Ministry of Food and Agriculture,
Republic of Ghana

TECHNICAL COOPERATION PROJECT FOR ENHANCING MARKET-BASED AGRICULTURE BY SMALLHOLDERS AND PRIVATE SECTOR LINKAGES IN KPONG IRRIGATION SCHEME

JOINT TERMINAL EVALUATION REPORT

October 2020

JOINT TERMINAL EVALUATION TEAM
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

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Note 1: The Joint Terminal Evaluation Study was conducted six months before the completion of the Project.
Note 4: The exchange rates of GHS, JPY, and USD are as follows:
(JICA Exchange rate September 2020)
1GHS=18.258100JPY, 1 USD=105.378000 円

LIST OF ABBREVIATIONS

A/C	Airconditioner
CAADP	Comprehensive African Agricultural Development Programme
CARD	The Coalition of African Rice Development
C/P	Counterpart
CS	Certified Seed
DAD	District Agricultural Department
DCS	Directorate of Crop Service, MoFA
FBO	Farmer Based Organization
GCAP	Ghana Commercial Agriculture Project
GDP	Gross Domestic Product
GIDA	Ghana Irrigation Development Authority
GOG	Government of Ghana
GOJ	Government of Japan
HQ	Headquarters
ICOUR	Irrigation Company of Upper Region
JCC	Joint Coordination Committee
JICA	Japan International Cooperation Agency
KIS	Kpong Irrigation Scheme
MoF	Ministry of Finance
MoFA	Ministry of Food and Agriculture
M/M	Minutes of Meeting
MT	Metric ton
NRDS	National Rice Development Strategy
OACS	Osudoku Agricultural Co-operative Society Limited
OIRiC	Optimum Input Rice Cultivation
OJT	On-the-job Training
O&M	Operation and Maintenance
OVI	Objectively Verifiable Indicators
PCU	Project Coordination Unit
PDM	Project Design Matrix
PFJ	Planting for Food and Jobs
PIM	Participatory Irrigation Management

PO	Plan of Operation
PPP	Public Private Partnership
R/D	Records of Discussion
SHEP	Smallholder Horticulture Empowerment and Promotion
SREP	Smallholder Rice Empowerment and Promotion
SME	Scheme Management Entity
TC	Technical Committee
TOT	Training of Trainers
GCAP/WB/USAID	Ghana Commercial Agriculture Project/World Bank/United State Agency for International Development
WS	Workshop
WUA	Water User Association

Chapter 1. Outline of the Terminal Evaluation

1-1 Background of the Project

Rice is one of the most important staple crops in Ghana. The domestic paddy production increased from 240,000 metric tons to 570,000 metric tons between 2004 and 2013. Meanwhile, the population growth, urbanization, and changes in consumer habits have induced increase of annual per capita consumption of rice; from 15.4kg in 2000 to 37.5kg in 2010. In 2013, the total rice available for consumption was estimated to be around 1,037,000 metric tons, exceeding the production volume. To compensate the insufficient supply of domestic rice and meet the increasing demand, Ghana has depended largely on imports. Increase and sustainable domestic production of quality rice has strategic significance to the Government of Ghana in view of food security, import substitution, and foreign exchange savings of the country.

Rice production in Ghana is predominantly rain fed (90%). In pursuit of increasing the production capacity effective irrigation management was considered to be imperative because the average yield of rain-fed rice production was 2.96 MT/ha, and that in the irrigated sites was 4.8MT/ha[1]. At the time of appraisal study, the total land area under irrigation was 222,978 Ha, of which formal irrigation schemes accounted for 12,978 Ha (about 80% is used for rice cultivation). With the climate change affecting rain-fed agriculture unfavourably, there was a greater importance of producing more rice under irrigation scheme, and improvement of irrigation management was needed to be addressed.

In this context, the Technical Cooperation Project for Enhancing Market-Based Agriculture by Smallholders and Private Sector Linkages in Kpong Irrigation Scheme (hereinafter referred to as "the Project") was requested, with the aims to increase agricultural production through improvement of capacities of GIDA officers, Water Users Associations (WUAs), productivity and promotion of market-oriented agriculture in KIS area.

Table1-1 Summary of the Project

(PDM Ver.3.6 dated on May 3, 2018)

Overall Goal	The total agricultural production in irrigation schemes of Ghana is increased
Project Purpose	The agricultural production in KIS is increased.
Output 1	The capacity of GIDA for scheme management oversight in KIS is developed.
Output 2	The management capacity of WUAs is strengthened.
Output 3	The appropriate techniques for KIS is identified and practiced by trained farmers.
Output 4	Market-Oriented Agriculture is promoted in KIS.
Activity 1-1	To assess the efficiency and effectiveness of existing scheme management methodologies
Activity 1-2	To identify any factors which obstruct the efficient scheme management
Activity 1-3	To discuss the mandate of Scheme Management Entity with GCAP

[1] National Rice Development Strategy (2019 – 2030) Draft. Ministry of Food and Agriculture. 2019.

Activity 1-4	To study the activities and business plans of SME in KIS
Activity 1-5	To design the framework for Project intervention
Activity 1-6	To implement capacity development plan including Training Programmes and OJT
Activity 2-1	To facilitate the establishment of WUAs
Activity 2-2	To assess existing capacity in institutional building, O&M and water management, and training needs of WUAs
Activity 2-3	To develop appropriate curriculum and training materials
Activity 2-4	To conduct trainings for WUAs and the member farmers
Activity 2-5	To monitor and follow-up WUA's activities
Activity 3-1	To identify any factors which obstruct the increase in productivity and profitability of rice
Activity 3-2	To assess training needs of rice farmers and extension officers
Activity 3-3	To conduct trainings for extension officers of KIS and rice farmers
Activity 3-4	To align water use plan with proposed cropping calendar of all member of each branch WUAs
Activity 4-1	To assess training needs of smallholders that promotes Market-Oriented agriculture in KIS
Activity 4-2	To design training curriculum for smallholder farmers to promote Market-Oriented Agriculture based on Activity 4.1
Activity 4-3	To conduct baseline survey to identify the activities of private sectors and linkages with smallholders in KIS
Activity 4-4	To strengthen linkages between smallholder and private sectors
Input (Japanese Side)	(a) Dispatch of Experts (b) Training (c) Equipment
Input (Ghanaian Side)	Services of GIDA counterpart personnel and administrative personnel. Suitable office space with necessary equipment. Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the equipment provided by JICA, Information as well as support in obtaining medical service. Multiple Visa. Available data (including maps and photographs) and information related to the Project. Counterpart Fund necessary for the implementation of the Project. Expenses necessary for transportation within Ghana of the equipment as well as for the installation, operation and maintenance thereof

Chapter 2. Purpose of Terminal Evaluation

2-1 Objective of the Terminal Evaluation

With the assumption that the Project would complete at end of January 2021 as planned, a Joint Terminal Evaluation Team (hereinafter the Team) was formed in Tokyo and in Accra in September 2020. The mission of the Team is three-fold: firstly to confirm the achievements of project activities, outputs, and project purpose since the commencement of the Project in January 2016, comparing them with the plan; then to evaluate its overall performance based on five criteria (Relevance, Effectiveness, Efficiency, Impacts and Sustainability); and finally to provide recommendations for more effective project implementation in the remaining project period as well as to withdraw lessons learnt that can be useful for the future operations in relevant areas.

2-2 Members of the Team

The Terminal Evaluation Members are shown in Table 2-1 and 2-2.

Table 2-1 Members of Japanese side

Name	Position	Organization
Mr. Minoru Matsunoshita	Team Leader	JICA Headquarters
Ms. Megumi Shuto	Cooperation Planning	JICA Headquarters
Ms. Kazuko Shirai	Evaluation Analysis1	Kaihatsu Management Consulting, Inc.
Ms. Takako Mochizuki	Evaluation Analysis2	Kaihatsu Management Consulting, Inc.

Table 2-2 Members of Ghanaian side

Name	Position	Organization
Mr. Godfred Antwi	Agricultural Economist	Project Coordination Unit, Directorate of Policy, Planning, Monitoring and Evaluation (PPMED), Ministry of Food and Agriculture (MoFA)
Mr. Kennedy Donyong	Agricultural Economist	Monitoring & Evaluation Unit, PPMED, MoFA
Ing. Eric Samuel Adu-Dankwa	Director	Planning, Monitoring, Evaluation & Coordination, Ghana Irrigation Development Authority (GIDA)

2-3 Schedule of the Terminal Evaluation

The Joint Terminal Evaluation was conducted from September 17th to October 9th, 2020. The detailed schedule of the Joint Terminal Evaluation is shown in Table 2-3.

Table 2-3 Detailed Schedule of Terminal Evaluation

		* Green = Tensui2, Blue = MASAPS-KIS, Red = Both	As of 5 October,2020
Date		Activities	Memo
16-Sep	Wed	Kick Off Meeting	(Study Team & JICA related offices)
17-Sep	Thu	17:30(G08:30)1st Meeting with Tensui 2 C/Ps (Explanation of the Study) AR: Rev. John Manu (RDA) and Mrs. Yaa Pokuaa (PCU Schedule Officer: SO, NR: (Ms. Hawa Musah (RDA), Mr. Dauda Salam(PCU SO))	Both 2 projects + Ghanaian Evaluation Team (MoFA PPMED2、GIDA Planning Dep.
18-Sep	Fri	18:00(G09:00) Ghanaian Evaluation Team 19:00(G10:00)1st Meeting with KIS-MASAPS C/Ps	Mr.Eric, GIDA Director, Planning & Coordination Mr.Chris, Director of Scheme Oversight, GIDA
19-Sep	Sat		
20-Sep	Sun		
21-Sep	Mon		
22-Sep	Tue		
23-Sep	Wed	11:00: Meeting with Tensui 2 Expert Team	
24-Sep	Thu	17:00(G08:00)Meeting with RAD of Ashanti 19:00 DAD(s)&AEAs	Interview with Target Farmers in Ashanti (by Local Consultant)
25-Sep	Fri	17:00(G08:00) Meeting with RAD of Nothern 19:00 DAD(s) & AEAs	Interview with Target Farmers in Northern (by Local Consultant)
26-Sep	Sat		
27-Sep	Sun		
28-Sep	Mon	11:00 Meeting with KIS-MASAPS Expert Team 17:00 Meeting with GIDA HQ 19:00(G10:00) Meeting with District Assembly(s) one each from 2 regions	
29-Sep	Tue	17:00(G08:00)Meeting with GCAP/World Bank/ Meeting with DCS/MoFA 19:00(G10:00)Meeting with Seed Producer Group	
30-Sep	Wed	17:00(G08:00) Meeting with Farmers (WUA) 18:00(G09:00) Meeting with Farmes (WUA)	
1-Oct	Thu	17:00(G08:00) Meeting with KIS Office 18:00(G08:00) Meeting with Farmers (WUA)	
2-Oct	Fri	AM:Documentation 14:00:Team meeting 17:00(G08:00): Meeting with Ghanian Evaluation Team	
3-Oct	Sat		
4-Oct	Sun		
5-Oct	Mon	17:00(G08:00):2nd Meeting on Tensui 2 with Ghanaian C/Ps (Discussion on evaluation result)	
6-Oct	Tue	17:00(G08:00):Meeting with JICA Ghana Office	
7-Oct	Wed	17:00(G08:00):2nd Meeting on MASAPS-KIS with Ghanaian C/Ps (Discussion on evaluation result)	
8-Oct	Thu		
9-Oct	Fri	M/Ms signinig & Report of evaluation result to both 2 Projects	

2-4 Methodology of Evaluation

The Team conducted various interviews and field surveys remotely through the evaluation period. The list of the main consulted personnel is shown in ANNEX 1.

(1) Joint Evaluation

The Project was jointly evaluated by the Japanese and Ghanaian Teams in accordance with the Record of Discussion (hereinafter, "R/D"), the PDM and the Plan of Operations (hereinafter referred to as "PO"). The evaluation activities, including report analyses, questionnaire surveys, and interviews with staff of relevant C/P organizations, individual beneficiaries, Japanese experts and other concerned personnel of the Project, were conducted based on the Five Evaluation Criteria described in the following section. The Team had four (4) members from Japanese side and three (3) members from the Ghanaian side.

(2) Evaluation Framework: Five Evaluation Criteria

The evaluation was preceded along with the following five criteria, which embody the major points to consider in evaluating development projects.

Table 2-4 Five Evaluation Criteria

Items	Components
(1) Relevance	Relevance is to question whether the project purpose and overall goal are still in line with the priority needs and concerns at the time of evaluation
(2) Effectiveness	Effectiveness concerns the extent to which the project purpose has been achieved, or is expected to be achieved, in relation to the outputs produced by the Project.
(3) Efficiency	Efficiency is a productivity of the implementation process: how efficiently the various inputs are converted into outputs.
(4) Impact	Impact is any intended and unintended, direct and indirect, positive and negative that is brought about as a result of the Project.
(5) Sustainability	Sustainability of the project is assessed in terms of institutional, financial and technical aspects by examining the extent to which the achievement of the Project will be sustained after the project is completed.

(3) Sources of Information Utilized for the Evaluation

The sources of information were shown in Table2-5.

Table 2-5 Source of Information

1	Project documents such as R/D, PDM, and Minutes of Meetings (hereinafter referred as “M/M”)
2	Periodical reports of the Project
3	Interviews and discussions with the Japanese experts
4	Interviews and discussions with the counterpart personnel
5	Interviews and discussion with the beneficiaries
6	Record of inputs
7	Documents on the progress and achievements of the Project

(4) PDM for evaluation

The current PDM (version 3.6 dated on May 3rd, 2018) shown in ANNEX 2 is used as the PDM for the Terminal Evaluation.

Chapter 3 Achievements and Implementation Processes of the Project

3-1 Inputs

The Team confirmed the following inputs based on the PDM and the PO. The data refer the results up to July 2020 unless otherwise indicated. The details of inputs are shown in the ANNEX 3.

3-1-1. Japanese side

It is projected that the total disburse amount under the Project during the original Project period will be 427,423,000 JPY (4,056,093 USD).

(1) Dispatch of Japanese experts

A total of 13 Japanese experts with different areas of expertise were dispatched to realize technical transfer in the areas including: 1）Chief Advisor/Institutional Building/Irrigation Scheme Management； 2）Water Users Associations; 3) Farm Management; 4) Market-oriented Agriculture/Program Coordination; 5) Program Coordinator (Donor Relationship); 6) Rice Production; Evaluation of Water Users associations; 7) Seed Production/Quality Control; and 8) Leadership and Consensus Building of Water Users Associations have been dispatched to the Project for technology transfer.

(2) Training of counterpart personnel in Japan and in other countries

Total of 22 counterpart officials and staff participated in the training courses held in Japan. The thematic areas of the trainings encompassed: (i) irrigation management; (ii) rice cultivation; (iii) participatory water management; (iv) post-harvest processing; and (v) irrigation facility operation and maintenance. Additionally, twelve (12) counterparts participated in the training courses related to: (i) efficient usage of irrigated water; (ii) SHEP approach; and (iii) the CARD. Those courses were carried out in Egypt, South Africa, and Senegal. The ANNEX 4 has the complete list of trainings and participants.

(3) Provision of equipment and machineries

Equipment and machineries, such as vehicles, motorcycles, photocopiers, desktop computers, projector, and generator, of the total value equivalent to GHC403,894 (7,374,337 JPY) (69,980 USD) were provided for the project activities. The ANNEX 3 has the complete list.

(4) Bearing of local costs

Local costs covered from the beginning of the Project (beginning of the project) to March 2020 (4th year of the Project) is equivalent to 2,598, 338.01 GHS (47,440,715 JPY) (450, 195 USD).

3-1-2. Ghanaian side

(1) Appointment of counterpart personnel

In total, 20 counterpart (CP) personnel from GIDA – five from Headquarters (HQ) and fifteen (15) from KIS have engaged in the Project. Officials and staff from the HQ included the Director of Scheme Oversight as the Project Director, Deputy Chief Executive, Principle Agronomist, and Marketing Officer, and from the

KIS, Field Operations Manager, Water Management Engineer, Maintenance Manager, and extension officers.

(2) Provision of facilities and operational cost

One office space in GIDA with water, electricity, and AC have been provided for the Project.

(3) Local cost

The GIDA has disbursed the total amount of GHS 298,771 (51,766 USD) has been provided to cover local expenditure for the project activities; 165,000GHC (28,588 USD) for running cost of the office, vehicle maintenance, and co-financing of project workshops at the GIDA HQ, and GHS 133,771 (23,177 USD) for operational costs at the KIS, such as fuel, electricity, and maintenance cost.

3-2 Achievements of the Outputs

The Project initiated implementation in January 2016 and has carried out activities as described below without causing significant delays.

Output1: The capacity of GIDA for scheme management oversight in KIS is developed.

The Output 1 concerning the institutional capacity building of GIDA for effective scheme management oversight in KIS **is almost achieved** in accordance with the evaluation result as follows.

Indicator 1-1: The capacity development plan is made by 2018.

[Achieved]

The capacity development plan was elaborated, presented at the JCC, and its execution was initiated by 2018. As the GIDA underwent institutional reform in 2018, the Project revised the capacity development plan in a holistic way, considering the emphasis on the human resource development reflected in the new Corporate Plan of GIDA. The revised capacity development plan was presented at the fourth JCC (March 2020) and duly approved.

Indicator 1-2: 40 GIDA staff are trained on scheme management oversight in KIS.

[Achieved]

In total, 45 GIDA staff (28 male and 17 female staff) have been trained on scheme management oversight.

Output 2: The management capacity of WUAs is strengthened.

The Output 2 relating to the strengthening of WUAs capacities in water management and in organizational management **is almost achieved** in accordance with the evaluation result as follows.

Indicator 2-1: More than 70% of the 288 lateral leaders of WUA in the KIS are trained on water management and O & M of facilities.

[Almost achieved]

The minimum target number of the training in total is 202 (corresponding to 70% of 288). Training areas covered five specific topics, including: (i) the role of WUA (basic level); (ii) the operation planning by WUA (basic level); (iii) the maintenance plan by WUA; (vi) water management for rice production on paddy fields (basic level and intermediate levels); (v) water management in the irrigation scheme (intermediate level); and (vi) experiment on appropriate water management in 4 seasons (basic level) have been elaborated.

The training of the target population has been carried out in four batches, assigning the lateral leaders of fifteen (15) WUAs in each batch. As of July 2020, three batches, totalling 165 lateral leaders from 11 WUAs have completed the trainings. **It corresponds to 82% of the target.**

Originally, the training of the fourth batch was scheduled to start in March 2020, however, it has been postponed to September because of the COVID-19. The curriculum is under revision and expected to be carried out during 2020.

Indicator 2-2: 50 WUA Executive are trained on WUA organization strengthening.
[Achieved]

As of March 2020, more than 60 WUA executives have received the training on WUA management.

Output 3: The appropriate techniques for KIS is identified and practiced by trained farmers.

Output 3 relating to capacity building of farmers is **achieved** based on the progress demonstrated as follows.

Indicator 3-1: Trained farmers practice optimum rice cultivation techniques.
[Achieved]

The optimum rice cultivation techniques promoted by the project encompass six components, including: (i) use of certified rice seed; (ii) raising healthy seedlings; (iii) optimum seed rate and spacing; (iv) optimum amount of nitrogen application; and (v) efficient water management. The training comprised of lectures at the KIS training room (3 days) and practical training at the demonstration farm (3 days) and was executed at the timing before the rice production season started.

As for the major season in 2019, 94 percent of the farmers reportedly practiced at least one component of the Optimized Input (OIRiC) techniques. On average, 70 percent of the farmers practiced each component of the OIRiC.

As for the minor season in 2019, 97 percent of the farmers reportedly practiced the OIRiC, demonstrating the increase from 90 percent in the previous year. The disaggregated data by component is summarized as follows.

Table 3-1. Ratio of farmers practice OIRiC by component (minor season 2019) n=71

Component	Ratio
Application of OIRiC Techniques after the training	97%
Usage of Certified Seed	93%
Technique of fertilizer (N) application amount/timing	75%

Technique of Seed Rate for Nursery	83%
Technique of Plant population for transplanting	67%
Technique of Water management (timing or depth of water, etc.)	94%

* Based on the survey conducted by the MASAPS-KIS in June 2019 (MASAPS-KIS experts report)

Output 4: Market-Oriented Agriculture is promoted in KIS.

The Output 4 relating to the promotion of the market-oriented agriculture is **almost achieved** based on the findings as below.

Indicator 4-1: More than 70% of the 288 lateral leaders of WUA in the KIS are trained on Market-Oriented Agriculture.

[Almost achieved]

The minimum target number of the training is 202 (corresponding to 70% of 288). A total of 195 farmers, which **represents about 97 percent of the target**, have been trained in the Smallholder Rice Empowerment and Promotion (SREP) training, a capacity building material of market-oriented agriculture elaborated based on the SHEP[2]. As the fourth round of SREP training is going to be carried out **in the fourth quarter of 2020, the target indicator is expected to be fully achieved.**

Table 3-2. Farmers Participation in the SREP training

Training batch	Number of farmers
1 (October 2018 to January 2019)	70
2 (February to July 2019)	57
3 (September 2019 to January 2020)	68
TOTAL (1~3 batches)	195
4 (September/October 2020)	n.a.

* Based on the MASAPS-KIS expert report

In addition to the SREP training, the Project facilitated stakeholders to participate in four marketing activities; including the National Rice Festivals (2017 and 2018), the 35th Farmers Day, and Stakeholders Forum to encourage farmers and private sector linkages (2016). Furthermore, the Project carried out consumer survey to understand the market demand of rice. Through these activities, the Project has engaged in assisting the farmers to promote KIS rice, to obtain market information, and facilitated communication with wider array of rice value chain actors.

[2] The SHEP (Smallholders Empowerment and Promotion) approach has spread widely in Africa including the GoG through the governments' initiatives. The principal concept of the SHEP is "grow to sell" and based on a psychological theory "a mechanism for unlocking farmer motivation".(source: JICA website) At the early stage of the project implementation when the establishment of WUAs were incomplete, the project piloted different set of market-oriented agriculture training based on the SHEP approach. The experiences from these activities were reflected on the SREP training.

3-3. Important Assumptions from Activities to Outputs

1) The legislation status of WUA/OACS is not changed.

[Fulfilled]

No change concerning the legislation status of WUA observed.

2) The price of domestic rice is not deteriorated sharply.

[Fulfilled]

The price of domestic rice has not declined drastically during the project period.

3-4 Prospects to Achieve the Project Purpose

Project Purpose: The agricultural production in KIS is increased.

(1) Prospect to achieve Project Purpose

The Project Purpose is **almost achieved** based on the following results:

Indicator 1: 100% collection rate* of Irrigation Service Charge in two model WUAs is achieved in 2020.

[Almost achieved]

As of June 2020, the collection rates of Irrigation Service Charge (ISC) of two model WUAs – C1 and SLLC-A – are 95 percent and 90 percent respectively for the charges corresponding to the irrigation water usage during 2019. The same figures from the previous year were 88.5 percent for C1 and 89.6 percent for SLLC-A.

While not reaching the target, increases have been observed and the cases of two model WUAs significantly outperformed the figures commonly observed among the Water Users Associations of other irrigation projects supported by JICA.

Indicator 2: 15 WUAs are established in KIS

[Achieved]

Fifteen (15) WUAs have been established in KIS by June 2019.

When combined, the WUAs cover 88 percent of the gross area of KIS and incorporate 85 percent of the farmers in the area. The Farmers List has been updated in accordance with the WUA data.

Table 3-3. WUAs and current farmers list (as of July 2020)

Area (A=upper stream, B=downstream)	WUA	Registered Area (ha)	Registered Area (%)	Registered Members	Registered Members (%)	Num. of Block	Num. of Lateral
Block A	C1*	103	96%	84	95%	6	15
	C2	121	77%	132	74%	9	16
	C3	215	90%	206	88%	11	32
	C4	155	85%	161	87%	9	26
	C5	61	98%	62	98%	3	7
	C6	80	95%	79	94%	5	15
	M1-4	66	99%	68	99%	4	10
	M5-9	94	100%	98	100%	5	14
	WSC	59	100%	59	100%	3	8
Block B	NLLC-A (A)-(D)	87	69%	253	65%	3	22
	NLLC-B (E1)-(M4)	124	76%	259	76%	5	19
	SLLC-A* (R)-(U),(V1A-B)	128	96%	285	95%	4	22
	SLLC-B (V1C)-(X)	72	79%	107	78%	3	17
	CY	163	96%	264	96%	8	26
	CZ	203	87%	267	86%	10	39
TOTAL		1,731	88%	2,384	85%	88	288

Elaborated with data from the Japanese Experts.

* Model WUAs

Indicator 3: The action plan is authorized by General Assembly and implemented at two model WUAs in KIS.

[Achieved]

The action plans of two model WUAs (C1 and SLLC-A) for 2020 have been elaborated and duly approved by General Assembly in August 2020.

As for the implementation of the action plans, WUA SLLC-A is facing some difficulties to execute the original plan because the farmers have been unable to re-start cultivation due to the KIS rehabilitation works[3].

Indicator 4: The average paddy rice yield of trained farmers is increased to 6.0 MT in major season and 5.0 MT in minor season per ha after training.

[Almost achieved]

Rice yield in major season (2019) was 5.8 MT, corresponding to about ninety-seven (97) percent of the target.

Rice yield in minor season (2019) was 5.0 MT, achieving the target.

Indicator 5: The average net profit from rice on the trained farmers increase GHC 2000 after training.

[Almost achieved]

During the major season in 2019, the average increase of net profit of trained farmers was 1668 GHC. This is eighty-three (83) percent of the target. Although the target has not been reached, this figure is one point

[3] The rehabilitation works by GCAP was originally scheduled to finish in January 2020.

four times greater than the average of all farmers, indicating positive effects of the training on the net profit increase.

Data of the minor season has not been collected due to the COVID-19 influence.

(2) Important Assumptions from Output to Project Purpose

1) The rehabilitation of KIS is completed as scheduled.

[Unfulfilled]

Considering the delay of rehabilitation works, the PDM was revised.

At the time of the Evaluation, this assumption has not been fulfilled. According to KIS and GCAP, the rehabilitation is now expected to complete in the first quarter of 2021.

2) The Scheme Management Entity is functional according to the plan.

[Unfulfilled]

The assumption has not been fulfilled. Procurement of Scheme Management Entity (SME) is scheduled to start two months prior to the completion of the rehabilitation works. Because the rehabilitation is behind the original schedule for over a year, and the government discussion on the SME policy is ongoing, the introduction of SME at KIS has not materialized to date[4].

3) The rehabilitation works by GCAP do not give negative impacts.

[Unfulfilled]

The assumption has not been fulfilled. The delay of rehabilitation has prolonged the period during which the farmers cannot access to sufficient irrigation water, inhibiting them (particularly those in the Block B area) to practice farming that support their livelihoods. Likewise, the Project extension activities have been limited on those areas, and the operationalization of the WUAs has been constrained, supressing opportunities for the Project to demonstrate effectiveness.

3-4 Prospects to Achieve the Overall Goal

Overall Goal: **The total agricultural production in irrigation schemes for Ghana is increased.**

(1) Prospect to achieve the Overall Goal

Based on the following information, with fulfilment of present and additional important assumptions, the Overall Goal **is expected to be achieved**.

Indicator: The national agriculture production on GIDA scheme is increased from 44, 189 metric ton (MT) in 2015 to 66, 690 MT in 2023.

According to the projection by GIDA, the national agriculture production on GIDA scheme in 2023 will be 86,000 MT, exceeding the target indicator by 78 percent. Construction of Pwalugu irrigation project of

[4] Golden Exotics Ltd. a French firm which manages the banana plantation and also uses KIS has shown official interest in becoming SME of the scheme.

GOG will significantly expand irrigation area, and that will increase rice production to 86,000MT.

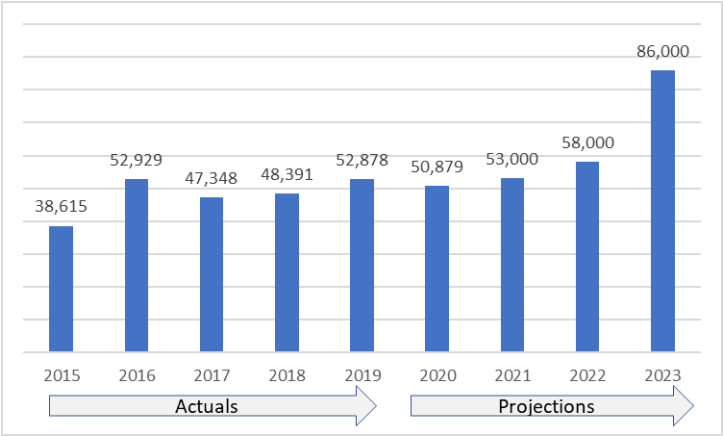

Figure 3-1. The national agriculture production on GIDA scheme (MT) from 2015 to 2023
Elaborated based on GIDA monitoring and projection as of 2020.

(2) Important Assumptions from Project Purpose to Overall Goal

GIDA disseminates the methodologies of irrigation scheme management, which the Project has developed in KIS, to other large irrigation schemes in the country.

[Will be fulfilled]

GIDA has expressed their strong will to disseminate the methodologies of irrigation scheme management introduced by the Project. The Project already has started providing training to those who are associated with non-targeted areas, and the working versions of manuals and guidelines are widely used by GIDA. WUAs have been established in three irrigated areas not targeted by the Project. These movements will contribute to the achievement of Overall Goal if the financial status of GIDA will be sustained.

3-5 Implementation Process

3-5-1. Revision of PDM

The Project has revised PDM twice to date. The Project reflected the change in the regulation into PDM3.0 (April 2017) that WUA, instead of the agricultural cooperatives, would be responsible for O&M of irrigation infrastructure (Output2). The Project also shifted its direction from promoting PPP in KIS to promoting market-oriented agriculture by WUA(Output4). The indicators of the Project Purpose were also largely revised as 1) from increase of rice production to increase of rice yield due to the delay of GCAP rehabilitation, and 2) setting detailed indicator to emphasise the institutional empowerment of WUA.

3-5-2. Reporting System

The Project (JICA experts) ensured monthly reporting to JICA Ghana Office, updating the Project progresses, and discussing associated issues. With the proliferation of COVID-19, the experts report to JICA HQ and maintained communications by holding online meetings. For regular periodic reporting, JICA Ghana share primary issues with JICA HQ.

3-5-3. Decision-making and monitoring mechanism

The JCC, as the highest decision-making mechanism of the Project, chaired by Chief Executive Officer of GIDA, is held to discuss and endorse the plan, and decide on the issues raised during the course of the project implementation, including the revision of PDM. Four JCC has been held as of July 2020.

Table 3-4. Joint Coordination Committee Meeting

No	Date	Major topics
1	November 9, 2016	JCC selected the 1st pilot area, and approved PDM ver.1 and PO ver.1 (PDM was revised to ver.2 on September 16, 2016)
2	March 1, 2018	Discussion on the future activities based on the review of activities so far.
3	March 5, 2019	Approval of revised PDM (version 3.6). Promotion and monitoring of OIRiC application, collaboration with aggregators/millers of to keep quality of KIS rice.
4	March 4, 2020	Approval of the GIDA capacity development plan.

3-5-4. Technical Committee established during the Project period

Besides the JCC, a Technical Committee was established for discussion with the representatives from GIDA／KIS、WUA、GCAP, and JICA. MOFA attends the meeting in observer nature.

Chapter 4. Evaluation Results with 5 Evaluation Criteria

4-1 Relevance

The relevance of the Project is evaluated "**High**" based on the following findings:

4-1-1. Relevance to the development policies and agriculture programs of Ghana

In accordance with the population growth, demand for rice is expected to rise and the Government of Ghana (GoG) emphasizes on the need to enhance the production capacity using irrigation schemes in the country to satisfy the increasing demands. Under the Coordinated Program of Economic and Social Development Policies (2017-2024), the MoFA Medium Term Development Plan (MTDP) hinges on the GoG MTDP, *An Agenda for Jobs: Creating Prosperity and Equal Opportunity for All 2018-2021*, targets "transforming agriculture and industry". The Food and Agriculture Sector Development Policy II (FASDEP II, 2007) is the overarching policy for the MOFA and is aligned to "An Agenda for Jobs". The current implementation plan for Ghana's agriculture sector is Investing for Food and Jobs (IFJ, 2018 - 2021): An Agenda for Transforming Ghana's Agriculture.

The Planting for Food and Jobs (PFJ) Campaign, which is captured in the METASIP III is a major driver in transforming and modernizing agriculture in Ghana. The PFJ prioritizes interventions in seed access and development, fertilizer access and fertilizer systems development, extension services, marketing, and e-agriculture. GIDA/KIS has been registered as the supplier of certified seed by MOFA, and presently the certified seed produced by the seed growers' group in KIS are purchased by PFJ.

4-1-2. Consistency with the ODA policies of Government of Japan

In the Country Assistant Policy of the Japanese Government (GoJ) for the Republic of Ghana (2012), the GoJ defines agriculture (rice production) as one of the priority areas in the Basic Policy, 'Assistance for the Promoting Dynamic Economic Growth that Benefits the People Widely.' The GoJ promotes the Rice Production and Agricultural Development Program, and the Project is an integral part of the Program. The Basic Policy was followed by the Country Assistant Policy for the Republic of Ghana (2019). The Project is regarded as a part of the Assistance Program for Small Scale Farmers in the priority area of the Strengthening Industry Including Agriculture in the Basic Policy of the 'Assistance for the Sustainable and Stable Economic Growth of Ghana.'

4-1-3. Relevance to needs of target area and beneficiaries

The Project has responded to the needs of target area and beneficiaries as explained as follows.

(1) Needs of GIDA/KIS

Among seventy (70) public irrigation schemes managed by GIDA, KIS is the biggest one in terms of the number of farmers and the irrigated areas, indicating its strategic significance and potentials to contribute to rice production increase in Ghana. In addition, its convenient location (accessibility to important commercial and consumption areas in the country) also qualifies KIS to be a pilot scheme of GIDA in pursuit of modernizing and strengthening the schemes nationwide. The Project has addressed the major issues of

GIDA/KIS related to the poor operation and maintenance, inadequate water management incoherent to the production plan, low collection rate of irrigation service fees, and scheme management oversight performance by capacity building of the officials and staffs. In 2016, new Irrigation Development Authority (Irrigation Water Users Association) Regulation (IWUAR-L.I 2230) was passed, which provides the legal framework for the establishment of WUAs in Ghana. Under its mandate, GIDA/KIS needed capacity building to embark on transforming the existing irrigation farmers organizations into WUAs as new entities in charge of effective scheme management.

(2) Needs of WUAs

It is WUA's responsibility to collect irrigation service charges (ISCs) in their operational areas from their members. However, the collection, submission and effective utilization of ISCs for irrigation scheme operations and maintenance is a challenge for newly established WUAs as it has always been for the previous farmers' cooperative due to poor organization and weak governance. The Project trained WUA leaders and lay foundation for operationalization and sustainable management of WUAs so that they become equipped with adequate skills, knowledge and capacity as an entity to effectively engage member farmers and ensure participatory and sound irrigation management scheme, which constitutes a critical path to achieve increased rice production at KIS.

(3) Needs of farmers

The preceding rice production at KIS was deemed inefficient against high potentials it possesses. Over planting and over fertilizing on farm and ineffective water usage were commonly observed. The project carried out a baseline survey to analyse the existing production patterns with the objective to identify areas of improvement, followed by a series of verification trials (soil and seeds), in view of defining productive and profitable rice production practices for the KIS farmers, and provided capacity building accordingly.

4-1-4. Relevance of the Project Plan

Same as mentioned in 3-5-1.

4-2 Effectiveness

The effectiveness of the Project is evaluated **"Relatively High"** based on the following findings:

4-2-1. Achievement of the Project Purpose

As described in 3-4, it is assumed that the Project Purpose is expected to be **almost achieved**.

4-2-2. Contribution of Outputs to the achievement of the Project Purpose

Output1 (the capacity of GIDA for scheme management oversight in KIS is developed) contributes to the achievement of the Project Purpose (the agricultural production in KIS is increased) for three reasons: (i) enhanced oversight capacity is essential for the water management of the scheme; (ii) GIDA becomes capable of facilitating the establishment and operationalization of WUAs; and (iii) GIDA becomes capable of

providing adequate extension services to farmers.

Output 2 (the management capacity of WUA is strengthened) also contributes to the achievement of the Project Purpose, closely associated with every one of its indicators. As WUAs become recognized by farmers not just as ISCs collecting agents but as entities to genuinely serve members' interests, WUAs are expected to play a greater role in assisting farmers improve rice production and sales.

Both Output 3 and 4 (capacity building for farmers in rice production techniques and marketing) would directly influence the achievement of the Project Purpose. Farmers will increase the rice yields per hectare as well as reduce cost of production per hectare by putting the production techniques into practice. By practicing market-oriented agriculture, farmers are expected to have access to better market (e.g. sell more and better with favourable conditions.)

4-2-3. Analysis of factors

1) Contributing factors

The following factors can be inferred as important factors that contributed to the achievement of the Project Purpose.

- **Technical assistance extended to cover the upstream of rice production value chain:** The Project elaborated a comprehensive methodology to improve the rice production efficiency and profitability. As the quality of rice seeds was identified as critical bottleneck for productivity, the Project provided technical assistance to improve the quality of foundation seeds and assisted the certified seed grower to obtain quality foundation seeds. The Project also trained the certified seed growers' group (originally 12 members, currently 11) at KIS and contributed to increase their production capacity. The production volume of CS for the major season in 2019 was 76.6 tons from 14.8 ha. of land, in comparison to 55.9 tons from 10.7 ha. of land in major season 2017. As the result, certified seeds have become more readily available to farmers, allowing them to use and increase the yields.

- **Continuous support for the establishment and early operationalization of model WUAs**: The Project spent significant amount of time and patience to facilitate the understanding of the founding members and consensus building among them to consolidate the establishment of the WUAs. With the support of the Project, two model WUAs have become operationalized and demonstrated the viability of new system of participatory irrigation management to the rest of the beneficiaries. This, in turn, has accelerated establishment and operationalization of non-model WUAs in KIS.

- **Awareness and commitment of GIDA/KIS**: GIDA/KIS played an important role as a certified seed supplier registered under the MOFA. KIS sought for potential markets to sell seeds and identified the PFJ as a buyer with steady demand. Initially, the sales to the PFJ caused distortion that left KIS farmers inaccessible to the certified seed produced at KIS, but this has been solved through negotiations with the PFJ to prioritize better supply to the KIS farmers. Strengthening of seed production capacity promoted by GIDA/KIS is generating impacts in favor of increasing seed production capacity at KIS. GIDA/KIS is exploring the possible partnership with private sector in expanding the seed production operation at the KIS and make this a viable business model to become independent from provision of

inputs from the Project.

2) Hindering Factors

Some major factors that have adversely affected the project effectiveness are as follows.

- **Adding WUA establishment and capacity building to the MASAPS-KIS Project:** WUA establishment and associated capacity building were originally embedded in the Ghana Commercial Agriculture Project (GCAP) of the World Bank and USAID. This change obliged the Project to reorganize the operational plan to accommodate new activities, resulting in taking more time to produce Project outputs.

- **Delay of KIS facility rehabilitation works:** The rehabilitation and modernization work by the GCAP has been behind schedule for nearly a year, leaving the MASAPS-KIS beneficiary farmers off faming. This situation jeopardizes the momentum carefully constructed by the Project to encourage farmers to practice the OIRiC on their farms. Likewise, without the irrigation water and income generating activities of member farmers, the WUAs are facing difficulties in implementing the current action plans and revising their budgeting and action plans for the current and coming year.

- **Insufficient agricultural machineries:** Conventional rice production is labor-intensive. Insufficient availability of workers due to COVID-19 (WUAs cannot mobilize workers because of the government restriction) and lowering affordability of contracting manual labor are increasing the demand for machines such as power tillers and combines. However, there are not enough machines readily available to the farmers. Even though the farmers prudently employ the OIRiC techniques, if they are unable to execute actions with input (labor) at proper timing, their rice production volume and quality, in other words productivity and profitability will be compromised.

4-3 Efficiency

The efficiency of the Project is evaluated "**High**" because the output is achieved with the expected inputs from the GoG and GoJ.

4-3-1. Achievement of Output

As described in 3-4, some of the Outputs were already achieved or close to full achievement.

4-3-2. Inputs

(1) Japanese Side

- Experts: Japanese experts with adequate expertise were dispatched and engaged in planning and carrying out project activities as needed. During the project implementation, the Japanese side accommodated the newly emerged needs of assistance with flexibility, in areas such as the establishment of WUAs (originally GCAP component) and capacity building to produce foundation seeds and certified seeds. Due to the COVID-19 influence in Ghana, the long-term experts had to return to Japan in April 2020 and continue to manage the project activities remotely. Since mobility restriction was also placed in Ghana, which has halted group capacity building, the evacuation of the Japanese

experts do not directly result in incompletion of planned activities.

- Equipment: The Project provided minimum equipment which has been used effectively in the project office and in the project sites.
- Training of C/P in Japan and in other countries (as mentioned in 3-1)
- Knowledge: technical expertise in the area of rice production in Ghana accumulated from previous JICA's technical assistance as well as the market-oriented agriculture based on the SHEP approach were adequately exploited.
- The total budget of the Project was 519,752,000 JPY (4,932,263 USD). It is projected that the total disburse amount under the Project during the original Project period will be 427,423,000 JPY (4,056,093 USD), corresponding to 82 percent of the budget.

(2) Ghanaian Side

- Assignment of personnel for the Project implementation, for training in Japan and in other countries, and funds allocation for general operational costs are mentioned in 3-1.
- GIDA/KIS provides production inputs to the certified seed grower group members upfront so that they can follow adequate production techniques. GIDA/KIS recovers the associated costs by deducting corresponding value from the purchase price when the producers sell the certified seeds to GIDA/KIS.
- Efficient resource allocation, capitalizing on the human resources already trained (equipped with certain level of relevant knowledge and techniques) in case of selecting farmers to form a group of certified seed growers.

4-4 Impact

The impact of the Project is evaluated as **"Relatively High"** based on the following findings:

4-4-1. Prospect of Achievement of the Overall Goal

As stated in 3-5, the Overall Goal is expected to be achieved with the projection provided by GIDA's monitoring division. The GoG is going to implement Pwalugu Irrigation Project, which will significantly expand irrigation land, and increase rice production. The establishment and operationalization of WUAs is expected to generate positive impacts on the productivity of rice and other crops in the irrigation schemes.

4-4-2. Positive impact on policy, institution

Considering the achievement of the Project, MoFA is in the process of endorsing the guidelines and manuals as official material. Because the Project produced the initial experiences of the establishment and operationalization of WUAs, the material will become primary guiding tool for the same actions being taken in other irrigation schemes. The government counterpart bodies (MoFA/GIDA/KIS) have recognized the authenticity and continuity of technical transfer by JICA as a long-standing development partner. The following materials are undergoing officialization:

1. Guidelines on the process of WUAs establishment with facilitation by supervising authority (GIDA)

2. Operation and Management Manual for WUAs
3. Guide for Certified Rice Seed Production in Irrigation Scheme

4-4-3. Positive Impact on Technology

The contents of training provided by the Project were appropriate and applicable to GIDA/KIS officials and technical staff, WUA leaders and farmers to practice. The government counterparts also appreciated the Project's extended capacity building for foundation seed production and certified seed production, which go beyond the original scope of the areas of technical assistance, but addressed the bottleneck of producing quality rice, which is highly associated with the productivity and profitability of farmers.

4-4-4. Positive Impact on Environment, Economy and Society

The Project carried out awareness raising on gender equality during the selection process of WUA executives, which is based on the nomination from WUA members. This has contributed to generating gender conscious outcome; 13 WUAs selected at least one woman for management committee executive position, and 8 of them designated as treasurers (very important position).

Table 4-1. Gender balance of WUAs (as of July 2020)

WUA	Registered Members		Number of GA**		Number of MC** Members		
	Total number	ratio of Women	Total	Women	Total	Women	Position of W
C1*	84	26%	21	1	7	1	Tre
C2	132	39%	27	5	9	1	Tre
C3	206	32%	21	4	11	1	Mem
C4	161	34%	45	5	11	2	Tre & Asst Sec
C5	62	35%	24	9	9	2	Sec & Tre
C6	79	32%	26	6	11	2	Mem2
M1-4	68	22%	27	3	7	0	
M5-9	98	33%	19	3	9	1	Tre
WSC	59	29%	18	4	7	1	Tre
NLLC-A (A)-(D)	253	48%	35	3	11	1	Mem
NLLC-B (E1)-(M4)	259	42%	36	7	11	3	Tre & Mem
SLLC-A* (R)-(U),(V1A-B)	285	48%	27	4	7	0	
SLLC-B (V1C)-(X)	107	30%	30	6	11	3	Tre & Mem
CY	264	36%	29	4	9	1	Mem
CZ	267	39%	21	5	7	2	Tre & Mem
Total	2,384	38%	406	69	137	21	

Elaborated with data from the Japanese Expert team.
*Model WUAs, **GA: General Assembly, MC: Managing Committee

4-4-5. Negative Impacts

No negative impacts (environmental, social, political, financial) observed by the Evaluation Team at the time of the evaluation.

4-5 Sustainability

The sustainability of the Project is evaluated "**Relatively High**" based on the following findings:

4-5-1. Laws and Policies

There is no foreseen change in the government sector policy and development policy regarding the promotion of irrigated rice production in the country. The legal framework for the establishment of WUAs (the Irrigation Development Authority Regulation, 2016, IWUAR-L.I 2230) remains valid in the foreseen future.

The Government flagship program, Program for Planting Food and Jobs, is likely to remain as an important partner for the GIDA/KIS while it continues.

4-5-2. Institutional Aspect

The ownership of GIDA and KIS of the technical knowledge and the experiences generated through the implementation of the Project is deemed high. Both stakeholders have engaged in the validation process of the guidelines and manuals produced by the Project. Currently, MoFA is in the process of officializing those materials, meanwhile GIDA has already embarked on establishment of WUAs in the irrigation schemes in other parts of the country, utilizing the KIS pilot experiences. GIDA/KIS technical officers and staff (agronomist, marketing officer, extension officers) are confident with utilizing the techniques to replicate conducting necessary analyses as well as to train farmers.

It should be noted that GIDA is expecting substantial personnel change, involving key counterpart officials for the Project (Director of Scheme Oversight and Deputy Chief Executive). However, other officials who have also heavily involved in the Project remain in their positions; thereby GIDA's institutional memory is rest assured, and adequate handover of responsibilities and tasks will be done the new appointees.

4-5-3. Financial Aspect

Nearly ninety (90) percent of GIDA budget is allocated for the maintenance and rehabilitation of schemes. GIDA is also heavily dependent on financial assistance from international donors. With the prevailing financial situation of the country and the declining budget size of GIDA, financial sustainability as it is now is a matter of concern. While the GoG funding for WUA establishment remains a challenge, the financial landscape concerning the irrigation scheme management will change with the management responsibility shifting from GIDA to SMEs. GIDA will become a supervising entity in charge of monitoring and expect to receive irrigation service fees via managing SME[5]. Once WUAs become more capable and sustainable in generating profits, they can pay for the irrigation services and other related services, which will also lessen financial burden on the government budget.

4-5-4. Ownership of Target Group (Farmers)

The 15 WUAs leaders have assumed different responsibilities covering thematic committees, ranging from agriculture, water management, to welfare, etc. They continue using relevant manuals of the Project to keep sound and strong functions of the WUAs. High commitment level is reflected by frequency of meetings held

[5] It is important to note that irrigation scheme is used not only by farmers/WUAs but also by commercial producers, and the latter contribute greater value of ISCs. SMEs, farmers and GIDA will define ISCs jointly at affordable level to farmers.

to attend issues raised by member farmers. The sustainability of WUAs is highly likely given that continue payment of membership fee to derive benefits. In April 2020, the formal procedure of federation of WUAs in KIS has also been launched, This will facilitate information dissemination and exchanges of ideas across the WUAs in KIS.

Trained farmers are convinced by the effects of the OIRiC on productivity and profitability (expressed to lesser extent) and making efforts to follow the techniques[6]. The satellite demonstration farm is open to all the farmers as a means for additional learning, but some farmers have voiced the need for more ToT for further dissemination and replication.

4-5-5. Technical Aspect

GIDA/KIS considers that the methodologies of establishment and operationalization of WUA and OIRiC will be the basis for standard quality rice production with profitability. Associated guidelines and manuals are under approval process by MoFA and expected to be widely referred to in other irrigation schemes.

GIDA/KIS extension staff have been fully committed to apply new skills and knowledge for conducting technical analyses and for supporting farmers. Farmers are largely satisfied with the improved service quality of the extension officers after the trainings.

In order to sustain the current dissemination and extension practices, it is important to consider the cost reduction of the satellite demonstration farms.

GIDA and District Agriculture Department (DAD) are in line to collaborate in other irrigation schemes and have already worked together for WUA establishment. Because the extensionists of DAD collaborate in the irrigation areas get transferred periodically, without placing adequate handover measures, the institutional memory can be easily lost. In this sense, new DAD agents should also undergo similar training as GIDA/KIS extension officers to catch up with the existing level of service provision.

[6] A total of 65 demonstration sites have been established by the trained farmers (19 from the first batch trainees, 27 from the second batch, and 19 from the third batch. The fourth batch training is to be conducted.).

Chapter 5. Conclusion

Considering all the achievements and progresses with on-going activities, the Project Purpose is expected to be almost achieved, generating positive impacts socially, economically, and institutionally.

Based on the baseline survey conducted at the early stage of the implementation, the Project elaborated a holistic technical transfer package, aiming at increasing productivity as well as profitability of rice production under irrigation scheme by reducing costs of production and raising yields. The Project spent tremendous efforts and time to assist the whole process of establishing and operationalization of the first cases of Water Users Associations (WUAs) under the new regulation in Ghana. Although WUAs as participatory irrigation management system is still at incipient stage of institutionalization, they have proven to be promising given their effectiveness in raising the collection rate of the Irrigation Service Charges (ISCs). The collection rate of the model WUAs at KIS was raised to 90-96 percent from 30-40 percent before WUAs. These figures (i.e. 90-96 percent) are exceptionally high and outperform the similar cases in other projects/countries. Organizational strengthening of WUAs is also leading to women empowerment: Thirteen (13) WUAs have women in executive positions, including 8 women performing as treasurers. This demonstrates important progress of endorsing gender equality in the Ghanaian society where men's leadership predominantly prevails and women's role in decision-making is traditionally less visible and passive.

The government stakeholders (i.e. GIDA and KIS) closely accompanied every stage of WUA establishment and operationalization processes. GIDA engaged its staff of other irrigation schemes and started replicating the experiences of GIDA/KIS in other donor projects. The guidelines and manuals elaborated by the Project are undergoing final stage of approval by the government to become official references. They are expected to be used nationwide, thereby to contribute to achieve the overall goal of the Project.

The farmers have experienced important improvement in rice productivity and profitability by changing their production techniques. Successful enhancement of rice seed production at KIS also opened new business possibilities. Farmers, including those who grow rice seeds, have become more confident with their farming practices, and with the expectation to be able to produce more and better rice and earn money.

However, in order to fully exploit the benefits from the OIRiC and seed production techniques, some issues remain to be addressed. Major issues include the government budgetary allocation and potential changes to be introduced under SME management, and the linkages with the private sector value chain actors to enhance productivity and profitability of rice production by improving farmers' access to production means and by strengthening the post-harvest.

Chapter 6. Recommendations

The Evaluation Team made the following recommendations which are expected to be materialized before the end of the Project period based on the results of evaluation.

6-1 Extension of the Project Period

The Evaluation team recommends the extension of the Project implementation period for 5 months (to June 2021) to carry out the pending activities of the original plan for achieving the Project Output and Purposes, and incorporating (additional) activities as follows:

6-2 Institutional strengthening

(1) **GIDA to continue to assign key officials/staff for the Project implantation and for sustainable usage of knowledge.** It is commendable that GIDA is already capitalizing on the knowledge and experiences acquired through the Project in improving management and governance in other scheme areas. During the remaining period of the Project, it is essential for GIDA to continue assigning key officials/staff for the Project implementation and facilitate knowledge/technical transfer across GIDA operations.

(2) **GIDA to keep monitoring the activities of the WUAs.** Since the WUAs at KIS are still at incipient stage, it will take time to become fully functional and consolidated as a mechanism for participatory and sustainable irrigation management. Therefore, it is natural that various issues have been already raised by members and will continue to do so. At this stage, it is recommendable that GIDA/KIS/Project continue to monitor the WUAs operations and management in view of stock taking the problems and issues faced by the WUAs management and the measures taken by them or by other stakeholders. Likewise, good practices and innovative initiatives by WUAs such as those demonstrated by the model WUAs in relation to the introduction of new modality of ISC payment (in kind), attempts to formalize WUA as a guarantor to facilitate access to finance, and collective sales of crops to the miller, among others. This activity will generate useful information for GIDA while rolling-out WUA establishment and operationalization in other irrigation schemes.

(3) **GIDA/KIS to keep activities to strengthen seed producers group in pursuit of their self-sustaining strategy.** Seed production plays important roles in increasing productivity and profitability[7] of rice producers in and outside KIS. The seed growers and KIS can increase income by selling the seeds. Due to GIDA's limited budgets from MoFA, the foundation seed (FS) production[8] as well as certified seed (CS) production at KIS are currently materialized with the provision of inputs from the Project. The challenge to graduate from this dependency should be addressed, ideally before the Project ends. GIDA/KIS management is exploring the amplification of FS production and sales by collaborating with private sector actors. GIDA/KIS envisages that such operation will create an enabling environment to

[7] Profitability can be enhanced because use of certified seeds has proven to be effective to reduce cost of production.
[8] Foundation seeds are inputs for certified seed production.

enhance CS production at KIS and to capitalize on the greater demand of the CS in and outside KIS. The Project can accompany the process and provide advisories to make a viable plan for continuation and potential expansion of CS production and sales.

6-3 Budgeting

(1) **MoFA and GIDA to secure appropriate budget allocation and fortify linkages with budget of other national initiatives (PFJ).** Currently, there is a limitation of budget allocation to MoFA and GIDA from the Government for continuing activities of the Project. PFJ is an important vehicle for the farmers to access to inputs (seeds and fertilizers) at subsidized (affordable) price, and there are KIS farmers who continue benefiting from the program. GIDA/KIS also considers PFJ as an important program which purchases the certified seeds produced at KIS.

(2) **GIDA to keep the satellite demonstration sites in practice.** The satellite demonstration sites have played important roles in demonstrating the benefits of OIRiC and disseminating the techniques properly to the farmers. Demonstration sites can be further promoted with some cost reduction measures by having linkages with private sector, or by designating part of ISCs for operation and management.

6-4 Amplification of Project outputs

(1) **GIDA to finalize the manuals/guidelines, to promote use of manuals/guidelines for other irrigation schemes.** For example, as part of promotion efforts, GIDA/KIS and the Project can hold a dissemination seminar, inviting other donors who support irrigation farming.

(2) **GIDA to utilize the results of surveys on Consumer's preference and the demands of domestic rice after sharing the study report.** This is for planning its own actions as well as for supporting farmers in terms of the Output 4 (Market-oriented Agriculture) of the Project. The analysis of the consumer survey has been completed and the Project is going to share the results with GIDA and other stakeholders.

(3) **MoFA to take measures to minimize further delay of rehabilitation and modernization works by GCAP, while GIDA/KIS/Project conduct closer monitoring of the rehabilitation progress at KIS and discussions with GCAP and JICA.** From the Project standpoint, it is essential to understand how and to what extent the rehabilitation works can bring impacts on the effectiveness of the Project intervention and the achievement of the Project purpose. The Project needs to keep close monitoring of the progresses through communication with GCAP and GIDA/KIS, and farmers. The Project should share updates with JICA HQ and JICA Ghana to assess the changing situations and take appropriate actions in a timely manner.

(4) **The Project to provide closer attention and support to the farmers in the Block B area (NLLC-A, NLLC-B, SLLC-A, SLLC-B, CY, CZ).** Farmers in this area have been heavily affected by the delay of rehabilitation works, and some of them have expressed frustration of falling behind the capacity

building. While the farmers remain eager to adopt the OIRiC, it is suggested that the Project should contemplate measures that facilitate knowledge dissemination and technical transfer activities and accompany the farmers to try new techniques on their farm. One idea is conducting the Training of Trainers, while not limiting the target to the lateral leaders but selecting farmers with extensionist mindset.

(5) **The Project to organize information regarding the market linkages that GIDA/KIS farmers presently have.** There seems to exist different patterns of business relationships between farmers (including family aggregators who share the same household budgets with the farmers) and buyers (processors, wholesalers, market retailers, input dealers, etc.). Different ways in which farmers obtain agricultural inputs, negotiate sales price, and receive payment (mode of payment such as via mobile account, cash, and timing of payment such as upfront, 2-3 months later after the harvest season, etc.) are largely decided based on the relationships with market actors. Collecting and organizing such information will facilitate identification of areas in need of technical support to raise both productivity and profitability of rice as well as to promote market-oriented agriculture.

Chapter 7. Lessons Learnt

Principal lessons learnt from the Project implementation are as follows:

7-1 Strengthening of WUAs

(1) **Continuous awareness building activities concerning the mission and value of WUAs and enhanced transparency of decision-making process of ISCs are key factors for the establishment of WUAs and high collection rate of ISCs.** Carrying out pilot cases (i.e. Model WUAs) and disseminating their experiences to the rest of farmers and nascent WUAs accelerated the establishment and registration of formal WUAs. There is a good practice that the Project collaborated with the existing foundation of farmers cooperatives (OACS) for achieving smooth establishment of WUA[9].

(2) **With functioning WUAs it is possible to raise collection rate of Irrigation Service Charges (ISCs).** As showcased by the increased collection rate of ISCs of WUAs at KIS, when adequate governance is installed and functioning with greater transparency, the farmers become more aware of the responsibilities tied to the access to proper irrigation and commit to their responsibilities as WUA members. Such behavior changes of farmers open pathways to viable, participatory, and sustainable irrigation operation and management. WUAs also serve as platform for technology transfer for higher productivity.

(3) Regardless of the rehabilitation delay, WUAs remain active with several technical supports by the Project. There was a concern that unfair water distribution due to the rehabilitation delay could easily interrupt ISCs collection. To avoid that, the Project conducted several technical supports to distribute water as fair as possible. These efforts can be said to be a good example of the actions taken by the Project to minimize the negative effect of important assumption by utilizing technical knowhow of the experts on irrigation management.

7-2 Enhanced productivity

(1) **Utilization of satellite demonstration plots has proven to be effective for dissemination of technical transfer.** It serves as platform to visualize the effects of OIRiC at private farms. Farmers use small inputs provided by the Project and practice acquired skills.

(2) **Seed production has led to substantial positive effects on productivity.** The Project extended its technical transfer to the upper stream of rice value chain, including breeder, foundation, and certified seed production. This has facilitated easier access for the farmers to certified seeds, the first essential component to realize higher productivity. The strengthening of FS and CS production capacities at GIDA/KIS also contributes to become major seed provider to other parts of the country.

[9] Some of the founding members of WUAs were selected amongst the leading members of OACS.

(3) **Capitalization of accumulated resource among the stakeholders enhances the efficiency and effectiveness of technical transfer in the Project target area.** JICA has had realized technical transfer of rice production techniques under irrigation scheme in Ghana over decades. As the result of such investment, there is a pool of trained farmers with accumulated knowledge and experiences. There is a tendency that those farmers already recognize the authenticity and benefits of the Japanese techniques; thereby their willingness to acquire additional knowledge and techniques tend to be very high. This Project, together with the GIDA/KIS team, identified such skilled farmers with relevant background, and mobilized them when forming a group of certified seed (CS) growers at GIDA/KIS.

To date, they have been successful in producing certified seed, which has received high reputation by MoFA, leading to greater demand of GIDA/KIS CS in the market. In essence, when a project defines target farmers for technical transfer, it is desirable to identify those who have willingness and measures to disseminate the knowledge and techniques, instead of designating leaders unconditionally as model farmers. Such approach is more likely to induce trickle-down effects on the rest of the members.

7-3 Propositions for the next project

The following can be considered during the elaboration of the design for the upcoming rice-related project in Ghana.

(1) **Fine-tune of the manuals/guidelines developed by the Project based on the characteristics of other irrigation schemes of GIDA.** The irrigation schemes managed by GIDA vary in terms of sizes, location, main crops, users (smallholder farmers, commercial farmers, private company), and management (i.e. ICOUR and GIDA, and potentially other SMEs in the coming years). The Project manuals/guidelines will need to be fine-tuned in accordance with the characteristics of the target area.

(2) **Seeking for building competitive domestic rice value chain.** The government stakeholders consider that there is a need to improve value chain of KIS rice. Even though the quality of rice produced at KIS has improved, such improvement has not been reflected in the increase of market price. The bottlenecks of post-harvest, such as mixture of rice from different origins at milling process and lack of branding have been discussed at JCCs. These issues need to be addressed to strengthen rice productivity and profitability sustainably.

(3) **Improvement of access to machineries**. The needs (types, specifications, costs, market size) for agriculture machinery should be identified and analyzed. One of the challenges commonly observed among the farmers is the difficulty in renting machines at the right time, and it inhibits them from following the adequate agronomic techniques (OIRiC) promoted by the Project. This, in turn, means that the farmers have less likelihood of fully enjoying the benefits that can be derived from the OIRiC. Improvement of access to machineries comprises possible areas of stronger linkages with private sector actors (Ghanaian and Japanese).

(4) **Designing a Project with careful setting of important "Assumptions" and needs of monitoring.** The Project design should contemplate the provision of technical assistance to WUAs in tandem with on-going or planned irrigation rehabilitation and modernization works in the area. The farmers suffer from temporally interruption of farming (sustained period can be unexpectedly longer) and due to the infrastructure works that involve suspension of irrigation water. This has non-negligible implications not only for the productivity and profitability for individual farmers, but also for the viability of WUAs functions and sound water management. Such risks should be taken into consideration at the beginning of roll-out strategy in the future.

(5) **Integrating support to assist farmers access to production inputs and machineries in a timely manner through financial inclusion**[10]**.** The Project beneficiary farmers have difficulties in purchasing inputs or machines[11] because their cash flow is tight. In general, farmers receive payment from their buyers in two to three months after sales of rice, with exception of those who are sponsored by fixed buyers (off-takers or millers) in the forms of upfront payments or input provisions. For example, many farmers have difficulties in preparing budgets to purchase inputs in time, which lead to postponing the production activities. When one farmer does not follow his/her crop calendar, which is synchronized with the calendar of other farmers who share the same irrigation branches, the group's water management plan may not be executed accordingly, affecting the production activity of various associated farmers. This poses challenge for income generation of farmers but also for consolidating the foundations to exercise participatory and sustainable irrigation and management through WUAs.

In this sense, it is highly recommendable to contemplate incorporation of financial inclusion approach in the Project design. In Ghana, where digitization has advanced, there are emerging business models and innovative tools in the agriculture sector[12], and there is a room for exploring these in terms of applicability to small scale rice producers be it individually or in a collective manner (via WUAs) under irrigation scheme.

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[10] Financial inclusion approach can help identify issues associated with different elements of agriculture value chain and to define potential solutions that financial and (associated) non-financial services can provide. See "Guidelines for Incorporating Financial Inclusion Perspectives into JICA Technical Cooperation Projects Targeting Smallholder Families" JICA/Kaihatsu Management Consulting Inc. (March 2020).

[11] As for machinery, renting is an alternative of purchase, but the demand is greater than supply by rental service providers (companies and individual owners).

[12] Some examples in Ghana are introduced in the Guideline (footnote 10), including business model of Esoko.Ltd., FINGAP by USAID, FISFAP by AGRA and MasterCard Foundation, and Saving and Internal Lending Communities (SILC) by Catholic Relief Service.

ANNEXES

1. The list of the main consulted personnel
2. The List of C/P
3. The current PDM and PO (version 3.6 as of 3rd May 2018)
4. The details of the equipment list
5. The List of C/P training participants
6. Evaluation Grid

Project Title: The Project for Enhancing Market-Based Agriculture by Smallholders and Private Sector Linkages in Kpong Irrigation Scheme
Implementing Agency: Ghana Irrigation Development Authority (GIDA), Ministry of Food and Agriculture
Target Group: Officials of GIDA, WUAs, small scale farmers in KIS and private sector
Period of Project: 2016-2021
Project Site: Kpong Irrigation Scheme

Version 3.6
Dated 5/03/2018

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
Overall Goal	（Proposed）				
The total agricultural production in irrigation schemes of Ghana is increased.	• The national agriculture production on GIDA schemes is increased from 44,189 metric ton (MT) in 2015 to 66,690 MT in 2023.	• National Agricultural Census			Ex-post evaluation by JICA will be conducted 3 years after the project completion. So the year of indicators for the Overall Goal is set at 2023.
Project Purpose					
The agricultural production in KIS is increased.	• **100% collection rate*** of Irrigation Service Charge in **two model WUAs** is achieved in 2020. ・**15** WUAs are **established** in KIS. ・The **action plan** is authorized by General Assembly and implemented at **two model WUAs** in KIS. • The average paddy rice yield of **trained farmers** is increased to **6.0 MT in major season** and **5.0 MT in minor season** per ha after training. ・The average net profit from Rice on **the trained farmers** increase **GHC2000** after training.	• KIS annual report ・Baseline and Folloow-up data from trainees	GIDA disseminates the methodologies of irrigation scheme management, which the Project has developed in KIS, to other large irrigation schemes in the country.		【Reason of Revice】Actually main activity has been concentrated for rice. (productuin and
Outputs					
1. The capacity of GIDA for scheme management oversight in KIS is developed.	• The capacity development plan is made by 2018. • 40 GIDA staff are trained on scheme management oversight in KIS.	• Project annual report	• The rehabilitation of KIS is completed as scheduled. • The Scheme Management Entity is functional according to the plan. • The rehabilitation works by GCAP do not give negative impacts.		
2. The management capacity of WUAs is strengthened.	• **More than 70% of the 288 lateral leaders** of WUA in the KIS are trained on water management and O & M of facilities. ・**50 WUA Exective are** trained on WUA organization stregthen.	• Project annual report			
3. The appropriate techniques for KIS is identified and practiced by trained farmers.	・**Trained farmers practice optimum rice cultivation techniques.**	• Project annual report			
4. Market-Oriented Agriculture is promoted in KIS.	・**More than 70% of the 288 lateral leaders** of WUA in the KIS are trained on Market-Oriented Agriculture.	• Project annual report			

Activities	Inputs		Important Assumption
		The Ghanaian Side	
1.1 To assess the efficiency and effectiveness of existing scheme management methodologies 1.2 To identify any factors which obstruct the efficient scheme management 1.3 To discuss the mandate of Scheme Management Entity with GCAP 1.4 To study the activities and business plans of SME in KIS 1.5 To design the framework for Project intervention 1.6 To implement capacity development plan including Training Programmes and OJT		a. Human Resources • Counterpart personnel b. Physical Input • Office Space for JICA Project Team c. Financial Input • Counterpart Fund for implement the Project activities	• The legislation status of **WUA/OACS** is not changed. • The price of domestic rice is not deteriorated sharply.
2.1 To facilitate the establishment of WUAs 2.2 To assess existing capacity in institutional building, O&M and water management, and training needs of WUAs 2.3 To develop appropriate curriculum and training materials 2.4 To conduct trainings for WUAs and the member farmers 2.5 To monitor and follow-up WUA's activities			Pre-Conditions The main contents of GCAP are not changed drastically.
3.1 To identify any factors which obstruct the increase in productivity and profitability of rice 3.2 To assess training needs of rice farmers and extension officers 3.3 To conduct trainings for extension officers of KIS and rice farmers 3.4 To align water use plan with proposed cropping calendar of all member of each branch WUAs.			<Issues and countermeasures> [Issue] There is a change of an important assumption. The legislation status of OACS might not be changed. However, Irrigation Development Authority (Irrigation Water Users Association) Regulations, 2016(L.I. 2230) has been enacted and WUA which will be formed by the regulation shall be in charge of water management. [Action]Target of Outputs and Activities related to water management will change from OACS to WUAs, once established.
4.1 To assess training needs of smallholders that promotes Market-Oriented agriculture in KIS 4.2 To design training curriculum for smallholder farmers to promote Market-Oriented Agriculture based on Activity 4.1. 4.3 To conduct baseline survey to identify the activities of private sectors and linkages with smallholders in KIS 4.4 To strengthen linkages between smallholder and private sectors			

* Irrigation service charge(ISC) collection rate =(the amount of ISC actual payment / the amount of payable ISC) × 100%

GCAP: Ghana Commercial Agriculture Project

Revision of Plan of Operation

Version

Project Title: The Project for Enhancing Market-Based Agriculture by Smallholders and Private Sector Linkages in Kpong Irrigation Scheme

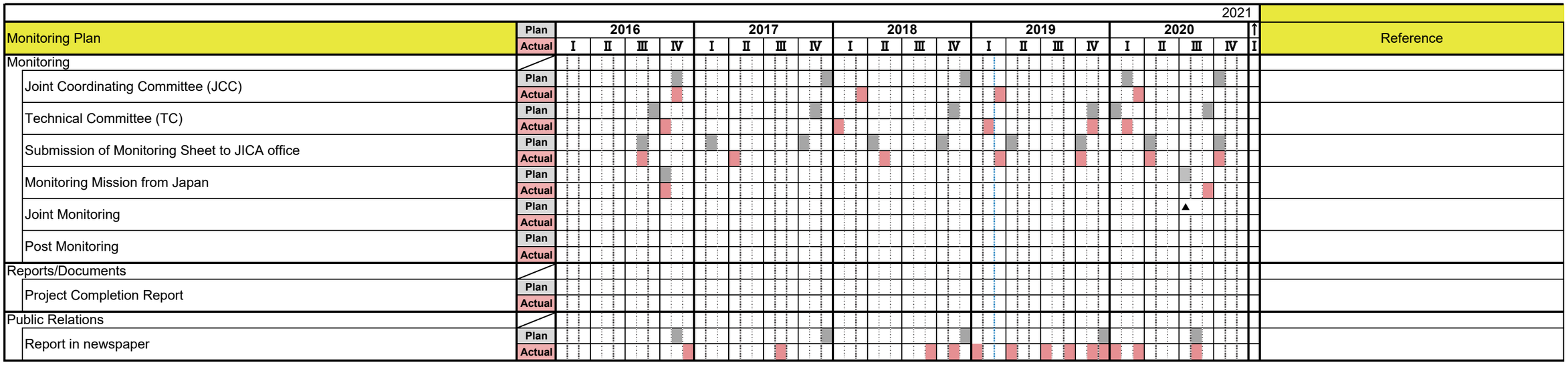
Inputs	Plan / Actual	2016 I	2016 II	2016 III	2016 IV	2017 I	2017 II	2017 III	2017 IV	2018 I	2018 II	2018 III	2018 IV	2019 I	2019 II	2019 III	2019 IV	2020 I	2020 II	2020 III	2020 IV	2021 I	Reference
The long term Experts																							
Institutional Building/Irrigation Scheme Management	Plan																						
	Actual																						
Water Users Association	Plan																						
	Actual																						
Market-oriented Agriculture/Project Coordinator	Plan																						
	Actual																						
Programme Coordinator	Plan																						
	Actual																						
Farm Management	Plan																						
	Actual																						
The short term Experts																							
Rice cultivation techniques and training	Plan																						
	Actual																						
WUA Evaluation/Capacity Building	Plan																						
	Actual																						
Seed Production/Quality Control/Guidelines Supervision	Plan																						
	Actual																						
Rice Marketing Improvement	Plan																						
	Actual																						
Baseline survey																							
Implementation of Baseline survey in KIS	Plan																						
	Actual																						
Equipment																							
Office equipment and instruments for field survey and demonstration farm, etc.	Plan																						
	Actual																						
Vehicles and motor bikes	Plan																						
	Actual																						
Training in Japan																							
Counterpart Training(Scheme Management Training for GIDA Officers)	Plan																						
	Actual																						
SHEP Training	Plan																						
	Actual																						
Improvement of Rice Cultivation Techniques	Plan																						
	Actual																						
Participatory Irrigation Management System for Paddies	Plan																						
	Actual																						
Post-Harvest Rice Processing for African Countries	Plan																						
	Actual																						
Maintenance, Operation and Management of Irrigation Facilities	Plan																						
	Actual																						
Irrigation and Drainage Technology based on Integrated Water Management	Plan																						
	Actual																						
In-country/Third country Training																							
SHEP Training in Kenya	Plan																						
	Actual																						
SHEP WS in South Africa/Senegal	Plan																						
	Actual																						
Technical exchange of WUA organization in Kenya	Plan																						
	Actual																						
Efficient Water Use for Moderate Irrigation Schemes in Egypt	Plan																						
	Actual																						
CARD Regional Training “Rice Cultivation” in Uganda	Plan																						
	Actual																						

Activities / Sub-Activities							2016				2017				2018				2019				2020				2021	Reference
						Plan / Actual	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	
Output 1: The capacity of GIDA for scheme management oversight in KIS is developed																												
1.1 To assess the efficiency and effectiveness of existing scheme management methodologies	o	o				Plan																						
						Actual																						
1.1.1 To review operation and maintenance manual in KIS	o	o				Plan																						
						Actual																						
1.1.2 To conduct field survey	o	o				Plan																						
						Actual																						
1.2 To identify any factors which obstruct the efficient scheme management	o	o				Plan																						
						Actual																						
1.3 To discuss the mandate of Scheme Management Entity with GCAP	o	o		o		Plan																						
						Actual																						
1.4 To study the activities and business plans of SME in KIS	o	o		o		Plan																						
						Actual																						
1.5 To design framework for Project intervention	o	o		o		Plan																						
						Actual																						
1.6 To implement capacity development plan including Training and OJT	o	o	o	o	o	Plan																						
						Actual																						
1.6.1 To prepare training materials	o	o	o	o	o	Plan																						
						Actual																						
1.6.2 To implement training and OJT	o	o	o	o	o	Plan																						
						Actual																						

Activities / Sub-Activities	Plan / Actual	2016 I	2016 II	2016 III	2016 IV	2017 I	2017 II	2017 III	2017 IV	2018 I	2018 II	2018 III	2018 IV	2019 I	2019 II	2019 III	2019 IV	2020 I	2020 II	2020 III	2020 IV	2021 I	Reference
Output 2: The management capacity of Water Users Association (WUA) is strengthened.																							
2.1 To facilitate the establishment of WUA	Plan																						
	Actual																						
2.1.1 To assess current state of farmers organizations' activities	Plan																						
	Actual																						
2.1.2 To facilitate update of farmers list in KIS	Plan																						
	Actual																						
2.1.3 To facilitate establishment of pilot WUAs	Plan																						
	Actual																						
2.1.4 To facilitate establishment of other WUAs	Plan																						
	Actual																						
2.2 To assess the existing capacity in institutional building, O&M and water management, and training needs of WUA	Plan																						
	Actual																						
2.3 To develop appropriate curriculum and training materials	Plan																						
	Actual																						
2.3.1 To develop appropriate curriculum and WUA administration, O&M and water management training materials	Plan																						
	Actual																						
2.3.2 To improve water use plan on the paddy field	Plan																						
	Actual																						
1) To investigate water level & volume on the field	Plan																						
	Actual																						
2) To examine water management operation corresponding to cultivation stage of rice	Plan																						
	Actual																						
2.4 To conduct training for WUA and farmers	Plan																						
	Actual																						
2.5 To monitor and follow-up WUA's activities	Plan																						
	Actual																						
2.5.1 To monitor and follow-up established WUAs	Plan																						
	Actual																						
2.5.2 To facilitate the capacity building for administration of the Association and water management operation & maintenance	Plan																						
	Actual																						

Activities / Sub-Activities	Plan / Actual	2016 I	2016 II	2016 III	2016 IV	2017 I	2017 II	2017 III	2017 IV	2018 I	2018 II	2018 III	2018 IV	2019 I	2019 II	2019 III	2019 IV	2020 I	2020 II	2020 III	2020 IV	2021 I	Reference
Output 3: The productivity and profitability of rice cultivation is increased.																							
3.1 To identify any factors which obstruct the increased productivity and profitability on rice	Plan																						
	Actual																						
3.1.1 To assess the present status of paddy cultivation in and around the scheme area	Plan																						
	Actual																						
1) To assess production cost per hectare, and season on rice production	Plan																						
	Actual																						
2) To secure and establish the trial fields to identify appropriate cultivation techniques	Plan																						
	Actual																						
3) To identify the rice seed production techniques at farmer's level	Plan																						
	Actual																						
3.1.2 To examine and propose appropriate cultivation management techniques for product commercialization	Plan																						
	Actual																						
1) To implement trials on fertilizer (Nitrogen amount and application timing)	Plan																						
	Actual																						
2) To implement trials on planting density (amount of seed and spacing)	Plan																						
	Actual																						
3) To implement trials on variety (variety comparison)	Plan																						
	Actual																						
4) To verify the techniques of on-farm water management for rice cultivation	Plan																						
	Actual																						
5) To condust soil analysis (chemical & physical properties by short-term expert)	Plan																						
	Actual																						
3.2 To assess training needs of rice farmers and extension officers	Plan																						
	Actual																						
3.2.1 To review existing cultivation manuals for extension	Plan																						
	Actual																						
3.2.2 To formulate the extension material (guideline and manual) as to cultivation techniques for extension officers and farmers	Plan																						
	Actual																						
3.3 To conduct training for extension officers of KIS and rice farmers	Plan																						
	Actual																						
3.3.1 To organize seminars for cultivation techniques and seed production	Plan																						
	Actual																						
3.3.2 To organize field day for rice cultivation techniques and seed production	Plan																						
	Actual																						
3.3.3 To make follow up ex-trainees with technical services	Plan																						
	Actual																						
3.4 To align water use plan with proposed cropping calendar of all member of each branch WUA	Plan																						
	Actual																						
3.4.1 To promote extension technology by utilizing demonstration farms of scheme area	Plan																						
	Actual																						
1) To plan and establish demonstration field	Plan																						
	Actual																						
2) To verify the each rice cultivation technique at demonstration field in collaboration with leading farmers	Plan																						
	Actual																						
3) To disseminate verified techniques to the farmers	Plan																						
	Actual																						
3.4.2 To explain to all membr of each branch WUA about the improvement of water distribution plan and cropping calendar	Plan																						
	Actual																						

Activities / Sub-Activities	Plan / Actual	2016 I	2016 II	2016 III	2016 IV	2017 I	2017 II	2017 III	2017 IV	2018 I	2018 II	2018 III	2018 IV	2019 I	2019 II	2019 III	2019 IV	2020 I	2020 II	2020 III	2020 IV	2021 I	Reference
Output 4: Market-Oriented Agriculture is promoted in KIS.																							
4.1 To assess training needs of smallholders to promote Market-Oriented agriculture in KIS	Plan																						
	Actual																						
4.2 To design training curriculum for smallholder farmers to promote Market-Oriented Agriculture based on Activity 4.1	Plan																						
	Actual																						
4.2.1 To develop training materials	Plan																						
	Actual																						
4.2.2 To conduct trainings and improve training materials	Plan																						
	Actual																						
4.2.3 To monitor and conduct evaluation for the result of training	Plan																						
	Actual																						
4.3 To conduct baseline survey to identify the activities of private sectors and linkages with smallholders in KIS	Plan																						
	Actual																						
4.3.1 To assess needs of intervention of private setors to vitalize value chain of rice in KIS	Plan																						
	Actual																						
4.3.2 To conduct study tour for farmers to understand private sectors activites.	Plan																						
	Actual																						
4.4 To strengthen linkage between smallholders and private sectors	Plan																						
	Actual																						
4.4.1 To organize business forum in KIS	Plan																						
	Actual																						
4.4.2 To conduct workshops to improve rice value chain in KIS and farmers' profitability in collaboration with stakeholders	Plan																						
	Actual																						


2021
Monitoring Plan
Plan
Actual
2016
2017
2018
2019
2020
Reference
Monitoring
Joint Coordinating Committee (JCC)
Technical Committee (TC)
Submission of Monitoring Sheet to JICA office
Monitoring Mission from Japan
Joint Monitoring
Post Monitoring
Reports/Documents
Project Completion Report
Public Relations
Report in newspaper

ANNEX 2. List of CP
(data compiled in September 2020)

No.	Name of counter part	Position	Term of Assignment	
			From	To
1	Dr. Ben Vas Nyamadi	Chief Executive	Jan-16	May-18
2	Ing. Willson Darkwah	Deputy Chief Executive (Eng.)	Jan-16	May-18
		Acting Chief Executive	Jun-18	Present
3	Mr. Samuel Dekyi	Deputy Chief Executive (Scheme Oversight)	Jan-16	Present
4	Mr. Chris Feruta-Benee	Director (Scheme Oversight)	Jan-16	Present
5	Mr. Albert Feefi Swatson	Scheme Manager of KIS	Jan-16	Mar-17
6	Mr. Joseph Nartey	Scheme Manager of KIS	Mar-17	Present
7	Ms. Juliet Adjei-Kyere	Senior Agronomist GIDA-HQ	Jan-16	Present
8	Ms. Vincentia Coffie	Marketing Officer GIDA-HQ	Jan-16	Present
9	Mr. Albert APPIAH	Finance and Administration KIS	Jan-16	Present
10	Mr. Anthony Seddoh	Maintenance Manager KIS	Jan-16	Present
11	Mr. Moses Kodjotse	Operation Manager KIS	Jan-16	Present
12	Mr. Promise Amegah	Water Management Senior Engineer KIS	Jan-16	Present
13	Mr. Solomon Buernor	Extension officer KIS	Jan-16	Sep-19
14	Mr. George A Quaye	Extension officer KIS	Jan-16	Present
15	Mr. S. K. Kwakye	Extension officer KIS	Jan-16	Sep-19
16	Mr. Raphael Edifor	Extension officer KIS	Jan-16	Present
17	Mr. Frank Kedzi	Extension officer KIS	Nov-18	Present
18	Ms. Helen Kane Gbirth	Extension officer KIS	Nov-18	Present
19	Mr. Mawunyo Korku Fie	Extension officer KIS	May-19	Present
20	Mr. Emmanuel Lartey	Extension officer KIS	May-19	Dec-19
21	Mr. Gideon Kwasi Appea	Purchase/Supply Kis	Jan-16	Nov-18
22	Mr. Tong-Kurug Kenneth	Water management Officer KIS	Jan-16	Present
23	Mr. Afari Obiri Philemon	Water management Officer KIS	Nov-18	Present
24	Mr. Fiaho Xoese Korku	Water management Officer KIS	Jan-16	May-18

Project Title: The Project for Enhancing Market-Based Agriculture by Smallholders and Private Sector Linkages in Kpong Irrigation Scheme
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		The Ghanaian Side	
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GCAP: Ghana Commercial Agriculture Project

Revision of Plan of Operation

Version

Project Title: The Project for Enhancing Market-Based Agriculture by Smallholders and Private Sector Linkages in Kpong Irrigation Scheme

Inputs	Plan / Actual	2016 I	2016 II	2016 III	2016 IV	2017 I	2017 II	2017 III	2017 IV	2018 I	2018 II	2018 III	2018 IV	2019 I	2019 II	2019 III	2019 IV	2020 I	2020 II	2020 III	2020 IV	2021 I	Reference
The long term Experts																							
Institutional Building/Irrigation Scheme Management	Plan																						
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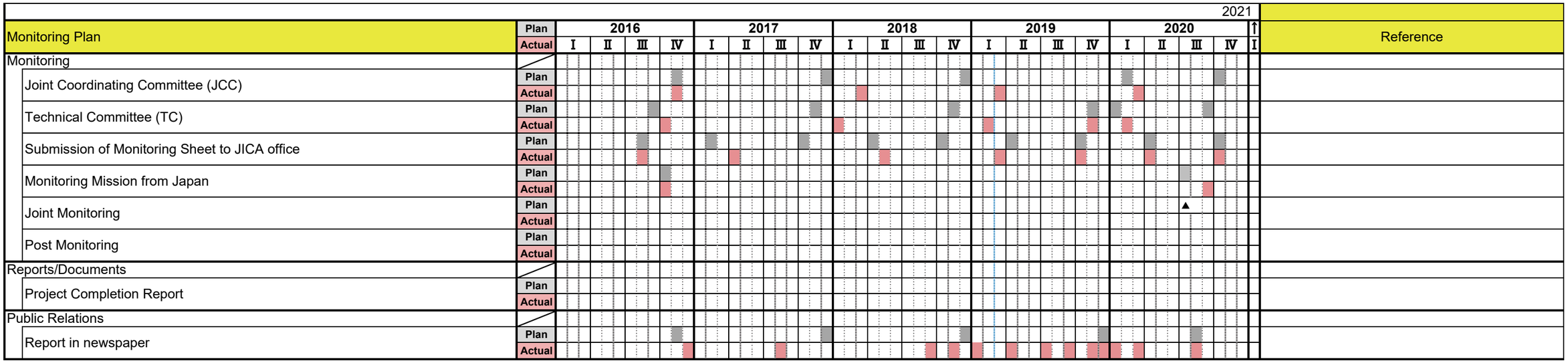
	Actual																						
Baseline survey																							
Implementation of Baseline survey in KIS	Plan																						
	Actual																						
Equipment																							
Office equipment and instruments for field survey and demonstration farm, etc.	Plan																						
	Actual																						
Vehicles and motor bikes	Plan																						
	Actual																						
Training in Japan																							
Counterpart Training(Scheme Management Training for GIDA Officers)	Plan																						
	Actual																						
SHEP Training	Plan																						
	Actual																						
Improvement of Rice Cultivation Techniques	Plan																						
	Actual																						
Participatory Irrigation Management System for Paddies	Plan																						
	Actual																						
Post-Harvest Rice Processing for African Countries	Plan																						
	Actual																						
Maintenance, Operation and Management of Irrigation Facilities	Plan																						
	Actual																						
Irrigation and Drainage Technology based on Integrated Water Management	Plan																						
	Actual																						
In-country/Third country Training																							
SHEP Training in Kenya	Plan																						
	Actual																						
SHEP WS in South Africa/Senegal	Plan																						
	Actual																						
Technical exchange of WUA organization in Kenya	Plan																						
	Actual																						
Efficient Water Use for Moderate Irrigation Schemes in Egypt	Plan																						
	Actual																						
CARD Regional Training “Rice Cultivation” in Uganda	Plan																						
	Actual																						

Activities / Sub-Activities							2016				2017				2018				2019				2020				2021	Reference
						Plan / Actual	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	
Output 1: The capacity of GIDA for scheme management oversight in KIS is developed																												
1.1 To assess the efficiency and effectiveness of existing scheme management methodologies	o	o				Plan																						
						Actual																						
1.1.1 To review operation and maintenance manual in KIS	o	o				Plan																						
						Actual																						
1.1.2 To conduct field survey	o	o				Plan																						
						Actual																						
1.2 To identify any factors which obstruct the efficient scheme management	o	o				Plan																						
						Actual																						
1.3 To discuss the mandate of Scheme Management Entity with GCAP	o	o		o		Plan																						
						Actual																						
1.4 To study the activities and business plans of SME in KIS	o	o		o		Plan																						
						Actual																						
1.5 To design framework for Project intervention	o	o		o		Plan																						
						Actual																						
1.6 To implement capacity development plan including Training and OJT	o	o	o	o	o	Plan																						
						Actual																						
1.6.1 To prepare training materials	o	o	o	o	o	Plan																						
						Actual																						
1.6.2 To implement training and OJT	o	o	o	o	o	Plan																						
						Actual																						

Activities / Sub-Activities		Plan / Actual	2016				2017				2018				2019				2020				2021	Reference
			I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	
Output 2: The management capacity of Water Users Association (WUA) is strengthened.																								
2.1 To facilitate the establishment of WUA	o	Plan																						
		Actual																						
2.1.1 To assess current state of farmers organizations' activities	o	Plan																						
		Actual																						
2.1.2 To facilitate update of farmers list in KIS	o	Plan																						
		Actual																						
2.1.3 To facilitate establishment of pilot WUAs	o	Plan																						
		Actual																						
2.1.4 To facilitate establishment of other WUAs	o	Plan																						
		Actual																						
2.2 To assess the existing capacity in institutional building, O&M and water management, and training needs of WUA	o	Plan																						
		Actual																						
2.3 To develop appropriate curriculum and training materials	o	Plan																						
		Actual																						
2.3.1 To develop appropriate curriculum and WUA administration, O&M and water management training materials	o	Plan																						
		Actual																						
2.3.2 To improve water use plan on the paddy field	o	Plan																						
		Actual																						
1) To investigate water level & volume on the field	o	Plan																						
		Actual																						
2) To examine water management operation corresponding to cultivation stage of rice	o	Plan																						
		Actual																						
2.4 To conduct training for WUA and farmers	o	Plan																						
		Actual																						
2.5 To monitor and follow-up WUA's activities	o	Plan																						
		Actual																						
2.5.1 To monitor and follow-up established WUAs	o	Plan																						
		Actual																						
2.5.2 To facilitate the capacity building for administration of the Association and water management operation & maintenance	o	Plan																						
		Actual																						

Activities / Sub-Activities	Plan / Actual	2016 I	2016 II	2016 III	2016 IV	2017 I	2017 II	2017 III	2017 IV	2018 I	2018 II	2018 III	2018 IV	2019 I	2019 II	2019 III	2019 IV	2020 I	2020 II	2020 III	2020 IV	2021 I	Reference
Output 3: The productivity and profitability of rice cultivation is increased.																							
3.1 To identify any factors which obstruct the increased productivity and profitability on rice	Plan																						
	Actual																						
3.1.1 To assess the present status of paddy cultivation in and around the scheme area	Plan																						
	Actual																						
1) To assess production cost per hectare, and season on rice production	Plan																						
	Actual																						
2) To secure and establish the trial fields to identify appropriate cultivation techniques	Plan																						
	Actual																						
3) To identify the rice seed production techniques at farmer's level	Plan																						
	Actual																						
3.1.2 To examine and propose appropriate cultivation management techniques for product commercialization	Plan																						
	Actual																						
1) To implement trials on fertilizer (Nitrogen amount and application timing)	Plan																						
	Actual																						
2) To implement trials on planting density (amount of seed and spacing)	Plan																						
	Actual																						
3) To implement trials on variety (variety comparison)	Plan																						
	Actual																						
4) To verify the techniques of on-farm water management for rice cultivation	Plan																						
	Actual																						
5) To condust soil analysis (chemical & physical properties by short-term expert)	Plan																						
	Actual																						
3.2 To assess training needs of rice farmers and extension officers	Plan																						
	Actual																						
3.2.1 To review existing cultivation manuals for extension	Plan																						
	Actual																						
3.2.2 To formulate the extension material (guideline and manual) as to cultivation techniques for extension officers and farmers	Plan																						
	Actual																						
3.3 To conduct training for extension officers of KIS and rice farmers	Plan																						
	Actual																						
3.3.1 To organize seminars for cultivation techniques and seed production	Plan																						
	Actual																						
3.3.2 To organize field day for rice cultivation techniques and seed production	Plan																						
	Actual																						
3.3.3 To make follow up ex-trainees with technical services	Plan																						
	Actual																						
3.4 To align water use plan with proposed cropping calendar of all member of each branch WUA	Plan																						
	Actual																						
3.4.1 To promote extension technology by utilizing demonstration farms of scheme area	Plan																						
	Actual																						
1) To plan and establish demonstration field	Plan																						
	Actual																						
2) To verify the each rice cultivation technique at demonstration field in collaboration with leading farmers	Plan																						
	Actual																						
3) To disseminate verified techniques to the farmers	Plan																						
	Actual																						
3.4.2 To explain to all membr of each branch WUA about the improvement of water distribution plan and cropping calendar	Plan																						
	Actual																						

Activities / Sub-Activities		2016				2017				2018				2019				2020				2021	Reference
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	
Output 4: Market-Oriented Agriculture is promoted in KIS.																							
4.1 To assess training needs of smallholders to promote Market-Oriented agriculture in KIS	Plan																						
	Actual																						
4.2 To design training curriculum for smallholder farmers to promote Market-Oriented Agriculture based on Activity 4.1	Plan																						
	Actual																						
4.2.1 To develop training materials	Plan																						
	Actual																						
4.2.2 To conduct trainings and improve training materials	Plan																						
	Actual																						
4.2.3 To monitor and conduct evaluation for the result of training	Plan																						
	Actual																						
4.3 To conduct baseline survey to identify the activities of private sectors and linkages with smallholders in KIS	Plan																						
	Actual																						
4.3.1 To assess needs of intervention of private setors to vitalize value chain of rice in KIS	Plan																						
	Actual																						
4.3.2 To conduct study tour for farmers to understand private sectors activites.	Plan																						
	Actual																						
4.4 To strengthen linkage between smallholders and private sectors	Plan																						
	Actual																						
4.4.1 To organize business forum in KIS	Plan																						
	Actual																						
4.4.2 To conduct workshops to improve rice value chain in KIS and farmers' profitability in collaboration with stakeholders	Plan																						
	Actual																						


2021
Monitoring Plan
Plan
Actual
2016
2017
2018
2019
2020
Reference
Monitoring
Joint Coordinating Committee (JCC)
Technical Committee (TC)
Submission of Monitoring Sheet to JICA office
Monitoring Mission from Japan
Joint Monitoring
Post Monitoring
Reports/Documents
Project Completion Report
Public Relations
Report in newspaper

ANNEX 4. The details of the equipment list

List of Equipment Procured

Item		Q'ty	Arrival date	Price (GHS)	Price (original currency)	installation site	Condition
1	Safe	1	2016/2/26	GHS 2,200		KIS Office	Good
2	Desktop PC	2	2016/3/16	GHS 9,436		KIS Office	Good
3	LaserJet color Printer	1	2016/3/16	GHS 1,829		KIS Office	Good
4	LaserJet color Printer	1	2016/3/16	GHS 1,829		KIS Office	For repair
5	Copy machine	1	2016/3/31	GHS 26,513		KIS Office	Good
6	Air Conditioner	1	2016/3/31	GHS 1,787		GIDA HQ	unable to use (discard requested)
7	Vehicle (Patrol)	1	2016/3/31	GHS 129,989	USD 33,500	JICA office*	Good
8	Vehicle (Pcik-up)	1	2016/3/31	GHS 79,545	USD 20,500	JICA office*	Good
9	30Kva Generator	1	2016/6/7	GHS 61,448	USD 16,043	KIS Office	Good
10	LaserJet color printer	1	2016/6/8	GHS 1,829		GIDA HQ	Good
11	Acrobat DC2015 12.0 WIN AOO License IE	3	2016/6/29	GHS 5,487		KIS Office	Good
12	Printer with stand	1	2016/7/27	GHS 8,736		JICA office	unable to use (discard requested)
13	Video camera	1	2016/12/20	GHS 1,900		JICA office*	Good
14	Digital Camera	1	2016/12/20	GHS 2,251		KIS Office	Good
15	Portable PC	1	2016/12/30	GHS 3,169		JICA office*	Good
16	Chlorophyll Meter	1	2017/3/1	GHS 6,125	JPY 149,040	KIS Workshop	Good
17	N730 Automatic Level	1	2017/3/1	GHS 4,306		KIS Office	Good
18	Electromagnetic current meter	1	2017/4/21	GHS 14,483	JPY 370,872	KIS Workshop	Good
19	Penetrometer	1	2017/4/21	GHS 6,917	JPY 177,120	KIS Workshop	Good
20	Boring Stick	1	2017/4/21	GHS 3,888	JPY 99,576	KIS Workshop	Good
21	Soil Moisture Meter	1	2017/4/21	GHS 6,959	JPY 178,200	KIS Workshop	Good
22	Soil Hardness Meter	1	2017/4/21	GHS 2,665	JPY 68,256	KIS Workshop	Good
23	Incubator	1	2017/4/21	GHS 2,994	JPY 76,680	KIS Workshop	Good
24	Drying oven	1	2017/4/21	GHS 5,061	JPY 129,600	KIS Workshop	Good
25	Room Air Conditioner	1	2017/4/14	GHS 2,300		KIS Workshop	Good
26	Welding Machine	1	2018/2/2	GHS 6,888		KIS Workshop	Good
27	Rice Blower	1	2018/2/6	GHS 2,400		KIS Workshop	Good
28	Desktop PC	1	2018/2/23	GHS 3,200		GIDA HQ	Good
29	Rice Blower	1	2018/3/1	GHS 2,400		KIS Workshop	Good
30	Power Tiller with Gage Wheel	1	2018/3/9	GHS 32,400		KIS Workshop	Good

31	Rice milling machine	1	2018/7/18	GHS 7,027	JPY 162,756	KIS Workshop	Good
32	Multi-function printer	1	2019/2/29	GHS 16,797		KIS Office	Good
33	Trailer for Power tiller	1	2019/3/8	GHS 10,920		KIS Workshop	Good
34	Rice Thresher	1	2019/3/8	GHS 13,520		KIS Workshop	Good
35	Air conditioner	1	2019/8/7	GHS 2,250		KIS Workshop	Good
36	Water pumping machine	1	2019/10/25	GHS 2,600		KIS Workshop	Good
37	Desktop PC	1	2020/2/4	GHS 2,649		WUA AKC1 office	Good
38	Desktop PC	1	2020/2/4	GHS 2,649		JICA office	Good
TOTAL				GHS 3,750,085		*temporary	

List of Equipment Provided

No.	Item	Q'ty	Arrival date	Price (GHS)	Price (original currency)	Installation Site	Condition
1	Motor cycles	2	Nov-17	GHS 31,618	-	KIS	Good
2	Motor cycles	3	Nov-17	GHS 33,733	-	KIS	Good
3	Motor cycle	1	Feb-18	GHS 13,375	-	KIS	Repairing by KIS (as of 21st July)
4	Motor cycles	2	Mar-19	GHS 23,314	-	KIS	Good
5	Vehicle (pick up)	1	Aug-17	GHS 94,300	USD 21,800	KIS	Good
TOTAL				GHS 196,340			

ANNEX 5. List of C/P training participants

Training Title: Scheme Management Training for GIDA Officers in Japan			
No.	Name	Position	Affiliation
Period: 28 Aug to 10 Sep, 2016			
Subject: Scheme Management			
1	Mr. Chris Feruta-Benee	Director (Scheme Oversight)	GIDA-HQ
2	Mr. Albert Feefi Swatson	Scheme Manager	KIS
3	Mr. Anthony Seddoh	Maintenance Manager	KIS
4	Mr. Promise Amegah	Water Management Senior Engineer	KIS
Period: 17 to 29 Oct 2017			
Subject: Scheme Management			
1	Mr. Samuel Dekyi	Deputy Chief Executive (Scheme Oversight)	GIDA-HQ
2	Mr. Kwasi Asare Mintah	Director of Planning, Monitoring and Evaluation Department	GIDA-HQ
3	Mr. Joseph Nartey	Scheme Manager	KIS
4	Mr. Albert APPIAH	Finance and Administration	KIS

Training Title: Market-oriented Agriculture Promotion for Africa in Japan & Kenya			
No.	Name	Position	Affiliation
Period: 6 to 19 Nov 2016 (Japan), 20-26 Nov 2016 (Kenya)			
Subject: Market-based Agriculture			
1	Mr. Moses Kodjotse	Operation Manager	KIS

Training Title: Improvement of Rice Cultivation Techniques in Japan			
No.	Name	Position	Affiliation
Period: 5 Mar to 28 Oct 2017			
Subject: Rice Cultivation			
1	Mr. Raphael Edifor	Extension Officer	KIS
Period: 10 Mar to 19 Oct 2018			
Subject: Rice Cultivation			
1	Mr. Moses Kodjotse	Operation Manager	KIS
Period: 10 Mar to 18 Oct 2019			
Subject: Rice Cultivation			
1	Ms. Helen Kane Gbirth	Extension Officer	KIS

Training Title: Participatory Irrigation Management System for Paddies			
No.	Name	Position	Affiliation
Period: 16 Aug to 27 Sep 2017			
Subject: WUA			
1	Mr. Tong-Kurug Kenneth	Water Management Officer	KIS
Period: 8 Aug to 27 Sep 2018			
Subject: WUA			
1	Mr. Narh-Fio Neizer	WUA Interim Committee Chairman	KIS
2	Ms. Naa Amon Koteikor	Principal Agronomist	GIDA-HQ
Period: 14 May to 3 July 2019			
Subject: WUA			
1	Mr. William Keni Noi	AK/C1 WUA Chairman	KIS
2	Mr. Tetteh Charles Hombey	SLLC-A WUA Chairman	KIS
3	Mr. Anthony Somma Boatbil	Regional Agronomist	GIDA Upper East Region

Training Title: Post-Harvest Rice Processing for African Countries			
No.	Name	Position	Affiliation
Period: 12 Aug to 30 Sep 2017			
Subject: Rice Cultivation			
1	Mr. Solomon Buernor	Extension Officer	KIS
Period: 20 Aug to 28 Sep 2018			
Subject: Rice Cultivation			
1	Mr. Martin ?	Extension Officer?	KIS

Training Title: Maintenance, Operation and Management of Irrigation Facilities			
No.	Name	Position	Affiliation
Period: 15 Oct to 9 Dec 2017			
Subject: Water Management			
1	Mr. Fiaho Xoese Korku	Water Management Officer	KIS
Period: 6 Jun to 17 Jul 2018			
Subject: Water Management			
1	Mr. Gideon Kwasi Appea	Water Management Officer	KIS

Training Title: Irrigation and Drainage Technology based on Integrated Water Management			
No.	Name	Position	Affiliation
Period: 4 Mar to 15 Sep 2018			
Subject: Water Management			
1	Mr. Anthony Seddoh	Maintenance Manager	KIS

Training Title: Efficient Water Use for Moderate Irrigation Schemes in Egypt			
No.	Name	Position	Affiliation
Period:22 Oct to 30 Nov 2017			
Subject: Water Management			
1	Mr. Promise Amegah	Water Management Senior Engineer	KIS
Period:13 Jan to 21 Feb 2019			
Subject: Water Management			
1	Mr. Samuel Dewona Tetteh	Agronomist	GIDA-HQ
2	Ms. Achiaa-Frimpongo Bernice	Agronomist	GIDA-HQ
3	Mr. Doodaa Gaspard	Agriculture Engineer	GIDA-HQ
Period: 1 Dec 2019 to 9 Jan 2020			
Subject: Water Management			
1	Mr. Tong-Kurug Kenneth	Water management KIS	KIS
2	Mr. Afari Obiri Philemon	Water management KIS	KIS
3	Mr. Sualihu Jalilu Ajaska	Principal Tech. Engineer	GIDA-HQ

Training Title: Third SHEP Approach Workshop in South Africa			
No.	Name	Position	Affiliation
Period: 12 to 15 Feb 2017 (South Africa)			
Subject: Market-based Agriculture			
1	Mr. Moses Kodjotse	Operation Manager	KIS
2	Ms. Vincentia Coffie	Marketing Officer	GIDA-HQ

Training Title: 2nd International Workshop for SHEP Approach in Senegal			
No.	Name	Position	Affiliation
Period: 10 to 12 Dec 2019 (Senegal)			
Subject: Market-based Agriculture			
1	Mr. Moses Kodjotse	Operation Manager	KIS

Training Title: CARD Regional Training on Rice Cultivation in Uganda			
No.	Name	Position	Affiliation
Period: 9 to 13 Dec 2019 (Uganda)			
Subject: Rice Cultivation			
1	Mr. Frank Kedzi	Extension Officer	KIS
2	Mr. Mawunyo Korku Fie	Extension Officer	KIS

The Project for Enhancing Market-Based Agriculture by Smallholders and Private Sector Linkages in Kpong Irrigation Scheme
Evaluation Grid

Verification of Performance				
Evaluation Questions		**Information needed**	**Information source**	**Survey Results**
Main Questions	**Sub-Questions**			
Were the Inputs allocated as planned?	Have Experts been dispatched as planned?	Comparison of plans and results	Project documents, Japanese experts, JICA Ghana	【YES】 ・There were few gaps and time lags between the assignments of different Japanese experts for the same posts. However, it did not cause issues for the project implementation. Assignments of different experts brought in more comprehensive views which contributed to enhance project effectiveness. COVID-19 has forced the experts to return to Japan and manage the project remotely though this has not caused significant delay in project activities. ・Long-term experts: Chief Advisor/Institution Strengthening/Irrigation Scheme Management, Program Coordination, Water Users Association, Program Coordination/Market-oriented Agriculture. ・Short-term experts: Seed production and quality management, WUA leadership and consensus building
	Have necessary equipment been installed / provided as planned?	Comparison of plans and results	Project documents, Japanese experts, JICA Ghana	【Mostly YES】 ・Minor exceptions with small agricultural machineries due to procurement delay.
	Have the installed/ provided equipment been properly used and maintained?	Comparison of plans and results	Project documents, Japanese Experts, GIDA, KIS	【YES】 ・As listed in the Annex 4
	Were the C/P Trainings conducted as planned?	Comparison of plans and results	Project documents, Japanese Experts, GIDA, KIS	【YES】 ・ Plan = 40 ・ Results =45
	For what and how much were local costs paid by the Japanese side?	Comparison of plans and results	Project documents, Japanese experts, JICA Ghana	3750085 GHC (JPN 45,968,987 1GHC=12.2581000 JPN) for office and field machines, equipment, vehicles, and motorcycles.
	Has the adequate budget been allocated for project management by the Ghanaian side? Has the allocated budget been efficiently executed?	Comparison of plans and results	Project documents, Japanese Experts, GIDA, KIS	C/P allocated budgets to support smooth operation of the Project, both at GICA HQ and at KIS.
	Were the C/P and management staff appointed as planned?	Comparison of plans and results	Project documents, Japanese Experts, GIDA, KIS	Yes. GIDA: Chief Executive, Deputy Executive, Director, Senior Agronomist, Marketing Officer KIS: Scheme Manager, Finance and administration Officer, Operation Manager, Senior Water Engineer, KIS Water Management Officers (3), Extension Officers (5-9)
	Were the Project office, furniture, telecommunication network, and facilities equipped as planned?	Observations Conditions of equipment	Project documents, Japanese Experts, GIDA, KIS	Yes. ANNEX 3.
	What expenditures were covered by the Government of Ghana? How much?	Expenditure items, amount	Project documents, Japanese Experts, GIDA, KIS	GIDA HQ covered costs (running cost of the Project office, office installation, running and maintenance costs of GIDA vehicles for the Project activities, and co-organizing workshop). GHC 205,000 KIS covered costs (installation of the Project office, running expenses - electricity, water, fuel) GHC 159,481
Comparing with indicators in PDM, have the Outputs been produced as planned?	**OUTPUT 1. The capacity of GIDA for scheme management oversight in KIS is developed.**			
	1-1 : To assess the efficiency and effectiveness of existing scheme management methodologies.	Assessment of irrigation scheme	Project documents, Japanese Experts, GIDA, KIS	・Map of the irrigation system made(scale 1/10,000). ・Map utilized by KIS staff and farmers to recognize existing situation and challenges on the field.
	1-2 : To identify any factors which obstruct the efficient scheme management.	Opinions of the CP regarding the results of the		・The Operational Manuals of KIS Project retrieved from the archives. Project water management team discussed the areas of improvements, such as recording log sheets and water distribution plan.

The Project for Enhancing Market-Based Agriculture by Smallholders and Private Sector Linkages in Kpong Irrigation Scheme
Evaluation Grid

Verification of Performance				
Evaluation Questions		Information needed	Information source	Survey Results
Main Questions	Sub-Questions			
	1－3：To discuss the mandate of Scheme Management Entity (SME) with Ghana Commercial Agriculture Project (GCAP)	Discussion record, MOU, if any.	Project documents, Japanese Experts, GIDA, KIS	・The Project participate in monthly technical meeting of GCAP and exchange views on the rehabilitation design plan and WUA, SME component.
	1－4: To study the activities and business plans of SME in KIS.	Results of the study, List of relevant businesses	Project documents, Japanese Experts, GIDA, KIS	・The Project participate in monthly technical meeting of GCAP and exchange views on the rehabilitation design plan and WUA, SME component.
	1-5:To design the framework for Project intervention.	Project report, process of designing		・Issues of overall process on WUA formation and establishment of two model WUAs confirmed at the meeting involving GIDA HQ, MASAPS-KIS, and GCAP (Dec. 2016 and Mar. 2017).
	1-6: To implement capacity development plan including training and OJT.	Project report, implementation report		・Trials of water flow measurement at paddy fields conducted by KIS staff. ・Overseas training provided for GIGA/KIS officers and staff.
	OUTPUT 2. The management capacity of WUAs is strengthened.			
	2-1: To facilitate the establishment of WUA.	Registration status, relevant law	Project documents, Japanese experts, GIDA, KIS, WUAs leaders, farmers	・In accordance with WUA Regulation, 2016 (L.I. 2230), WUA Interim Committee was formed to replace OACS, then WUAs were established and registered in MoFA. ・The Project and government stakeholders accompanies the whole process of organization and registration of WUAs. ・Updating Farmers List started in January 2017. As of July 2020, 88% of land and 85 % farmers are registered in 15 WUAS.
	2-2: To assess existing capacity in water management and training needs of WUAs.	Results of the assessment. CP's opinions regarding the results.		・Based on the results of baseline survey, training needs of WUA executive members and farmers analyzed. ・Some equipment for the field survey procured and started to be utilized.
	2-3: To develop appropriate curriculum and training materials.	curriculum, process of development of curriculum and training materials.		・Training curriculum and materials developed to cover (i) water management and maintenance; (ii) WUA organizational strengthening.
	2-4: To conduct trainings for WUA and the member farmers.	Training plan, Attendance record, Evaluation of learning level.		・Trainings programmed and conducted. ・Participants utilize the skills and knowledge transferred on their own, and with support from the Project and C/P as needed.
	2-5: To monitor and follow-up WUA's activities.	Methods and frequency of monitoring		・WUAs hold meetings bi-monthly or monthly. Japanese experts and C/P staff monitor the WUA activities by attending those meetings and keep communication with WUA leaders.
	OUTPUT 3. The appropriate techniques for KIS is identified and practiced by trained farmers.			

The Project for Enhancing Market-Based Agriculture by Smallholders and Private Sector Linkages in Kpong Irrigation Scheme
Evaluation Grid

Verification of Performance				
Evaluation Questions		Information needed	Information source	Survey Results
Main Questions	Sub-Questions			
	3-1: To identify any factors which obstruct the increase in productivity and profitability of rice.	Results of the baseline study	Project reports, Japanese experts, KIS (operation, maintenance, extension), GIDA	・Baseline survey report was completed in November 2016. ・Short-term expert was dispatched. Factors that obstruct rice production were identified and sub-activities formulated under Output 3. (strengthening seeds)
	3-2: To assess training needs of rice farmers and extension officers.	Results of the assessment. CP's opinions regarding the results.		・Baseline survey was conducted. ・Agronomical verification trials at test plots carried out to formulate adequate extension materials and guidelines for KIS farmers. A technical training package called "OIRiC - Optimum Input Rice Cultivation" elaborated, covering 5 technical areas: (i) use of certified seed; (ii) raising healthy seedlings; (iii) optimum seed rate and spacing; (iv) optimum amount of nitrogen application; and (v) efficient water management.
	3-3: To conduct trainings for extension officers of KIS and the rice farmers.	Training plan, Attendance record, Evaluation of learning level.		・Trainings for farmers programmed in 4 batches. At the time of the Termination Evaluation Study, three batches have completed the trainings.
	3-4: To align water use plan with proposed cropping calendar of all members of each branch WUA.	Status of elaboration of crop calendar, Level of alignment with water use plan.		・Trainings facilitate farmers to elaborate own crop calendar. Crop calendars are taken into account for the water use plan at WUAs.
	OUTPUT 4. Market-Oriented Agriculture is promoted in KIS.			
	4-1:To assess training needs of smallholders to promote Market-Oriented agriculture in KIS.	Results of the assessment. CP's opinions regarding the	Project documents, Japanese experts, KIS	・Series of training for farmers based on SHEP approach were conducted. Based on those trials, training needs of stallholders were assessed.
	4-2: To design training curriculum for smallholder farmers to promote Market-Oriented Agriculture based on Activity 4.1	curriculum, process of development of curriculum and training materials.	Project documents, Japanese experts, KIS	・Based on experience of Activity 4.1, contents of training finalized.
	4-3: To conduct baseline survey to identify the activities of private sectors and linkages with smallholders in KIS.	Results of Baseline survey	Project documents, Japanese experts	・As a result of baseline survey and Activity of Output 4., machinery service providers (MSP) and aggregators were identified as priority private sector stakeholders to vitalize value chain associated with KIS. ・Farmers outsource some of their cultivation activities to MSP. ・Main market channel is aggregators (<-It seems that this needs further analyses).
	4-4: To strengthen linkages between smallholders and private sectors.	Activities, results of activities	Project documents, Japanese experts, KIS extension officers, farmers	・Farmers Business Linkage Stakeholder Forum was held in Dec. 2017. ・The Project held workshops to mobilize MSP, focusing on 4 areas: (i) registration of SMP to KIS/GIDA; (ii) forming an association; (iii) selection of executive members; (iv) holding meetings for price setting with farmers. =>results not clear and not in use. ・The Project has carried out four marketing activities; including participation in the National Rice Festivals (2017 and 2018), the 35th Farmer's Day, and Stakeholders Forum to encourage farmers and private sector linkages (2016). ・The Project carried out consumer survey to understand the market demand of rice. Through these activities, the Project has engaged in assisting the farmers to promote KIS rice, to obtain market information, and facilitated communication with wider array of rice value chain actors. ・The Project team is considering to carry out more activities before the Project ends.

The Project for Enhancing Market-Based Agriculture by Smallholders and Private Sector Linkages in Kpong Irrigation Scheme
Evaluation Grid

Verification of Performance				
Evaluation Questions		**Information needed**	**Information source**	**Survey Results**
Main Questions	**Sub-Questions**			
Comparing with the indicators in PDM, will objectives of the Project be achieved? :	Indicator 1 : 100% collection of rate of Irrigation Service Charge in two model WUAs is achieved in 2020.	Status of collection rate	WUAs, KIS	・Collection rates of ISCs of two model WUAs – C1 and SLLC-A – are 95 percent and 90 percent respectively (collected in 2020 for the charges corresponding to the irrigation water usage during 2019). The same figures from the previous year were 88.5 percent for C1 and 89.6 percent for SLLC-A.
	Indicator 2 : 15 WUAs are established in KIS.	Status of WUA establishment	Project documents, Japanese experts	・15 WUAs completed registration by June 2019.
	Indicator 3 : The action plan is authorized by General Assembly and implemented at two model WUAs in KIS.	Status of action plans.	Project document, Japanese experts, KIS extension officer, WUA leaders	・The action plans of two model WUAs (C1 and SLLC-A) for 2020 have been elaborated and duly approved by General Assembly in August 2020. ・The action plans are being implemented. As for WUA SLLC-A (in Block B), they are facing some difficulties to execute the original plan because the farmers have been unable to re-start cultivation due to the delay of KIS rehabilitation works (GCAP). Farmers being off-farm influence on: (i) payment of ISCs (arrangement being made to be exempted for the charges during the non-service period); and (ii) water management plan.
	Indicator 4 : The average paddy rice yield of trained farmers is increased to 6.0 MT in major season and 5.0 MT in minor season per ha after training.	Rice production volume.	Project documents, Japanese experts, KIS extension officers, farmers	・Rice yield in major season (2019) was 5.8 MT, corresponding to about ninety-seven (97) percent of the target. ・Rice yield in minor season (2019) was 5.0 MT, achieving the target. ・In the satellite demonstration plots, higher yields have been observed, implying that the yields can exceed the target indicator.
	Indicator 5 : The average net profit from Rice on the trained farmers increase GHC 2000 after training.	Sales and cost of production and post-harvest of rice.	Project documents, Japanese experts, KIS extension officers, farmers	・The average net profit from rice of the trained farmers increased 1668 GHC. This is eighty-three (83) percent of the target. ・Although the target has not been reached, this figure is one point four times greater thanthe average net profit increase of ALL farmers. This means that the trained farmers enjoyed better profitability in comparison to the rest of farmers, indicating positive effects of the training on the net profit increase. ・This is the data of major season 2019. The Project team plans to collect data of minor season 2019 (pending due to COVID-19 influence
Is it expected that the national agriculture production under GIDA scheme will be increased?	The national agriculture production on GIDA schemes is increased from 44,189 metric ton (MT) in 2015 to 66,690 MT in 2023.	National agriculture production volume under GIDA scheme.	GIDA	・According to GIDA's projection, the national agriculture production on GIDA scheme in 2023 will reach 85,000 MT, exceeding the OVI. ・GoG is planning a Pwalagu multipurpose dam project. Pwalagu Irrigation Project is embedded in the dam project and will significantly increase the land area under irrigation.

The Project for Enhancing Market-Based Agriculture by Smallholders and Private Sector Linkages in Kpong Irrigation Scheme
Evaluation Grid

IMPLEMENTATION PROCESS				
Evaluation Questions		Information needed	Information source	Survey Results
Main Questions	Sub-Questions			
Were activities implemented as planned?	Have the Project activities been implemented in line with the PO (despite the PDM revisions)?	Comparison of plans and results, PO	Japanese experts, GIDA	Mostly yes, except for some parts of the training: the Project programed trainings of OIRiC and SREP to farmers dividing into 4 batches. The training of the 4th batch postponed due to the influence of COVID-19. These activities are to be implemented September/October 2020.
	Was there any effect from revising PDM?	Effects and Issues derived from revising PDM to project management	Japanese experts, GIDA	The PDM was revised twice. No significant issues derived from revising PDM to project management. The Project reflected the change in the regulation into PDM3.0 (April 2017) that WUA, instead of the agricultural cooperatives, would be responsible for O&M of irrigation (Output2). The Project also shifted its direction from promoting PPP in KIS to promoting market-oriented agriculture by WUA(Output4). The indicators of the Project Purpose were also largely revised as 1) from increase of rice production to increase of rice yield due to the delay of GCAP rehabilitation, and 2) setting detailed indicator to emphasis the institutional empowerment of
Is there any problem in the measures to transfer skill/knowledge/techniques ?	Measures to transfer skill/knowledge/techniques Target of the skills/knowledge/techniques	Opinions/evaluation of participants	Project documents, Japanese experts, WUAs, Farmers, Seed growers	No issue raised in terms of technical transfer. ・Training materials prepared by the Project with consultation with the CP. ・CP officials/technical officers acquired knowledge and techniques for replication. ・Farmers with previous training background (by past JICA technical transfer) were strategically selected for seed production. ・Satellite demonstration farms served as platform for technical transfer effectively
Is there any problem in the project management system (monitoring system, decision-making process, functioning of JICA Ghana office, communication mechanisms among project staff)?	#Does JICA HQ and JICA Ghana Office promptly adjust project activities, provide advice, and communicate with related agencies?	Opinions of Japanese experts, JICA Ghana	Project documents, Japanese experts, JICA HQ, JICA Ghana	The Project, JICA HQ and JICA Ghana maintained communication largely through monthly visit to the office and JCC (Ghana Office), and periodic reporting (JICA HQ). Negative effects because of the delay of rehabilitation work (GCAP) have been partly dealt with by the Project through operating fair water distribution, however, further risk control measures could have been considered involving JICA HQ/Ghana and C/P.
	#How is the Project monitored and what is improved as a result of the monitoring? Issues of the monitoring and actions to be taken to deal with the issues	#Japanese experts opinions, reports #JCC records #GIDA, KIS	Project documents, Japanese experts, JICA Ghana	The Project is monitored through reporting by the Project experts. C/P (KIS) holds weekly staff meeting and share issues and updates. JCC held four times. In addition to the Project progresses, participants actively engaged in discussions to exchange opinions on issues and potential actions to take. Main issues are well recorded in the JCC reports.
Do the implementing agency and C/P well understand/actively participate in the project?	How well does C/P recognize the Project activities?	Opinions from GIDA, KIS	Project documents, GIDA, KIS	The ownership of GIDA and KIS of the technical knowledge and the experiences generated through the implementation of the Project is deemed high. They engaged in the validation process of the guidelines and manuals produced by the Project. GIDA and MoFA consider the results of the Project highly relevant for non-target areas of the Project. MoFA is in the process of officializing those materials, meanwhile GIDA has already embarked on establishment of WUAs in the irrigation schemes in other parts of the country, utilizing the KIS pilot experiences. GIDA/KIS technical officers and staff are utilizing knowledge and skills transferred from the Project.
	Does T/G actively participate in the activities?	Opinions from KIS extension officers, WUA leaders, Farmers	Project documents, Japanese experts, KIS, WUA leaders	WUAs leaders are active to keep sound and strong functions of the WUAs. High commitment level is reflected by frequency of meetings held to attend issues raised by member farmers. Trained farmers are convinced by the effects of the OIRiC and making efforts to follow the techniques. The satellite demonstration farm is open to all the farmers as a means for additional learning.

The Project for Enhancing Market-Based Agriculture by Smallholders and Private Sector Linkages in Kpong Irrigation Scheme
Evaluation Grid

IMPLEMENTATION PROCESS				
Evaluation Questions		Information needed	Information source	Survey Results
Main Questions	Sub-Questions			
Are appropriate personnel assigned as C/P?	Are the C/P (GIDA, KIS) appointed as planned?	Staff allocation	Project documents, Japanese Experts,JICA, KIS	Staff appropriately appointed. With transfer of key officials, proper handover were performed and no significant constraints observed.
	Are the number of C/P, their roles, positions, capacity and assignment relevant?	Opinions of stakeholders	Project documents, Japanese experts,GIDA,	C/P assigned officials and staff appropriate for the Project implementation at GIDA HQ and KIS. Those with decision-making power as well as those with appropriate technical background and areas of responsibilities (water management, scheme oversight, agronomist, etc.) kept engaging in the Project and collaborate with JPN experts.
	Which organizations are involved in this project other than the direct beneficiaries? To what extent are these organizations involved?	Name of organizations and their activities deeply involved in the project other than T/G	Project documents, Japanese experts, KIS, WUAs, Farmers	No organization. The Project communicates with GCAP.
Did the Project take appropriate actions to respond to recommendation from the project planning mission?	Did the Project take appropriate actions to respond to recommendation from the project planning mission?	How the projects addressed the issues indicated at the time of the Project preparation. (collection of irrigation usage fees, linkages between farmers and private sector actors, etc.)	Project documents, Japanese experts, JICA Ghana office, GIDA, KIS	・【Rice value chain strengthening】The Project strengthened linkage with the crop service section of MoFA to improve the domestic rice supply chain. ・【Fair water distribution / Transparency in irrigation management】The Project provided detailed technical assistance for irrigation management and maintenance by farmers. Also, supported WUAs organizational strengthening in the area of irrigation management and maintenance. ・【Setting irrigation area manageable for farmers】 The Project accompanied the formation of 15 WUAs (12 to 17 WUAs were considered). WUAs are demarcated considering the branches, land levels, and (ethnic) clans, etc. and substantial discussion among the farmers. ・【Affordable ISCs for farmers】 ISC is defined in accordance with KIS standards. 400 GHC/ha/year is considered to be affordable for the farmers, judging from the collection rate.
Is there any other contribution factors or constraints during the project implementation?	What brings about those factors?	Influence by COVID-19, other socio-economic factors.	Project documents, Japanese experts, JICA Ghana office, GIDA, KIS	COVID-19 caused restrictions on gathering farmers for training. The remote management of the Project implementation by JPN experts also have influences on the execution of operation plan. However, the Project launched on individual technical consultation with trained farmers as training follow-ups by trained extension officers, which has been widely utilized.

The Project for Enhancing Market-Based Agriculture by Smallholders and Private Sector Linkages in Kpong Irrigation Scheme
Evaluation Grid

RELEVANCE					
Evaluation questions		Verification	Information needed	Information source	Survey Results
Main questions	Sub-questions				
NEEDS	Are objectives of the Project appropriate as a measure to solve issues of agricultural and rural development in Ghana at present?	PO is contributing to Ghana poverty alleviation and food security through agriculture development.	Agricultural issues in Ghanaian society.	GIDA, MoFA website, WB information	・In accordance with the population growth, demand for rice is expected to rise. ・GoG emphasizes on the need to enhance the production capacity using irrigation schemes in the country to satisfy the increasing demands.
	Is the Project still in line with the needs of the target groups (WUAs, farmers)?	The Project is aligned with the needs of the WUAs.	Changes of needs of KIS.	WUA leaders, GIDA, KIS	・It is WUA's responsibility to collect irrigation service charges in their operational areas among their members. ・The collection, submission and effective utilization of these charges for irrigation scheme operations and maintenance is a challenge for newly established WUAs as it always has been for the previous farmers cooperative due to poor organization and weak governance. ・The Project trained WUA leaders and lay foundation for operationalization and sustainable management of WUAs. ・WUA leaders can use newly acquired skills, knowledge and capacity to engage member farmers and ensure participatory and sound irrigation management scheme.
	Is the Project still in line with the needs of CP?	The Project is aligned with the needs of the GIDA and KIS..	Changes of needs of GIDA	GIDA, KIS	・The Project addressed main issues of GIDA/KIS related to the poor operation and maintenance, inadequate water management incoherent to the production plan, low collection rate of irrigation service fees, and scheme management oversight performance by capacity building of the officials and staffs. ・The Irrigation Development Authority (Irrigation Water Users Association) Regulation in 2016 (IWUAR-L.I2230) became effective. GIDA/KIS needed capacity building to embark on transforming the existing irrigation farmers organizations into WUAs as new entities in charge of effective scheme management.
	Is the Project still in line with the needs of farmers?	The Project is still in line with the needs of the farmers in the KIS.	Changes of needs of farmers.	KIS, Farmers	・ Traditional production is characterized as inefficient. Over planting and over fertilizing on farm and ineffective water usage were commonly observed. ・ The project carried out a baseline survey to analyze the existing production patterns with the objective to identify areas of improvement.
Priority	Is the Project in line with the direction of agricultural development under the development policies of Ghana?	The Project is in line with Ghana's agricultural development under the development policies of Ghana.	Position of rice production under irrigation in Ghana Medium term development policy 2017-2924 and in FASDEP II	GIDA, MoFA website, WB information	・Under the Presidential Coordinated Program (2017-2024), the MoFA Medium Term Development Plan (MTDP) hinges on the GoG MTDP, An Agenda for Jobs: Creating Prosperity and Equal Opportunity for All 2018-2021, targets "transforming agriculture and industry". ・The Food and Agriculture Sector Development Policy II (FASDEP II, 2007) is the overarching policy for the MOFA and is aligned to "An Agenda for Jobs". ・The implementation plan for FASDEP II is the Medium-Term Agricultural Sector Investment Plan III (METASHIP III, 2018-2021). ・The Planting for Food and Jobs (PFJ) Campaign, which is captured in the METASIP III is a major driver in transforming and modernizing agriculture in Ghana. The PFJ prioritizes interventions in seed access and development, fertilizer access and fertilizer systems development, extension services, marketing, and e-agriculture. KIS has been registered as the supplier of certified seed by MOFA, and presently the certified seed produced by the seed growers group in KIS sell the seeds to PFJ through the KIS.
	Is the Project in line with Japan's country assistance policy and JICA's implementation strategy?	The project is in line with Japan's country assistance policy and JICA's implementation strategy.	Japan's country assistance policy and priority areas. Role of this project in the Roll-out plan (Apr. 2014) Contents of assistance in agriculture sector addressed in TICAD VII	Japan's country assistance policy (April 2012), Roll-out plan (April 2014), TICAD VII report.	The Project is fully relevant to the latest policy between Ghana and Japan. In the Country Assistant Policy of the Japanese Government (GoJ) for the Republic of Ghana (2012), the GoJ defines agriculture (rice production) as one of the priority areas in the Basic Policy 'Assistance for the Promoting Dynamic Economic Growth that Benefits the People Widely.' The GoJ promotes the Rice Production and Agricultural Development Program, and the Project is an integral part of the Program. The Basic Policy was followed by the Country Assistant Policy for the Republic of Ghana (2019). The Project is regarded as a part of the Assistance Program for Small Scale Farmers in the priority area of the Strengthening Industry Including Agriculture in the Basic Policy of the 'Assistance for the Sustainable and Stable Economic Growth of Ghana.'

The Project for Enhancing Market-Based Agriculture by Smallholders and Private Sector Linkages in Kpong Irrigation Scheme
Evaluation Grid

RELEVANCE					
Evaluation questions		Verification	Information needed	Information source	Survey Results
Main questions	Sub-questions				
Adequacy as a measure	Is strategy of the Project appropriate to tackle development issues in the area of agricultural development?	KIS was appropriately selected.	#Changes in the adequacy of selecting KIS. #Changes of donor projects towards KIS.	Project reports, Experts, JCC records, GIDA, KIS, GCAP	・Among seventy (70) public irrigation schemes managed by GIDA, KIS is the biggest one in terms of the number of farmers and the irrigated areas, indicating its strategic significance and potentials to contribute to rice production increase in Ghana. ・KIS's convenient location (accessibility to important commercial and consumption areas in the country) makes it a good pilot case for GIDA in pursuit of modernizing and strengthening the schemes nationwide.
		Target groups are appropriately chosen.	#Selection criteria #Changes in justification of selection.		Farmers in KIS areas are the target group. During the WUA establishment process, the CP kept updating the Farmer's List, and record the number of farmers participating in WUA, and the farm area integrated into WUA accordingly.
		The project employed valid approach.	#CHANGES in Irrigation management, in WUA management performance, in production capacity, in Training/Extension skills.	Project reports, Experts, GIDA, KIS	・The Project carried out a baseline survey to identify the issues inhibiting rice productivity and profitability. Based on the results, "cost reduction" and "yield increase" approach was defined with corresponding training contents. ・In additional to production technique, SREP approach was elaborated based on the existing SHEP with modification for rice. ・Training has taken place in various forms to facilitate the learning of farmers, WUAs, and technical officers. Replication of satellite demo sites at the farms of trained farmers has turned out to be popular and effective. ・The CP largely assigned appropriate officers/staff for JICA training in Japan and in other countries in Africa. Most of them remain in the same position and utilizing their acquired knowledge and skills for the Project, and some for expansion of activities in non-target areas.
	Is the selection of the CP (GIDA/KIS) appropriate?	Selection of CP (GIDA/KIS) was appropriate. (needs for cooperation were high)	Process of determining GIDA/KIS as the C/P and relevancy of the C/P at present situation	Project reports, Experts,JICA, GIDA	Yes. The Government of Ghana needs to increase rice production capacity to meet the increasing demand of rice due to the population growth. Use of effective irrigation is essential to increase the production volume, and GIDA, the public irrigation management authority needed technical assistance to improve its management capacity and governance.
	Is any spillover effect observed with non-target groups?	Some spillover effects on non-target groups have been observed.	Some examples of spillover effects observed in non-T/G	Project reports, Experts, GIDA, KIS	Yes. GIDA has embarked on establishing WUAs in other schemes utilizing the KIS experiences. Three schemes have established WUAsso far.
	Are Japanese technologies effective (is the know-how of the necessary technology accumulated? Can Japanese experiences be effectively utilized?	The Japanese technologies (reflected in the irrigation management, water management, WUA, and OIRiC) transferred are effective.	Utilization of experiences accumulated from relevant projects, utilization of the know-how	Project reports, website, JICA	Yes. Technical assistance in rice production and irrigation management based on the Japanese know-how and adopted to the local context (Ghana and attributes found in KIS) were transferred. There are farmers and extension officers who were capitalizing on their existing knowlege and skills which they had acquired through relevant assistance and projects previously carried out.

The Project for Enhancing Market-Based Agriculture by Smallholders and Private Sector Linkages in Kpong Irrigation Scheme
Evaluation Grid

RELEVANCE					
Evaluation questions		Verification	Information needed	Information source	Survey Results
Main questions	Sub-questions				
Change in Project external environment (comparison with the situation at the time of the Project preparation).	Is there any significant change in Japan's development policy for Ghana?	Confirmation of Japan's development policy for Ghana.	Confirmation of Japan's development policy for Ghana	Assistant Policy of GoJ to Ghana	No significant change observed.
	Is there any significant change in policies for agricultural development in Ghana?	Confirmation of Ghana's development policy.	MOFA, GIDA policies	Project preparation mission report, MoFA, GIDA website	No significant change observed.
	Is there any significant social / economic change in Ghana?	Influence by COVID-19 Influence by climate change on crop production.	MoFA, GIDA, KIS, farmers, Experts opinions	Project preparation mission report, GIDA, KIS, farmers, Experts	No significant change observed except for the influence by COVID-19, including mobility restriction and restriction on physical meeting involving multiple participants. .

Effectiveness (Estimation)					
Evaluation questions		Verification	Information needed	Information source	Survey Results
Main questions	Sub-questions				
Achievement forecast for the Project Purpose	Is there a prospect to achieve the Project purpose?[The agricultural production in KIS is increased..]	Status of progress towards achieving the PO.	#Collection rate of 2 model WUA for irrigation service fee #Status of 15 WUA set up #Approval/Implementation of activities by 2 model WUA #Avrage rice yield #Average benefit from rice	Project reports, Experts, GIDA/KIS	The Project Purpose is expected to be almost achieved. There are five indicators associated with the Project Purpose; two of them are "achieved" and three of them are "almost achieved".
	Was there any effect from collaboration with other JICA projects / donors' program?	#Using Good practice of similar project #Effects of training are observed	#Status of similar projects #Good practice of collaboration #Contents of participated training	Project report, Experts, JIA Ghana, participants of training in Japan	The Project capitalized on the human resources (counterpart technical officers and farmers) who have been beneficiaries of previous technical assistance provided by JICA and acquired basic techniques. As such, the Project could count on utilizing those who have adequate background to engage in extension activities or in producing certified seed effectively.
Causality	How much of the Outputs has contributed to achieve the Project Purpose?	#Logicality bet, Outputs and Project purpose is valid #Outputs contribute to achievement of Project purpose #Outputs give impact each other	#Gegree of understanding on PDM #Access to production input #Usage of irrigation service fee #Average of yield and benefit of non-participated farmer	Project reports, Experts, GIDA, KIS	Logicality of the outputs and Project Purpose was assured in the manner as follows: -Output 1 contributes to the achievement of the Project Purpose because: (i) GIDA's enhanced oversight capacity is essential for the water management of the scheme; (ii) GIDA becomes capable of facilitating the establishment and operationalization of WUAs; and (iii) GIDA becomes capable of providing adequate extension services to farmers. -Output 2 contributes by feeding into each indicator of the Project Purpose. WUAs are expected to become functional not just in ISCs collection but also in effective water management and disseminating knowledge and techniques for productivity and profitability. -Output 3 and 4 directly influence the achievement of the Project Purpose. By following the OIRiC methods, farmers will increase the rice yields per hectare and reduce the cost of production per hectare. By practicing market-oriented agriculture, farmers are expected to access to better market.
	Is there a prospect to fulfill the important assumptions to achieve the Project Purpose by attaining the Outputs?	①The rehabilitation of KIS is completed as scheduled.	Progress of KIS rehabilitation	Project reports, Experts, GIDA, KIS	No. The rehabilitation work is behind the schedule nearly a year. It is now expected to complete in the first quarter of 2021.
		②The Scheme Management Entity is functional according to the plan.	Present function of SME	Project reports, Experts, GIDA, KIS	No. Procurement of SME has not started. The government discussion on the SME policy is still ongoing.
		③The rehabilitation works by GCAP do not give negative impacts	Status of rehabilitation work by GCAP and any negative impact	Project reports, Experts, GIDA, KIS	No. The delay of rehabilitation left some farmers off-farming for expended period time. Extension activities of the Project have faced constraints. Operationalization of WUAs has been constrained, suppressing opportunities for the Project to demonstrate effectiveness.

Effectiveness (Estimation)					
Evaluation questions		Verification	Information needed	Information source	Survey Results
Main questions	Sub-questions				
	Are there any contributing / hindering factor to achievement of the Project Objective?	Other than output, there is significant factor(s) to achieve the PO. Hindering factor, if any, is mitigated / solved.	Budget, COVID-19, associated donor project, etc.	Project documents Experts, JICA, CP. T/G	【Contributing factors】 -The Project effectively addressed the constraint of access to quality rice seed by enhancing seed production capacities. -The Project provided continuous support for the establishment and early operationalization of model WUAs. -Strong awareness and commitment of GIDA/KIS to strengthen the certified seed production and to strategize the enhanced capacity for sustainability and expansion of the operation. 【Hindering factors】 -Addition of WUA establishment and capacity building to the MASAPS-KIS, transferring from GCAP. The change burdened the Project to accommodate additional activities in the work plan. -Delay of KIS rehabilitation works. -Insufficient manpower and machineries available to the farmers to follow OIRiC properly.

Efficiency					
Evaluation questions		**Verification**	**Information needed**	**Information source**	**Survey Results**
Main questions	**Sub-questions**				
Achievement level of the Outputs	Has the Project been achieving the 4 Outputs?	Indicators for each output are already achieved / expected to be achieved	Check logical relation between outputs and project purpose Check the achievement level of targeted value for each indicator	Project documents (Latest progress report), Experts, KIS, GIDA, WUA Rep, Member farmers	Output 1 is almost achieved: GIDA capacity development plan was approved, and more than targeted number of GIDA staff trained. Output 2 is almost achieved: good progress with the number of lateral leaders trained, and more than targeted number of WUA executives trained. Output 3 is achieved because majority of the trained farmers practice the production techniques identified by the Project. Output 4 is almost achieved because good progress with the number of lateral leaders trained, and several other relevant activities have been carried out.
Appropriateness of inputs in terms of quality, quantity and timing	Have the Experts been dispatched appropriately for achieving outputs in terms of its number, expertise, and timing?	Compared with the plan, the volume, timing, activities' schedule, expertise, quality of outputs are satisfactory	Results of dispatch Attitudes of experts Opinion of C/P	List of dispatched expert, GIDA,KIS	Yes.
	Have the machineries and equipment been in good condition and operated in appropriate way?	Comparison with the plan, No negative effects to the project activities observed	Condition of machineries, equipment provided by the Project, C/Ps who use the provided machineries	List of equipment, maintenance levels, Experts	Yes.
	Are C/P training courses in Japan appropriate in terms of the number of participants, target, field/sector, content, period, and timing?	Comparison with the plan	Review trainings already conducted Leanings from the trainings and application of the earnings	List of training courses, Training reports, Experts, Trainees	Yes. CP trainees are utilizing the knowledge and techniques acquired by participating in the training for their areas of responsibilities.
	Have the C/P (GIDA, KIS) been allocated appropriately? Have the workload for other works, capacity and timing of appointment been appropriate?	Comparison with the plan, No negative effects to the project activities observed	Allocation of C/P to Project activities	Experts List of appointed C/P staff (incl. GIDA and KIS staff)	Yes. CP have allocated those officials with decision-making powers and staff in operations adequately. CP collaborated well with the Japanese expert team for the implementation of the Project.

Efficiency					
Evaluation questions		Verification	Information needed	Information source	Survey Results
Main questions	Sub-questions				
	Is there any problem in office, facilities and equipment provided by C/P?	No issues regarding the quality, scale and convenience of buildings, facilities observed	Distance, transportation hours and road conditions between buildings, facilities and the capital city and the Project office. Users' opinion	Direct observations of facilities, Users	No. (reportedly)
	Was the budget allocated appropriate for implementation of the project?	Amounts and timing of budget allocation from MOFA, GIDA, KIS and JICA were appropriate	Results of budget allocation by Ghanaian authorities (GIDA, KIS) Information from JICA HQ and Ghana Office	Project documents, Ghanaian stakeholders(GIDA, KIS),Experts,JICA HQ,JICAGhana Office	No important observation.
Causality	Were the activities sufficient to achieve four Outputs?	The activities were sufficient to achieve 4 Outputs	Activity records Stakeholders' opinions	Project documents Experts, Ghanaian stakeholders	All of outputs are evaluated as either "achieved" or "almost achieved". Based on such evaluation, it can be said that the designed activities were sufficient to achieve the Outputs.
	Has the Important Assumptions been fulfilled to achieve the outputs by implementing project activities?	1)The legislation status of WUA/OACS is not changed.	Legislation of present WUA/OACS	Project documents, Experts, KIS Extension staff	Yes. The important legislation of WUA remains valid.
		2)The price of domestic rice is not deteriorated sharply.	Price of domestic rice		No sharp deterioration of the price of domestic rice observed.
	Are there any contributing / hindering factors other than project inputs for the achievement of the Outputs?	Identify any other major factors that hinder outputs and its cause and effects if any	COVID19's effect Any other major hindering factors		【Contributing factors】 -The Project effectively addressed the constraint of access to quality rice seed by enhancing seed production capacities. -The Project provided continuous support for the establishment and early operationalization of model WUAs. -Strong awareness and commitment of GIDA/KIS to strengthen the certified seed production and to strategize the enhanced capacity for sustainability and expansion of the operation. 【Hindering factors】 -Addition of WUA establishment and capacity building to the MASAPS-KIS, transferring from GCAP. The change burdened the Project to accommodate additional activities in the work plan. -Delay of KIS rehabilitation works. -Insufficient manpower and machineries available to the farmers to follow OIRiC properly

Efficiency					
Evaluation questions		**Verification**	**Information needed**	**Information source**	**Survey Results**
Main questions	**Sub-questions**				
Cost	Have the Outputs been appropriately achieved in comparison to the cost?	The Outputs have been appropriately achieved in comparison to the cost	Expenditure of the Project up to now Expenditure of similar projects Measures to save the expense	Project documents Experts Similar project information	The Project has taken measures to minimize expenses on non-essetial items for workshops and trainings. The CP made efforts to ensure knowledge sharing and transfer within the orgnization (i.e. from those who participated in trainings to others). The cacacity building of the farmers and WUAs were largely integral parts of the regular tasks and responsibilities of extension officers; thus the Project activities that woud lead to generation of ouputs did not incur major additional costs to the Project.
	Are the human resources, outcomes, and equipment of former/ other on-going projects utilized?	The human resources, outcomes, and equipment of former/ other on-going projects are utilized	①Tensui2 ②PPP (BoP survey by Yanmar Co.?)	Project documents Experts,JICA Ghana Office	No important utilization of resources of other activities.
	Was there any duplication with projects implemented by other donors? Was there any collaboration with other projects? Was the collaboration cost effective?	There no duplication with projects implemented by other donors There is any case of collaboration with other projects to save the project cost	Latest information about assistance strategies and programs of other donors Demarcation of T/G in the training with other donors	Project documents Experts,JICA Ghana Office, GIDA,KIS Extension staff, Donor website	No duplication of activities of other projects. The knowledge and experiences generated through this Project are being utilized by other GIDA project with donor (e.g. IFAD).

Impact (Prospect)					
Evaluation Questions		Judgment Criteria/Method	Information needed	Information source	Survey Results
Main Questions	Sub-Questions				
Achievement forecast for the overall goal	Will the Overall goal, 'The total agricultural production in irrigation schemes of Ghana is increased.' be achieved three years after the completion of the Project?	Production increases from 44,189 MT（2015年）to 66,690 MT（2023年）	#Availability of annual report #Area, ha, farmers to be introduced	MOFA/GIDA annual report GIDA	According to the projection by GIDA, the national agriculture production on GIDA scheme in 2023 will be 86,000 MT, exceeding the target indicator by 78 percent.
		Any action has already been taken to achieve overall goal/planned	Activity/Budget plan of MOFA and GIDA	Project report, Experts, GIDA	GoG will significantly expand irrigation land by Pwalugu irrigation construction project.
		There is no possible hindering factor for achievement of overall goal	Activity/Budget plan of MOFA and GIDA, natural disaster, social limitation	Project report, Experts, GIDA, MOFA	No significant factor observed.
Causality	Are 'The total agricultural production in irrigation schemes of Ghana is increased'(Overall goal) and 'he agricultural production in KIS is increased' (Project Purpose) logically valid at present?	#GIDA's opinion if Experience of KIS will be used for other GIDA scheme/ #Rolling out plan to nation wide is discussed #KIS scheme is utilized by other schemes	Opinions of MOFA,GIDA,JICA experts	Project report, Experts, GIDA, MOFA, Extension staff	GIDA has started to establish WUAs in other schemes. Three WUAs have been established in other schemes. GIDA is using the guidelines and materials to replicate experiences of KIS in coordination with other donors. MoFA is in the process to approve guideline and manual of the Project to officialize them for further usage in other schemes.
	Is there a high probability that important assumptions are fulfilled?	GIDA disseminates the methodologies of irrigation scheme management, which the Project has developed in KIS, to other large irrigation schemes in the country.	Opinions of MOFA,GIDA,JICA experts	Project report, Experts, GIDA, MOFA, Extension staff	Yes. GIDA has expressed their strong will to disseminate the methodologies of irrigation scheme management introduced by the Project. The Project already has started providing training to those who are associated with non-targeted areas, and the working versions of manuals and guidelines are widely used by GIDA. WUAs have been established in three irrigated areas not targeted by the Project. These movements will contribute to the achievement of Overall Goal if the financial status of GIDA will be sustained.
Ripple effect	Is there any influence of the Project other than overall goal? - Effects on policy making, legal and judicial institution and regulations - Effects on social and cultural aspects such as gender, human rights and poverty - Economic influence on environment, technology, society, stakeholders and beneficiaries	<Possible Impacts> #Gave impact to existing program #Transfered technology is used by other DPs #PPP is promoted #Rice VC is modernized	Influence on policy, law, institution and regulations Influence on environment and economy Changes in women and the poor Influence on traditional institutions #Change in rice VC（roles of stakeholders, power balance）	Project report, Experts, GIDA, MOFA, Extension staff	【Policy, law, institution, regulations】 MoFA is in the process of endorsing the guidelines and manuals as official material. They will become primary guiding tool for other irrigation schemes. (1. Guidelines on the process of WUAs establishment with facilitation by supervising authority (GIDA), 2. Operation and Management Manual for WUAs, 3.Guide for Certified Rice Seed Production in Irrigation Scheme). The government counterpart bodies (MoFA/GIDA/KIS) have recognized the authenticity and continuity of technical transfer by JICA as a long-standing development partner. 【Society, Gender】 The Project contributed to promote gender equality for WUA irrigation management. Among 15 WUAs in KIS, 13 WUAs selected at least one woman for management committee executive position, and 8 of them designated as treasurers (very important position).
	If there is any negative impact, has the Project dealt with it?	# There is no negative impact # Project has taken actions to mitigate negative impact	Possibility of causing income gap in the region due to the Project	Experts, Project stakeholders	No negative impact observed.

Sustainability (Prospects)					
Evaluation Questions		Judgment Criteria/Method	Information needed	Information source	Survey results
Main Questions	Sub-Questions				
Policies and Institutions	Will policy support continue after JICA's cooperation is finished?	The policy support will continue after the end of JICA's cooperation.	Opinion from CP	Opinion from CP	Regulation of WUA remain valid. Policy support is likely to continue.
	Have the relevant regulations and legal institutions been developed? Is there a plan for developing such institutions?	The relevant regulations and legal systems are clarified. Those regulations and legal system are/will be established.	Opinion from CP	Project documents (reference to relevant law/regulations), Opinion from CP	GIDA underwent institutional reform. Based on the new mandate, capacity development has been planed and executed. The policy concerning the introduction of private sector as scheme management entity in place of GIDA is still under discussion. If the policy enters into effect, some of GIDA irrigation scheme will be managed by SMEs and GIDA becomes supervising entity.
	Has the institutional structure been developed to disseminate benefit of the project to outside of the KIS?	The application to other GIDA areas has / will be developed.	#Relevant GIDA plans and opinions	GIDA, Project experts	GIDA HQ has been largely involved in the development of activities at KIS. GIDA officials are well aware of the benefits of the Project and support dissemination and application of KIS experiences in other irrigation schemes. GIDA technical officers have been trained and started utilizing the knowledge and skills in other areas, in collaboration with other donor(s).
Organization and Finance	In order to continue project activities to achieve positive impacts after the completion of the Project, does the implementing agency have sufficient capacity? Can implementing agency allocate appropriate human resource, maintain decision-making process, and coordinate with other organizations?	#GIDA/KIS continue to exist after the Project completion to keep carrying out activities promoted by the Project. #Prospects of transition of new scheme management system in partnership with SME.	#GIDA plans for rolling-out MASAPS-KIS to other areas, policies and plans associated with SME partnership	Project reports, Opinions of GIDA/KIS, GCAP	GIDA/KIS are going strong with activities to establish WUAs in other irrigation schemes, with promoting OIRiC techniques, and with certified seed production. GIDA/KIS budgets are tight and they are seeking for alternative ways to secure funds to keep supporting the seed growers possibly by collaborating with private sector. The policy concerning the introduction of private sector as scheme management entity in place of GIDA is still under discussion and is hard to expect when the final decisions will be made.
		KIS and other GIDA schemes are appropriately staffed.	Number of officers and staff for scheme management and extension activities.	Project reports, Opinions of GIDA/KIS	KIS is appropriately staffed for scheme oversight, water management, and for extensions, who can replicate technica activities (production techniques, dissemination, technical analyses) developed by the Project. GIDA has agronomist and marketing officer who have also engaged in the implementation of the Project and other technical officers who can develop relevant activities in other areas; as such they can maintain institutional memory of the technical transfer done by the Project.
	Is the ownership of the implementing agencies (GIDA, KIS) strong enough to continue with what's been promoted by the Project?	GIDA and KIS have ownership strong enough for future activities.	Opinions of GIDA, KIS	Project reports, Opinions of GIDA/KIS, GCAP, Experts	The ownership of GIDA and KIS of the technical knowledge and the experiences generated through the implementation of the Project is deemed high. They have engaged in the validation process of the guidelines and manuals produced by the Project. Currently, MoFA is in the process of officializing those materials. GIDA has already embarked on establishment of WUAs in the irrigation schemes in other parts of the country, utilizing the KIS pilot experiences. GIDA/KIS technical officers and staff (agronomist, marketing officer, extension officers) are confident with utilizing the techniques to replicate conducting necessary analyses as well as to train farmers
	Is the ownership of the WUAs, seed growers, and farmers strong enough to continue with what's been promoted by the Project?	WUA practices what they learned from the Project by themselves	Opinions of WUAs and farmers	Project reports, Experts, WUAs, farmers	WUAs leaders continue using relevant manuals of the Project to keep sound and strong functions of the WUAs. The sustainability of WUAs is highly likely given that continue payment of membership fee to derive benefits. In April 2020, the formal procedure of establishment of federalization of WUAs in KIS launched. This mechanism facilitates information dissemination and exchanges of ideas across the WUAs in KIS. Seed growers keep production but with inputs provision by the Project.

Sustainability (Prospects)					
Evaluation Questions		Judgment Criteria/Method	Information needed	Information source	Survey results
Main Questions	Sub-Questions				
	Do GIDA HQ, KIS and other irrigation scheme of GIDA collaborate?	Three entities of GIDA HQ, KIS and GIDA share information, coordinate activities, and common plan	#Collaboration in setting/empowerment of WUA #Collaboration in extension of OIRiC #Collaboration in field test #Present status of SME	Project reports, Opinions of GIDA/KIS, GCAP, Experts	GIDA HQ facilitates technical dissemination and share information across different irrigation schemes under GIDA management in the country. GIDA staff who participated in trainings in Japan share their acquired knowledge with colleagues.
	Are there measures to secure future budget to sustain overall goal of the Project?	There are measures to secure future budget to sustain overall goal of the Project There are possibilities that the budget increase to continue and roll out the project activities	#Budget flow of GIDA and long-term perspective #Support by DPs (ex.GCAP) #Support by NGO	Project report MOFA,GIDA,KIS,GCAP	Budget allocation to GIDA and KIS is limited. However, under current conditions, the overall goal is expected to be achieved based on GIDA projection. GIDA/KIS are also exploring possible collaboration with private sector GIDA is also heavily dependent on financial assistance from international donors. The policy to shift irrigation management from GIDA to SME is ongoing. It is expected that with SME assuming the management role, GIDA will have less budget needs to expense on rehabilitation and maintenance works, and receive irrigation service fees via managing SMEs. In addition, WUAs become more capable and sustainable in generating profits, they can pay for the irrigation services and other related services, which will also lessen financial burden on the government budget
Technique	Are the skills and technologies transferred from the Project shared among stakeholders?	#Method (plot) itself is appropriate for technology transfer #GIDA accepts introduced technology by the project #Manuals and guidelines are utilized #Continuous usage of technology is expected	#Method of technology transferer #Opinions of GIDA,KIS,Extension staff, WUA	Project report Experts,GIDA,KIS, WUA	OIRiC has been widely adopted by trained farmers. When farmers have questions, extension officers can provide technical assistance directly, using the technologies transferred by the Project. In addition to GIDA/KIS extension officers, the District Agriculture Department Unit (DADU of MoFA) are in line to collaborate in other irrigation scheme. Therefore training should receive similar trainings. Guidelines and manuals regarding WUA establishment, water management, and OIRiC underwent technical validation by various stakeholders. GIDA/KIS extension staff have been fully committed to apply new skills and knowledge for conducting technical analyses and for supporting farmers. In order to sustain the current dissemination and extension practices, it is important to consider the cost reduction of the satellite demonstration farms.
	Will the machineries and equipment provided by the Project be maintained appropriately after the Project is ended?	# The owners of machineries and equipment are fixed. # The present condition of machineries and equipment	Opinions of stakeholders Machinery management list	Project report Experts,GIDA,KIS	The machines and equipment have been used and well maintained (except for ACs.) It is expected that GIDA and KIS will keep good use of those goods.

Sustainability (Prospects)					
Evaluation Questions		Judgment Criteria/Method	Information needed	Information source	Survey results
Main Questions	Sub-Questions				
	Has the dissemination mechanism been included in the project activity?	# Extension mechanism is / will be established # extension from model WUA to 13 WUAs is planned # Recommendations to extension strategy is discussed/exercised	#Extension plan and implementation status	Project report Experts,GIDA,KIS	・Extension officers attend farmers individually. ・Model WUAs set up demonstration farms open for all farmers. ・Trained farmers set up satellite demonstration farms to facilitate extension to other farmers in their areas.
	Are the introduced techniques appropriate to disseminate to non-target districts?	#Extension mechanism is/will be established # GIDA,KIS will maintain the extension mechanism	Opinions of GIDA,KIS, Extension plan	Project report Experts,GIDA,KI DDPs who observed technical training	Yes. WUAs are to be established in all GIDA irrigation schemes. Manuals and guidelines elaborated by the Project will need revision and fine-tuning in accordance with the local characteristics (agronomic, climatic, socio economic, etc.).
	Are these techniques applicable to other GIDA schemes?	#Technical level is not too high. #Techniques have universally applicable to the irrigation schemes of different facilities and size.	Opinions of GIDA, KIS, GCAP	Project reports, Experts, GIDA, KIS, GCAP	Yes. It is recommended to fine-tune the guidelines/manuals in accordance with the characteristics of the irrigation areas.
Society, culture and environment	Is there any possibility to hinder project's sustainable effects due to the shortage of attention to women, the poor, the socially vulnerable and traditional organizations?	#No conflicts amongst different WUAs / within the WUAs #Benefits for women	Opinions of GIDA, KIS, WUAs, Farmers	Project reports, Experts, GIDA,KIS,WUA, Farmers	The Project has contributed in awareness building on gender equality for WUA management. Leaders and members alike have become more gender conscious and women managers are selected for important management positions.
	Is there any possibility to hinder sustainable effects due to the shortage of attention to the environment?	There is no / little possibility to hinder sustainable effects of the project in terms of environmental aspect	Opinions of GIDA, KIS, WUAs, Farmers	Project reports, Experts, GIDA,KIS	No particular observation made.

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