

Country Name	Sustainable Development of Rain-fed Lowland Rice Production Project
Republic of Ghana	

I. Project Outline

Background	<p>In Ghana, rice is the second staple cereal crop next to maize. The total rice consumption in 2003 was about 500,000 ton or annual consumption of 22kg per person. The rice consumption sharply increased especially in urban areas. On the other hand, because the domestic rice production had been sluggish, 60-70% of rice consumption in the country was covered by imported rice, which resulted outflows of foreign currencies equivalent to more than 200 million dollars in a year. Therefore, from the viewpoints of food security and foreign reserves, enhancement of production and distribution of domestic rice was an urgent issue. With this background, the Government of Ghana prepared a Master Plan of the “Promotion of Domestic Rice in the Republic of Ghana” (2008) under the technical cooperation by JICA. Based on the Master Plan, the Government of Ghana requested the Government of Japan to implement a technical cooperation project aiming at production expansion and quality improvement of domestic rice through introduction of appropriate technologies for rain-fed rice production in lowland, which also could make a significant poverty reduction impact on small-scale rice farmers who has been relying on unstable rain-fed farming.</p>												
Objectives of the Project	<p>Through developing a technical package of improved practices of rain-fed lowland rice production, verifying a methodology to improve farming support system, and establishing extension procedures for the technical package improved by the project, the project aimed at accelerating the dissemination of the “model for sustainable development of rain-fed lowland rice production” in the project areas, thereby contributing to increasing productivity and profitability of rice farming in rain-fed lowland in the target areas.</p> <ol style="list-style-type: none"> Overall Goal: Productivity and profitability of rice farming in rain-fed lowland in project areas is increased. Project Purpose: Dissemination of the “model for sustainable development of rain-fed lowland rice production (Model)” is accelerated within the project areas. 												
Activities of the Project	<ol style="list-style-type: none"> Project Site: 4 districts in Northern Region (Tamale Metro, Sagnarigu, East Gonja, West Mamprusi) and 5 districts in Ashanti Region (Adansi South, Ahafo Ano North, Atwima Mponua, Asante Akim North, Asante Akim Central). Main Activities: 1) development of a technical package of improved practices of rain-fed lowland rice production, 2) verification of a methodology to improve farming support system for sustainable rain-fed lowland rice production, 3) establishment of extension procedures for the technical package improved by the project. Inputs (to carry out above activities) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Japanese Side</td> <td style="width: 50%;">Ghanaian Side</td> </tr> <tr> <td>1) Experts: 21 persons</td> <td>1) Staff allocated: 29 persons</td> </tr> <tr> <td>2) Trainees received: 40 persons</td> <td>2) Land and facilities: project offices</td> </tr> <tr> <td>3) Trainees received in the third country (Burkina Faso and Uganda): 30 persons</td> <td>3) Local cost: cost for utility of offices (electricity, water and telephone) and operational cost.</td> </tr> <tr> <td>4) Equipment: vehicles, motorcycles, PCs, equipment for post-harvest, office supplies, etc.</td> <td></td> </tr> </table> 			Japanese Side	Ghanaian Side	1) Experts: 21 persons	1) Staff allocated: 29 persons	2) Trainees received: 40 persons	2) Land and facilities: project offices	3) Trainees received in the third country (Burkina Faso and Uganda): 30 persons	3) Local cost: cost for utility of offices (electricity, water and telephone) and operational cost.	4) Equipment: vehicles, motorcycles, PCs, equipment for post-harvest, office supplies, etc.	
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Project Period	July 2009 – December 2014 (Extension: July 2014 – December 2014)	Project Cost	(ex-ante) 500 million yen, (actual) 607 million yen										
Implementing Agency	Directorate of Crop Services (DCS), Ministry of Food and Agriculture												
Cooperation Agency in Japan	None												

II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

- Continuation status of effects and sustainability of the project are influenced to some degree by the second phase of the project, and it's a difficult challenge to extract the sheer results of this particular project. Therefore, the evaluation results below include somewhat of the influence of the second phase of the project.

1 Relevance

<Consistency with the Development Policy of Ghana at the Time of Ex-Ante Evaluation and Project Completion>

Since the “Ghana Poverty Reduction Strategy II (GPRS II)” (2006-2009) and the “Food and Agriculture Sector Development Policy II (FASDEP II)” (2007-2012) at the time of ex-ante evaluation and the “Medium Term Agriculture Sector Investment Plan (METASIP)” (2011-2015) at the time of project completion placed high priority on rice cultivation from the viewpoint of food security and poverty reduction of small-scale farmers, the project has been consistent with the development policies of Ghana.

<Consistency with the Development Needs of Ghana at the Time of Ex-Ante Evaluation and Project Completion>

The project has been consistent with the needs of Ghana at the time of ex-ante evaluation and project completion. More than half of the total population of Ghana was the rural population, and the majority of them were engaged in agriculture. Nearly 90% of farmers were small-scale farmers cultivating farm lands less than 2 hectares in size per household, and their productivity was low and unstable due to semi-extensive manner depending on rain-fed farming.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the Japan's ODA policy for Ghana at the time of ex-ante evaluation. In the "Country Assistance Program for the Republic of Ghana" (September 2006), it was emphasized to support the reactivation of rural economy, particularly the improvement of income of smallholder farmers and increase of agricultural productivity by strengthening the production basis, capacity building and organization of farmers.

<Evaluation Result>

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

2 Effectiveness/Impact

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

The Project Purpose was achieved by the time of project completion. More than 1,000 farmers applied techniques recommended by the Model established by the project (Indicator 1). In addition, both of the Northern and Ashanti Regions prepared their rice extension plans and submitted them to DCS (Indicator 2), and all the manuals were compiled as the Model and distributed to stakeholders including DCS, the Regional Agriculture Departments (RADs)¹, the District Agriculture Departments (DADs)², Agricultural Extension Agents (agricultural extension workers) and farmers in the project sites (Indicator 3) by the time of project completion.

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

The project effects have been continued. The number of farmers applying techniques recommended by the project has been at around 1,300 (Indicator 1). Techniques including seed selection, split fertilizer application and nursery preparation have been continuously applied. While some other techniques such as bund construction, planting in rows, drill sowing and Bambam box threshing were limitedly used by farmers due to slightly difficult designs for local farmers, labor shortage and limited access to agricultural machines, utilization of them has resumed through the refinement by the second phase of the project. All the manuals prepared by the project had been incorporated in the Extension Guidelines, and the Guidelines being fine-tuned by the second phase of the project³ to be more suitable for local conditions. In the second phase of the project, 35 priority districts (15 in Northern Region and 20 in Ashanti Region) were selected for the implementation of their rice extension plans using the Extension Guidelines. Eleven districts respectively in each region have started implementation of their plans by the time of ex-post evaluation (Indicator 2). The Extension Guidelines are widely used in the project sites by the officials of RADs for the training of trainers, by the DADs and extension agents for their extension activities, and by farmers for their farming (Indicator 3).

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

The Overall Goal has been achieved at the time of ex-post evaluation. The average unit yield of rain-fed farmers in the project sites has increased to about 2.8 ton/ha in the Northern Region and about 3.5 ton/ha in the Ashanti Region, which were over 80% of the target yields (Indicator 1). The average income of farmers in the project sites has increased from 1,930 cedis/ha in 2013 to 2,483 cedis/ha in 2017 in the Northern Region and from 4,329 cedis/ha in 2013 to 5,399 cedis/ha in 2017 in the Ashanti Region. According to the interviews with extension agents and farmers, the income of farmers who have adopted techniques recommended by the project was significantly higher than the farmers who have not adopted them (Indicator 2).

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

There are various positive impacts observed at the time of ex-post evaluation. The extension agents introduced the knowledge and skills they had learned from the project to the communities in non-project sites, and farmers in the project sites join the extension agents' activities by introducing techniques they learned and some devices they improvised. Through the training provided by the project, women's involvement in farming has been expanding from simple labor works of seeding and transplanting to decision makings on cropping schedule and investments for seeds and farm tools. According to the interviews with community members, the increased yield of rice has improved their households' food, and the increased income has enabled them to afford to pay children's school expenses and medical bills, to construct and/or renovate houses, to purchase household appliances, electric appliances, farm machines such as power tillers and threshers, and motorbikes and tricycles for carrying farm products. One of the farmers' groups purchased a tractor with the saving they made from a demonstration plot in the project. No resettlement and land acquisition, and no other negative impact have been caused by the project.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results			
Project Purpose: Dissemination of the "model for sustainable development of rain-fed lowland rice production (Model)" is accelerated within the project areas.	Indicator 1	Status of the Achievement: achieved (continued) (Project Completion)			
	More than 1,000 farmers apply the recommended techniques of the Model.	The number of farmers applying the recommended techniques in the project areas			
		Year	2011	2012	2013
		Northern	30	87	380
		Ashanti	121	609	1,164
		Total	151	696	1,544
		(Ex-post Evaluation)			
		The number of farmers applying the recommended techniques in the project areas			

¹ Former Regional Agriculture Development Units (RADUs).

² Former District Agriculture Development Units (DADUs).

³ The second phase of the project "Sustainable Development of Rain-Fed Lowland Rice Production Project Phase 2" (2016-2021) is ongoing at the time of ex-post evaluation with the purpose of extending the recommended techniques of the Extension Guidelines formulated by the first phase of the project to 35 districts of Northern and Ashanti regions.

		Year	2014	2015	2016	2017	
		Northern	496	425	479	424	
		Ashanti	805	837	874	885	
		Total	1,301	1,262	1,353	1,309	
	Indicator 2 Based on the rice extension plan in target districts, the rice extension plan of Northern and Ashanti region is produced and submitted to MOFA.	Status of the Achievement: achieved (continued) (Project Completion) Both regions produced and submitted their regional rice extension plans to DCS at the time of project completion. (Ex-post Evaluation) 35 priority districts were selected for implementation of their rice extension plans under the second phase of the project, and 11 districts in each region have started their implementations.					
	Indicator 3 All the manuals of technical package, farming support system and extension is compiled as "Model" and made available to stakeholders.	Status of the Achievement: achieved (continued) (Project Completion) All the manuals were compiled as the Model and distributed to stakeholders. (Ex-post Evaluation) The Extension Guidelines incorporated all major components of the manuals have been revised by the second phase of the project and available in regions and districts in the project sites. The Guidelines are widely used by the officers in the RADs and DADs, extension agents and farmers.					
Overall Goal: Productivity and profitability of rice farming in rain-fed lowland in project areas is increased.	Indicator 1 Average unit yield in rain-fed farmers in the areas who applying the recommended techniques of the "Model" is increased to more than 4.0 ton/ha in Ashanti and 3.0 ton/ha in Northern region.	Status of the Achievement: achieved (Ex-post Evaluation) Average unit yield of rain-fed rice production farmers who applying the recommended techniques in the project sites Unit: ton/ha					
	Indicator 2 Income from rain-fed lowland rice production is increased in the areas where the model of sustainable development of rain-fed lowland rice production is applied.	Status of the Achievement: achieved (Ex-post Evaluation) Average income of rain-fed rice production farmers in the project sites Unit: Ghana cedis/ha					
		Year	2013	2014	2015	2016	2017
		Northern	2.9	2.8	2.5	3.3	2.6
		Ashanti	3.8	3.4	3.5	3.4	3.5
		Source: Northern RAD, Ashanti RAD					
		Year	2013	2014	2015	2016	2017
		Northern	1,930	1,871	1,893	2,528	2,483
		Ashanti	4,329	4,416	4,809	4,826	5,399
		Source: Northern RAD, Ashanti RAD					

Source: Terminal Evaluation report, questionnaire survey and interview survey with the officials of DCS, the Northern RAD and the Ashanti RAD.

3 Efficiency

Both of the project cost and period exceeded the plan (ratio against the plan: 121% and 108%, respectively). The project period was extended for 5 months due to delay of the completion of the Extension Guidelines. The outputs were produced as planned. Therefore, efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

Under GPRS II and FASDEP II, the Government of Ghana prepared the "National Rice Development Strategy (NRDS)" (2009) targeting the doubling of rice production by 2018. The updated version of NRDS which shifted the target to achieving the self-sufficiency of rice by 2025 is in the process of approval by the Minister of Food and Agriculture at the time of the ex-post evaluation.

<Institutional Aspect>

The institutional setup of and responsibility assignment to DCS, RADs and DADs have not been significantly changed since the time of project completion. The number of staffs in charge of rice cultivation has been insufficient in both of the Northern and the Ashanti RADs. Out of five posts, two posts have been vacant in the Northern and Ashanti RADs respectively. Vacant posts have been caused by transfers, retirements and study leaves. Staffing at district level has also been inadequate especially the number of extension agents due to financial constraints.

<Technical Aspect>

The technical level of the staffs of RADs has been maintained high through their day to day activities and the training provided by the government and development partners. One of the staffs in the Northern RAD has been assigned as a trainer of rice production training conducted by development partners such as the United States Agency for International Development (USAID). The district level staffs trained by the project, while some of them have been transferred or retired, continue to train farmers in the fields and other staffs including extension agents on the job and off the job training. As for training, a wide variety of training programs on rice cultivation, farm management, marketing, and others have been provided for the government officials and farmers by the government and development partners including JICA, USAID, the Global Affairs Canada, and others.

<Financial Aspect>

According to the questionnaires and interviews with DCS, RADs and DADs, the budget for agriculture extension activities, covering all the sub-sectors of crops, livestock, cocoa, fisheries, forestry/logging and others, has been insufficient but covered about half of the extension activities they expect to conduct. As external funds relating to the agricultural extension activities, while it is not more than sufficient, funding supports are currently provided by a number of development partners including JICA, USAID, the Food and Agriculture Organization (FAO), the Gesellschaft für Internationale Zusammenarbeit (GIZ), the World Bank, the African Development Bank, the Agence Française de Développement (AFD), and others. The Global Affairs Canada has commenced its funding support for agriculture extension across the country from the national to the local level planning from 2017 to 2021. In the phase 2 project, the cost for the

activities such as extension services is supposed to be borne by the counterpart. The project makes efforts to strengthen the capacity of budget acquisition, including planning, negotiation, implementation and monitoring, etc.

<Evaluation Result>

In light of the above, some problems have been observed in terms of institutional and financial aspects of the implementing agency. Therefore, the sustainability of the project effect is fair.

5 Summary of the Evaluation

The Project Purpose and the Overall Goal have been achieved by the time of ex-post evaluation. As for sustainability, the number of staffs and the budget at both of regions and district levels have been in short. The funding supports from development partners are expected to be secured for a certain span of years, while the amount is still insufficient to cover the deficiency of the national budget. Technical level of the staff involved was improved and has been sustained through the continuous assistance of development partners including the second phase of the project by JICA. As for efficiency, the project cost and period exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

1. Extension activities of the rain-fed lowland rice production techniques developed by the project are expected to be continued at the initiative of DCS even after the completion of the second phase of the project. Therefore, it is recommended for DCS to keep trying to get further public and external funds by preparing well elaborated, realistic, and feasible extension plans and appealing them to the local government and development partners.
2. It is recommended for DADs to encourage and assist farmers to organize farmers' groups to make it easier for them to access to machinery services and for services providers to reduce the transaction costs. The farmers' groups can also be encouraged to save their profits to acquire machines for themselves and to rent out to other farmers.

Lessons Learned for JICA:

1. Farmers' adequate application of agricultural technologies introduced by outsiders tends to be gradually degraded as time goes by. Inadequate application will lead to poor results and unduly devalue the reliabilities of technologies. Therefore, it is highly recommended for an agriculture project which introduces new technologies to farmers to materialize a regular monitoring by officials such as extension agents to follow up the farmers' usage of technologies introduced.
2. Seeing high productivity of the demonstration plots of the project, not a few farmers nearby adopted the technical packages introduced by the project by inquiring to the District Offices. Since demonstration plots have high potentials to disseminate the outputs of an agriculture project, it is recommended to place demonstration plots close to the main roads or in the fields where people frequently come and go.



Bunds constructed by farmers imitating the bunds in a project's demonstration plot (Anafo Ano North District, Ashanti Region)



Well-adopted weeding technology (Anafo Ano North District, Ashanti Region)