shown in the following table, most indicators have been “achieved” or “mostly achieved.” The extension system introduced by the Project has included personnel who manage the system (Indicator 1-1), PDCA of extension services (Indicator 1-2), Farmer Extensionists as key extension agents (Indicator 1-4), linkage with the research (Indicator 1-6), collaboration with other research institutes (Indicator 1-7), and evaluation system of Extension Officers (Indicator 1-8). On the other hand, trial results and good practices need to be managed in an organized manner (Indicators 1-3, 1-5, and 1-7). Therefore, it is judged that Output 1 is “mostly achieved.”

“

Table 2-1 Achievement of the Output 1

Indicators	Achievement
1-1. Number of people trained in Japan (60prs).	Mostly Achieved. <ul style="list-style-type: none"><li>● A total of 29 Extension Officers and related personnel participated in the training courses in Japan in 2017 and 2019.</li><li>● Instead of training in Japan, in-country training (webinar and online exercises) started after February 2022 every month for 30 Extension Officers and technicians of ETIGs on average. Also, three participated in the third-country training, 2 in Peru 3 in Honduras. Eight more will participate in the training in Mexico in July 2022.</li></ul>
1-2. Guidelines and activity plans for	Mostly achieved.

<p>agricultural extension are developed, implemented and reviewed in IIGranos.</p>	<ul style="list-style-type: none"> <li>● As the “Plan for Strengthening of the Agricultural Extension System,” the Five-year Plan (2017-2021) was developed in 2017. The plan was not revised in 2022, and the next Five-year Plan (2023-2027) has been under formulation.</li> <li>● Based on the Five-year plan, IIGRANOS developed the annual operational plan in 2018 and incorporated the plan into the annual plan of IIGRANOS after 2019.</li> <li>● Each Extension Officer developed the annual work plan and reported it to IIGRANOS headquarters on monthly basis. The Extension Officers have also reported their activities of the previous year in the annual certification training and received feedback from the provincial coordinator of IIGRANOS.</li> <li>● The “Policy for Agricultural Extension” was developed based on the Project experience and approved officially by the Ministry of Agriculture (hereinafter referred to as “MINAG”) in 2020.</li> </ul>
<p>1-3. The agricultural extension system/structure of each province is established, and the results of the activities (more than 3 good examples for each province).</p>	<p>Mostly achieved.</p> <ul style="list-style-type: none"> <li>● Successful activities of the Farmer Extensionists have been reported by the Extension Officers, but the information has not been collected and organized in a uniform manner by province.</li> </ul>
<p>1-4. List and number of Farmer Extensionists belonging to the agreement with IIGranos (more than 300).</p>	<p>Achieved.</p> <ul style="list-style-type: none"> <li>● As of July 2022, a total of 425 Farmer Extensionists agreed with IIGRANOS and their information has been managed in the mapping database.</li> </ul>
<p>1-5. The list and number of demonstration plots are established (more than 3 good practice per province).</p>	<p>Achieved.</p> <ul style="list-style-type: none"> <li>● One to three good practices on the activities in the demonstration plots of each province have been shared through Social Networking Service (hereinafter referred to as “SNS”).</li> <li>● The list of the demonstration plots was developed.</li> </ul>
<p>1-6. Linkage between agricultural extension and research is systematized.</p>	<p>Mostly achieved.</p> <ul style="list-style-type: none"> <li>● The concept of the collaboration between agricultural extension and research was developed by 2021.</li> <li>● The newsletter "Agricultural Extension Newsletter" has been published by IIGRANOS to share information from the field to research and research results to the field every three months.</li> </ul>
<p>1-7. Results and examples of collaborative activities with other agricultural institutions (more than 5 examples).</p>	<p>Achieved.</p> <ul style="list-style-type: none"> <li>● The extension experience was shared with the Research Institute of Sugarcane in 2018.</li> <li>● The Project’s activities, agricultural extension system, and the role of Extension Officers were shared with technicians of the Pasture and Forage Research Institute in 2019.</li> </ul>

	<ul style="list-style-type: none"> <li>● The Project’s experience in agricultural extension was shared with the Pork Research Institute and the Honey Research Institute in 2019.</li> </ul>
1-8. The performance evaluation of extension staff.	<p>Achieved.</p> <ul style="list-style-type: none"> <li>● The outline of the performance evaluation of Extension Officers was reviewed in 2019 and the trial of considering the performance for salary assessment was started in 2020.</li> </ul>

Note: The English PDM was developed during the formulation of the Project but has been left unrevised when the Spanish version was revised during the implementation of the Project. In the terminal evaluation, the translation of the latest version of Spanish PDM is used.

Through the activities for Output 1, the framework and institutional setting for the agricultural extension services have been developed, including the following remarkable results.

**(1) Development of the implementation system of the agricultural extension for diffusing**

In this system, the responsible agents and their respective roles are identified for conveying necessary information and techniques to farmers. Specifically, the Development and the Extension Department of IIGRANOS headquarters and Extension Officers of ETIGs collaborate with the Farmer Extensionists and technical staff of EAIG to support farmers. This system has fit the Cuban production structure in which the public corporations supervise farmers’ associations and cooperatives and the Farmer Extensionists are selected from these associations and cooperatives.

**(2) PDCA of the agricultural extension plan**

The “Plan for Strengthening of the Agricultural Extension System” (2017-2021) was developed in 2017, based on which IIGRANOS and Extension Officers have developed the annual plan. The Extension Officers have implemented their activities and reported to IIGRANOS headquarters every month. They have received feedback in the annual training for improving the activities for the next year. Thus, agricultural extension services have been provided in the PDCA cycle.

**(3) Establishment of roles of “Farmer Extensionists”**

The Farmers Extensionists were newly introduced by the Project, based on the preceding project’s experience of “leader farmers.” IIGRANOS has selected Farmer Extensionists and exchanged the agreement for collaboration. In this system, Farmer Extensionists have the advantage of getting the latest information related to grain production, receiving technical training and some agricultural inputs, etc. As well, IIGRANOS has had the merits of expanding its extension services to more farmers, understanding the farmers’ issues, utilizing the farmers’ fields as demonstration plots, having communication routes with individual farmers, etc. First, 59 Farmer Extensionists were selected in July 2017, and as of May 2022, the number increased to 425 (250 in eight target provinces and Isla de la Juventud and 175 in six impact provinces). The data of the Farmer Extensionists have been managed through the software “google my map.”

**(4) Development of the draft concept of the linkage between the agricultural extension and research**

The concept has been developed based on the learning from visiting to Mexico, to systematize extension services based on the research results. Key stakeholders are proposed in the three units, namely, the research platform, demonstration modules, and extension fields. In this linkage system, agricultural techniques are to be examined, demonstrated, and diffused to farmers, and the feedback is given from the fields to the research platform. The concept has been planned to be implemented on a trial basis from September 2022.

**(5) Analysis of the extension network**

Besides the mapping database of the Farmer Extensionists, the impact of extension networking has been analyzed with the support of the Autonomous University of Chapingo, Mexico. Using data of about 360 Farmer Extensionists, the following has been analyzed: a) factors of the productivity increase, b) factors of network expansion, c) factors of adaptation of extended techniques, etc. The analysis results would be utilized to improve the extension system and be reflected in the training.

**2-2-2. Output 2**

Output 2 is set as “tools and educational materials for agricultural extension service will be developed.” As shown in the following table, both of the set indicators were “achieved;” various materials for extension services were developed (Indicator 2-1), and agricultural equipment has been utilized for training and extension purposes (Indicator 2-2). Output 2 is considered to have been “achieved.”

Table 2-2 Achievement of the Output 2

Indicators	Achievement
2-1. Manuals and other materials for agricultural extension will be revised, updated and prepared (more than 5 varieties in each year at headquarters and IIGranos stations).	Achieved. <ul style="list-style-type: none"><li>● Manuals and materials for extension activities were developed every year, as follows:<ul style="list-style-type: none"><li>- 23 posters, leaflets, and calendar in 2018.</li><li>- 14 posters, leaflets calendar in 2019.</li><li>- 13 posters and manuals in 2020.</li><li>- 20 posters, manuals, catalogues, pamphlets, calendar materials, and video in 2021.</li><li>- 1 guidebook for Extension Officers in 2022 as planned.</li></ul></li></ul>
2-2. Tools (machinery and equipment) supplied by the project are assigned to the offices or departments related to agricultural extension and are adequately in use for agricultural extension activities.	Achieved. <ul style="list-style-type: none"><li>● Agricultural equipment (vehicles, motorbikes, agricultural machinery, photocopy machines, etc.) was installed at IIGRANOS headquarters and ETIGs and have been utilized for training and preparation of demonstration plots at ETIGs.</li></ul>

Note: The English PDM was developed during the formulation of the Project but has been left unrevised when the

Spanish version was revised during the implementation of the Project. In the terminal evaluation, the translation of the latest version of Spanish PDM is used.

Interestingly, until 2019, the Internet was not widely available as well as some of the teaching materials, especially reference materials, were stored on USB memory sticks and distributed to Extension Officers and Farmers Extensionists. After late 2019, video materials for self-paced distance training were developed as the Internet began to spread and due to the COVID-19 pandemic as well.

### 2-2-3. Output 3

Output 3 is set as “the system on human resource development for agricultural extension will be formulated and examined.” As shown in the following table, all indicators have been “achieved.” Specifically, the concept, plan, and materials of the human resource development and performance evaluation system of the Extension Officers were developed (Indicator 3-1, 3-2, 3-3, and 3-5), and accordingly, technical staff were trained (Indicator 3-4). Therefore, Output 3 is considered to be “achieved.”

Table 2-3 Achievement of the Output 3

Indicators	Achievement
3-1. Creation of the training system for the formation of human resources for agricultural extension.	Achieved. <ul style="list-style-type: none"> <li>The training system has been developed based on the experience of training for Extension Officers and EAIG technical staff and integrated into the next “Plan for Strengthening of the Agricultural Extension System.”</li> </ul>
3-2. Training materials for the agricultural extension.	Achieved. <ul style="list-style-type: none"> <li>The handbook for Extension Officers was developed in 2022.</li> </ul>
3-3. Mid- and long-term plans for the human resources development (training) of human resources.	Achieved. <ul style="list-style-type: none"> <li>The “Mid- and Long-term Plan for Extension Personnel” was drafted to be integrated into the next “Plan for Strengthening of the Agricultural Extension System.”</li> </ul>
3-4. Number of extension personnel who received training (120prs).	Achieved. <ul style="list-style-type: none"> <li>A total of 122 Extension Officers were trained from 2018 to 2022.</li> <li>A total of 241 technical staff of EAIG were trained at the department level in 2019.</li> </ul>
3-5. Evaluation system (training) of human resources	Achieved. <ul style="list-style-type: none"> <li>The outline of the performance evaluation of Extension Officers was reviewed in 2019 and the trial of reflecting the performance in salary assessment was started in 2020. It is part of the system for human development which would be integrated into the revised “Plan for Strengthening of the Agricultural Extension System.”</li> </ul>

Note: The English PDM was developed during the formulation of the Project but has been left unrevised when the Spanish version was revised during the implementation of the Project. In the terminal evaluation, the translation of the latest version of Spanish PDM is used.

Output 3 is related to capacity building system at the individual and organization levels, while the institutional setting and framework have been established through the Output 1 activities. Various training courses were implemented as follows.

Table 2-4 Training of the extension-related personnel

Year	Target	Major theme
2017	IIGRANOS (CP), ETIG (Director, Extension Officers)	Extension system, training system for the extension personnel [Japan]
2017	ETIG (Extension Officers)	Exchange of extension experiences, networking
2018	IIGRANOS (CP), ETIG (Director, Extension Officers), EAIG (extension personnel)	Extension system, training system for the extension personnel [Japan]
2018	ETIG (Extension Officers)	Exchange of extension experiences, networking
2019	EAIG (extension personnel)	
2019	ETIG (Extension Officers)	Exchange of extension experiences, networking
2019		Use of agricultural machinery
2020	ETIG (Extension Officers)	Exchange of extension experiences, networking
2020		Use of agricultural machinery
2021	ETIG (Extension Officers)	Exchange of extension experiences, networking
2021	IIGRANOS (HQs personnel) ETIG, GAG	Impact analysis of the extension (Chapingo University) [mexico]
2021	IIGRANOS (HQs personnel), ETIG	Extension-investigation linkage, maize cultivation (CIMMYT) [online]
2021	IIGRANOS (HQs personnel), GAG	Frijol cultivation, extension [online]
2021	IIGRANOS (HQs personnel), ETIG (Extension Officers), GAG	Online training
2022	IIGRANOS (HQs personnel)	Maize cultivation (participation in the international conference) [Peru]
2022	IIGRANOS (HQs personnel)	Impact analysis of the extension (Chapingo University) [Mexico]
2022	IIGRANOS (HQs personnel)	Frijol cultivation [Honduras]
2022	IIGRANOS (HQs personnel)	Frijol cultivation
2022	IIGRANOS (HQs personnel), GAG	Impact analysis of the extension (Chapingo University)

### 2-3. Achievement of the Project Purpose

The Project Purpose is set as “the system for agricultural extension service for grain production is improved.” Cycles for extension service (plan-implementation-review-feedback) have been repeated, and

capacity building was conducted for the extension personnel. The agricultural extension service as a system has been newly introduced to farmers, although the update of the Five-year Plan has been delayed. Therefore, it can be judged that the Project Purpose has been “mostly achieved.”

Table 2-5 Achievement of the Project Purpose

Indicator	Achievement
1. Policies, guidelines and plans on agricultural extension activities are being used on a continuous basis.	<p>Mostly achieved.</p> <ul style="list-style-type: none"> <li>● As the “Plan for Strengthening of the Agricultural Extension System,” the Five-year Plan (2017-2021) was developed in 2017. The next Five-year Plan is in the process of updating within July 2022.</li> <li>● Based on the Five-year Plan, IIGRANOS and each Extension Officer have developed the annual operational plan. The Extension Officers have carried out their activities based on the plan.</li> </ul>
2. Number of events - frequency of trainings of human resources according to the mechanism of human resource development established (created) for agricultural extension (3 events/year).	<p>Achieved.</p> <ul style="list-style-type: none"> <li>● Training for Extension Officers has been conducted by IIGRANOS and ETIGs in 2018, 2019, 2020, and 2022, while the one in 2021 was canceled due to Covid-19 Pandemic.</li> <li>● Training for the technical staff of EAIG was conducted in 2019 at the provincial level.</li> <li>● Training for Farmer Extensionists has been conducted in 2017, 2018, 2019, 2020, and 2021 through the meetings.</li> </ul>

In the developed extension system, farmers have received extension services from Extension Officers of ETIG, technical staff of EAIG, and Farmer Extensionists. Functions of ETIG include training of farmers in collaboration with Farmer Extensionists, verification and diffusion of new varieties in the demonstration plots, and distribution of materials to farmers. As they visit the farmers’ field almost every day and meet each farmer each week, farmers have opportunities to get advice from the ETIG Extensionist. Farmers sometimes consult with the ETIG Extensionist by phone. The extension personnel of EAIG also have frequent opportunities to meet farmers and give consultations, as well. Since the Extensionists of ETIG and the technical staff of EAIG support farmers in the same area, they communicate with each other and visit farmers together to save the transport cost. Farmer Extensionists convey to neighborhood farmers the knowledge and information which they received from the Extension Officers or through Farmer Extensionists’ meetings. By showing the new varieties or cultivation techniques in their field, neighborhood farmers can directly observe and learn from the Farmer Extensionists. Conversation on the street or in the field is also an important extension channel. As the extension system has been built on the long-time relationship among ETIG, EAIG, farmers’ organizations, and farmers, extension services are provided in various and flexible ways depending on each area’s situation.

As supplemental information, activities of Extension Officers of ETIG include home visits, seminars and other events in the farmers' organization, field demonstration, provision of materials, and information dissemination on radio, TV, and SNS such as Facebook and Youtube. Extension contents are related to appropriate varieties, appropriate seeds and fertilizers, cultivation infrastructure, cultivation technology, post-harvest, and food production. Also, the information not directly related to the cultivation technology, such as agricultural finance, insurance, and value chain are included. Receiving this information, Farmer Extensionists carried out 3,045 extension activities (1,908 in target provinces and Isla de la Juventud and 1,137 in impact provinces) in 2021, from which 22,150 individual farmers benefited (15,105 in target provinces and Isla de la Juventud and 7,045 in impact provinces).

## **2-4. Implementation Process**

### **2-4-1. Cuban Commitment to the Project**

#### **(1) IIGRANOS' initiative for strengthening the extension services nationwide**

Although the Project originally targeted eight provinces and one special municipality, IIGRANOS has taken initiatives to implement activities such as selection and capacity building of Farmer Extensionists and training of Extension Officers in the rest of the provinces from the beginning of the Project period as the impact area. IIGRANOS took advantage of some activities of the Project, but the expenses for activities in these provinces were covered by IIGRANOS. IIGRANOS has shown its intention and strong commitment to continue to strengthen the extension service nationwide as a system, not only limited to the duration of the Project.

### **2-4-2. Project Management**

#### **(1) Response to the pandemic of COVID-19**

The Project has been affected in many ways by the pandemic of COVID-19. Due to restrictions on movement to prevent infection, the travel of JICA experts, as well as the movement of the Cuban counterpart personnel in the country, were severely limited or suspended until June 2021. Also, Cuban counterparts needed to work from home for a certain period. Under these conditions, although communication among the Project counterparts was somehow continued, some activities were delayed and modified. Particularly, training, that had been conducted face to face needed to be conducted online. On the other hand, it can be said that this was an effective shift in terms of not only preventing infection but also reducing travel costs and utilizing the Internet.

## **3. Evaluation Results by Six Criteria**

### **3-1. Relevance**

#### **3-1-1. Relevance with the Cuban Development Policies**

The "National Economic and Social Development Plan until 2030: Proposals for the Nation's Vision,



Strategic Economic Axes and Sectors", proposes a strategy to increase production, productivity, competitiveness, and environmental and financial sustainability of agrifood production chains, to contribute to food security, take advantage of export potential, increase efficient import substitution, and generate jobs and income, particularly for the rural population. Also, the "Economic and Social Policy Guidelines of the Communist Party and Revolution" presented in 2011 set forth, as one of the objectives, an increase in grain production to reduce food imports. In the "Socioeconomic Policy Direction (2016-2021)," the need to promote agricultural technology extension (Article 158) was mentioned for the first time, along with the need to increase the production of rice, and frijoles beans, and corn (Article 169). The succeeding policy for the period 2021-2025 identifies agricultural insurance and nutrition as new issues in the agricultural sector, of which the information should be diffused to farmers. The Project aimed at strengthening the agricultural extension system to support individual farmers' production, which has been consistent with the mentioned policies in Cuba.

### **3-1-2. Relevance with the Cuban Development Needs**

From the perspective of food security, the Government of Cuba has implemented various measures to enhance domestic food production, especially grain production. It has shifted from large-scale collective agricultural production centered on state-owned farms to relatively small-scale production by individual farmers and cooperatives. In addition, efforts have been made to increase the number of new farmers. There has been an urgent need to extend appropriate agricultural technology to these individual farmers. In recent years, Cuba has faced economic difficulties as adverse effects of the COVID-19 pandemic and the US blockade, which led to the lack of agricultural inputs and low planting. This has resulted in a lower production of basic grains, according to the Food and Agriculture Organization of the United Nations (FAO). Thus, the Project has been relevant to Cuban development needs.

### **3-1-3. Appropriateness of the Project Approach**

As described in 2-3, the Project has changed approaches to respond to the pandemic of COVID-19, such as strengthening online training and the change from training in Japan to third-country training. These responses have been appropriate, as they have led to the achievement of the Outputs and the Project Purpose mostly as originally expected, although it needed a little more time than planned.

Regarding the benefits for farmers, no issue related to equity in gender or production scale has been identified since the formulation stage of the Project period. Since all farmers belong to any cooperative or unit, the extension service could reach them as long as an Extensionist Farmer has been selected from the group.

In light of the above, the relevance is high.

## **3-2. Coherence**

### **3-2-1. Relevance with Japan's Assistance Policy**

In the "Country Assistance Policy to the Republic of Cuba" (April 2014), "agricultural development" was set as one of the priority areas, and its goal was to expand agricultural production to improve food self-sufficiency. "Agricultural development" has been one of the priority areas in the succeeding "Country Assistance Policy to the Republic of Cuba" (September 2018), aiming at increasing the productivity of diverse food products including rice. Thus, the Project to improve the extension service which contributes to an increase in grain production has been relevant to Japan's assistance policy.

### **3-2-2. Collaboration/coordination with Japan's other intervention**

JICA has supported rice production in Cuba since 2003, implementing four technical cooperation projects including this Project and a grant aid project. The Project was planned based on the results of the preceding "Project for Extension and Diffusion of Technologies for Certified Rice Seed Production in the Central Zone of Cuba (2012-2016)". The Project has been positioned in the Cooperation Program "Increasing Food production" of JICA Cuba, together with the grant aid, "Project for Improvement of Agricultural Machinery Advances in Rice Seeds Production Techniques" (2017), and others. The grant aid project aimed at boosting the production of quality rice seeds production which was strengthened by the prior project, for increasing rice production. To further promote the use of the procured equipment, training on the use of rice transplanters was conducted and operational manuals were developed by the Project, and actually, the equipment has been used in the demonstration area and rented to farmers. Thus, the Project has been aligned with other JICA projects for grain production mainly rice as the common goal.

### **3-2-3. Collaboration/coordination with other development partners' intervention**

The Project started the discussion with other international cooperation projects which supported the grain production value chain early on to explore the collaboration. The Project and these partners had commonalities in the activity areas and target crops and shared common goals of increased production and farmer support. Firstly, the extension system developed by the Project has been shared with the cooperation of the Government of Vietnam which aims at increasing rice production. Since the two projects have shared some common target provinces, IIGRANOS provides training in rice production technology to the coordinators assigned to the state-owned companies to generate synergy effects. Another example is that the Extensionist trained by the Project was invited to give a lecture in technical training for corn production of the "Project of Rural Cooperative Development in the Eastern Region" (2013-2021) funded by the International Fund for Agricultural Development (IFAD). As the two projects have been implemented in the same province and shared experiences in the cultivation of frijol and maize.

It also relates to the AGROCADENAS project (2014-2020), which was implemented by MINAG and the United Nations Development Program (UNDP), with the financial contribution of the European Union (EU) and the Swiss Agency for Development and Cooperation (SDC). This project was carried out in 13 municipalities in four provinces in the central and eastern regions of the country, to support the

improvement of the management and performance of agrifood chains, including corn and beans, to contribute to import substitution. It included the assembly of a grain processing and packing plant located in the Project's target areas.

In light of the above, the coherence is high.

### **3-3. Effectiveness**

#### **3-3-1. Achievement of the Project Purpose**

As mentioned in 2-3, the Project Purpose has been mostly achieved.

#### **3-3-2. Contribution of the Project Outputs to Achievement of the Project Purpose**

Before the Project, there was no officially established extension system or no position for Farmer Extensionist. Through the Project activities, the structured extension system has been introduced. The key actors and their collaborative functions have been identified, the PDCA cycle of extension services has been tried, and the personnel who manage the system and cycle were trained. These efforts have strengthened the institutional and human capacity for promoting extension services (Output 1). Manuals and other informative materials necessary for training and extension services were developed (Output 2). Through a series of capacity-building activities, the system for human resource development for the agricultural extension has been introduced (Output 3). As these Outputs (human, material, and institutional framework) are essential components of extending agricultural information to farmers, it can be considered that these Outputs have contributed to the achievement of the Project Purpose.

#### **3-3-3. Factors that Influenced Achievement of the Project Purpose**

External factors which could be risks to achieving the Project Purpose had not been identified, and no such factor has not arisen.

In light of the above, the Project Purpose has been mostly achieved through Outputs. Therefore, the Project effectiveness is relatively high.

### **3-4. Efficiency**

#### **3-4-1. Achievement of the Outputs**

As explained in 2-2, all of the Outputs have been mostly achieved.

#### **3-4-2. Inputs by the Japanese Side**

The following inputs were delayed or changed, some of which partially affected the project activities and Outputs. First, the provision of some agricultural equipment to prepare the demonstration plots was delayed for one to two years, thus the demonstration work for the extension was delayed. Second, equipment

and computers for VPN (Virtual Private Network) connection have been delayed due to the complexity of the procurement logistics, and the installment is expected in the last moment of the Project. No activity with this equipment could be carried out. However, this has not directly affected the training activities, as the online training or webinar has been somehow conducted with the usual internet connection. Third, the third and fourth training courses in Japan could not be implemented due to the pandemic of COVID-19, and these were converted to third-country training courses on the necessary topics after the pandemic subsided. Fourth, JICA experts' dispatch was suspended because of the travel restrictions under the pandemic of COVID-19 from April 2020 to June 2021. During this period, communication with the Cuban members was continued and activities were carried out remotely. It is also because the Cuban members had travel restrictions in the country. Some activities, especially the development of the linkage model between research and extension were delayed and negatively affected the achievement of Output 1. Other inputs have been made mostly as planned.

### **3-4-3. Inputs by the Cuban Side**

As the counterpart expectations from the management have been assigned as almost full-time members. This has resulted in efficient activity implementation. Resources have been utilized efficiently, as the Extensionist of ETIG and the technical staff of EAIG have visited farmers together by traveling in the same vehicle to save the transport cost, as an example.

One delayed input is the construction of the training facility, because of the shortage of budget and construction materials and the belated work of the construction company, the project office had to be set in another place without Wi-Fi internet access.

### **3-4-4. Project period**

It was originally planned that the Project would be implemented for five years. During the pandemic period of COVID-19, Japanese members could not travel to Cuba for 14 months, and also Cuban members had limitations in commuting to the office and traveling to other provinces. Therefore, some activities were delayed. Thus, the Project has been extended for six months.

### **3-4-5. Factors which Influenced Achievement of the Outputs**

As explained above, delay of some procurement has affected activity implementation and slightly the achievement of Outputs. This was mainly because of the pandemic of COVID-19. Another factor was Cuba's unique logistics situation.

Most of the outputs have been achieved as expected with the appropriate use of the inputs, although some inputs were delayed or changed. The Project period exceeded the original plan. Overall, the efficiency of the Project is relatively high.

### **3-5. Impact**

#### **3-5-1. Prospect of the Achievement of the Overall Goal**

The Overall Goal is set as “the agricultural extension service for grain production is improved.” If the agricultural extension system is sustained, it is expected that farmers will utilize the extended knowledge and techniques. The result of the extension network analysis shows that 95%, 75%, 67%, 57% and 50% of the surveyed farmers have applied the learned technologies such as variety, fertilization, biological methods, transplanting, and regrowth. Also, in the Terminal Evaluation, some positive changes in the farmers’ attitude were reported by Farmers Extensionists. As an example, they have become more active in getting new knowledge and skills including new varieties, some have got to feel the need to change the cultivation methods, and some have got to believe in science more than before. However, it is too early to strictly verify the prospect of achievement of the Overall Goal as the result of the improved extension system at this moment.

A possible external factor for the achievement of the Overall Goal is the lack of agricultural inputs (seeds, fertilizer, etc.) caused by the severely deteriorating economic situation in the country. This might affect the cultivation activities at the uncontrollable scale by the Project.

#### **3-5-2. Other Impacts**

##### **(1) Reflection of the Project Output into the policy**

MINAG recognized the importance of the agricultural extension, which has been probably brought by the Project efforts of inviting them to some activities including the Farmer Extensionists’ meetings. Since MINAG did not have a section responsible for the extension, it directed the IIGRANOS to prepare a draft policy on the extension. Thus, the IIGRANOS developed the “Policy for Agricultural Extension.” The responsible of MINAG discussed and finalized it, and it got approval from MINAG in 2020. Subsequently, this document was presented to the President of the Republic during a meeting with scientists and experts for food and nutritional sovereignty with science and innovation. MINAG has worked to adopt the policy as its ministerial decree. However, at the timing of the terminal evaluation, the schedule for the completion of the legalization process could not be confirmed. Once it is effectuated, it is expected that the agricultural extension system including the trainings of the personnel related to the extension would be applied to other crops than basic grains and to livestock products as well. Furthermore, the ministerial decree would be a great backstop for IIGRANOS to sustain the agricultural extension system developed by the Project.

##### **(2) Improvement of IIGRANOS’ computer and Information-Communication-Technology (ICT) skills**

Prior to the start of the project, most of the partners were not familiar with the use of computers. In the Project, many documents including the Monitoring Sheet, training materials, newsletters, etc. have been prepared and edited digitally. Also, the data of the Farmer Extensionists has been using the google my map application. The Cuban counterparts of the Project have been actively involved in these works and much

improved their computer skills than before the Project. Another remarkable example of skill improvement under the pandemic of COVID-19 by turning this into an opportunity is, that the Project tried organizing webinars and online training courses to prevent the infection and also save transportation costs. Having the Cuban members responsible for IT in the Project team has been another driving factor to accelerate this impact.

### **(3) Diffusion of the Project experience to other provinces**

As explained in 2-4-1, IIGRANOS has implemented activities not only in the originally targeted provinces but also in other provinces on their own initiative. Also in these provinces, the extension system has been introduced and extension services have been provided utilizing the experiences of the Project.

### **(4) Expansion of the farmer extensionists' network**

Among the seven meetings of Farmer Extensionists, three meetings were held at the national level. Farmers who participated in the national meetings shared their progress and exchanged opinions, and even since the meetings they have continued their communication by phone or through SNS such as Facebook. Once the information has been uploaded to SNS, Farmers Extensionists who did not attend those meetings and individual farmers can also refer to the information, if they have access to the internet. The Director of an ETIG answered in the terminal evaluation that Farmers Extensionists got stimulated through exchanges, which have further motivated their activities.

No negative impact has been reported.

## **3-6. Sustainability**

### **3-6-1. Policy Aspect**

The "Strategy of the Socioeconomic Policy (2021-2025)" identifies agricultural insurance and nutrition as new issues of the agricultural sector, of which the information should be diffused to farmers through the extension services. Also more recently, in May 2022, the National Assembly of People's Power approved the Food Sovereignty and Food and Nutritional Security Law. The law regulates the organization of sovereign and sustainable local food systems, and establishes the responsibilities for the proper functioning of food systems in the territories, with broad participation of science and innovation.

As explained earlier, the "Principals of Policy for Agricultural Extension" developed by the IIGRANOS has been under discussion to be reflected in the ministerial decree for promoting the agricultural extension. Once the decree is enacted, the agricultural extension service will be supported in terms of training the personnel engaged in extension services, strengthening the linkage between the extension and research, sustaining the extension structure developed by the Project, etc.

### **3-6-2. Institutional/Organizational Aspect**

Through the Project activities, the structured extension system has been introduced. The five-year

plan is the base of the system, but the first plan (2017-2022) has not been updated yet. As key actors, roles of the Extensionist of ETIG, technical staff of EAIG, and Farmer Extensionists were specified at the national and provincial levels. Instead of not having enough Extension Officers, the number of Farmer Extensionists is increasing. The Cuban members of the Project will remain at IIGRANOS and will be continuously engaged in the established system.

For human resource development, IIGRANOS has the training plan for Extension Officers, technical staff of EAIG, and Farmer Extensionists. And, the online training infrastructure with equipment for VPN connection will be ready right after the Project.

### **3-6-3. Technical Aspect**

It can be judged that IIGRANOS has got sufficient skills for operating the extension system. Specifically, they can plan, implement, review, and make feedback on the extension plan, by repeating the cycles during the Project period. For extension materials, they can revise or newly develop materials as they have done so with their initiative. For implementing training, IIGRANOS' investigators specialize in some grain cultivation techniques, and to supplement the topics they are not familiar with, they have contact with other institutes in the country and other countries to consult or invite as lecturers. For VPN connection, there are IT specialists at IIGRANOS who can operate and maintain the equipment.

### **3-6-4. Financial Aspect**

No financial data for the agricultural extension could not be confirmed in the terminal evaluation. However, according to IIGRANOS, the budget for implementing the extension system will be secured. The head of the Department of Development and Agricultural Extension has identified priority activities for 2023, training of the extension personnel (ETIG Extension Officers, EAIG technical staff, and Farmers Extensionists) and revision of the didactic materials upon and will submit the budget plan. These budgets are basically what has been disbursed during the Project period, and therefore it is very probable that all the planned budgets will be approved. For example, as necessary training expenses, the transport cost for attending the training will be covered with the subsidy that IIGRANOS has received from the government. The venue will be the space of IIGRANO, ETIG, or EAIG. Only the lodging cost will be necessary. The cost of a VPN connection will be included in the budget plan, too. At the provincial level, transport and communication costs of Extension Officers and EAIG extension personnel will be borne by ETIG or EAIG. ETIG and EAIG answered that they will save the cost by having regular meetings and visiting the farmers in the same vehicle, etc.

### **3.6.5 Environmental and Social Aspects**

As of the time of the terminal, no risk in the environmental and social aspects has been identified.

In light of the above, there are slight issues in the institutional/organizational and financial aspects.

Therefore, the sustainability of the project effects is relatively high.

### 3-7. Conclusion

The expected Outputs and the Project Purpose have been mostly achieved despite the negative impact due to the COVID-19 pandemic. In other words, the agricultural extension system has been established through the development of an institutional setting, training system, and materials for training and extension services. As the Overall Goal, farmers' utilization of the extended information and technologies would be expected if the extension system is sustained, although the availability of agricultural inputs is an external factor. A concern from the Terminal Evaluation Team is that installation of VPN and the introduction of the system of the "linkage of extension services and research" have been pending. On the other hand, it is presumed that IIGRANOS will sustain the organizational setting for the extension system including human resource development in collaboration with other actors.

## 4. Recommendations

### 4-1. Recommendations to the Government of Cuba

- (1) If the agricultural extension system is sustained, it is expected that farmers will utilize the extended knowledge and techniques, as an impact of the Project. It is necessary to have indicators to ensure that this impact is indeed being created and to take action as needed, based on the monitoring result. It is recommended to IIGRANOS to modify the indicators set in PDM by the end of 2022, as follows:

	Indicator	Data collection and analysis
1	The productivity (t/ha) of rice, maize and frijol is improved compared to that of 2021 in each province.	IIGRANOS monitors the data of each grain by province every year, and analyzes increasing or decreasing factors. Depending on the monitoring result, necessary skills and information as countermeasures need to be included in the training contents.
2	The types of agricultural extension information are diversified, including non-technical themes, such as farming management.	IIGRANOS monitors the progress of the diversification of the type of information through the monthly report of ETIG Extensionists. IIGRANOS aggregates that information semiannually and counts the number of information, and conducts an analysis of factors of diversification or non-diversification.
3	The farmers' satisfaction with the extension service is improved.	At least semiannually IIGRANOS directly conducts an interview with some farmers (not Farmers Extensionists) about their satisfaction with the extension service. IIGRANOS reflects the monitoring results in the extension strategy of the next year.

- (2) It is recommended to MINAG to complete the legalization process of the policy related to the agricultural extension as soon as possible and to diffuse the extension system enhanced by the Project,



including the organization setting, training of extension personnel, material development, extension-research linkage, etc. to other crops. If the extension system functions in other crops such as fruits, vegetables and livestock products which are more suitable for exporting or selling to the domestic markets in freely convertible currency, it would lead to the acquisition of foreign currency.

- (3) In this Project, agricultural machinery and equipment which require regular maintenance and frequent replacement of spare parts have been procured. Since there are severe restrictions on importing foreign products in Cuba, it is highly recommended that IIGRANOS coordinate with GAG or other relevant institutes or departments to clarify the necessary procurement methods and procedures as well as to secure the budget (foreign currency) for procurement.
- (4) The Project was very successful in establishing a mechanism and system for agricultural extension, in which the technology is transferred from IIGRANOS to Farmers Extensionists through ETIGs and EAIGs. There are uncertainties, however, about the effectiveness of technology transfer to farmers, who are the ultimate beneficiaries. This largely depends on the willingness and capacity of each Farmer Extensionist. In order to achieve the Overall Goal, it is recommended that Extension Officers of ETIG and the technical staff of EAIG be more involved and monitor the dissemination activities of Farmers Extensionists to farmers and report to IIGRANOS.

## **5. Lessons Learned**

### **5-1. Lessons Learned to JICA**

- (1) As mentioned in the Recommendation (4) above, the effective extension system does not ensure the outreach of extension services to the ultimate beneficiaries. When planning similar extension projects in the future, it is important to incorporate a mechanism to ensure the path of outreach from Farmer Extensionists to individual farmers.
- (2) In the Project, the efficient and sustainable agricultural extension mechanism was successfully established by networking the existing institutions (research institution, its sub-agencies, extension agencies, and farmers' associations). In addition, the Policy for Agricultural Extension developed by SEGRANOS is expected to be adopted as a decree in the Agricultural Extension Guidelines of MINAG, a higher-level authority, thereby increasing the possibility of its adoption for other crops under other research institutions of MINAG. In formulating similar projects, it is effective to tap and network the existing institutions while reinforcing their functions, and to ensure the acknowledgment and involvement of the higher authorities from an early stage of the Project to facilitate the institutionalization/legislation of the project output.
- (3) When providing equipment in countries under particular circumstances, such as foreign currency restrictions or import restrictions, it is critical to thoroughly confirm access to suppliers for after-sales

service and spare parts of the procured equipment, as well as the maintenance system and procurement procedures of the implementing agencies.

[End]

## Annex 1. Schedule of the Terminal Evaluation

Date	Day	Activities
June 26	Sun	- Arrival at Havana City [Noguchi and Yagi]
June 27	Mon	- Meeting with Japan International Cooperation Agency (JICA) Cuba - Interview with the Agricultural Public Company Group (GAG) - Interview with the Institute of Investigation of Grains (IIGRANOS) - Interview with JICA experts
June 28	Tue	- Interview with IIGRANOS
June 29	Wed	- Move to Sancti Spiritus - Interview with ETIG Sur de Jíbaro Extension Officers - Interview with EAIG Sur de Jíbaro Technical staff - Interview with Farmers Extensionists
June 30	Thu	- Interview with Extension personnel - Interview with EAIG Valle de Caonao Technical staff - Interview with Farmers Extensionists - Visit to Farmers Extensionist in Yaguajay Municipality
July 1	Fri	- Move to Ciego de Avilla - Interview with Extension Officers of ETIG Sur de Jíbaro - Interview with EAIG Arnaldo Ramirez Technical staff - Interview with Farmers Extensionists
July 2	Sat	- Move to Havana City - Report preparation
July 3	Sun	- Arrival at Havana City [Ohshima, Mizobe and Ichikawa] - Report preparation
July 4	Mon	- Meeting with JICA - Meeting with the Ministry of Agriculture - Press conference of SEGRANOS - Interview with JICA experts
July 5	Tue	- Move to Piñar de Rio - Interview with IIGRANOS Extension personnel - Interview with Farmers Extensionists - Observation and interview with IIGRANOS - Move to Havana
July 6	Wed	- Interview with IIGRANOS - Discussion in the evaluation committee
July 7	Thu	- Discussion in the evaluation committee
July 8	Fri	- 6 <sup>th</sup> Joint Coordination Committee and signing of Minutes of Meetings - Report to the Embassy of Japan in Cuba

**Project Design Matrix (PDM) (version5) [Tentative translation for the terminal evaluation]**

Name of the Project : “The Project on Improvement of Agriculture Extension System for Grain Production in Cuba”  
 Implementation Agency: MINAG, GAG (Agricultural Public Company Group), IIGranos  
 Period : Enero de 2017 – Julio de 2022  
 Target Area : 8 provinces (Pinar del Río, Matanzas, Cienfuegos, Villa Clara, Sancti Spiritus, Ciego de Ávila, Camagüey, Granma), el Municipio Especial Isla de la Juventud e IIGranos (Artemisa)  
 Impact Area: Artemisa, Mayabeque, Holguín, Las Tunas, Santiago de Cuba, Guantánamo  
 Target Group : (Direct Beneficiaries) Department of Extension de IIGranos (Extension Officers HQs and provinces) (40prs), farmers extensionists (300prs) and provincial technical staff of the public Companies (70prs) of 8 provinces and Isla de la Juventud Special Municipality  
 (Indirect Beneficiaries) Grain producers of the 8 provinces and Island of youth special municipality

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
<b>Overall Goal :</b> The agricultural extension service for grain production is improved.	1) Degree of farmer satisfaction (survey result) (more than 80% satisfied). 2) Extensionist performance evaluation result (more than 80% of extensionists are evaluated as "Very Good Performance" or "Excellent Performance" in the Annual Performance Evaluation System).	◇ Reports de IIGRANOS ◇ Registration book of farmers extensionists	
<b>Project Purpose :</b> The system for agricultural extension service (*) for grain production is improved.	1) Policies, guidelines and plans on agricultural extension activities are being used on a continuous basis. 2) Number of events - frequency of trainings of human resources according to the mechanism of human resource development established (created) for agricultural extension (3 kinds/year).	◇ Entrevistas e informes anuales del instituto ◇ Informes del instituto y las empresas	◇ The number of people for agriculture extension will not be decreased drastically. ◇ No outstanding change in the existing system for agricultural extension
<b>Outputs :</b> 1. Capacity building for staff of IIGranos, Extension Officers of ETIG, technical staff of the public Companies and Farmer Extensionists on planning, managing and implementing agricultural extension service will be promoted.	1) Number of people trained in Japan (60prs). 2) Guidelines and activity plans for agricultural extension are developed, implemented and reviewed in IIGranos. 3) The agricultural extension system/structure of each province is established, and the results of the activities (more than 3 good examples for each province). 4) List and number of extension producers belonging to the agreement with IIGranos (more than 300). 5) The list and number of demonstrative areas are established (more than 3 good practice per province). 6) Linkage between agricultural extension and research is systematized. 7) Results and examples of collaborative activities with other agricultural institutions (more than 3 examples). 8) The performance level of extensionists.	Reports, developed plan, participants' list, evaluation results.	
2. Tools and educational materials for agricultural extension service will be developed.	1) Manuals and other materials for agricultural extension will be revised, updated and prepared (more than 5 varieties in each year at headquarters and IIGranos stations). 2) Tools (machinery and equipment) supplied by the project are assigned to the offices or departments related to agricultural extension and are adequately in use for agricultural extension activities.	Reports, number of printed and distributed manuals, training participants' list.	
3. The system on human resource development for	1) Creation of the training system for the formation of human resources for agricultural extension.	Reports, record of training, developed plan, number of trained extensionists.	

agricultural extension will be formulated and examined.	2) Training materials for the formation of human resources for agricultural extension. 3) Mid and long term plans developed for the development of human resources development (training) of human resources. 4) Number of extension personnel who received training (120prs). 5) Evaluation system (training) of human resources		
Activities		Inputs	
1-1 Diagnose the current status, needs and priorities related to agricultural extension. 1-2 Develop an action plan from the training in Japan. 1-3 Implement the action plans developed during the training in Japan to revolve the Plan Do Check Act (PDCA) cycle. 1-4 Establish the agricultural extension system/structure in each province. 1-5 Assign and establish the network with farmer extensionists and implement agricultural extension activities jointly. 1-6 Strengthen the linkage between agricultural extension and research (including exchange and seminar with the third country institutions). 1-7 Discuss and try collaboration with other institutions. 1-8 Strengthen the monitoring and evaluation system of agricultural extension activities.	<u>Cuban side</u> GAG will take necessary measures to provide as its own expense: 1) Assignment of Counterpart Personnel 2) Suitable office space with necessary equipment 3) Running expenses necessary for the implementation of the Project 4) Fuel for machines and equipment for the project activities 5) Negotiation and arrangement for imports of machineries and equipment at airport, and Expenses necessary for transportation within the Republic of Cuba of the equipment referred to in II-X as well as for the installation, operation and maintenance thereof.	There are no significant delays in the acquisition of machinery, materials and equipment.	
2-1 Develop the necessary methods and tools for agricultural extension according to the conditions of the target area. 2-2 Carry out, if necessary, revisions and corrections of existing manuals, didactic materials, etc. for agricultural extension. 2-3 Elaborate and distribute manuals, didactic materials, tools, etc. necessary for agricultural extension. 2-4 Establish necessary conditions (materials and equipment) for the satisfactory development of agricultural extension including demonstration areas in IIGRANOS headquarters, and ETIGs.	<u>Japanese side</u> 1) Experts: Chief Advisor, Agriculture extension, training management/ monitoring, technical manual and visual aid preparation, agriculture machinery, etc. 2) Training in Japan (15 personas x 4 years) 3) Machinery and Equipment for implementation of training and establishment of demonstration farm at IIGRANOS, ETIGs, and UCTB of INCA.	<u>Preconditions</u> Continuation of the policy that promotes agricultural extensionism.	
3-1 Confirm the current situation of existing human resources for agricultural extension and specify the problems. 3-2 Discuss a draft training system to train human resources for agricultural extension based on the results of 3-1. 3-3 Test a draft training and certification system for extension human resources training and certification and update it. 3-4 Draft the Training System to Train Human Resources for Agricultural Extension.			

\* "Agriculture extension system" in the PDM refers to the overall structure, which includes elaborating strategy, planning, management, implementation, monitoring and evaluation of the of the agriculture extension promotion..

Project Monitoring Sheet II (Revisión de Plan Operativo) (Versión final)

Título de Proyecto: <b>Proyecto de Mejoramiento del Sistema de Extensionismo Agrario para la Producción de Granos Básicos en Cuba</b>																						Fecha: junio, 2022							
		Año	1ro año				2nd año				3ro año				4ro año				5to año				6th year				Nota	Monitoreo	
Inputs			I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV		Issue	Solución
<b>Expert</b>																													
Líder asesor	Plan																										<p>• El especialista en "maquinaria agrícola" cancelará el viaje después de su 1ro viaje, por cambio de tiempo de llegada de maquinaria y la influencia de COVID.</p> <p>• El especialista de "materiales didácticos" canceló su viaje después de 2020 y trabajó en remoto desde japon.</p> <p>• El envío de la especialista de diseño de materiales didácticos fue cancelado por influencia de COVID. Se substituirá por seminario virtual por especialista de tercer país.</p> <p>• Líder asesor terminó su asignación en el enero de 2020.</p>	<p>Por influencia de COVID, los expertos japoneses trabajaban en distante desde fin de marzo de 2020. Se empezó de reenvío desde junio de 2021 al bajo de ciertas restricciones. Hay que considerar la situación de COVID-19 y los tramites necesarios.</p>	<p>Durante del periodo de trabajo en distancia, se estableció el sistema de comunicación por telegram, whatsapp, teamspeak y skype, para mantener comunicación frecuente entre equipos.</p>
	Actual																												
Sistema de Extensión Agraria (planificación y administración)	Plan																												
	Actual																												
Capacitación en gestión	Plan																												
	Actual																												
Sistema de Extensión Agraria (Implementación)	Plan																												
	Actual																												
Maquinaria Agrícola	Plan																												
	Actual																												
Manuales y Materiales para Extensión Agrario/ Agricultura	Plan																												
	Actual																												
Manuales y Materiales para Extensión Agrario (2)	Plan																												
	Actual																												
Coordinador/Monitoreo	Plan																												
	Actual																												
Monitoreo/Capacitación en gestión (2)	Plan																												
	Actual																												
Capacitación en Japón	Plan																												
	Actual																												
<b>Equipment</b>																													
Medio de transporte (vehículos, motor, etc.)	Plan																										<p>• Al principio del proyecto, se planificó de colaborar con el UCTB Los Palacios de INCA en la provincia de Pinar del Rio, basando el convenio oficial, pero se decidió de manejar por parte de sede de IGranos. Otro lado, nueva estación se abrió en la isla de la Juventud en el comienzo de 2017. Por lo tanto, las maquinarias se ubicará en la isla, en cambio de UCTB los Palacios.</p> <p>• En 2020, se decidió de suministrar el equipo de VPN para eficientar el trabajo de E.A en remoto y está en proceso de adquisiciones.</p>	<p>En cuanto a suministración del equipo de VPN se han cumplido hasta al fin de julio de 2022, y se empezará a la instalación.</p>	<p>En 2020, por fin, todas maquinarias y equipos fueron planificado llegarón a Cuba y ya empezaron de su uso.</p> <p>El equipo de VPN se preparará para su instalación y despliegue inmediatamente después de su llegada a Cuba.</p>
	Actual																												
Maquinaria Agrícola para áreas demostrativas	Plan																												
	Actual																												
Equipamientos para aulas de capacitaciones y otros	Plan																												
	Actual																												
<b>Training in Japan</b>																													
Capacitación en Japón	Plan																										<p>Se implementaron capacitaciones en japon, 1ra en 2018, con la participación de 15 pres y 2da en 2019. La tercera se va substituir por la capacitación en Cuba con conferencias en líneas y la cuarta se ha substituido a la cursos en remoto país entre jun - jul, 2022.</p>		
	Actual																												



3. Formulado y evaluado el sistema de gestión de capacitación de los recursos humanos para el desarrollo de la extensión agraria.																									
3-1 Confirmar la situación actual de los recursos humanos existente para la extensión agraria y especificar los problemas.	Plan	[Gantt chart showing activity from Q1 2017 to Q4 2017]															Equipo del proyecto	Se han confirmado las capacitaciones existentes disponibles para los extensionistas.	N.A.						
	Actual	[Gantt chart showing activity from Q1 2017 to Q4 2017]																							
3-2 Discutir un borrador del sistema de capacitación para formar recursos humanos para la extensión agraria en base de los resultados de 3-1.	Plan	[Gantt chart showing activity from Q1 2017 to Q4 2017]															Equipo del proyecto	Se examinó la estrategia de capacitación y recalificación en 2017.	N.A.						
	Actual	[Gantt chart showing activity from Q1 2017 to Q4 2017]																							
3-3 Ensayar un borrador del sistema de capacitación y certificación de los recursos humanos de la extensión y actualizarlo.	Plan	[Gantt chart showing activity from Q1 2017 to Q4 2017]															Equipo del proyecto	Se hicieron recalificaciones en marzo de 2018, febrero de 2019 y 2020, y 2022 aplicando lecciones de cada vez, (se hicieron a nivel E TIC en 2021)	Se continuará la modificación, y se reflejarán las lecciones. El plan de capacitaciones de largo plazo estará incorporarse en el plan de fortalecimiento de E.A.						
	Actual	[Gantt chart showing activity from Q1 2017 to Q4 2017]																							
3-4 Elaborar el Sistema de capacitación para formar recursos humanos para el extensionismo agrario.	Plan	[Gantt chart showing activity from Q1 2017 to Q4 2017]															Equipo del proyecto	Se aprobó la capacitación para los extensionistas potenciales de empresas durante de mayo a noviembre de 2016, con 241 participantes en total. En 2020 y 2021, no se pudo hacerlo porque la situación no se permitió (ver el resumen)	Debe considerarse la mé todo alternativa de la capacitación como conferencia en remoto.						
	Actual	[Gantt chart showing activity from Q1 2017 to Q4 2017]																							
<b>Duración / Etapas</b>	Plan	[Gantt chart showing 1ra, 2da, 3ra phases]																							
	Actual	[Gantt chart showing 1ra, 2da, 3ra phases]																							
<b>Plan de Monitoreo</b>	año	[Gantt chart showing 1ro año to 5to año]																							
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV				
<b>Monitoreo</b>																									
Comité de Coordinación Conjunta	Plan	[Gantt chart showing activity]																					Se hizo el 4ta CCC en la enero de 2021.	N.A	N.A
	Actual	[Gantt chart showing activity]																							
Comité de Ejecución	Plan	[Gantt chart showing activity]																					Después de la 1ro año, se cambió la estrategia. Ya se hace las reuniones más frecuentemente.	N.A	N.A
	Actual	[Gantt chart showing activity]																							
Plan de Operación detallado	Plan	[Gantt chart showing activity]																						N.A	N.A
	Actual	[Gantt chart showing activity]																							
Hoja de monitoreo	Plan	[Gantt chart showing activity]																					Se hace regulamente.	N.A	N.A
	Actual	[Gantt chart showing activity]																							
Monitoreo conjunto	Plan	[Gantt chart showing activity]																					Las actividades se han monitoreado por el comité de ejecución.	N.A	N.A
	Actual	[Gantt chart showing activity]																							
Evaluación posterior	Plan	[Gantt chart showing activity]																						N.A	N.A
	Actual	[Gantt chart showing activity]																							
<b>Informes/Documentos</b>																									
Informe Final	Plan	[Gantt chart showing activity]																						N.A	N.A
	Actual	[Gantt chart showing activity]																							
<b>Relaciones Públicas</b>																									
Preparación de artículos para página web de JICA	Plan	[Gantt chart showing activity]																					Se han actualizado continuamente los artículos.	N.A	N.A
	Actual	[Gantt chart showing activity]																							
Preparación de materiales para promoción del proyecto	Plan	[Gantt chart showing activity]																					Se transmite las informaciones a través de SNS (facebook, twitter) y también empezó publicar boletines desde 2020.	N.A	N.A
	Actual	[Gantt chart showing activity]																							

Note: The Plan of Operation was developed in only Spanish and Japanese.



## Annex 4. Evaluation Grid

### 1. Project Achievement

PDM ver.5			Information Source in the terminal evaluation
Narrative Summary	Indicators	Means of Verification	
Overall Goal: The agricultural extension service for grain production is improved.		Report of IIGRANOS, Registration book of Farmers Extensionists	IIGRANOS C/P, JICA experts (Interview)
		Report of IIGRANOS, Registration book of Farmers Extensionists	IIGRANOS C/P, JICA experts (Interview)
Project Purpose: The system for agricultural extension service for grain production is improved.		Interviews and annual reports of the institute, Institute and company reports	Informe Final (Review), IIGRANOS C/P, JICA experts (Interview)
		Interviews e informes anuales del instituto, Informes del instituto y las empresas	Informe Final (Review), IIGRANOS C/P, JICA experts (Interview)
Output 1: Capacity building for staff of IIGranos, Extension Officers of ETIG, technical staff of EAIG and Farmers Extensionists on planning, managing and implementing agricultural extension service will be promoted.	1-1. Number of people trained in Japan (60prs).	Informes, planes elaborados, lista de participantes, resultados de evaluaciones	IIGRANOS C/P, JICA experts (Interview)
	1-2. Guidelines and activity plans for agricultural extension are developed, implemented and reviewed in IIGranos.	Reports, plans developed, list of participants, results of evaluations, etc.	IIGRANOS C/P, JICA experts (Interview)
	1-3. The agricultural extension system/structure of each province is established, and the results of the activities (more than 3 good examples for each province).	Reports, plans developed, list of participants, results of evaluations, etc.	IIGRANOS C/P, JICA experts (Interview)
	1-4. List and number of Farmer Extensionists belonging to the agreement with IIGranos (more than 300).	Reports, plans developed, list of participants, results of evaluations, etc.	IIGRANOS C/P, JICA experts (Interview)
	1-5. The list and number of demonstration plots are established (more than 3 good practice per province).	Reports, plans developed, list of participants, results of evaluations, etc.	IIGRANOS C/P, JICA experts (Interview)
	1-6. Linkage between agricultural extension and research is systematized.	Reports, plans developed, list of participants, results of evaluations, etc.	IIGRANOS C/P, JICA experts (Interview)
	1-7. Results and examples of collaborative activities with other agricultural institutions (more than 5	Reports, plans developed, list of participants, results of evaluations, etc.	IIGRANOS C/P, JICA experts (Interview)

	examples).		
	1-8. The performance evaluation of extension staff.	Reports, plans developed, list of participants, results of evaluations, etc.	IIGRANOS C/P, JICA experts (Interview)
Output 2: Tools and educational materials for agricultural extension service will be developed.	2-1. Manuals and other materials for agricultural extension will be revised, updated and prepared (more than 5 varieties in each year at headquarters and IIGranos stations).	Reports, numbers of manuals printed and delivered, list of participants in training courses	IIGRANOS C/P, JICA experts (Interview)
	2-2. Tools (machinery and equipment) supplied by the project are assigned to the offices or departments related to agricultural extension and are adequately in use for agricultural extension activities.	Reports, numbers of manuals printed and delivered, list of participants in training courses	IIGRANOS C/P, JICA experts (Interview)
Output 3: The system on human resource development for agricultural extension will be formulated and examined.	3-1. Creation of the training system for the formation of human resources for agricultural extension.	Reports, training records, plans developed, numbers of extension personnel trained.	IIGRANOS C/P, JICA experts (Interview)
	3-2. Training materials for the agricultural extension.	Reports, training records, plans developed, numbers of extension personnel trained.	IIGRANOS C/P, JICA experts (Interview)
	3-3. Mid- and long-term plans for the human resources development (training) of human resources.	Reports, training records, plans developed, numbers of extension personnel trained.	IIGRANOS C/P, JICA experts (Interview)
	3-4. Number of extension personnel who received training (120prs).	Reports, training records, plans developed, numbers of extension personnel trained.	IIGRANOS C/P, JICA experts (Interview)
	3-5. Evaluation system (training) of human resources	Reports, training records, plans developed, numbers of extension personnel trained.	IIGRANOS C/P, JICA experts (Interview)

## 2. Project Implementation Process

Survey items		Necessary data	Data Source
Main items	Sub items		
Activity implementation	Were the activities for projecting Outputs 1- implemented as planned?	Implementation result (against the plan in PDM), reason of the delay if any	Project Completion Report (Review)
	Was the technology transfer conducted appropriately?	Way of the technology transfer conducted	IIGRANOS C/P, JICA experts (Questionnaire, Interview)
Project management	Were the project objectives shared clearly among the project members?	Understanding of the project members on the objectives in PDM	IIGRANOS C/P, JICA experts (Questionnaire, Interview)
	Who led the planning and implementation of the activities?	Process of the project planning and implementation	JICA experts (Questionnaire, Interview)

	How were the result of the activity implementation and outputs shared among the project members?	Monitoring method of the activities (data collection and analysis)	Project Completion Report (Review)
	Was the communication among the project members appropriate?	Timeliness of the communication among the project members	IIGRANOS C/P, JICA experts (Questionnaire, Interview)
	Was the technical assistance under the pandemic of COVID-19 implemented appropriately?	Efforts for activity implementation from Japan, issues and responses	IIGRANOS C/P, JICA experts (Questionnaire, Interview), Project Completion Report (Review)
Recognition of the Cuban side toward the project	Was the Cuban authorities' recognition on the project high?	Recognition on the project	IIGRANOS C/P, MAG (Questionnaire, Interview)

### 3. Six Evaluation Criteria

Criteria	Evaluation Questions		Necessary Data	Data Source
	Evaluation Questions	Sub-questions		
Relevance	Are the project objectives relevant with the development policy of Cuban Government?	Is the strengthening of extension services to basic grain farmers consistent with Cuba's development policies?	Importance of basic grain production in development policy, including "Socioeconomic Policy Directions" (2016-2021)	"Socioeconomic Policy Directions" (2016-2021) (Review)
	Are the project objectives relevant with the development needs in Cuba?	Is the strengthening of extension services to basic grain farmers consistent with the development needs of basic grain farmers?	Production status of basic grains and farmers' needs	Project Completion Report (Review), IIGRANOS extensionists and farmers extensionists, JICA experts (Interview)
	Was the project design and approach appropriate for equitable benefits?	Have approaches to ensure equity in extension services been planned and implemented?	Existence of farmers (regions, attributes, etc.) who may be left out of the benefits of extension services (and if so, the measures to deal with them)	IIGRANOS C/P, extensionists and farmers extensionists, JICA experts (questionnaire, Interview)
	Is the project appropriate as a means of problem solving?	Was the content of the project plan necessary to strengthen the extension implementation system?	Process for selecting project approaches to strengthen the extension system	Detailed Planning Survey Report (Review)
Coherence	Are the project objectives relevant with the assistance policy of Japanese Government?	Is the strengthening of extension services to basic grain farmers consistent with Japan's policy of support to Cuba?	Positioning of support for basic grain production in Country Assistance Policy (2014) and Country Development Cooperation Policy (2018)	Country Assistance Policy (2014) and Country Development Cooperation Policy (2018) (Review)
	Has there been coordination with other projects within JICA?	Were the results of preceding projects utilized in the project?	Status of utilization of results of prior projects	JICA experts (Questionnaire, Interview)

	Has there been coordination with other organizations?	Has there been cooperation and coordination with other donors to strengthen extension services?	Details and results of cooperation and collaboration with other donors	Project Completion Report (Review)
Effectiveness	Is the Project Purpose expected to achieve by the project completion?	Has the agricultural extension system for rice and grain farmers been strengthened?	To be confirmed as the project achievement.	To be confirmed as the project achievement.
	Was the achievement of the Project Purpose attributed to the project outputs?	Do the Project Purpose and Outputs 1-3 have "means-ends" logic?	Causal linkage between the Project Purpose and Outputs	Project Completion Report (Review), JICA experts (Questionnaire, Interview)
	Were there factors which influenced the achievement of the Project Purpose?	Were there any external factors that affected the strengthening of the extension system for basic grain farmers?	External factors and their impact on the project	Project Completion Report (Review)
Efficiency	Were the Outputs produced as planned?	(Output 1) Was capacity building for staff of IIGranos, Extension Officers of ETIG, Technical staff of the public corporations and Farmer Extensionists on planning, managing and implementing agricultural extension service promoted?	To be confirmed as the project achievement.	To be confirmed as the project achievement.
		(Output 2) Were tools and educational materials for agricultural extension service developed?	To be confirmed as the project achievement.	To be confirmed as the project achievement.
		(Output 3) Was the system on human resource development for agricultural extension formulated and examined.	To be confirmed as the project achievement.	To be confirmed as the project achievement.
	Were the Inputs appropriate for producing the Outputs in terms of quantity, quality and timing?	Were the inputs from the Cuban side as planned?	Comparison against the plan (Personnel, expenses, equipment/facility)	IIGRANOS C/P, JICA experts (questionnaire, Interview)
		Were the inputs from the Cuban side appropriate in terms of production of the Outputs?	Opinion on the appropriateness (with reasons)	IIGRANOS C/P, JICA experts (questionnaire, Interview)
		Were the inputs from the Japanese side as planned?	Comparison against the plan(Personnel, expenses, equipment/facility, training)	JICA experts (questionnaire, Interview)
		Were the inputs from the Japanese side	Opinion on the appropriateness (with	JICA experts (questionnaire,

		appropriate in terms of production of the Outputs?	reasons)	Interview)
	Were there factors which influenced the production of the Outputs?	Were there any external factors that influenced the implementation of activities and the production of Results?	External Factors and Their Impact on Business	Project Completion Report (Review)
Impact	Is the Overall Goas expected to achieve 3-4 years after the project completion?	Are farmers likely to be satisfied with extension services?	Satisfaction with extension services	IIGRANOS Farmers Extensionists and farmers (Interview)
		Are there prospects for quality extension services to be provided by IIGRANOS extensionists?	Improvement of extension compared to pre-project level	IIGRANOS C/P and extensionists, JICA experts (questionnaire, Interview)
	Is the Overall Goas expected to achieve as an effect of the project implementation?	Are there prospects for improved extension services to farmers as a result of the strengthening of the IIGRANOS extension structure?	Logic between the Project Purpose and the Overall Goal	Project Completion Report (Review), JICA experts (Interview)
	Are there any factors which may influence the production of the Overall Goal?	(external conditions) Is the work of extension personnel (Extensionists and Farmers Extensionists) likely to continue?	Availability of extension personnel (extensionists and cooperating farmers extensionists) to work and the personnel who influence this	IIGRANOS extensionists and Farmers Extensionists (questionnaire, Interview)
		Are there any factors that will be affected by the farmers' engagement in grain production?	External factors that may affect farmers' production engagement	IIGRANOS C/P and Farmers Extensionists (questionnaire, Interview)
	Have there been any impacts other than the Overall Goal?	Were there any unexpected impact (positive and negative) caused by the project activities?	IIGRANOS ICT skills enhancement/facilitating factors	IIGRANOS C/P, JICA experts (questionnaire, Interview), Project Completion Report (Review)
			Impact/facilitating factors for implementation of extension and farmer support for crops other than basic grains (pork, beekeeping, etc.)	IIGRANOS C/P, JICA experts (questionnaire, Interview), Project Completion Report (Review)
			Synergies/facilitating factors in collaboration with other donors	IIGRANOS C/P, JICA experts (questionnaire, Interview), Project Completion Report (Review)
Unexpected impacts (positive and			IIGRANOS C/P, JICA experts	

			negative)	(questionnaire, Interview), Project Completion Report (Review)
Sustainability	Will the project effects continue? (Policy and institutional aspect)	Are there any changes in the Cuban government's policy on basic grain production?	Likelihood of policy changes after the "Socioeconomic Policy Directions" (2016-2021)	IIGRANOS C/P (questionnaire, Interview)
			Likelihood that the "Agricultural Extension Policy" will become the ministerial decree	IIGRANOS C/P (questionnaire, Interview)
	(Organizational aspect)	Are there any changes in the role of the Extension Department at IIGRANOS Headquarters (formulation of strategies for extension and human resource development, development of training materials, coordination with other institutions)?	Views on the prospects for the continuation of the role of the Extension Department of IIGRANOS Headquarters (basis for the views)	IIGRANOS C/P (questionnaire, Interview)
		Will the extension services be implemented according to the "Plan for Strengthening Extension Systems"?	Status of implementation of extension services based on the "Plan for Strengthening Extension Systems" (recognition of PDCA)	IIGRANOS C/P, JICA experts (questionnaire, Interview)
		Will the implementation of extension services be monitored?	Methods (roles and procedures) for monitoring the activities of extensionists and cooperating farmers extensionists	IIGRANOS C/P and extensionists, JICA experts (questionnaire, Interview)
		Will Extensionists continue to be assigned to each province (or fill vacancies as needed)?	Extensionist staffing plan	IIGRANOS C/P (questionnaire, Interview)
		Will there be continued cooperation from Farmers Extensionists in each province?	Prospects for continued cooperation of farmers extensionists	IIGRANOS C/P and farmers extensionists, JICA experts (questionnaire, Interview)
		Will there be continued cooperation from public corporations in each province?	Prospects for continued cooperation by the public corporation	GAG, public companies (Interview)
		Is there a clear structure for a collaborative model of research and extension?	Recognition of the role of each unit involved in the model and plans for the future	IIGRANOS C/P, JICA experts (questionnaire, Interview)
		Will data remote management (VPN connection) be utilized?	Status and prospects of installation of equipment for VPN connection and plans for its utilization	IIGRANOS C/P, JICA Cuba Office (questionnaire, Interview)
		(Technical aspect)	Will the "Extension System Enhancement Plan" continue to be utilized?	Knowledge and skills related to the review of the "Extension System Strengthening

		Plan"	
	Are extension agents likely to maintain the necessary skills?	Training Plan for Extension personnel	Project Completion Report (Review), IIGRANOS C/P, JICA experts (questionnaire, Interview)
	Are Farmers Extensionists likely to maintain the necessary technology?	Availability of training plan for farmers extensionists	IIGRANOS C/P (questionnaire, Interview)
		Knowledge and skills needed by farmers extensionists	IIGRANOS extensionists and farmers extensionists (questionnaire, Interview)
	Knowledge and skills needed for testing and research on basic grain production are available	Status of research on basic grain production	IIGRANOS C/P and extensionists (questionnaire, Interview)
	Will training materials and tools continue to be used?	Availability of technology on how to plan and revise the use of training materials and tools	IIGRANOS C/P, JICA experts (questionnaire, Interview)
	Do they have the knowledge and skills needed to conduct training and seminars via VPN connection and to maintain and manage equipment?	Availability of knowledge and technology required to operate and maintain VPN connection equipment	IIGRANOS C/P (questionnaire, Interview)
	Will technical assistance from external organizations be available as needed?	Possibility of collaboration with CIMMYT, INIFAP (Mexico), and Universidad de Zamorano (Honduras) (communication, continuity of contacts)	IIGRANOS C/P (questionnaire, Interview)
(Financial aspect)	Does IIGRANOS have the necessary budget to implement extension (including communication with extensionists and extension activities of extensionists)?	IIGRANOS extension budget (or view and rationale on whether it is sufficient or not)	IIGRANOS C/P (questionnaire, Interview)
	Has IIGRANOS set aside the necessary budget for training of extension personnel?	Budget of IIGRANOS for training (or opinion and rationale as to sufficiency)	IIGRANOS C/P (questionnaire, Interview)
	Does IIGRANOS have the necessary budget for the maintenance of VPN connection equipment?	IIGRANOS equipment maintenance budget (or opinion and rationale as to sufficiency)	IIGRANOS C/P (questionnaire, Interview)
	Does ETIG (IIGRANOS) have the necessary	IIGRANOS' budget for research (or the	IIGRANOS C/P (questionnaire,

		budget for research?	opinion and rationale as to whether it is sufficient)	Interview)
(Environmental and social aspect)	Does IIGRANOS have environmental and social risk prevention measures in place to sustain the effectiveness of the project?	Whether there are any environmental and social risks of concern in the implementation of extension services (if so, whether preventive measures have been taken)	IIGRANOS C/P, JICA experts (questionnaire, Interview)	



## Annex 5. Assignment of JICA Experts

	Name	Responsibility	Duration
1.	Masato Kitanaka	Chief Advisor	January 2017-January 2020
2.	Izumi Okata	Agriculture Extension System (planning & management), <i>Team leader</i>	January 2017-September 2022
3.	Masafumi Ikeno	Capacity development, <i>Sub-team leader</i>	January 2017-September 2022
4.	Tomonori Yoshino	Agriculture Extension System (Implementation)	January 2017-September 2022
5.	Hiroshi Abo	Agriculture machinery	January 2017-September 2022
6.	Keisuke Shimizu	Teaching material / Agriculture / Training in Japan	January 2017- August 2018
7.	Masahiko Taniguchi	Teaching material / Agriculture / Training in Japan	September 2018-September 2022
8.	Ai Uehara	Administrative coordinator/ Monitoring	January 2017-April 2019
9.	Tomoko Hayashi	Administrative coordinator/ Monitoring	May 2019-December 2019
10.	Yu Yamamoto	Administrative coordinator / Monitoring-Capacity development (2)	February 2020-september 2022
11.	Fumio Ota	Training in Japan	June 2017-april 2018
12.	Akiko Mizunuma	Training in Japan	April 2019-December 2019

## Annex 6. List of the Equipment

Equipment and Material	Qty.	Installation Place
<Provision 1>		
Micro Bus	1	II Granos HQs
Pickup Truck (Single)	4	4 ETIGs, 1 unit for each
Pickup Truck (Double)	1	II Granos HQs
Motorcycle	18	II Granos HQs 2 units/ 4 ETIGs, 4 units for each
Motorcycle-Spare Parts	5	II Granos HQs/ 4 ETIGs, 1 unit for each
Tools for vehicle maintenance	5	
Hydraulic jack for vehicle maintenance	5	
Welding machine for vehicle maintenance	5	
Electric stapler	1	II Granos HQs
Electric cutter	1	II Granos HQs
Copier	1	II Granos HQs
Sprayer (for mounting)	1	II Granos HQs
Transplanter (for rice)	4	4 ETIGs, 1 unit for each
Trays for transplanter	4,000	4 ETIGs, 1,000 units for each
Harvester (for rice)	4	4 ETIGs, 1 unit for each
Combine harvester (for corn and legumes)	1	II Granos HQs
Cutter (for weeds)	20	II Granos HQs y 4 ETIGs
<Provision 2>		
Tractor	5	II Granos HQs/ 4 ETIGs, 1 unit for each
Tractor-Spare Parts	5	
Tractor Disc Rotor	5	
Tractor Plow	5	
Tractor Rotators	5	
Pulverizador de barra de tractor	4	4 ETIGs, 1 unit for each
<Addition 1>		
Equipment and material for the establishment of the network (Server, switcher, cable etc.)	1	II Granos HQs
Large TV (43 inches)	1	II Granos HQs
Large screen (65 inches)	1	II Granos HQs
OPS for large screen (65 inch)	1	II Granos HQs
Lack for the big screen (65 inch)	1	II Granos HQs
Webcam and Microphone for the meeting	1	II Granos HQs
Laptop PC	5	II Granos HQs
HDMI Cable for Laptop PC	5	II Granos HQs
Desktop PC	3	II Granos HQs
Desktop PC Monitor	4	II Granos HQs
<Addition 2>		
Large screen (65 inches)	2	II Granos HQs
OPS for large screen (65 inch)	2	II Granos HQs

Lack for large screen (65 inch)	3	IIGranos HQs
Web Camera and Microphone for the meeting	4	IIGranos HQs
Laptop PC	20	IIGranos HQs
Ethernet Adapter for Laptop PC	20	IIGranos HQs
Desktop PC	30	IIGranos HQs
Keyboard and mouse for desktop PC	30	IIGranos HQs
Bosino for desktop PC	30	IIGranos HQs
Desktop PC Monitor	30	IIGranos HQs
UPS	25	IIGranos HQs
Large TV (43p inches)	2	IIGranos HQs
Lack for large TV (43 inches)	2	IIGranos HQs
Color printer	5	IIGranos HQs
Color printer	5	IIGranos HQs
External disk	30	IIGranos HQs
USB	50	IIGranos HQs
Camera	2	IIGranos HQs
Camera bag	2	IIGranos HQs
SD for camera	2	IIGranos HQs

## Annex 7. Assignment of the Personnel by the Cuban Side

### 1. Counterpart Personnel

	Name	Position in IIGRANOS	Responsibility in the Project	Period
1	Ibrahim Cantillo Pérez	Specialist of Corn	Project Coordinator	January 2017-July 2022
2	Yeandy Graveran Valdes	Specialist in irrigation and agriculture machinery	Vice coordinator	January 2017-July 2022
3	Mailin Salgado Rodríguez	Postharvest specialist	Training	January 2017-July 2022
4	Julia Emilia Pérez Fonseca	Agricultural extension and development specialist	Agriculture extension	January 2017-July 2022
5	Nathali Abrahan Ferro	Industry mechanic specialist	Training	January 2019-July 2022
6	Gerardo Pérez Regueiro	Cultivation management specialist	Monitoring	January 2019-July 2022
7	Dairy Medina Valdés	Information	Monitoring	January 2020- July 2022
8	Raudel Viera Morales	Information	Material design	January 2018- July 2022
9	Sair Rodríguez del Portal	Agricultural extension and development specialist	Training	January 2017-December 2018
10	Raico Milián Leyva	Mechanic specialist	Agriculture machinery	January 2017-december 2019
11	Edel Aguilar Ordaz	Seed specialist	Training	January 2017-July 2017
12	Martha Laffita Suarez	Cultivation management specialist	Monitoring	January 2017-July 2019

2. Extension Officers of ETIG (as of July 2022)

	Name	Province	Municipality	Period
1	Marcos Valle Sánchez	Piñar del Rio	Los Palacios	2020.02 - present
2	Jeider Estrada Mujica	Piñar del Rio	Pinar, Consolación, San Luis, San Juan, Sandino	2020.02 - present
3	Yaniel de la Osa Naranjo	Artemisa	San Antonio, Güira, Guanajay, Mariel	2019.10 - present
4	Ignacio de las Cueva Cleto	Artemisa	Bauta, Caimito	2019.09 - present
5	Jesús Meneses Peralta	Artemisa	Candelaria	2019.12 - present
6	Norberto Sánchez Gonzáles	Matanzas	Calimete, Betancourt, Jagüey, Agramonte, Jovellanos	2014.03 - present
7	Joaquín Izaguirre Solano	Matanzas	Arabos, Martí, Perico, Jovellanos	2019.11 - present
8	Berto Oquendo Pérez	Cienfuegos	Aguada, Abreus, Palmira, Cruces, Cienfuegos, Cumanayagua	2010.12 - present
9	Ihosvany Pérez Gómez	Villa Clara	Manicaragua, Ranchuelo, Santa Clara, Santo Domingo	2022.01 - Present
10	Alexander Hernández	Sancti Spiritus	Cabaiguán, Taguasco, Yaguajay.	2014.12 - present
11	Yuneisy Montejo Gonzáles	Sancti Spiritus	Sur del Jibaro, (Zona Sur)	2020.11- present
12	Wilfredo Méndez Parra	Ciego de Ávila	Baragua, 1 de Enero, Ciro Redondo	2019.12 - present
13	José Manuel Martín Jiménez	Ciego de Ávila	Florencia, Chambas, Morón, Bolivia	2022.01 - present
14	Fermín Hernández Espinosa	Camagüey	Vertientes, Camagüey, Santa Cruz del Sur, Sierra Cubitas, Minas, Najasa, Jimaguayú	2019.03 - present
15	Guillermo Blanco Ramos	Camagüey	Esmeralda, Florida, Céspedes	2018.03 - present
16	Seidel Castillo Avilés	Las Tunas	Tunas, Menéndez, Manatí, Majibacoa, Amancio	2016.01 - present
17	Redamés Oduardo Castillo	Granma	Jiguaní, Cauto Cristo, Bayamo, Río Cauto	2016.01 - present
18	Yoandris Reyes Castillo	Granma	Yara, Manzanillo, Campechuela, Media Luna, Masó	2020.02 - present
19	Carlos N. Escalona Gonzales	Holguín	Mayarí, Banes, Urbano Noris, Holguín, Jibara, Calixto García, Baguano, Freire	2017.06 - present
20	Yaciel A. Montero Rodríguez	Santiago de Cuba	Songo la Maya, San Luis, Palma, Contra maestre, Tercer Frente, Santiago	2015.12 - present
21	Ismael Montesino Miranda	Guantánamo	San Antonio del Sur	2019.11 - present
22	Gladys Carmona Herrera	Isla Juventud	Mella, Pino Alto, mella, La Fe, Sabana Grande, Gerona	2018.01 - present

Note: Some Extension Officers have been working before the Project was started.