

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Rwanda Office: August 2022

Country Name	Project for Increasing Crop Production with Quality Extension Services in the Eastern Province
Republic of Rwanda	

I. Project Outline

Background	Rwanda had the highest population density of 380 persons/ km ² in sub-Saharan Africa. Farmers in the country were engaged in small-scale farming with the average of 0.76ha farm per household (hereinafter called as FHH), and, in addition, 80% of farmlands were 5 to 55 degrees slanted, according to “Agricultural Sector Investment Plan 2009-2012.” In the hilly area, low productivity and profitability were predominant because of limited irrigation water, dependency on rainfall, and ineffective farming systems. JICA implemented the “Study on Sustainable Rural and Agricultural Development in Bugesera District, Eastern Province in the Republic of Rwanda” (2006-2009), and based on the results a technical cooperation project was requested by the Government of Rwanda for promoting rice production particularly in low wetlands.		
Objectives of the Project	Through improved the farmers’ organizations’ techniques for rice cultivation, horticulture cultivation and management and quality services of agricultural extension, the project aims at increasing the production of the rice production cooperatives and benefits of the horticultural crop production cooperatives in the target sites, thereby contributing to the increase in the rice production and horticulture benefits in Bugesera District and Ngoma District of the Eastern Province.		
	1. Overall Goal: 1) Rice production is increased in Bugesera District and Ngoma District of the Eastern Province. 2) Benefit of horticultural crop production cooperative is increased in Bugesera District and Ngoma District of the Eastern Province. 2. Project Purpose: Targeted rice production cooperatives increase production and horticultural crop production cooperatives increase benefits with quality extension services.		
Activities of the project	1. Project site: Bugesera District and Ngoma District of the Eastern Province. 2. Main activities: i) Training of cooperative members, RAB and NAEB staff and district agronomists on rice cultivation, ii) Post-harvest and horticulture techniques through Farmer Field School and seminars, iii) Development of the technology package for extension, study tours among cooperatives, iv) Training of district/sector officers and NAEB staff as trainers, v) training of cooperative members on organizational strengthening and gender mainstreaming, and so on. 3. Inputs (to carry out above activities) <div style="display: flex; justify-content: space-between;"> <div> Japanese Side 1) Experts from Japan: 10 persons 2) Training in Japan: 3 persons 3) Training in the third country: 4 persons (Kenya) 4) Equipment: PCs, printers, motorbikes, etc. 5) Local cost: training expenses. </div> <div> Rwandan Side 1) Staff allocated: 24 persons 2) Land and facilities: Office space, land for dry-yards and storehouses. 3) Local cost: Transportation and per diem for training for staff at regional offices. </div> </div>		
Project Period	(ex-ante) October 2010 to September 2013 (actual) November 2010 to October 2013	Project Cost	(ex-ante) 459 million yen, (actual) 544 million yen
Implementing Agency	Ministry Agriculture and Animal Resources (MINAGRI), Rwanda Agriculture Board (RAB), National Agricultural Export Development Board (NAEB)		
Cooperation Agency in Japan	Sanyu Consultants Inc., Nippon Koei Co., Ltd.		

II. Result of the Evaluation

1 Relevance
<p><Consistency with the Development Policy of Rwanda at the time of Ex-ante Evaluation></p> <p>The “Economic Development and Poverty Reduction Strategy (EDPRS)” (2008-2012) as well as the “Strategic Plan for the Transformation of Agriculture in Rwanda-Phase II (PSTA II)” (2009-2012) were formulated, both of which emphasized the importance of intensification of sustainable production systems, technical and organizational capacity building of farmers, promotion of commodity chains and agribusiness, and strengthening the institutional framework of the sector and at the central and local level. Thus, the project was consistent with the development policy of Rwanda at the time of ex-ante evaluation.</p> <p><Consistency with the Development Needs of Rwanda at the time of Ex-ante Evaluation></p> <p>In Rwanda, most farmers in the country were engaged in small-scale farming, and low productivity and profitability were predominant in the hilly area. Although the smallholders had had experiences in cultivation of rice and horticulture crops, they needed more opportunities to learn improved cultivation techniques. Thus, the project was consistent with the development needs of Rwanda at the time of ex-ante evaluation.</p> <p><Consistency with Japan’s ODA Policy at the time of Ex-ante Evaluation></p> <p>The policy consultation meeting was held every year from 2004, in which priority areas were decided¹. At the time of ex-ante evaluation, one of the priority areas was regional development which included promotion of agriculture and rural development. Thus, the project was consistent with Japan’s ODA policy at the time of ex-ante evaluation.</p> <p><Appropriateness of the project design/approach></p>

¹ Ministry of Foreign Affairs, “ODA Databook” (2011).

In the project, almost all of the target rice production cooperatives increased their yields during the project period, but all of the surveyed cooperatives have decreased their yields since the project completion. This is because the diffused techniques did not take root in the cooperatives due to the change of the members and the turnover of the agronomists-in-charge. In addition, the project effects have not been diffused, largely due to the reduction of the government subsidy. Even the national average productivity of paddy rice (ton/ha) has significantly dropped by nearly 50% since 2014 (FAOSTAT). The personnel retention could not be controlled much by the project, and the reduction of the subsidy could not be foreseen at the planning stage. As the extension package has been taken over by the succeeding project, it could be considered that the project approach itself was not a problem.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. As the target rice production cooperatives in the Districts of Bugesera and Ngoma improved their techniques for production and organizational management, most of them increased the rice yields (Indicators 1 and 2). Also, the target core horticulture crop production cooperatives increased their benefits (Indicator 3).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have partially continued at the time of ex-ante evaluation. In Bugesera District, data were available from four of the nine target rice production cooperatives. Data were not available from the rest five cooperatives, because of various reasons such as missing data and personnel change. All of the four cooperatives decreased the same production amount since the project completion but maintained a certain level of the production at the time of project completion since 2017 (Indicator 1). In both core and satellite cooperatives, there have been changes in the members and turnover of the agronomists trained by the project. The decrease in rice production was according to the cooperative members, less members have applied techniques acquired from the project, according to the interviewed cooperatives. As well, in Ngoma District, data were available from five of the eight target rice production cooperatives. Data were not available from the rest three cooperatives, because of personnel change. The surveyed five cooperatives have decreased the production amount since the time of project completion (Indicator 2). Some cooperatives have merged with other rice farmers' associations to become new cooperatives and changed their management, which has negatively affected the rice production. Regarding the horticulture crop production, no data were available because of the difficulty of obtaining their contact details (Indicator 3).

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The achievement of the Overall Goal could not be verified, because the baseline data could not be confirmed. On the other hand, rice production has decreased in both Bugesera District and Ngoma District since 2017 (Indicator 1). According to the RAB, during the project period there were many projects of the government and donors such as the World Bank and the International Fund for Agricultural Development to provide intensive support and inputs in the rice sector. However, such projects have ended one by one, and some of the rice cooperatives have not been able to sustain their production as much as they used to. Moreover, there has been an input subsidy program, called the "Crop Intensification Program" (CIP), which started in 2007 for purchasing quality seeds and fertilizers for priority crops including rice. CIP set the subsidy rate of 75% during the project period, but since the exit of subsidy started to be operationalized in 2013, the rate has decreased to 25%. This has discouraged farmers to use good quality seeds. In fact, the productivity (ton/ha) of the national average in Rwanda peaked in 2013 and has decreased since 2014 (FAOSTAT), probably due to the sharp decrease in the subsidy rate of the input subsidy program. In addition, the research & development system in rice has been significantly weakened due to the major restructuring at MINAGRI and RAB since 2011. Regarding the horticulture crop production, no data were available because the profit of horticulture crops are not among the indicators under Seasonal Agriculture Survey of NISR (National Institute of Statistics Rwanda) as well as weaker record keeping capacity of horticulture cooperatives than rice cooperatives (Indicator 2). As the extension services of the central and district governments have been limited, and government agronomists are not specialized in rice but many other crops such as horticultural crops, most cooperatives have hired agronomists on their own. Thus, it could be presumed that the project experience in the target cooperatives has not been diffused much to other cooperatives in both districts. After the establishment of RAB in 2010 through integrating Rwanda Agriculture Development Authority (RADA), Rwanda Animal Resources Development Authority (RARDA) and Rwanda Agriculture Research Institute (ISAR), extension became a part of the RAB's mandate. In reality, according to RAB, each program allocates more budget to "research" rather than "extension".

<Other Impacts at the time of Ex-post Evaluation>

Several positive impacts have been confirmed. First, there has been an impact related to gender. Gender promotion was one of the subjects of the training in the project, where women and men were trained to work as business collaborates instead of looking at one as labor, especially women. As a good result in the most of cooperatives, women have been among decision makers and some have been elected as the executive committee member of the cooperative which is backed by government regulation. Secondly, the project experience has been diffused to other provinces through the successor project, "Smallholder Market Oriented Agriculture Project (SMAP)" (2014-2019). In SMAP, two districts of each of all provinces were targeted, and at the end of project RAB expressed the initiative to extend the project experience nationwide. However, due to the COVID-19 pandemic, the initiative has been slowing down.

No activities causing any negative environmental impact has been implemented in the project.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement of the Project Purpose and Overall Goal

Aim	Indicators	Results	Source
(Project Purpose) Targeted rice production cooperatives increase production and horticultural crop production	1. More than 50% of targeted rice production cooperatives increase their yields by 10% in Bugesera District.	<u>Status of achievement: Achieved (Partially continued).</u> (Project Completion) • Eight out of the nine target rice production cooperatives (88.9%) increased their yields by 10-146% in 2013 (season A) from 2010 in Bugesera District.	Project Completion Report.

cooperatives increase benefits with quality extension services.		<p>(Ex-post Evaluation)</p> <ul style="list-style-type: none">Two of the five target rice production cooperatives from which data were available have sustained mostly the same production amount since the project completion in 2013 in Bugesera District. <p>Table: Rice production (t/ha, Season A)</p> <table><tr><td></td><td>2010 Baseline</td><td>2013 Project Completion</td><td>2017</td><td>2018</td><td>2019</td><td>2020</td></tr><tr><td>Corinyaburiba</td><td>7.0</td><td>7.7</td><td>6.2</td><td>6.6</td><td>5.9</td><td>6.5</td></tr><tr><td>Jyambere Nyarugenge</td><td>2.6</td><td>6.4</td><td>5.0</td><td>6.0</td><td>6.4</td><td>5.1</td></tr><tr><td>Twizamure</td><td>4.0</td><td>5.9</td><td>4.2</td><td>5.4</td><td>5.2</td><td>3.6</td></tr><tr><td>Corivarwi</td><td>6.5</td><td>7.8</td><td>4.8</td><td>6.2</td><td>5.5</td><td>4.4</td></tr></table> <p>Note: Corinyaburiba and Jyambere Nyarugenge were core cooperatives, and others were satellite cooperatives.</p>		2010 Baseline	2013 Project Completion	2017	2018	2019	2020	Corinyaburiba	7.0	7.7	6.2	6.6	5.9	6.5	Jyambere Nyarugenge	2.6	6.4	5.0	6.0	6.4	5.1	Twizamure	4.0	5.9	4.2	5.4	5.2	3.6	Corivarwi	6.5	7.8	4.8	6.2	5.5	4.4	Target cooperatives.							
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Corivarwi	6.5	7.8	4.8	6.2	5.5	4.4																																							
	2. More than 50% of targeted rice production cooperatives increase their yields by 15% in Ngoma District.	<p><u>Status of achievement: Achieved (Not continued).</u></p> <p>(Project Completion)</p> <ul style="list-style-type: none">Seven of the target eight rice production cooperatives (89.5%) increased their yields by 22-98% in 2013 (season A) from 2010 in Ngoma District. <p>(Ex-post Evaluation)</p> <ul style="list-style-type: none">In all of the five target rice production cooperatives from which data were available, the rice production amount has significantly decreased compared to that in the year of project completion in 2013 in Ngoma District. <p>Table: Rice production (t/ha, Season A)</p> <table><tr><td></td><td>2010 Baseline</td><td>2013 Project Completion</td><td>2017</td><td>2018</td><td>2019</td><td>2020</td></tr><tr><td>COPERIG</td><td>4.0</td><td>7.9</td><td>4.6</td><td>6.8</td><td>5.1</td><td>4.1</td></tr><tr><td>COCURIGI</td><td>4.5</td><td>8.3</td><td>3.6</td><td>3.9</td><td>3.6</td><td>3.2</td></tr><tr><td>COPRIMWA</td><td>4.0</td><td>6.6</td><td>4.9</td><td>4.0</td><td>4.0</td><td>3.1</td></tr><tr><td>COCURIRE</td><td>4.0</td><td>7.1</td><td>4.6</td><td>5.3</td><td>5.8</td><td>4.3</td></tr><tr><td>COPAMUNYA</td><td>6.0</td><td>6.1</td><td>NA</td><td>NA</td><td>4.1</td><td>3.1</td></tr></table> <p>Note: COPERIG was the core cooperative, and others were satellite cooperatives. The data of 2017 was the production in the Season B.</p>		2010 Baseline	2013 Project Completion	2017	2018	2019	2020	COPERIG	4.0	7.9	4.6	6.8	5.1	4.1	COCURIGI	4.5	8.3	3.6	3.9	3.6	3.2	COPRIMWA	4.0	6.6	4.9	4.0	4.0	3.1	COCURIRE	4.0	7.1	4.6	5.3	5.8	4.3	COPAMUNYA	6.0	6.1	NA	NA	4.1	3.1	Project Completion Report. Target cooperatives.
	2010 Baseline	2013 Project Completion	2017	2018	2019	2020																																							
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COPAMUNYA	6.0	6.1	NA	NA	4.1	3.1																																							
	3. More than 2/3 of targeted core horticulture crop production cooperatives increase their benefit by 15%.	<p><u>Status of achievement: Achieved (Not verifiable).</u></p> <p>(Project Completion)</p> <ul style="list-style-type: none">All (100%) of the targeted core horticulture crop production cooperatives increased their benefit by 38-4,951%². <p>(Ex-post Evaluation)</p> <ul style="list-style-type: none">No data was available.	Project Completion Report. NA.																																										
(Overall goal) 1) Rice production is increased in Bugesera District and Ngoma District of the Eastern Province. 2) Benefit of horticultural crop production cooperative is increased in Bugesera District and Ngoma District of the Eastern Province.	1. Rice: Production in Bugesera District and Ngoma District is increased by 15%.	<p><u>Status of achievement: Not verifiable.</u></p> <p>(Ex-post Evaluation)</p> <ul style="list-style-type: none">The baseline data could not be confirmed in both Bugesera District and Ngoma District. The data after 2017 were available. Rice production has decreased since 2017 in both districts. <p>Table: Rice production (t/ha, Season A/B)</p> <table><tr><td>District</td><td>2010 (Reference)</td><td>2013 Project Completion (Reference)</td><td>2017</td><td>2018</td><td>2019</td><td>2020</td></tr><tr><td>Bugesera</td><td>5.2/6.2</td><td>6.8/NA</td><td>NA/4.3</td><td>3.4/2.6</td><td>3.1/4.6</td><td>3.1/1.2</td></tr><tr><td>Ngoma</td><td>4.7/4.7</td><td>7.0/NA</td><td>2.6/4.3</td><td>3.7/2.8</td><td>4.1/4.8</td><td>3.6/4.2</td></tr></table> <p>Note: The reference data of 2010 and 2013 were estimated based on the achievement of the target cooperatives. From 2017 to 2020, the district-level data were available from the Seasonal Agricultural Survey (SAS)/NISR.</p>	District	2010 (Reference)	2013 Project Completion (Reference)	2017	2018	2019	2020	Bugesera	5.2/6.2	6.8/NA	NA/4.3	3.4/2.6	3.1/4.6	3.1/1.2	Ngoma	4.7/4.7	7.0/NA	2.6/4.3	3.7/2.8	4.1/4.8	3.6/4.2	Project Completion Report, SAS/NISR.																					
District	2010 (Reference)	2013 Project Completion (Reference)	2017	2018	2019	2020																																							
Bugesera	5.2/6.2	6.8/NA	NA/4.3	3.4/2.6	3.1/4.6	3.1/1.2																																							
Ngoma	4.7/4.7	7.0/NA	2.6/4.3	3.7/2.8	4.1/4.8	3.6/4.2																																							
	2. Horticultural crops: Benefit of more than 2/3 of target cooperatives in Bugesera District and Ngoma District is increased by more than 30%.	<p><u>Status of achievement: Not verifiable.</u></p> <p>(Ex-post Evaluation)</p> <ul style="list-style-type: none">No data was available.	NA.																																										

3 Efficiency

Although the project period was as planned (ratio against the plan: 100%), the project cost exceeded the plan (ratio against the plan: 119%). Outputs were produced as planned. Therefore, the project efficiency is fair.

² Some cooperatives had an extremely high increasing rates because they had a negative baseline or extremely low baseline benefit.

4 Sustainability

<Policy Aspect>

Rice and horticulture have been promoted through PSTA IV (2018-2024), which has been the main planning document under the agriculture sector of Rwanda. Specifically, the rice sector has its own strategic plan called “National Rice Development Strategy 2 (NRDS2)” (2020-2030) promoted under the initiative of “Coalition for Africa Rice Development (CARD).” For rice sector, there used to be a zonal system whereby farmers can sell their paddy only within the same zone. However, this rule was removed two years ago, and farmers are able to sell their produce to any other zones. This new policy will encourage market-oriented approach of rice farmers.

<Institutional/Organizational Aspect>

Although the organization structure of MINAGRI, RAB and NAEB has changed more than twice since the time of project completion, the package developed by the project has been taken over by the successor project, SMAP. It has been promoted through SMAP by RAB with the new name, MAEP (Market-Oriented Extension Package). According to RAB, it has sustained a sufficient number of staff to promote MAEP. On the other hand, District Officers have not been much involved in diffusion of MAEP due to large responsibilities they have to perform. Training of farmer promoters were continued in SMAP, and since then RAB provides training to farmer promoters every year, focusing on one crop or topic per year. Farmer Field Schools have been continued in the Eastern Province by farmer promoters under Twigire Muhinzi extension system. Although it is not easy to conduct some activities promoted during the project such as matching meetings and study tours due to insufficient budget, it became easier for districts to promote market-oriented agriculture, by providing marketing training and market linkages to the processing factories, hotels and schools.

<Technical Aspect>

RAB answered that its staff have sustained necessary skills and knowledge to promote the package. The staff trained by the project worked for SMAP and also other government projects and also contributed to the formulation of NRDS2.

<Financial Aspect>

Financial data could not be available at the ex-post evaluation survey. According to RAB, for promotion of the package budgets have been allocated to extension services and funds have been earmarked to the districts. Nevertheless, in reality, each program under RAB tends to allocate larger part of its budget to “research” activities rather than “extension”, according to RAB.

<Evaluation Result>

In the light above, there have been issues in the institutional/organizational and financial aspects. Therefore, the sustainability of the effects is fair.

5 Summary of the Evaluation

The Project Purpose was achieved. Specifically, rice and horticulture production increased in target cooperatives. However, since the time of project completion, the same level of rice production has not been sustained in the target cooperatives. At the district level, rice production has not increased as expected. The data of horticulture production were not confirmed. Regarding sustainability, there has been a shortage of District Officers to support cooperatives. As for efficiency, the project cost exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing agency:

- RAB and Districts should strengthen the capacity of cooperatives (particularly, horticulture cooperatives) in good data collection and management based on which it should promote evidence-based strategic planning and support.
- As this evaluation found strong impact of subsidy program such as CIP on the productivity, RAB and Districts should promote sustainable supply chain of quality seeds, not limiting their support to technical training.

Lessons Learned for JICA:

- The continuation of the project effects and the achievement level of the Overall Goal could not be confirmed in the ex-post evaluation, due to the lack of data from the target cooperatives. The project should include a component of capacity building on data collection at cooperative or farmer levels, in order to enable proper monitoring and evaluation after the project completion. Also, it is necessary to make sure that the implementing agency to collect and manage the data from cooperatives or farmers.