

## 付 属 資 料

1. ミニッツ（合同評価報告書）
2. プロジェクト合同調整委員会（JCMM）  
参加者リスト（2006年8月6日）

MINUTES OF MEETING ON  
 THE JOINT COORDINATING COMMITTEE MEETING FOR  
 TERMINAL EVALUATION REPORT ON  
 THE PROJECT FOR PROMOTION OF FARMERS' PARTICIPATION  
 IN IRRIGATION MANAGEMENT (FAPIM) IN THE REPUBLIC OF GHANA

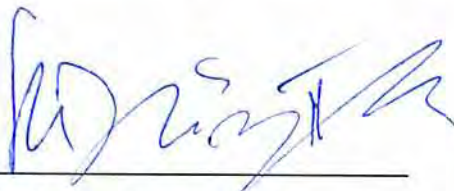
The Japanese Terminal Evaluation Team, organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. HANAI Junichi, visited the Republic of Ghana (hereinafter referred to as "Ghana") from July 25 to August 4, 2006, for the purpose of conducting the terminal evaluation of the Project for Promotion of Farmers' Participation in Irrigation Management (hereinafter referred to as "the Project").

The Joint Evaluation Team (hereinafter referred to as "the Team"), which consists of four members from JICA and three members from Ghana, conducted the terminal evaluation and made necessary recommendations to the respective governments.

After intensive study and analysis of the activities and achievements of the Project, the Team prepared the Terminal Evaluation Report (hereinafter referred to as "the Report"), which presented to the Joint Coordinating Committee (hereinafter referred to as "the Committee") on August 3<sup>rd</sup> 2006.

The Committee discussed the major issues pointed out in the Report, and agreed to recommend to the respective government the matters attached hereto.

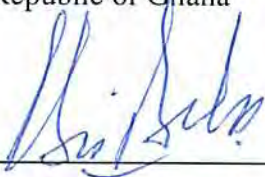
Accra, August 4, 2006



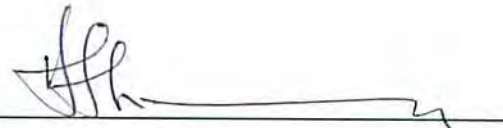
Mr. Kwaku Owusu Baah  
 Chief Director  
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Mr. D.L. Lamptey  
 Chief Executive  
 Ghana Irrigation Development Authority  
 Ministry of Food and Agriculture  
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## Major Points of Discussions in the 2nd Joint Coordinating Committee Meeting of FAPIM

### 1. The Terminal Evaluation Report

The Team carried out the Terminal Evaluation on the Project and had presentation of the Report to the Committee. The Team reported that the Project achieved the purposes, as described in the Report. Therefore, upon on the Reports, the Team concluded that the Project would be terminated in September 2006 as planned.

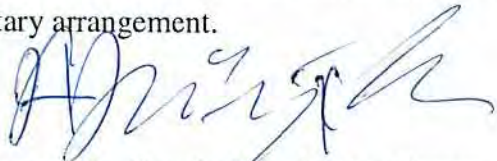
The Team recommended that GIDA should promote irrigated agriculture by implementing JISM in the existing and newly developed irrigation schemes by its own effort after the Project. It was pointed out that the inventory of Irrigation Farmer Cooperatives (IFC) and the implementation strategy would be made by the Project. The Team also mentioned that MOFA and GIDA should address the financial issue in order to implement JISM after the Project because the availed matching fund will be shortly terminated.

The Committee accepted the conclusion of the Report and took notes on the recommendations by the Team.

### 2. Remarks from the Committee members

The Japanese side remarked that concerning ongoing and new projects in agriculture sector in Ghana, the GIDA staff with developed capacity through the Project and the experience and lessons gained from the Project shall be fully utilized.

The Ghanaian side expressed sincere appreciation to JICA's continuous cooperation in irrigation. Full utilization of technical skills of GIDA staff which has been accumulated during the Project period was assured in the execution of JISM. It is also announced that GIDA makes effort to ensure their financial resources to implement JISM after the Project through internal budgetary arrangement.



Attachment: the Terminal Evaluation Report



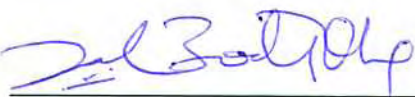
THE TERMINAL EVALUATION REPORT ON  
PROJECT FOR PROMOTION OF FARMERS' PARTICIPATION  
IN IRRIGATION MANAGEMENT  
IN THE REPUBLIC OF GHANA

ACCRA, 4th AUGUST 2006



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Mr. HANAI Junichi  
Team Leader,  
Japanese Evaluation Team



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Mr. Daniel Ohemeng-Boateng  
Team Leader,  
Ghana Evaluation Team

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## Abbreviation

AfDB	African Development Bank
AgSSIP	Agricultural Sector Services Investment Programme
BADEA	Arab Bank for Agricultural Development
CIDA	Canadian International Development Agency
FAO	Food and Agriculture Organization
DA	District Assembly
M/M	Minutes of Meeting
FASDFP	Food and Agriculture Sector Development Policy
FAPIM	Farmers' Participatory Irrigation Management
GDP	Gross Domestic Product
GIDA	Ghana Irrigation Development Authority
GPRS	Growth Poverty Reduction Strategy
IDC	Irrigation Development Centre
IFC	Irrigation Farmer Cooperative
JICA	Japan International Cooperation Agency
JISM	Joint Irrigation System Management
L.I.	Legislative Instrument
MOFEP	Ministry of Finance and Economic Planning
MOFA	Ministry of Food and Agriculture
NGO	Non Governmental Organizations
O&M	Operation and Maintenance
OVI	Objectively Verifiable Indicators
PDM	Project Design Matrix
PIM	Participatory Irrigation Management
PO	Plan of Operations
R/D	Record of Discussions
SPFS	Special Programme for Food Security
SSIAPP	Small-Scale Irrigated Agriculture Promotion Project
SSIAPP-FU	SSIAPP- Follow Up
SSIDP	Small Scale Irrigation Development Project
SFIP	Small Farm Irrigation Project

## BACKGROUND

Agriculture continues to play a central role in the social and economic development of Ghana. In 2000, the agricultural sector directly employed about 65% of the work force, accounted for 41% of total export volume and contributed to 41% of Gross Domestic Product (GDP).

The country continues to remain heavily reliant on rain-fed crop production for its food supply. However, the rainfall pattern has become more erratic over time, leading to greater food insecurity in the country. The Government of Ghana found it necessary to establish sustainable irrigated farming system in existing twenty-two (22) irrigation schemes under the Ghana Irrigation Development Authority (GIDA) and to advance the farmer-based operation and maintenance system.

The Japan International cooperation Agency (JICA) has been supporting the irrigation sector in Ghana since 1988. After several technical cooperation projects including the Small-Scale Irrigated Agriculture Promotion Project (SSIAPP), JICA had implemented the SSIAPP follow-up (SSAPP-FU) from 2002 to 2004 in order to improve farming system in Ashaiman and Okyereko schemes and clarify necessary technologies and methodologies for dissemination into other 20 irrigation schemes.

The issues that have been raised by the result of SSIAPP-FU were that the official laws and regulation concerned would be established for promotion of farmers' participatory irrigation management because of unclear demarcation between GIDA and farmers' cooperatives in irrigation management. Given the situation, the Ghanaian and Japanese Governments agreed to start a project known as the Project for Promotion of Farmers' Participation in Irrigation Management (hereinafter referred to as "the Project") with GIDA in October 2004. The Project aimed at introducing the concept of participatory irrigation management by sharing irrigation facility management between government agencies (GIDA) and farmers' cooperatives.

With about two months left to the termination of the terms of cooperation of the Project in early September 2006, the Joint Evaluation Team comprising both Japanese and Ghanaians (hereinafter referred to as "the Team") was formed in order to conduct an overall review and a terminal evaluation of the performance of the Project. The evaluation was performed upon completion of a project, focusing on its relevance, effectiveness, efficiency, impact and sustainability. Based upon the results of the evaluation, JICA assesses the level of achievement, overall effects and strategies and then determines the necessity of follow-up cooperation after the termination of the Project.

## **1. Objectives and Method of the Evaluation**

### **1-1 Objectives of the Evaluation**

The evaluation activities were performed with the objectives:

- 1) To evaluate the overall achievement of the Project, based on the Record of Discussions (R/D), Project Design Matrix (PDM) and Plan of Operations (PO).
- 2) To identify remaining problems on any aspects of the Project implementation and to propose necessary solutions.
- 3) To consider the lessons obtained from the Project activities in order to reflect them on future projects in the interest of making them more effective and efficient.

### **1-2 Method of the Evaluation**

To carry out Terminal Evaluation, the Team consisting of both the Ghanaian side and the Japanese side has conducted interviewing the concerned personnel of the Project, field visit (irrigation schemes under GIDA) and had a series of discussions within the Team and other partners. The evaluation was made based on the findings from the above activities, and the following five evaluation criteria.

- a) Relevance: Relevance is referred to the validity of the Project Purpose and the Overall Goal in compliance with the development policy of the Government of Ghana as well as the needs of beneficiaries.
- b) Effectiveness: Effectiveness is referred if the expected benefits of the Project have been achieved as planned and if the benefit was brought about as a result of the Project (not of the external factors).
- c) Efficiency: Efficiency is referred to the productivity of the implementation process and examined if the input of the Project was efficiently converted into the output.
- d) Impact: Impact is referred to direct and indirect, positive and negative impacts caused by implementing the Project including the extent of the prospect of the achievement of the Overall Goal.
- e) Sustainability: Sustainability is referred to the extent that the Project can be further developed by the recipient country and the benefits generated by the Project can be sustained under the recipient country's policies, technology, systems, and financial state.





### 1-3 Members of the Evaluation Team

#### (1) The Japanese Team

Name	Job title	Occupation
Mr. HANAI Junichi	Team Leader	Team Director of Central & West Africa Team, Rural Development Dep., JICA
Dr. TOKIDA Kunihiro	Irrigated Agriculture/ Farmer Cooperative	Senior Advisor, Institute for International cooperation, JICA
Ms. TATSUTA Akiko	Evaluation Planning Management	Project Formulation Advisor, Agriculture and Rural Development, JICA Ghana Office
Dr. WATANABE Junichi	Evaluation and Analysis	Senior Planner, International Development Centre of Japan (IDCJ)

#### (2) The Ghanaian Team

Name	Job title	Occupation
Mr. Daniel OHEMENG-BOATENG	Team Leader / Policy & Planning	Assistant Director, Policy Planning Monitoring and Evaluation Directorate (PPMED), Ministry of Food and Agriculture (MOFA)
Mr. Emmanuel TETTEH-BIO	Irrigated Agriculture	Project Manager of Ghana Rice Inter-Professional Body (GRIB), Directorate of Crop Services, Ministry of Food and Agriculture (MOFA)
Mr. Samuel ABU-BONSRAH	Farmers Training	Head of Japan, China and South Korea Desk, External Resource Mobilization Division, Ministry of Finance and Economic Planning (MOFEP)

### 1-4 Evaluation Questions and Sources of Information

#### (1) Evaluation Questions and Indicators

The Evaluation Grid is attached as Annex III.

#### (2) Sources of Information Used for Evaluation

The Team reviewed the achievement made based on the interviews with the Ghanaian counterparts engaged in the Project, Japanese experts, and other authorities concerned, and documents compiled by the Project. In addition, there are two surveys such as Project Scheme Survey (questionnaire) covering 21 schemes under GIDA (one scheme was abandoned) conducted by local consultants in July 2006 and Irrigation Farmer Cooperative (IFC) survey (semi-structural interview) conducted by the Team from 27-29 July 2006.

## **2. Outline of the Project**

### **2-1 Background of the Project**

Growth and Poverty Reduction Strategy II (2006-2009) emphasises on the importance of irrigated agriculture because the country continues to remain heavily reliant on rain-fed crop production for its food supply. This is one of the reasons of food insecurity in the country.

JICA has been supporting the irrigation sector in Ghana ever since 1988. The issues that have been raised by the result of several technical projects were that the official laws and regulation concerned would be established for promotion of farmers' participatory irrigation management because of unclear demarcation between GIDA and farmers' cooperatives at the field level. Recognizing the unclear responsibilities in operation and maintenance (O&M) as a major constrain for promotion of irrigated agriculture, the Ghanaian and Japanese Governments agreed to start the Project known as FAPIM with GIDA in October 2004. The Project aimed at introducing the concept of participatory irrigation management by sharing irrigation facility management between government agencies (GIDA) and farmers' cooperatives.

### **2-2 Summary of the Project**

In accordance with M/M in October 2004, the outline of the Project is as follows:

Overall Goal: (1) Income per farmer from irrigated agriculture is increased on irrigation schemes under GIDA.

(2) Farmers Participation in Irrigation Management is developed in Ghana.<sup>1</sup>

Project Purpose: (1) Foundation for Farmers' participation in Irrigation Facility Management of Irrigation Schemes under GIDA, based on the new rules and regulations is established.

(2) GIDA's function in service delivery on irrigation farming technology is strengthened.

Outputs: (1). Legal arrangement to promote farmers' participation in irrigation management is prepared

(2). Implementation of farmers' participation in irrigation facility management between GIDA and farmers' organization is prepared.

(3). Capacity of GIDA staffs in planning and implementation of training on irrigation

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<sup>1</sup> In accordance with Joint Coordination Committees decision in November 2005, the sentence of "Farmers Participation in Irrigation Management is developed in Ghana" was added as the Overall Goal.

farming technology is improved.

Terms of cooperation: Two (2) years from October 1, 2004

## **2-3 Project Performances and Implementation Process**

### (1) Accomplishment of the Project

Accomplishment of the Project was measured in terms of inputs, activities, outputs and project purpose, all of which are based on the R/D, PDM and PO.

### (2) Inputs (as of July 2006)

Lists of Inputs are attached in ANNEX (see ANNEX IV~VII).

#### **<Japanese side>**

Long-term Expert: Total number 7, Short-term Expert: Total number 2 (61 M/M)

Trainees received in Japan: 1 (10 M/M)

Provision and Procurement of Equipment: approx. ¥15.8 million

Local Cost (between 2004 and September 2006): approx. ¥19.6 million

#### **<Ghanaian Side>**

Counterparts: In total 31, Local cost: 14 million GHC. (approx. \$1,500)

Matching Fund: \$ 49,000 in 2005, \$ 98,000 in 2006, Total \$147,000

### (3) Achievement level

#### **<Outputs>**

Achievement level of each output is described in the next section (Detail of Outputs is attached in ANNEX (see ANNEX III).

## **3. Results of the Evaluation with Five Criteria**

### **3-1 Relevance**

The Project is relevant for Ghanaian agricultural development policy and Japanese cooperation policy described below. This is simply because development of irrigated agriculture cooperated by the Project is essential to agricultural development and poverty alleviation through increasing the income of smallholder farmers in Ghana. As concrete strategies in Ghanaian policy, rehabilitation of viable irrigation facility, introduction of Participatory Irrigation Management (PIM) as well as development of new irrigation schemes.

#### (1) Ghanaian Policy

The National Irrigation Policy, Strategies and Regulatory Measures (May 2006) emphasizes sharing GIDA's responsibility with farmers' participation in irrigation management in line with PIM.

Thus, it is certainly expected that irrigated agriculture with PIM plays a key role to promote economic growth based on agricultural production and poverty alleviation. There are two crucial points, namely rehabilitation of viable irrigation facility and development of small-scale irrigation, for considering further roles of GIDA. In other words, economic sustainability and Operation and Maintenance (O&M) mainly implemented by water user group are required in the field of irrigated agriculture, which have to be taken into account in terms of roles of GIDA.

## (2) Japanese Cooperation Policy

The activation of rural economy through increasing the incomes of smallholder farmers is clearly described in Japan's Country Assistance Plan for Ghana revised in May 2006. This will be materialized by the improvement of agricultural productivity, processing and marketing in combination with rural infrastructure development. Its focal cooperation areas of agricultural development emphasise improving irrigation and drainage facilities, improving farming systems, and building capacity of extension officers, farmers and relevant institutions.

## (3) Needs of Beneficiaries (target groups)

GIDA staff and the farmers in GIDA irrigation schemes are the target beneficiaries in the Project objectives. The farmers need more improvement in irrigation management for increasing their income. Satisfying the farmers' needs, GIDA had recognized the necessity of strengthening its functions in service delivery, but its limited human and financial resources had been a draw-back especially on PIM. Therefore, the Project certainly met their needs.

### 3-2 Effectiveness

The Purpose I: Achieved; 10 Joint Irrigation System Management (JISM) Agreement were signed by both GIDA and the Irrigation Farmer Cooperative (IFC), while the Objectively Verifiable Indicator (OVI) targets more than 6 JISM Agreement.

The following are identified as promoting and hampering factors.

Promoting factor I: Functional irrigational facility is essential for farmers to participate in JISM. All the 10 schemes have been supported with rehabilitation of irrigation facilities by JICA, AgSSIP, and SPFS or pumps installation by CIDA.

Promoting factor II: There has been a long history of cooperation among GIDA, IFC and JICA through projects such as SSIAPP, and SSIAPP-FU in the field of irrigated agriculture since 1988. As a result, the understanding of the content of JISM Agreement between GIDA and IFC has been enhanced by the mutual trust built by the cooperation.

The Purpose II indicated by (1): **Prospect of Achievement**; 2 training programmes financed by GIDA will be implemented by the end of September 2006. Indicator (1): increasing numbers of services (technical support based on training) managed and financed by GIDA.

The Purpose II indicated by (2): **Not yet achieved, because indicator (1) has not yet been implemented**; the above training programs have not yet been implemented, thus the purpose II indicated by (2) cannot be evaluated. Although 95% of participants were satisfied with the previous 8 training programs cooperated by JICA. Indicator (2): more than 60% of the participants (farmers) satisfied with GIDA's service.

However, the Purpose II has **High Prospect of Achievement**, because of following promoting factors:

Promoting factor I: "Matching fund" from GIDA is useful as a financial resource.

Promoting factor II: Capacity of GIDA staff in terms of technical knowledge and skills has been built for a long time, which is very crucial in providing their services.

Promoting factor III: Technical Guidelines for Irrigated Agriculture (March 2004) and Strategies for Effective Utilization of Existing Irrigation Projects (March 2004) formulated under SSIAPP-FU are available to be used.

### 3-3 Efficiency

#### (1) Achievement of the outputs

The Output I indicated by (1): **Prospect of Achievement**; Draft amendment of L.I.1350 has been formulated and submitted to MOFA. Draft amendment of L.I. 604 has been formulated and will be submitted to Ministries concerned in August 2006. Indicator (1): Draft amendments of existing laws are submitted to Ministries concerned:

The Output I indicated by (2): **Prospect of Achievement**; The submission will be finished by the end of August 2006. Indicator (2): proposal on establishment of irrigation farmers society and /or amendment of bye-laws are submitted to IFC.

Therefore, the Output I is classified as **Prospect of Achievement**.

The Output II: **Achieved**; 14 JISM Agreements (draft) were formulated, while more than 12 drafts of JISM Agreement are targeted in the OVI.

The Output III: **Achieved**; 8 training programs were implemented and 2 training programs under GIDA budget will be implemented by the end of September 2006, while more than 8 training programs are targeted in the OVI.

#### (2) Efficiency of the Project Inputs

It can be said that the inputs from the Japanese side and Ghanaian side are, more or less,

appropriate in terms of quantity, quality, and timing at most levels. All inputs allocated to the Project so far have been fully utilized for the project implementation. "Matching fund" from Ghanaian side is worth of special mention.

### 3-4 Impact

(1) Achievement of the overall goal

The Overall Goal I: Prospect of Achievement as follows:

The irrigation scheme with more than 70% of farm households continuously having increased or stable income from irrigated agriculture in ten years from 1996 to 2005 can be said as beneficial scheme. The existing schemes are classified into four types, namely expanded (4), maintaining (7), suspended and decreased (10), and abandoned (1). This classification is based on the trend of beneficiary area.

The survey result shows that all 4 expanded schemes are beneficial. 5 out of 7 maintaining schemes are beneficial, and the other 2 schemes are under rehabilitation. One of 10 suspended or decreased schemes is beneficial, and 7 out of the other 9 schemes are under rehabilitation. Incomes of the farm household and condition of irrigation facility have a positive correlation. The implementation of ongoing rehabilitation is expected to increase and stabilize income of farmers from irrigated agriculture.

The Overall Goal II: Prospect of Achievement as follows:

There are three points for the implementation of JISM, namely 1) strong willingness of both GIDA and IFC, 2) condition of irrigation facility, and 3) human resource to manage it.

- 1) **Willingness:** The experience in the current process of the JISM Agreement shows that both GIDA and IFC have strong willingness for its implementation.
- 2) **Condition:** JICA, AgSSIP and CIDA support rehabilitation of irrigation facilities, and it contributes to the JISM process.
- 3) **Human resource:** GIDA has been directly involved in the formulation of JISM Agreement, and its staff will be able to follow its process.

It is indicated that JISM concept is being utilized at new irrigation schemes under SSIDP (Small Scale Irrigation Development Project) and SFIP (Small Farm Irrigation Project). Thus, the number of schemes using JISM is expected to be increased under existing and future schemes. This is one of the positive impacts of the Project.

### 3-5 Sustainability

(1) Technical aspect

Technical skill and knowledge of GIDA staff are sufficient in service delivery in the field of crop

and vegetable production, agricultural machinery, water management, O&M and farmers' organization through the trainings during JICA's cooperation period. The technical guidelines have been availed for the use in irrigation schemes to meet the farmers' needs.

#### (2) Policy and institution aspect

In Ghana, new irrigation development reopened around 2002. GIDA has been playing its important role in feasibility studies, planning and designing of facility construction. In the National Irrigation Policy, the role of GIDA has been clearly earmarked as a pro-active promoter of both public and private irrigation development. Technical skills and knowledge of the GIDA staff which is accumulated through JICA's former cooperation are being utilized in the development of new irrigation schemes being funded by donors such as AfDB and BADEA. It is estimated that those core staff of GIDA who have learned irrigated farming technology through JICA's former cooperation take the lead in irrigation development in the country.

#### (3) Legal aspect

Recognizing the absence of a national irrigation policy in Ghana as a major constraint, MOFA has formulated the National Irrigation Policy in collaboration with FAO in May 2006 with a strong view point of the importance of irrigation in the economic development of Ghana. The Policy envisages that irrigation services will be enhanced through GIDA as a core body of implementing units among directorates in-and-out of MOFA, District Assemblies (DAs), and regulatory bodies.

In general, the interest for the legal reform in rural communities is low in Ghana. However, the Project recognized the importance of reviewing existing laws (L.I.1350, and L.I 604) and bye-laws, which did not cover some issues in the JISM concept. The process of amending those L.I.s contributes to the legal sustainability of the Project.

#### (4) Financial aspects

It should be considered as a positive symptom of public budgetary guarantee that supports GIDA's financial sustainability although the counterpart matching fund has the time limit for its execution. GIDA will sufficiently carry out its technical service delivery to farmers by the use of the matching fund.

In order for GIDA to promote sustainable irrigated farming in the country on its own effort by introducing JISM from now on, two financial problems should be addressed. These are farmers' training costs and rehabilitation costs of the main parts of irrigation facilities such as dams, pumps, main canals, gates and so on. Concerning training costs, GIDA can find more effective means to save costs by cost sharing with farmers. The Government of Ghana should see the rehabilitation of irrigation facilities as social responsibility. Hence, budgetary allocations to GIDA through MOFA

should be increased. Special appeal should be made to developing partners by MOFA for assistance, if necessary.

#### **4. Conclusion**

The Team evaluated the Project in line with JICA's five evaluation criteria based on the findings obtained from the field observations and a series of discussions with those who have been involved in the Project.

The Team concludes that the Project activities have been smoothly implemented with joint effort of both governments. The promotion of irrigated agriculture has been an important policy of the Ghanaian government, and the Project is relevant to contribute to it. The effectiveness of the Project is positively attained by the fact that the Project purpose I was achieved, and II to be achieved in two months. The efficiency of the Project has been substantially secured by allocating Ghanaian budget for the Project activities, and there was no significant negative cause in this aspect. The productivity and income of farmers have been improved, and farmers' participation in irrigation management as one of the overall goals is promoted as the impact of the Project. The capacity and skills of the GIDA counterparts have been strengthened in terms of the capability on training formulation and service delivery to the farmers, thus sustainability of the Project is assured.

According to the second version PDM of the Project revised by the Joint Coordinating Committee meeting held on the 17th of November 2005, the Project purposes will be successfully achieved by the end of the Project. Based on the findings mentioned above, it is concluded that the Project will be terminated in September 2006 as planned.

It is also concluded that the super goal of our cooperation since 1988, that is promotion of irrigated agriculture in formal irrigation schemes is considered to be achieved by implementing the JISM as a successful attainment of the Project.

#### **5. Recommendation**

##### **5-1. Short Term Issues (During the remaining cooperative period of the Project)**

###### **1) Inventory of farmers' organization**

Strengthening farmers' organization becomes prerequisite to implement JISM. Inventory survey of farmers' organization at each irrigation scheme is needed to grasp the situation of the farmers' organization. This should be done by the Project collecting information such as membership, sub-committee, fee collection system, farmers' needs, agricultural production, income, etc. GIDA project managers at the schemes should update the inventory and submit the progress report of JISM to GIDA headquarters periodically. As for GIDA, it is necessary to prepare the annual report on the basis of each project reports as the minimum requirement.



## 2) JISM implementation strategy

The Project has to make a JISM implementation strategy and to make action plans for each scheme. It might be difficult for GIDA to implement JISM at the same time in all irrigation schemes that have completed JISM agreement due to its limited resources. The strategy should prioritize the schemes to start JISM based on the progress of rehabilitation of the projects and preparedness of farmers' organizations and the implementation capacity of GIDA project staff of each scheme. The necessary services to be provided by GIDA to farmers should be clearly described in the operational plan for the smooth implementation of JISM.

## 5-2. Medium and Long term issues (After the FAPIM project completion)

### (1) Successful implementation of JISM in formal irrigation schemes

After the termination of the Project, GIDA should take initiative to complete JISM agreement in the remaining formal irrigation schemes where rehabilitation works are completed. In the process of agreement, awareness of farmers should be drawn so that the farmers are involved in JISM with a sense of ownership. It may not be appropriate to rapidly agree on JISM if farmers' organizations are not ready to accept JISM due to specific technical and social conditions in each scheme.

In order for farmers to understand strengthening farmers' organization, it is suggested that GIDA should utilize Ashaiman and Okyereko irrigation schemes as models by showing their experience during the cooperation period.

### (2) Capacity building of project managers

For the promotion of sustainable irrigated agriculture, it is necessary to transfer facilitation skills to enhance farmers' organization as well as technical skills and knowledge, and O&M techniques which have been accumulated in Irrigation Development Centre (IDC) i.e. the Project Operations Directorate through the Project implementation to the project managers in the schemes.

For the implementation of JISM, the trainings of farmers on water management, O&M and strengthening farmers' organizations should be directed by each project managers' response to farmers' demand, and the IDC staff should provide the necessary support. While such technical decentralization of GIDA in service delivery advances, functional strengthening and responsibilities of the Regional Offices as coordination body should be clearly defined.

### (3) Strengthening of farmers' organization as prerequisite of JSIM

At the time of implementation of JISM, strengthening of farmers' organization is prerequisite, but the present situation of farmers has been fragile and inadequate. Because of GIDA's limited human resources and technical background, close cooperation with the Directorate of Cooperatives and Extension Service in MOFA and other concerned departments is necessary for strengthening of

farmers' organization.

(4) Budget allocation for the JISM execution

For the execution of JISM, it is necessary for GIDA and MOFA to acquire budget allocation to implement trainings for the project managers and farmers such as farmer organization strengthening, irrigation water management and O&M. In addition, for effective utilization of GIDA's limited financial resources, it is necessary to improve GIDA's financial management ability. GIDA should also implement prioritized activities in selected irrigation schemes.

(5) Rapid implementation of rehabilitation work

Rehabilitation of irrigation facilities is considered as a precondition for the implementation of JISM. The rehabilitation of 9 irrigation schemes out of 22 which is on going with World Bank and CIDA support should be accelerated and completed before implementing JISM.

(6) Effective use of the outputs of the Project in the new role of GIDA

GIDA should utilize the concept of JISM in newly developed irrigation schemes. In addition, GIDA's role should be clarified if the private sector is also involved in the same scheme with regard to O&M such as Kpong irrigation scheme.

GIDA should carry out its role and responsibility not only in the existing irrigation schemes but also in new and commercial irrigation schemes. It is desirable to utilize the outputs of the Project such as irrigated farming technology and JISM introduction methods.

(7) Close coordination of directorates of GIDA

As the National Irrigation Policy points out, in order for GIDA to carry out its important role at the time of new irrigation development, close cooperation between the development directorate (Engineering Section) and the project operation directorate (Agronomy Section) is necessary. With the cooperation of the two directorates, GIDA can plan and design more appropriate irrigation facilities from the view point of farming technology.

(8) Linking with concerned organizations

To promote farmers' participation in irrigation management, GIDA should have a close collaboration with concerned organizations such as the DAs, the Department of Cooperatives, NGOs, and the private sector as well as development partners.

## 6. Lessons Learned

### (1) Functional irrigation facility as precondition of JISM

To implement successful irrigation management with farmers' participation, it is necessary to have a functional irrigation facility for each scheme as a precondition. Without having this precondition, it may not only delay the farmers' participation in the management but also create a serious adverse effect such as abandoning irrigated agriculture.

### (2) Joint irrigation system development

It is suggested that both engineers and agronomists work together on promoting irrigated agriculture for the sake of betterment of beneficiary farmers, and accountability of GIDA as the public entity is a condition to have better understanding of farmers that leads to smooth implementation of JISM. In addition, involvement of the farmers at the design stage of irrigation scheme is a key to facilitate the implementation of JISM, and this may be called "Joint Irrigation System Development."

Annex I : Project Design Matrix: Project Title: The Project for Promotion of Farmers' Participation in Irrigation Management  
 Implementation Period: Oct.2004-Sep.2006, Implementation Agency: Ghana Irrigation Development Authority, Version 2. (Nov 17, 2005)

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p><b>Overall Goal</b></p> <p>1. Income per farmer from irrigated agriculture is increased in irrigation schemes under GIDA.</p> <p>2. Farmers Participation in Irrigation Management is developed in Ghana.</p>	<p>(comparing to 2006, during 2007-2011)</p> <p>1. Irrigation scheme under GIDA in which farmers getting increased (or stable) income from agriculture, increases (or is stable) in number.</p> <p>2. Irrigation schemes under GIDA beginning to be jointly managed according to the "Joint Irrigation System Management Agreement" increases in number.</p>	<p>1. Annual progress report on farmers' participation from each scheme, and GIDA head office.</p> <p>2. Annual progress report on farmers' participation from GIDA head office</p>	<p>a. Amended regulation submitted by the ministries are approved at the National Assembly</p>
<p><b>Project Purpose</b></p> <p>1. Foundation for farmers' participation in irrigation facility management of irrigation schemes under GIDA, based on the regulations and agreements, is established.</p> <p>2. GIDA's function in service delivery on irrigation farming technology* is strengthened.</p> <p>* including <i>cultivation, water control, cooperative activity, etc</i></p>	<p>1. At least six irrigation schemes under GIDA, begin to be jointly managed according to the "Joint Irrigation System Management Agreement" between GIDA and irrigation farmers cooperative.</p> <p>2.1 The services, which are planned, conducted and evaluated by GIDA staff, and financed by GIDA increases in number.</p> <p>2.2 More than 60 % of the farmers are satisfied with the services/training delivered.</p>	<p>1. Progress report of the project</p> <p>2.1. Progress report of the project.</p> <p>2.2. Report of the service (evaluation on each service )</p>	<p>a. Budget for GIDA to implement farmers' participation in irrigation management is approved and allocated by MOFA and MOFEP*.</p> <p>*Ministry of Food and Agriculture, Ministry of Finance and Economic Planning</p>

<p><b>Outputs</b></p> <p>1. Legal arrangement to promote farmers' participation in irrigation management is prepared</p> <p>2. Implementation of farmers' participation in irrigation facility management between GIDA and farmers' organization is prepared</p> <p>3. Capacity of GIDA staffs in planning and implementation of training on irrigation farming technology is improved.</p>	<p>1.1 Drafts of amendment of existing laws* are submitted to the ministries concerned (*L.I.1350 and L.I.604)</p> <p>1.2 Proposal on establishment of irrigation farmers' society and/or amendment of by-laws of existing societies are submitted to farmers organization/ society concerned</p> <p>2. Agreement paper of "Joint Irrigation System Management" are formulated for at least 12 irrigation schemes</p> <p>3. Based on Action Plans* and/or the results of the workshops, more than 8 training courses for farmers and officers, planned by C/P staffs, are approved from technical viewpoint by Japanese experts and implemented.</p> <p><i>*: developed during the previous project; Small Scale Irrigated Agriculture Promotion Project</i></p>	<p>1.1. Copies of letters and drafts submitted to the ministries</p> <p>1.2. Copies of letters and proposals submitted to the farmers' organization</p> <p>2. Copies of agreements signed</p> <p>3. Report of training course approved.</p>	<p>a. Drafts submitted to the ministries are promptly approved</p> <p>b. Registration of farmers and/or amendments of by-laws are promptly approved by the authorities concerned</p> <p>c. Rehabilitation of 13 irrigation schemes under AgSSIP and CIDA-FABS are completed as scheduled</p>
<p><b>Activities</b></p> <p>1-1 Analyze national irrigation policy and strategy.</p> <p>1-2 Analyze existing rules and regulations and actual status on irrigation management.</p> <p>1-3 Analyze some rules and regulations on irrigation management of other countries as reference.</p> <p>1-4 Draft rules and regulations on farmers' participation in irrigation management.</p>	<p><b>Inputs</b></p> <p>1. Japanese Side</p> <p>1) Experts</p> <p>-Chief Advisor / Irrigation Management Regulation</p> <p>-Irrigation Facility Management</p>	<p>a. Market prices of agricultural inputs including electricity charges remain stable.</p>	