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1. ミニッツ（終了時評価レポートを含む）

MINUTES OF MEETING OF THE FINAL EVALUATION
ON JAPANESE TECHNICAL COOPERATION
FOR THE SMALL-SCALE IRRIGATED AGRICULTURE PROMOTION PROJECT

The Japanese Final Evaluation Team (hereinafter referred to as “the Japanese Team”) organized by the Japan International Cooperation Agency (hereinafter referred to as “JICA”) and headed by Mr. Ryozo HANYA, visited the Republic of Ghana from February 4 to February 14, 2002 for the purpose of Final Evaluation of the Project-type Technical Cooperation for the Small-Scale Irrigated Agriculture Promotion Project (hereinafter referred to as “the Project”) as well as discussing the major issues related to the implementation of the Project.

For the joint evaluation of the Project, the Ghanaian authorities nominated persons for Ghanaian Evaluation Team (hereinafter referred to as “the Ghanaian Team”). The Joint Evaluation Team (hereinafter referred to as “the Team”) conducted an evaluation of the performance and achievements of the Project by carrying out field visits, exchanged views and held series of discussion in respect of desirable measures to be taken by both Governments for the successful implementation of the Project.

As a result of the discussion, the Team agreed to recommend to their respective Governments the matters referred to in the evaluation report attached.

On the recommendations of the Team, the Japanese Team and the authorities of Ghana concerned agreed with the contents of the attached document.

Accra, February 13, 2002

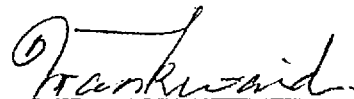


Ryozo HANYA

Leader

Japanese Final Evaluation Team

Japan International Cooperation Agency



Francis OFORI

Acting Chief Director

Minister of Food and Agriculture

The Republic of Ghana

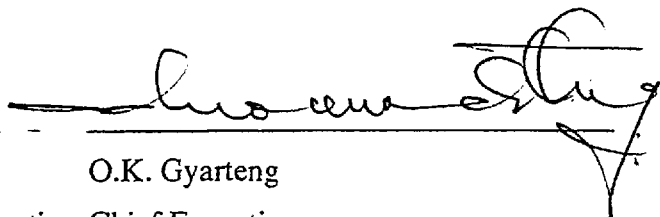


M.A. Quist-Therson

Director of External Resource Mobilization

Bilateral Division

Ministry of Finance



O.K. Gyarteng

Chief Executive

Ghana Irrigation Development Authority

Attached document

Contents of Agreement

1. Further Assistance from Japanese side

The Japanese Team brings the result of the Final Evaluation Report for the Project to Japan and recommends the necessity of further assistance from Japanese side for 2-year after the 5-year project cooperation period to the authorities concerned of the Government of Japan.

2. The prerequisite condition for further assistance from Japanese side

GIDA agreed to take the following necessary measure as the prerequisite condition for further assistance from Japanese side.

1) Allocation of necessary budget for next 2 year technical cooperation

2) Prepare for the post project plan

The Japanese Team requested to prepare the concrete plan to internalize the outcomes of the Project into the regular function of GIDA/ IDC. GIDA agreed

- a) To select the priority schemes based on the feasible strategy of GIDA.
- b) To make the concrete plan of activities in consideration of sustainability after the termination of the Project.
- c) To submit the plan to JICA by the end of May 2002.

3) Preparation of support program

GIDA agreed to prepare and submit the realistic support program of ex-participants of training on priority irrigation schemes to JICA by the end of May 2002.

4) Budget for necessary furniture for the training center

GIDA agreed to allocate some budget towards the furnishing of training center as soon as possible.

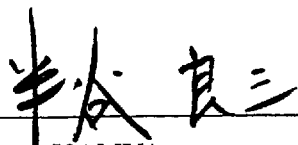
3. Sustainability of IDC

The Team recommended to consider prioritizing IDC as a technology development, extension and training center for all irrigation schemes, in line with the national development policy. MOFA and GIDA agreed to this recommendation and to make every effort to ensure the budget allocation for IDC to conduct necessary activities.

Attached Document

THE FINAL EVALUATION REPORT
FOR THE SMALL-SCALE IRRIGATED AGRICULTURE PROMOTION PROJECT

Accra, February 13, 2002

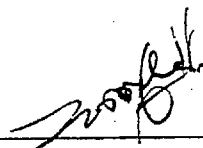


Ryozo HANYA

Leader

Japanese Final Evaluation Team

Japan International Cooperation Agency



S. Okoampa ARCHER

Leader

Ghanaian Final Evaluation Team

Ministry of Finance

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1. Evaluation of the Project

In order to draw the recommendations for the Project and lessons for the other Projects, the evaluation survey was conducted.

1-1 Objective

- 1) To evaluate the degree of achievement of the project based on the Record of Discussions (R/D), Project Design Matrix (PDM) and Tentative Schedule of Implementation (TSI) during the term of the Project.
- 2) To evaluate in terms of the five criteria that are shown below.

1-2 Method

1) Joint Evaluation

The Project was jointly evaluated by Japanese and Ghanaian sides on five evaluation criteria. The Joint Evaluation Team was composed of five members each from Japan and Ghana who were not directly involved in the Project. The Team visited GIDA, IDC and project sites and carried out a series of interviews with Ghanaian staff, farmers and Japanese long-term experts.

2) Preparation of the PDMe

The PDM for evaluation (hereinafter referred to as PDMe) is necessary to be formulated for logical evaluation of the Project. And the objectively verifiable indicators should be clear.

3) Five Evaluation Criteria

a) Relevance

Relevance is to question whether outputs, project purpose and overall goal are still in keeping with the priority needs and concerns at the time of evaluation.

b) 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.

c) Efficiency

Efficiency of the implementation process: how efficiently the various inputs are converted into outputs.



d) Impact

Impact is intended and unintended, direct and indirect, positive and negative changes as a result of the project.

e) Sustainability

Sustainability of the project is to question whether the project benefits are likely to continue after the external aid has come to an end.

1-3 Members of the Team

1) The Japanese Team

Name	Job title	Occupation
Ryozo HANYA	Leader/Training	Director, Agricultural Technical Cooperation Division, Agricultural Development Department, JICA
Masashi NAKAI	Water Management	Senior Technical Official, Technical Cooperation Division, International Affairs Department, Food Policy Bureau, MAFF
Takeaki TOMIOKA	Cultivation/Farm Management/Farm Machinery	Senior Consultant, Consulted Department, IC Net Limited
Takahiro MIYOSHI	PCM Evaluation	Program Officer, Department of Planning and Program, FASID
Tomoko TANAKA	Planning Management	Staff, Agricultural Technical Cooperation Division, Agricultural Development Department, JICA

2) The Ghanaian Team

Name	Job Title	Occupation
S. Okoampa ARCHER	Leader/Training	Principal Economist, External Resource Mobilization, Bilateral Division, Ministry of Finance
Kofi KUTAME	Farmers' Organization	Assistant Registrar, Cooperatives Department, Ministry of Manpower Development and Employment
Edwin SONNE	Cultivation/Farm Management/Farm Machinery	Assistant Director of Agriculture/ Rice specialist, Ministry of Food and Agriculture
S. K. FORSON	PCM Evaluation	Principal Agronomist, Project Operations Directorate, Ghana Irrigation Development Authority (GIDA)
Christian AMEDO	Planning Management	Senior Agricultural Economist, Statistics Research and Information Directorate, Ministry of Food and Agriculture (MOFA)

2. Outline of the Project

2-1 Background of the Project

GIDA was established in 1977 for development, management and extension services for the all national irrigation projects (meaning same as 'irrigation schemes'). IDC was established as a center for improving technology, extension and training of GIDA in 1991. The Government of Ghana proposed the technical cooperation for the purpose of strengthening the function of GIDA/ IDC for irrigation management, improving component technology and for training through the activities on pilot schemes.

In response to this request, the Government of Japan dispatched Study Teams and proceeded with the expected cooperation.

On May 27, 1997, the Record of Discussions on the Project for Small-Scale Irrigated Agriculture Promotion was signed between the Ghanaian authorities and the Implementation Team. The Project was commenced in August 1997 for a five-year period that will terminate in July 2002. The purpose of the Project is establishment of a model farming system in irrigated areas under the supervision of GIDA. The Consultation Team was dispatched to revise PDM and TSI, and Mid-term Evaluation Team revised them and evaluated the activities during first half period. The project activities have been conducted based on PDM and TSI.

2-2 Plan of the Project

The Project purpose is 'A model farming system is established in irrigated agriculture area under the supervision of GIDA', and the results of discussion, the outputs of the Project are confirmed as follows.

- 1) Farmers' situation and farming systems of irrigation schemes are clarified.
- 2) Component technology is improved.
- 3) Farming system is verified in the two model schemes.
- 4) Farming supporting system is improved in the two model schemes.
- 5) Extension officers, staff of farmers' organizations and farmers acquire necessary knowledge and skills to implement a model farming system.

2-3 Expected technological transfer

Through the activities of the Project, expected technological transfer is to improve the ability of the counterparts of GIDA/ IDC. In order to achieve these activities, the Project set the 2 pilot models, Ashaiman and Okyereko.

3.Preparation of the PDMe

As the result of discussion among the members of 4th Joint Coordinating Committee held on February 6, 2002, the current Project Design Matrix (hereinafter referred to as PDM) was modified for evaluation into PDMe. The PDMe is attached as the ANNEX 1.

1) Framework of the Project

The Japanese Team found the necessity of readjusting the framework of the Project as to be more logical, and especially the treatment of the training (Output 5) is the subject of the discussion.

It was confirmed that the training has been conducted not only for the two schemes but also for the other schemes. In the logic of PDMe, it is thought that training for other schemes is necessary for the evaluation of the adaptability of the components of the model farming system developed by the Project, while all stakeholders explained various benefits of the training. Therefore, the training is set as the last output as it was, and an indicator about the applicability of the model farming system is added for the project purpose in PDMe.

2) The Objectively Verifiable Indicators

The Objectively Verifiable Indicators of Overall Goal, Project Purpose and Outputs in the current PDM were vague and found to be not suitable for the evaluation. In order to see the extent of the achievement, objectively verifiable indicators need to be those shown in PDMe.

3) Overall Goal

The current PDM has two Overall Goals, but from the viewpoint of PDM logic, these two Overall Goals are different steps. In terms of time sequence, logically increase of farmers' income will be achieved after improvement of the farming system at other irrigation schemes. Therefore, the Overall Goal 'Farmers' income is increased' should be set as Super Goal on PDMe.



4. Achievement of the Plan

Achievement of the Plan is confirmed along the Achievement Grid (ANNEX 2) that is prepared by the Team. As the results of the confirmation through the survey, the findings are as follows.

4-1 Achievement of Inputs

1) Japanese Inputs

Dispatch of Experts

A total of 11 long-term experts and a total of 16 short-term experts have been dispatched as planned. The list of the experts is attached in ANNEX 3.

Provision of Equipment, Machinery and Materials

Major equipment, machinery and materials were provided to carry out the activities effectively as shown in ANNEX 4.

Training of Ghanaian Personnel in Japan

A total of 17 counterparts have visited Japan to participate in technical training. The list of trained personnel is attached in ANNEX 5.

Supplementary Funds to Cover Local Cost

The Japanese side bore a part of the Project local cost to implement the Project more effectively. The supplementary fund made by the Japanese side is shown in ANNEX 6.

2) Ghanaian Inputs

Provision of Land, Buildings and Facilities

The facilities and land which are essential for the Project have been provided.

Assignment of Counterparts

Ghanaian counterparts have been assigned to the Project. The list of assigned counterparts is attached in ANNEX 7.

Provision of Equipment and Materials (Furniture and Fittings)

Provision of desks, chairs and ventilation for the training center was not sufficient to conduct the training, causing inconvenience for the trainees and trainers.

Allocation of Budget

While the Ghanaian side bore expenses for electricity, fuel, water supply and other miscellaneous expenses, disbursement of counterparts fund was inadequate as shown in ANNEX 6.

4-2 Achievement of Outputs

- 1) Output 1: Farmers' situation and farming systems of irrigation schemes are clarified.

Baseline survey and other surveys have been conducted, and the necessary information was collected and analyzed. Based on the results of these surveys, each section developed and prioritized a number of activities that needed to be carried out for the improvement of the component technology.

- 2) Output 2: Component technology is improved.

Although achievement degree is different among each technology, research and improvement relating with 4 major fields of basic component technology is proposed.

- 3) Output 3: Farming system is verified in the two model schemes.

Each component technology was verified in terms of 4 major technical fields. There have been the technical committee for sharing the developed technology. However, the integrated technology as farming system has not been shaped and consolidated as a farm income generation method especially in Okyoreko scheme.

- 4) Output 4: Farming supporting system (irrigation facility maintenance, strengthening farmers' organizations, extension system, agriculture credit system) is improved in the two model schemes.

Each supporting system is improved at basic level in the two model schemes. However, the revolving of the agricultural credit is yet to be consolidated, and Okyoreko is behind compared with Ashaiman.

- 5) Output 5: Extension officers, staff of farmers' organizations and farmers acquire necessary knowledge and skills related to a model farming system.

Training for each target group has been conducted as planned since the training facility was built. The contents of the training have benefited participants.

4-3 Achievement of the Project Purpose

Project Purpose: A model farming system is established in irrigated agriculture area under the supervision of GIDA.

With high achievement in every indicator such as nearly 100% of farmers admitting the improvement, high payment rate for Irrigation Service Charge and high recovery rate of micro-credit, and high appreciation of training participants for the project, it

seems that the project purpose is about to be achieved by the end of the project period. Meanwhile, it is arguable as to whether the achievement of indicators is really thought to be the establishment of the model farming system, which is still vague in its definition and the progress in Okyereko has not been thought as satisfactory.



5. Results of the Evaluation with Five Criteria

Results of the evaluation with five criteria are described as follows. Details of each evaluation result can be referred to the Evaluation Grid attached in ANNEX 8.

5-1 Relevance

The project purpose and its overall goal are set to promote irrigated agriculture with participatory approach of farmers, which is highly relevant to the needs of local farmers, the Ghanaian development policy, and JICA's country strategy paper for Ghana. Thus, the project's relevance is evaluated as very high.

5-2 Effectiveness

Every indicator of achievement of the project purpose shows that this project purpose is likely achieved. However, bear in mind that this project is a technology-oriented project and the building/rehabilitation of irrigation facilities is not part of the input of this project. It is necessary to reconsider about the value of indicators as the sole achievement of the project. Supplementary surveys conducted by the evaluation team revealed that not all of the farmers' appreciation is attributed to the effect of this project, i.e. some part of the farmers' appreciation must be attributed to the renovation of irrigation facilities. Even though it is the fact that the improvement of farming is not sole effect of this project, the project seems to be effective more than just in terms of technology-oriented aspects in the sense that the function of the irrigation facilities has been upgraded by improvement of technologies transfer made by this project.

5-3 Efficiency

Most of the necessary inputs have been made as planned from Japanese side, although some delay and change of contents have occurred in Ghanaian side mainly due to the financial difficulty. Although some inputs have been delayed, most part of the expected outputs seems to be achieved by the end of the project. In addition, supplementary interviews/ surveys revealed that neither particular input nor activity was thought to be unnecessary. Thus the project is thought as efficient in the sense that inputs have been fully utilized at their utmost potentials. By comparing the input level of the similar projects, the level of local cost support is relatively high. It is, however, considered as reasonable when considering the current financial difficulty of Ghana.

5-4 Impact

1) Changes accrued by the project

There are a lot of positive impacts 1) farmers income has increased by 60%, 2) more children can go to school, 3) women's status has improved, 4) farmers have gained self-esteem, 5) IDC's inter-sector communication has improved, 6) capacity of IDC C/Ps has been strengthened etc. On the other hand, some interviewees expressed the concern that a few farmers in the model schemes were not successful and burdened with loans.

2) Possibility of the overall goal achievement

During the project period, project managers, extension officers, leaders of farmers' organizations and farmers from other irrigation project were invited to the training program.

With respect to the current financial situation of GIDA (and Ghana itself), however, it seems to be very unlikely that GIDA/ IDC can extend the full-fledged activities of the Project to other irrigation schemes simultaneously. It requires further efforts to make the extension program and its contents of technologies into more realistic ones.

5-5 Sustainability

1) Institutional aspects

The sustainability of the Project activities under GIDA and IDC is not assured due to the fact that opinions are actually divided even among concerned parties. The main limitation to sustainability is the financial vulnerability.

There is no long-term programmed strategy on how to defuse the outcomes of the Project to other irrigation project.

2) Financial aspects

Every concerned party admits that the financial condition of GIDA is very weak and unstable. It is not the problem only for GIDA, but also for the national economy of Ghana. Currently there is no sufficient financial source which can be used for extending the Project activities into other schemes. Some C/Ps consider looking for the other donors to fund their activities.

3) Technical aspects

a) GIDA/ IDC's counterparts (C/Ps)

GIDA/ IDC's C/Ps have been fostered to deal with management of the technologies such as monitoring of farming activities, minor modification of technologies, etc., but

C/Ps are not seen as fully capable to develop technologies on their own. Continuity of C/Ps stay in GIDA is not assured because of the current financial situation.

b) Farmers in irrigation schemes

For the two model schemes, knowledge and skills are well transferred to farmers in Ashaiman, who would be capable to continue the activities, although some periodical technical support will be needed. In Okyereko, where the progress has not been satisfactory, it is necessary to foster more skilled farmers in order to sustain the effective farming activities on their own.

For other schemes, some farmers participating in training courses seem to apply some components of the Project into their field. Even though it would be a positive sign, the transfer knowledge and skills are not concluded as sustainable.

Surrounded by a lot of uncertainties and financial difficulty, the sustainability of the Project is evaluated as low especially if the Project is terminated as planned.

6. Conclusion

From the results of the evaluation, the Team concludes that the Project is successful in terms of the substantial achievement of the project purpose and outputs, and the technology-transfer to the counterparts provided by the Project. This success is attributed mainly to the collaboration between Japanese experts and the Ghanaian counterparts to conduct activities based on carefully monitored TSI.

The Project is appreciated due to its high relevancy and positive impacts, and a certain level of effectiveness and efficiency is confirmed by the Team. On the other hand, the achievement possibility of its overall goal and its sustainability are of serious concern to the Team because they are evaluated as low, especially if the project is terminated as planned.

Considering that the project purpose should be linked to the overall goal, the achievement of the project purpose still needs to be pursued to completion as much as possible.

The issues of concern are:

- 1) Farming system has not been fully formulated as a realistic income generation method.
- 2) Farming support system has not been fully improved as sustainable in Okyereko.
- 3) Extension and training system in IDC has not been fully established.

7.Recommendations

As a result of the survey, the Team makes recommendations for

- (I) further assistance from Japanese side
- (II) necessary preparation by Ghanaian side
- (III) necessary improvement of the present Project

(I) Further assistance from Japanese side

Further assistance from Japanese side is necessary after the 5-year project cooperation period for conducting following activities;

- a) the integration of the improved component technology in consideration of the establishment of farming system
- b) strengthening the farmers' organization to manage effectively the farming supporting system
- c) and training

The activities a) and b) should be implemented mainly targeting on the Okyereko scheme.

(II) Necessary preparation by Ghanaian side

1) Preparation of concrete post Project Plan by GIDA/ IDC

The Japanese assistance will be limited for 2 years.

It is recommended that GIDA/ IDC should prepare and submit concrete plan of activities in consideration of sustainability after the termination of the Project to JICA by the end of May 2002, so that the outcomes of the Project internalize into the regular function of GIDA/ IDC.

In course of planning, the first priority irrigation schemes for expansion of the outcomes of the Project should be selected based on the feasible strategy of GIDA.

2) Preparation of support program of ex-participants of training on priority irrigation schemes by IDC

Supporting systems for farmers' need should be strengthened for ensuring the sustainability and adaptability of the training. In order to achieve that, IDC should prepare and submit the realistic plan to JICA by the end of May 2002, that intends to support the farming activities of ex-participants of training. Support program of training will include organization system, especially linkage between extension and

training system, and concrete action plan to the first priority irrigation schemes to be implemented with suggestion from Japanese experts by using the Ghanaian financial resources.

The training to be conducted for 2 years should be concentrated in the first priority irrigation schemes. A support program of ex-participants of training on priority schemes is a prerequisite condition to conduct the training activities continuously for the next 2 years.

3) Sustainability of IDC

The Government of Ghana should consider prioritizing IDC as a technology development, extension and training center for all irrigation schemes, in line with the national development policy. IDC should make every effort to be recognized as a Center of Excellence from the inside and outside like external donors.

MOFA and GIDA should make adequate budgetary provision to realize the mandate of IDC, so that IDC will be secured for sustainability.

(III) Necessary improvement of the present Project

1) Integration of component technology

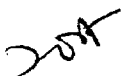
Integration of component technologies for farming system should be strengthened and institutionalized through the good coordination among sections based on the technical committee.

2) Budget for necessary furniture for the training center

GIDA should allocate some budget towards the furnishing of the training center as soon as possible.

3) Workshop for confirming next 2-year activities

The Project team should have a workshop to confirm and clarify the activities of the Project for the next 2 years among the concerned authorities of IDC, GIDA and MOFA. If necessary, facilitator of workshop will be dispatched from Japanese side based on the request of the Ghanaian side.



8. Lessons learned from the Project

- 1) If the project is related with other aid schemes such as grant aid and the development study, more collaboration among these schemes should be encouraged at the planning stage.
- 2) If the project purpose includes some conceptual words such as “System” and “Model”, it is necessary to define the meaning as concretely as possible with objectively verifiable indicators through discussions among stakeholders before commencement of the project. This facilitates not only the evaluation but also the implementation of a project.
- 3) In order to ensure the sustainability of the project, it is necessary to analyze the sustainability issues carefully at the planning stage in terms of institutional, financial and technical aspects.



Project name: Small-scale Irrigated Agriculture Promotion Project in the Republic of Ghana

Project Period: August 1, 1997 to July 31, 2002

Project area: Mainly the two model schemes (Ashaiman and Okyereko)

Target group: Farmers in the two model schemes

(Final Beneficiaries: Farmers in irrigation schemes)

Date : 2002/02/11

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Super Goal Farmer's income is increased	Farmer's income in irrigation schemes is increased.		
Overall Goal Farming system in respective irrigation scheme under GIDA is improved	By 2005/07/31, 1. Other irrigation schemes under GIDA yield greater production by practicing a farming system. 2. Payment rate for Irrigation Service Charge and recovery rate for micro-credit for farming are as high as more than 90% in other irrigation schemes.	• Survey documents by GIDA • Agricultural Statistics.	a. The Ghanaian Government continues its policy to support irrigated agriculture.
Project Purpose A model farming system is established in irrigated agriculture area under the supervision of GIDA.	By 2002/07/31, 1. More than 80% of farmers in respective model sites recognize that their farming has been improved through implementation of SSLAPP 2. Payment rate for Irrigation Service Charge and recovery rate for micro-credit for farming are as high as more than 90% in two model schemes 3. More than 80% of training participants from other irrigation schemes recognize that the contents of the model farming system are adoptable into their schemes.	1. Survey documents by the Project, GIDA and/ or JICA 2. Survey documents by the Project, GIDA and/ or JICA 3. Project documents on training (e.g. questionnaire results, if possible)	a. GIDA(IDC) continues the activities for extension and training. b. Irrigation facilities are maintained at the present level c. Abnormal weather conditions do not occur in other irrigation schemes.
Outputs 1. Farmers' situation and farming systems of irrigation schemes are clarified. 2. Component technology is improved. 3. Farming system is verified in the two model schemes. 4. Farming supporting system is improved in the two model schemes. 5. Extension officers, staff of farmers' organizations and farmers acquire necessary knowledge and skills related to a model farming system	1-1. Necessary information and baseline data used for evaluation at different stages are compiled in documents or reports 1-2. The number of problems and tasks for improvement of farming reaches more than eight. 2-1. The number of technologies, improved by the project to be applicable to field, reaches more than 4. 2-2. Productivity, economical efficiency and validity of proposed component technologies are confirmed in reports. 3. Farming system practiced by farmers in two model schemes yields greater productivity, economical efficiency, and validity than before. 4. Farming supporting systems (e.g. irrigation facility management, agricultural credit system, extension system and farmer's cooperatives) are introduced and operated in the two model schemes. 5-1. Trainings whose contents are appropriate from the point of view of local needs and technologies, are implemented 5-2. More than 80% of participants recognize that necessary knowledge and skills are transferred.	1. Baseline survey reports and other Project documents. 2. Project documents on components technologies. 3. Project documents on farming system 4. Project documents on farming support system 5-1. Training curriculum, documents, etc. 5-2. Project documents on training (e.g. questionnaire results, if possible)	a. Personnel relocation of Ghanaian officials and personnel which affects on the progress of the Project implementation does not occur.

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ANNEX1
PDMc (2/2)

Activities	Inputs		<p>a. MOFA and GIDA provide training facility without delay.</p> <p>b. Irrigation facilities of the proposed Model Schemes are rehabilitated by GIDA</p> <p>c. Abnormal weather conditions do not occur in the two irrigation schemes.</p>
	Japanese Side	Ghanaian Side	
<p>1. Analysis of farmers' situation and farming system.</p> <p>1-1. Conduct, analyze and evaluate baseline survey in the two model schemes.</p> <p>1-2. Survey of farming situation of rainfed field around the two model schemes.</p> <p>1-3. Collection of information on farming situation of other irrigation schemes.</p> <p>2. Improvement of component technology.</p> <p>2-1 Crop cultivation.</p> <p>2-2 Water management.</p> <p>2-3 Agricultural machinery.</p> <p>2-4 Farm management.</p> <p>3. Verification of farming system in the two model schemes.</p> <p>3-1 Verification of integrated technology at experimental field.</p> <p>3-2 Verification of farming system on farmer's fields in the two model schemes.</p> <p>4. Improvement of farming supporting system in the two model schemes.</p> <p>4-1 Operation and maintenance system of irrigation facilities.</p> <p>4-2 Agricultural credit system.</p> <p>4-3 Extension system.</p> <p>4-4 Mobilization of farmers' organization.</p> <p>5. Training of component technology, farming system and operation of supporting system.</p> <p>5-1 Training for extension officers of GIDA irrigation schemes.</p> <p>5-2 Training for staff of farmers' organizations in irrigation schemes.</p> <p>5-3 Training for farmers in irrigation schemes.</p>	<p><Dispatch of Experts></p> <ul style="list-style-type: none"> • Long-term experts <ol style="list-style-type: none"> 1. Team Leader 2. Coordinator/Training 3. Cultivation 4. Water Management 5. Farmers' Organization/Farm Management 6. Agricultural Machinery • Short-term experts Dispatched if required. <p><Procurement of the Equipment></p> <ul style="list-style-type: none"> • Equipment for research • Equipment for cultivation • Equipment for training • Equipment for office <p><Training in Japan></p> <p>2-3 personnel annually</p> <p><Local Cost Expenditure></p> <p>Improvement of experimental field.</p>	<p><Land, Building and Facility></p> <ul style="list-style-type: none"> • Land and building for the Project and 2 Model Schemes. • Other required building and facility on mutual agreement. <p><Placement of personnel> (Counterparts)</p> <ul style="list-style-type: none"> • Project Director (Chief counterpart) <ol style="list-style-type: none"> 1. Chief Director, MOFA 2. Chief Executive, GIDA 3. Director, IDC • For technical fields <ol style="list-style-type: none"> 1. Cultivation 2. Water Management 3. Agricultural Machinery 4. Farmers' Organization 5. Training <p><Other Equipment not Procured by Japan></p> <p><Running Expenses></p> <ul style="list-style-type: none"> • Emolument • Operation and management of facilities • Utilities • Administrative fees for training • Other running expenses • Budget for training 	<p>Pre-condition</p> <p>a. Farmers accept the Project.</p> <p>b. GIDA continues its governmental role.</p>

*"Model Farming System" means a comprehensive system which comprises both appropriate farming technologies, to promote multiple farming based on paddy rice and other crops utilizing irrigation facilities, and institutional systems to support farmers' organizations as well as farmers under supervision of GIDA. (quoted from the project's R/D)

*"Farming system" means a system for farming which comprises appropriate farming technologies utilizing irrigation facilities such as crop cultivation, water management, agricultural machinery, and farm management.

*"Farming support system" means a system of supporting irrigated farming such as operation and management of irrigation facilities, agricultural credit system, extension system, and farmer's organization.

*"Productivity": Production per unit of land (t/ha)

*"Economic efficiency": Economic Cost-Benefit (B/C)

*"Validity": Applicability for the environment such as land, institutions, etc.

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Achievement Grid

Category	Indicators	Source of Information	Method	Evaluation
Input	(Japanese side)			
	J-1. Japanese experts	Documents, relevant opinions, etc.	To confirm the amount and the timing of the input carried out.	11 long-term experts and 16 short-term experts have been dispatched. Some problems are pointed out such as too short period of short-term experts and insufficient take-over period from preceding experts to the current experts.
	J-2. Provision of machinery and facilities	Documents, relevant opinions, etc.	To confirm the amount and the timing of the input carried out. Also to confirm how much the input were utilized in the project.	Necessary inputs have been made. A few components of the inputs are considered as not fully used by the project.
	J-3. Counterpart's training in Japan	Documents, relevant opinions, etc.	To confirm as to whether the input was carried out as planned. Also to research the quality of the training in Japan according to the relevant opinions.	17 counterparts are received in trainings implemented in mainly TBIC, IDACA, and the Ministry of Agriculture, Forestry and Fisheries in Japan.
	J-4. Local Cost Support	Documents, relevant opinions, etc.	To confirm as to how much local cost support was made.	About 94 million yen (0.7 million dollars) were executed from Japanese side.
	(Ghana side)			
	G-1. Land, Buildings and Facilities	Documents, and reconnaissance	To confirm as to whether the necessary land, buildings and facilities are prepared.	Necessary inputs have been made.
	G-2. Allocation of C/P (Counterparts)	Documents, relevant opinions, etc.	To confirm the amount and the timing of the input carried out.	A couple of counterparts have been allocated for each Japanese expert. A part of counterparts have left the project. Allocation of deputy manager of IDC is delayed by a half year.
	G-3. Provision of Equipment and Materials	Documents, relevant opinions, etc.	To confirm the amount and the timing of the input carried out.	Provision of desks and chairs for the training center was not sufficient to conduct the training properly.
	G-4. Expenditure of Local Costs	Documents, relevant opinions, etc.	To confirm as to how much local cost were expensed by the counterpart organizations.	While cost of fuel and electricity has been covered, other necessary costs were not properly administered as expected.
Activities	Activities for Output 1 : 1. "Analysis of farmers' situation"	Achievement Chart	Based on the Achievement Chart, to confirm as to whether the activities have been carried out as planned.	Baseline survey and other surveys have been conducted, and necessary information and baseline data were collected and analyzed. (Averaged Achievement rate: 93%)
	Activities for Output 2 : 2. "Improvement of component technology"	Achievement Chart	Based on the Achievement Chart, to confirm as to whether the activities have been carried out as planned.	Research and development relating with 4 major fields of component technology were implemented. (Achievement : 60% for crop cultivation, 80% for water management, 80% for agricultural machinery, and 80% for farm management)

Achievement Grid

Category	Indicators	Source of Information	Method	Evaluation
	3. Activities for Output 3 : "Verification of farming system in the two model schemes"	Achievement Chart	Based on the Achievement Chart , to confirm as to whether the activities have been carried out as planned.	Activities for rice cultivation were conducted as expected in experimental sites, but the progress is not substantial for vegetable cultivation because of technological reasons. For application into the two model schemes, the progress is delayed by the following reasons. Water distributing schedule is being discussed between farmers and GIDA. Some farmers can not afford the water use payment. The market of rice and vegetable is not stable. (Achievement rate 55%)
	4. Activities for Output 4 : "Improvement of farming system in the two model schemes"	Achievement Chart	Based on the Achievement Chart , to confirm as to whether the activities have been carried out as planned.	The activities for establishing institutions and rules are naturally time-consuming, so the progress is not smooth. Besides, there are financial problems accused such as maintenance and operation cost, fuel cost, and operational cost for farmers' organizations. (Achievement: facility maintenance 80%, micro-credit system 60%, extension system 50%, farmers' organization 60%)
	5. Activities for Output 5 : "Training of component technology, farming system and operation of supporting system"	Achievement Chart	Based on the Achievement Chart , to confirm as to whether the activities have been carried out as planned. In addition, to confirm how much training and extension were conducted for other irrigation schemes.	During the project period, training and seminars have been conducted intensively for farmers and their leaders in the two model schemes. In addition, there have been other training and seminars held for extension officers, managers of GIDA, Leaders, scheme directors, and farmers from other schemes. (Averaged achievement rate 87%)
Output	1. Farmers' situation and farming systems of irrigation schemes are clarified.			
	1-1. Preparedness of baseline data	Project documents and reports, etc.	To confirm as to whether necessary baseline data is collected and compiled in a form of report.	The baseline surveys have extracted the several baseline data which is used as a comparison data for before-after evaluation.
	1-2. The number of problems and tasks for improvement of farming.	Project documents and reports, etc.	To confirm as to whether the number of the improvement case examples reaches more than eight.	The problems in the model sites have been extracted for each section such as lack of credit for farming, insufficient equipment, underdevelopment of water management, etc. From this problems, a number of tasks for improvement have been considered such as micro-credit for inputs, strengthening of farmers' organizations, intensifying of training for farmers, fostering of women's associations, etc.
	2. Component technology is improved			
	2-0. The number of technologies developed by the project.	Project documents and reports, etc.	To confirm as to whether the number of the technologies developed by the project reaches more than four.	Every section has achieved more than one technology improvement.

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Achievement Grid

Category	Indicators	Source of Information	Method	Evaluation
	2-1. Technical improvement of "crop cultivation"	Project documents and reports, etc.	To confirm as to whether the productivity, economic efficiency, and validity are improved..	Improvement technologies for rice cultivation such as selection and supply of qualified cultivars (five), establishment of agronomy standards, cost estimation, etc are established. Besides, the improvement for vegetable cultivation has not been progressed so far.
	2-2. Technical improvement of "water management"	Project documents and reports, etc.	To confirm as to whether the productivity, economic efficiency, and validity are improved..	Improvement technologies are establishment of water users associations, planning of water distribution, establishment of monitoring system, maintenance of irrigation facilities. There seems to be a room for improvement in terms of integration with farm management for charging the water use fee, establishment of facilities maintenance system, etc.
	2-3. Technical improvement of "agricultural machinery"	Project documents and reports, etc.	To confirm as to whether the productivity, economic efficiency, and validity are improved..	Improvement technologies are efficient use of agricultural machinery, development of agricultural machinery and equipment, and cost estimation for the selection of suitable agricultural machinery. It seems to need more integration with other sections for effective application.
	2-4. Technical improvement of "farm management"	Project documents and reports, etc.	To confirm as to whether the productivity, economic efficiency, and validity are improved..	Improvement technologies are survey methods of farming, micro-credit schemes for inputs, monitoring methods for farming activities, strengthening of farmer's organizations, etc. It seems to need more integration with other sections for effective application.
3. Farming system is verified in the two model schemes.				
	3-1. Verification of farming system in Ashaiman scheme.	Project documents and reports, reconnaissance, etc.	To confirm as to whether the productivity, economic efficiency, and validity are improved in this scheme.	Each component technology was verified in terms of productivity, economic efficiency and validity in the experimental field of IDC and the farmer's field. Farming system has not been shaped and consolidated as a farm income generation method.
	3-2. Verification of farming system in Okyereko scheme.	Project documents and reports, reconnaissance, etc.	To confirm as to whether the productivity, economic efficiency, and validity are improved in this scheme.	Each component technology was verified in terms of productivity, economic efficiency and validity in the experimental field of IDC and the farmer's field except vegetable crop production. Farming system has not been shaped and consolidated as a farm income generation method.
4. Farming supporting system is improved in the two model schemes				
	4-1. Improvement of farming support system (e.g. irrigation facility management, agricultural credit system, extension system and farmer's cooperatives) in Ashaiman scheme.	Project documents and reports, reconnaissance, etc.	To confirm the level of introduction of some contents of the farming support systems such as facilities maintenance, micro-credit, etc. in this scheme.	Irrigation facility management and farmer's cooperative get along well. Extension system were established by extension officers and IDC technical staff from component technology. Agriculture credit has been revolving for 2 years but the recent low price of rice market affects the revolving system.

Achievement Grid

Category	Indicators	Source of Information	Method	Evaluation
	Improvement of farming support system (e.g. irrigation facility management, 4-2. agricultural credit system, extension system and farmer's cooperatives) in Okyereko scheme.	Project documents and reports, reconnaissance, etc.	To confirm the level of introduction of some contents of the farming support systems such as facilities maintenance, micro-credit, etc. in this scheme.	Irrigation facility management and farmer's cooperative get along well. Extension system were established by extension officers and IDC technical staff from component technology. Agriculture credit has just started to revolve, but the recent low price of rice market affects the revolving system.
	5. Extension officers, staffs of farmers' organizations and farmers acquire necessary knowledge and skills to implement a model farming system.			
	5-1. The appropriateness of training schedules and curriculums from the point of view of local needs and technological level.	Training schedules curriculums	To confirm as to whether the training contains the necessary knowledge and skills for farming by analyzing training schedules and curriculums.	According to the report of the project, many participants expressed that they would initiate the content of training. In fact, the team heard from some cares of ex-participants that they applied the cultivation technologies in their farm. The training facilities had not been furnished, that seems to be one of constraining factors
	5-2. More than 80% of participants recognize that necessary knowledge and skills are transferred.	Project documents and reports on training.	To confirm this with some documents or questionnaire results measuring the level of success of the training such as satisfaction of training participants, etc.	According to the project impact assessment, 97% on Ashaiman and Okyereko agreed that the training had been of immense benefit to them.
Project Purpose	1. More than 80% of farmers in respective model sites recognize that their farming has been improved through implementation of SSLAPP.	Evaluation reports of local consultants, Project reports, etc.	To confirm and analyze the evaluation result from the report by the local consultants.	According to the local consultant's report, 100% of farmers in each model site agree that this project improve their farming. However, when reminding that this project is a technology-oriented project and the building/rehabilitation of irrigation facilities is not included as input of this project, it is necessary to reconsider about the figure as the sole achievement of the project. It needs more analysis in measuring its effectiveness. (The same report shows that farmers admitted the average rate of technology transfer from this project is 54% and 72% for Ashaiman and Okyereko, respectively.)
	2. Payment rate for Irrigation Service Charge and recovery rate for micro-credit for farming are as high as more than 90% in two model sites.	Evaluation reports of local consultants, Project reports, etc.	To confirm and analyze the evaluation result from the report by the local consultants.	Payment rates for Irrigation Service Charge are 94% and 78% at Ashaiman and Okyereko respectively (2001 Dec.), although that amount is not enough for GIDA to continue its activities. Recovery rates of micro-credit have reached almost 100% so far. However, these rates are achieved merely at the last phase of the project, thus it is not necessarily considered that these figures are stable. In addition, the actual rate of loan deal is not high especially for Okyereko.
	3. More than 80% of training participants from other irrigation schemes recognize that the contents of the model farming system are adoptable into their schemes.	Project documents and reports on training.	To confirm and analyze the possibility of the applicability of the model farming system into other schemes by farmer's opinions.	The questionnaire results of the trainings do not cover the applicability of the model to the other schemes, while it seems that most participants from other schemes rated the training as highly satisfactory. Observation survey of Dawhenya scheme, from where several farmers attended the training courses, revealed that some component technologies from training have been applied into the field.

Achievement Grid

Category	Indicators	Source of Information	Method	Evaluation
	4. Completeness as a model and integrity as a system	Project documents and reports, observation with relevant	To confirm and analyze the achievement of the project purpose in terms of the completeness and integrity of the model farming system as a model.	It seems that every stakeholder has own image of what the model farming system is, and the consensus has not been made yet. Such ambiguity would cause the difficulty not only for evaluation, but also for the project implementation.
Important Assumptions	1. MOFA and GIDA provide training facility without delay.	Project documents, reports, opinion of relevant	To check as to whether this important assumption is realized or not.	Training facilities of IDC (Irrigation Development Center) was provided with help of Japanese grant aid in 2000. (the mid of the project period)
	2. Irrigation facilities of the proposed Model Schemes are rehabilitated by GIDA	Project documents, reports, opinion of relevant	To check as to whether this important assumption is realized or not.	Irrigation facilities were rehabilitated with help of Japanese grant aid in 2000. (the mid of the project period)
	3. Abnormal weather conditions do not occur in the two irrigation schemes.	Project documents, reports, opinion of relevant	To check as to whether this important assumption is realized or not.	In rain season of year 2002, Flood has happened in Okyereko.
	4. Personnel relocation of Ghanaian officials and personnel which affects on the progress of the Project implementation does not occur.	Project documents, reports, opinion of relevant	To check as to whether this important assumption is realized or not.	Harmful personnel relocation did not occur.
	a1. Other external factors (important assumptions) affecting the progress of the project.	Project documents, reports, opinion of relevant	To check as to whether this important assumption is realized or not.	No particular factors affecting the project progress has not been reported.
Others	1. Problems encountered during management of the project such as division of works and communications. In other hand, any new management method applied for improvement.	Experts and C/P.	To interview with experts and c/pHs.	The first phase of the period, communication problems among experts were witnessed due to the physical distance of the model areas. It affected the work-sharing among experts and counterparts. This communication problem was mend gradually by introducing the frequent meetings. (every 2-weeks for technical committee and every week for experts meeting)
	2. Is "monitoring" on the progress of project conducted? How is the responsibility of monitoring administered?	Experts and C/P.	To interview with experts and c/pHs.	TSI (tentative schedule of implementation) has been used by every member and monitored thoughtfully during the project period.
	3. Level of technology transfer to C/P from experts.	Experts and C/P.	To interview with experts and c/pHs from the point of view of technology transfer.	According to the survey to counterparts, the achievement rate is averaged at 72% and it is considered that technology transfer is made successfully. Besides, some problems are pointed out such as too short period of short-term experts, etc.
	4. Actions taken for recommendations provided by the last mid-term evaluation study.	Experts and C/P.	To interview with experts and c/pHs.	As response to the recommendation from the mid term evaluation, technical committee was established, meeting with farmers was intensified and more consideration is made for integration of component technologies.

I. Long Term Experts

	Expert on	Name	Duration
1	Team Leader	Toshiyuki TSUJIMOTO	15. 08. 1997 - 14. 02. 2000
2	Co-ordinator/Training	Miyuki YAMAZAKI	15. 08. 1997 - 31. 07. 1999
3	Farmers' Organization and Farm Management	Kunihiro MASUMI	15. 08. 1997 - 28. 02. 2001
4	Crop Cultivation	Tatsushi TSUBOI	01. 08. 1997 - 31. 07. 2000
5	Water Management	Katsumasa SATO	15. 08. 1997 - 14. 08. 2000
6	Agricultural Machinery	Keiichi TANAKA	01. 10. 1998 - 31. 07. 2002
7	Co-ordinator/Training	Hideo ITO	15. 09. 1999 - 31. 07. 2002
8	Team Leader	Motonori TOMITAKA	05. 03. 2000 - 31. 07. 2002
9	Crop Cultivation	Tamotsu SEIJI	15. 07. 2000 - 31. 07. 2002
10	Water Management	Michihiko SAKAKI	01. 08. 2000 - 31. 07. 2002
11	Farmers' Organization and Farm Management	Nobuharu MORITA	08. 05. 2001 - 31. 07. 2002

II. Short Term Experts

Japanese Fiscal Year 1997

	Expert on	Name	Duration
1	Data Processing & Analysis on Base-Line Survey	Yosuke TANAKA	19. 02. 1998 - 17. 03. 1998

Japanese Fiscal Year 1998

	Expert on	Name	Duration
1	Vector Control	Shin-ichi NODA	16. 07. 1998 - 13. 08. 1998
2	Vegetable Production Technology	Hideo KATAHIRA	05. 11. 1998 - 19. 12. 1998
3	Agricultural Co-operative	Seisuke KOGA	15. 02. 1999 - 15. 03. 1999

Japanese Fiscal Year 1999

	Expert on	Name	Duration
1	Farm Management	Masuo ANDO	29. 11. 1999 - 16. 12. 1999
2	Crop (Vegetable) Production	Teruo SHIMADA	29. 11. 1999 - 26. 12. 1999
3	Agricultural Machinery	Fujio ICHINOSE	17. 01. 2000 - 12. 02. 2000
4	Efficient Water Management	Nobumasa HATCHO	29. 03. 2000 - 16. 04. 2000

Japanese Fiscal Year 2000

	Expert on	Name	Duration
1	Operation & Maintenance of Irrigation Facilities	Yoshinobu KITAMURA	31. 10. 2000 - 25. 11. 2000
2	Agricultural Co-operative Management	Yukio ABE	01. 11. 2000 - 22. 11. 2000
3	Rice Seeds Production	Hiroyuki SHIMIZU	01. 02. 2001 - 01. 03. 2001
4	Method of Field Performance Test of Farm Machinery / Improvement of Farm Tools	Fujio ICHINOSE	17. 01. 2001 - 14. 02. 2001
5	Agro-Processing Technology	Hideshi WADA	01. 04. 2001 - 29. 04. 2001

Japanese Fiscal Year 2001

	Expert on	Name	Duration
1	Vegetable Marketing Survey	Kenzo ITO	10. 08. 2001 - 07. 09. 2001
2	Area Farm Plan & Integrated Technology	Jun FURUYA	15. 10. 2001 - 12. 11. 2001
3	Appropriate Water Users Association	Nobumasa HATCHO	25. 10. 2001 - 09. 11. 2001

Date of Departure from Japan & Arrival to Japan

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List of Provided Equipment

ANNEX 4

JFY	Equipment (Maker/Model)	Amount	Qty.	Frequency of Use	Condition	Remarks
1997	Mitsubishi Pajero	US\$97,500	3	Good	Good	
1997	Nissan Pickup	US\$19,492	1	Good	Good	
1997	Mitsubishi Space Wagon	US\$20,000	1	Good	Good	
1998	Isuzu Pickup	US\$20,000	1	Good	Good	
1998	Isuzu Pickup	US\$20,000	1	Good	Good	
1998	Toyota Hi-Ace (Mini-Bus)	GH ₵ 49,407,200	1	Good	Good	
1998	Perkins Generator P60E-60KVA	US\$25,483	1	Good	Good	
1998	Radio Communication Equipment	US\$15,850	8	Occasionally	Good	On Demand
1998	Radio Communication Equipment	GH ₵ 6,160,000	1	Occasionally	Good	On Demand
1999	Isuzu Pickup	US\$43,320	2	Good	Good	
1999	Isuzu Truck	US\$26,600	1	Good	Good	
1999	Shakuti Tractor VST 180D	US\$21,130	2	Good	Good	

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List of Provided Equipment

ANNEX 4

JFY	Equipment (Maker/Model)	Amount	Qty.	Frequency of Use	Condition	Remarks
1999	Deadong Powertiller ND - 130 D	US\$9,200	2	Good	Good	
2000	Nissan Urvan (Mini-Bus)	US\$21,499	1	Good	Good	
2000	Shakuti Tracttor VST 180D	US\$21,130	2	Good	Good	
2000	Deadong Powertiller ND - 130 D	US\$1,000	2	Good	Good	
2000	Liquid-Crystal Projector MT840J	JP¥1,123,000	1	Good	Good	
2000	Indoor Broadcasting System	JP¥429,000	1	Good	Good	
2001	SOKKIA Total Station SET500	JP¥1,268,500	1	Occasionally	Good	for Survey Use

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Japanese Fiscal Year 1997

	Field of Training	Title of Job (at that time)	Name	Duration
1	Irrigation Agriculture	Chief Director, MOFA	Samuel Kojo DAPAAH	09. 03. 98 - 21. 03. 98
2	Irrigation and Drainage	Director, Project Development, IDA	Humphrey Adja TORGBOR	27. 02. 98 - 15. 03. 98

Japanese Fiscal Year 1998

	Field of Training	Title of Job (at that time)	Name	Duration
1	Vegetable Cultivation Technology for Extension	Section Head, Extension /Training, IDA	Damien Atta AMOATIN	22. 02. 99 - 18. 08. 99
2	Irrigation and Drainage	Deputy Director, Proj. Dev't., IDA	Billy Samuel OWUSU	14. 03. 99 - 15. 04. 99
3	Agricultural Cooperative Management	Agricultural Extensionist, IDA	Isaac Nii-Yarboye ANNANG	14. 03. 99 - 29. 05. 99
4	Agricultural Cooperative Management	Secretary, Farmers' Coop.	Samuel Bampo OPOKU	14. 03. 99 - 10. 04. 99
5	Agricultural Machinery Management	Unit Head, Farm Machinery, IDA	Raphael K. DENUTSUI	22. 02. 99 - 23. 10. 99
6	Rice Cultivation (Middle Eastern & African)	Unit Head, Training, IDA	Chris Kog FERUTA-BENEE	22. 02. 99 - 23. 10. 99

Japanese Fiscal Year 1999

	Field of Training	Title of Job (at that time)	Name	Duration
1	Farm Management	Senior Agricultural Economist, IDA	Kwasi Mintah ASARE	30. 08. 99 - 26. 02. 00
2	Irrigation and Drainage II	AG. Unit Head, Water Mng'ment., IDA	Thomas Annang ODONKOR	07. 02. 00 - 17. 11. 00
3	Vegetable Cultivation Technology	Unit Head, Horticulture, IDA	Prosper AKUMANI	07. 02. 00 - 17. 11. 00
4	Rice Cultivation	Unit Head, Rice Culture, IDA	Peter M. D. ABUGAH	21. 02. 00 - 20. 10. 00

Japanese Fiscal Year 2000

	Field of Training	Title of Job (at that time)	Name	Duration
1	Agriculture Cooperatives and Marketing	Director, Operation Dept., IDA	Sammy M. AKAGBOR	16. 10. 00 - 10. 11. 00
2	Irrigation, Drainage and Rural Development	Asst. Engineer, Water Mng't. Unit, IDA	Busia N. DAWUNI	05. 02. 01 - 16. 11. 01
3	Rice Cultivation	Asst. Agronomist, Rice Culture Unit, IDA	Albert A. SWATSON	19. 02. 01 - 02. 11. 01

Japanese Fiscal Year 2001

	Field of Training	Title of Job (at that time)	Name	Duration
1	The Role of Agricultural Cooperatives to be played in Activation of Rural Economy	Input Officer, Farmers' Coop.	Issac G. ACQUAH	08. 05. 01 - 01. 07. 01
2	Irrigation, Drainage and Water Management	Director, Planning Dept., IDA	Yaw YEBOAH	09. 07. 01 - 04. 08. 01

Date of Arrival to Japan & Departure from Japan




Local Cost (Japanese side)

ANNEX 6

Unit: 1,000 Japanese Yen

Description	Japanese Fiscal Year	1997 (Aug - Mar)	1998	1999	2000	2001 Budget	2002 Budget (Apr-Jul)	Total
Local Running Cost		3,630	15,300	6,000	6,000	6,000	1,600	38,530
Enlightenment and Extension /Local Adaption Activities		1,774	3,023	5,750	6,000	3,860	964	21,371
Middle Level Manpower Training		0	0	0	5,879	3,940	0	9,819
Technical Exchange		0	2,500	0	2,580	0	0	5,080
Security Measures		9,416	2,299	2,400	0	0	0	14,115
Physical Infrastructure Work		4,000	0	0	0	0	0	4,000
Emergency Measures		0	0	0	0	1,000	0	1,000
TOTAL		18,820	23,122	14,150	20,459	14,800	2,564	93,915

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Local Cost (Ghanaian side)
List of Budgetary Allocation (Upper Rows : Approved Budget, Lower Rows: Actual Expenditures)

ANNEX6

Unit: Ghana Cedis

Description	Year		1999	2000	2001	2002 Applied Budget	Total	Remarks
	1997	1998						
Personnel Emoluments	250,000,000	150,000,000	180,000,000	250,000,000	375,000,000	525,000,000	1,730,000,000	
	100,000,000	150,000,000	180,000,000	250,000,000	375,000,000		1,055,000,000	
Fuel	40,000,000	130,000,000	50,000,000	216,000,000	80,000,000	130,000,000	646,000,000	
	16,000,000	48,000,000	50,000,000	108,000,000	38,000,000		260,000,000	
Maintenance of Vehicles	62,500,000	105,000,000	50,000,000	162,000,000	60,000,000	100,000,000	539,500,000	
	25,000,000	42,000,000	50,000,000	81,000,000	27,000,000		225,000,000	
Administrative Expenses	60,000,000	94,000,000	48,000,000	84,000,000	90,000,000	105,000,000	481,000,000	
	20,000,000	38,000,000	48,000,000	42,000,000	45,000,000		193,000,000	
Utilities	27,000,000	53,000,000	26,000,000	193,200,000	75,000,000	95,000,000	469,200,000	
	11,000,000	21,000,000	26,000,000	96,600,000	58,000,000		212,600,000	
Operation and Maintenance of Irrigation Systems & Technology Improvement of Irrigation	37,500,000	50,000,000	15,000,000	63,000,000	3,490,581,010	150,000,000	3,806,081,010	Research Activities for SSIAPP & Operation Dep't.
	15,000,000	20,000,000	15,000,000	31,500,000	45,000,000		126,500,000	
Counterpart Fund for SSIAPP Support & Training Furniture			500,000,000	500,000,000	500,000,000	500,000,000	2,000,000,000	Fuel, Labour, etc. for Local Running
				25,000,000			25,000,000	
Total	477,000,000	582,000,000	869,000,000	1,468,200,000	4,670,581,010	1,605,000,000	7,671,781,010	
	187,000,000	319,000,000	369,000,000	634,100,000	588,000,000	0	2,072,100,000	

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Assignment of Counterparts

ANNEX 7

Field	Name	Rank	Duration of Assignment	Remarks
General Director	Dr. Samuel K. DAPAAH	Chief Director, MOFA	01/08/97 - 13/05/01	Resigned
	Dr. Francis OFORI	Acting Chief Director, MOFA	14/05/01 - Present	
Project Director	Mr. Oduro Kwadjo GYARTENG	Chief Executive, GIDA	01/08/97 - Present	Technical Exchange (Mar. 99 Tanzania & Kenya)
Project Manager	Mr. Daniel N. OHEMENG	Director, Project Operation, GIDA	01/08/97 - 17/12/99	Technical Exchange (Mar. 99 Tanzania & Kenya), Promoted as Deputy Chief Executive
	Mr. Sammy M. AKAGBOR	Acting Director, Project Operation, GIDA	17/12/99 - 08/05/00	Promoted as Director, Project Operation
	ditto	Director, Project Operation, GIDA	09/05/00 - Present	
Planning and Management	Mr. Adam AL-HASSAN	Acting Director, Planning and Management, GIDA	01/08/97 - 08/05/00	Technical Exchange (Mar. 99 Tanzania & Kenya), Personnel Reshuffle to Tamale
	Mr. Yaw YEBOAH	Director, Planning and Management, GIDA	09/05/00 - Present	
Deputy Director, IDC	Mr. James AKATSE	Principal Agronomist	01/08/97 - 01/01/98	Personnel Reshuffle to Head Office, IDA
	ditto	Deputy Director, (Agriculture)	??/01/02 - Present	Personnel Reshuffle from Head Office, IDA Counterpart, Cultivation
	Mr. Joseph K. ANTWI	Deputy Director, (Soil and Water)	01/03/00 - Present	Officer-In-Charge
	Mr. Simon APIO	Deputy Director, (Farm Management and Equipment)	01/10/00 - Present	Counterpart, Agricultural Machinery

*On course in Japan
**On leave

Assignment of Counterparts

ANNEX 7

Field	Name	Rank	Duration of Assignment	Remarks
Cultivation	Mr. James AKATSE	Deputy Director	??/01/02 - Present	Deputy Director for Agriculture
	Mr. Peter M.D. ABUGAH	Senior Agronomist	01/08/97 - Present	
	Mr. Albert F. SWATSON	Assistant Agronomist	01/01/99 - Present	Technical Exchange (Oct. 00 Philippines)
	Mr. Bans AKUTEY	Senior Technical Officer	01/08/97 - Present	
	Mr. Prosper AKUMANI	Assistant Agronomist	01/08/97 - Present	
	Mr. S.K.A. BONNEY	Assistant Agronomist	01/10/99 - Present	
	Mr. Charles N. ADEKU	Assistant Agronomist	01/10/99 - Present	
	Mr. Felix FYNN	Agronomist	01/08/97 - 31/08/98	
	Mr. Cephas AMETEFE	Principal Production Officer	01/08/97 - 30/10/00	Resigned
	Mr. Wisdom TULASI	Production Officer	01/08/97 - 01/04/99	Resigned
Water Management	Mr. Thomas A. ODONKOR	Engineer	01/08/97 - Present	
	Mr. George OSEI	Senior Agricultural Engineer	01/08/97 - 31/03/99	Resigned
	Mr. S. N. A. ARTHUR	Senior Agricultural Engineer	01/08/97 - 30/07/99	Resigned
	Mr. Busia N. DAWUNI	Assistant Agricultural Engineer	03/06/99 - Present	Third Country Training (Aug. 00 Indonesia)
	Mr. Emmanuel SACKEY**	Assistant Agricultural Engineer	01/09/99 - Present	Study Leave (Sept. 01~)
	Mr. Samuel Y. ABBEY	Assistant Agronomist	01/09/01 - Present	

*On course in Japan

**On leave

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Assignment of Counterparts

ANNEX 7

Field	Name	Rank	Duration of Assignment	Remarks
Farmers' Organisation / Farm Management	Mr. Damien A. AMOATIN	Principal Agricultural Economist	01/08/97 - 02/10/00	Personnel Reshuffle to SSIDP, IDA
	Mr. Kwasi A. MINTAH	Senior Agricultural Economist	01/08/97 - Present	
	Mr. Isaac N.Y. ANNANG	Assistant Agronomist	01/08/97 - 01/07/01	Technical Exchange (Oct. 00 Philippines)
	Mr. Samuel B. BOAKYE	Assistant Agronomist	01/01/99 - Present	
	Mr. Benedictus AGBEKO	Assistant Agronomist	01/07/01 - Present	
	Mr. Albert N. NTIM	Principal Production Officer	10/07/98 - Present	Third Country Training (Oct. 01 Indonesia)
	Mr. Enoch O. BOSOMPIM	Principal Production Officer	15/08/98 - Present	
Agricultural Machinery	Mr. Simon APIO	Deputy Director, Principal Agricultural Engineer	01/03/00 - Present	Technical Exchange (Oct. 00 Philippines), Deputy Director
	Mr. Raphael K. DENUTSUI	Assistant Chief Technician Engineer	01/08/97 - Present	
	Mr. Peter OFORI-ATTAH	Assistant Chief Technician Engineer	01/08/97 - Present	Third Country Training (Oct. 01 Indonesia)
	Mr. A. K. FORDJOUR	Principal Technician Engineer	02/07/99 - Present	
Training	Dr. Ben Vas NYAMADE	Senior Agronomist	01/08/97 - 01/10/98	Personnel Reshuffle to Planning Dep't., IDA
	Mr. Chris K. FERUTA-BENEE	Senior Agronomist	01/08/97 - Present	
	Mr. Sammy DEKYI	Senior Agronomist	01/03/99 - 18/07/01	Personnel Reshuffle to Soil Section, IDC, IDA
	Mr. Isaac SACKY	Assistant Agronomist	01/08/01 - 31/10/01	Resigned

*On course in Japan

**On leave

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Evaluation Grid

ANNEX 8 (E-Grid 1/4)

Criteria	Indicators	Source of Information	Method	Evaluation
Relevance	1. Relevance with beneficiaries' needs .	Local consultant's report, opinions of Experts and C/P	To confirm as to whether the result of the project and extended technology are useful and needed for local farmers through interviews.	According to the local consultant's report, farmers in two model sites sincerely appreciate the project and irrigation farming seems to be set as lifeline for them. It was ensured by observation by the evaluation team when visiting the model sites.
	2. Relevance with overall policy.	The latest development strategy of Ghana	To check as to whether the irrigated agriculture development is important in the current development policy or strategy.	It is confirmed that the irrigation is one of the main agendas for agricultural development in Ghana. The alleviation of high dependency on imported rice by promoting domestic rice is one of the urgent tasks mentioned in the policy of Ghana. Participatory approach of irrigation farming with farmers is encouraged by the current Ghanaian government. Thus relevance with the national policy is considered high.
	3. Relevance with JICA's policy for international cooperation	JICA Officer	To confirm as to whether the project purpose and overall goal are relevant with JICA's policy.	Latest JICA's country strategy paper for Ghana supports the promotion of irrigated agriculture with participatory approach of farmers' organizations.
Effectiveness	1. Achievement of the project purpose	Achievement Grid	To conclude as to whether the expected project purpose is achieved.	Every indicator of the project purpose shows that the project purpose is about to be achieved by the end of the project period. Meanwhile, it is arguable as to whether the achievement of indicators is really thought to be the establishment of the model farming system, which is still vague in its definition and the progress in Okyereko has not been satisfactory.
	2. Causes of improvement of farming in the two model sites.	Opinions of farmers	In order to distinguish the effect of this project from the effect of the provision of irrigation facilities, ask farmers what causes the improvement of their farming. The method is to let each farmer to choose the 3 main causes of improvement from irrigation facilities, machine and equipment, skill training, micro-credit, and farmers' organizations.	In Ashaiman, the result is that 29% for irrigation, 20% for machine, 2% for skill training, 29% for micro-credit, and 10% for organization. In Okyereko, the result is that 24% for irrigation, 22% for machine, 22% for skill training, 19% for micro-credit, and 13% for organization. Since the irrigation facilities provision is not a component of the project, it seems that not all of the achievement is attributed to the effectiveness of the project, although the project involves the maintenance activities of the facilities. Ashaiman farmers rated the effect of skill training quite low, that can be explained by the their skills had been already relatively high. Thus, the effectiveness of the project in Ashaiman seems to be found in advanced aspects such as micro-credit rather than simple skill-upgrading. On the other hand, Okyereko farmers appreciated the effect of skill training and see the comprehensive effects of the project.

Evaluation Grid

ANNEX 8 (E-Grid 2/4)

Criteria	Indicators	Source of Information	Method	Evaluation
	2. Comparison with other irrigation schemes which are out of influence of the project.	Documents, opinions of relevant	To find some examples of irrigation schemes which are not covered by the project to be compared in terms of its productivity.	There is a lack of comparable data because the characteristics of every scheme vary, however it is estimated that about 3 to 5 tons/hectare is the average of production of irrigation schemes. Since Okyereko is used to be the underdeveloped irrigation area and Ashaiman did not have operative irrigation system before the project, the effect of the project is explained by the fact that the project bring up the two model site to the average level.
	3. Important assumptions and other external factors which affect the achievement of project purpose.	Reports, Observation	To check the important assumptions and analyze the influence to the project.	Flood has happen in Okyereko in 2001 and it causes the project progress relating to the vegetable cultivation. The installment of pump facilities was completed in the middle of the project period and it seemed to affect the achievement of the progress in Okyereko.
Efficiency	1. Input Accomplishment	Accomplishment Grid	To confirm with the Accomplishment Grid	Most of the necessary inputs have been made as planned from Japanese side, although some delay and change of contents have occurred in Ghana side mainly due to the financial difficulty.
	2. Output Accomplishment	Accomplishment Grid	To confirm with the Accomplishment Grid	Most of the expected outputs have and will come out by the end of the project period. However, there is a concern about the real achievement of these outputs as the integration of sections seems to be still insufficient.
	3-1. Comparison output with input	Comparison of input with output	To confirm as to whether the accomplished level of output can justify enough of the input. To measure as to how efficient the input turned into the output.	Although some inputs have been delayed, expected outputs seems to be achieved by the end of the project. Thus it is though as efficient in the sense that inputs have been fully utilized at their utmost potentials.
	3-2. Comparison with other projects	JICA staff	To confirm as to whether the quantity of input can be justified by comparison with other similar projects.	By comparing the input level of the similar projects (e.g. the Bohole project in the Philippine), the level of local cost support is relatively high. It is, however, considered as reasonable when considering the current financial difficulty of Ghana, categorized in HIPC. The size of target area (two model schemes) is relatively small compared with inputs, but it is reasonable in the sense that the result of the project is assumed to be extended to other irrigation schemes in Ghana.
	3-3. Combination with input	Experts and C/P	To ask as to whether inputs contents and level are proper or not from a view point of a virtual project manager. Moreover to ask them what part of the input should be changed and why if the finance decrease	Most of opinions said that there is no necessity for changing the inputs, and there is no particular input found as "unnecessary" or "too much".

Evaluation Grid

ANNEX 8 (E-Grid 3/4)

Criteria	Indicators	Source of Information	Method	Evaluation
	3-4. Combination with activities	Experts and C/P	To ask as to whether activities are proper or not from a view point of a virtual project manager. Moreover to ask them what part of the input should be changed and why if the finance increase or decrease	Most of opinions said that there is no necessity for changing the structure of the activities, and there is no particular input found as "unnecessary " or "too much".
	Any linkages with other type 3-5. of cooperation which promote the efficiency.	Experts and JICA staff	To check as to whether any cooperation such as grant from overseas or other projects in Ghana promote the efficiency of the project?	Local clinic center project in Okyereko (built by the small-scale grant aid) has been operated integrity with the SSIAPP project for improvement of the life of farmers. The clinic center has received some support from the Noguchi laboratory center project. This integrated approach is considered as efficient.
Impact	1. The changes of environment (social / natural) by the project which the relevant feel / think.	Experts, C/P	Interview with the relevant and discuss freely as to what and how the project gave any influence.	There are a lot of positive impacts 1) farmers income is increased, 2) children can go to the school, 3) women's status is improved, 4) farmers gains self-esteem, 5) IDC's inter-sector communication is improved, 6) Capacity of GIDA's C/Ps have been strengthen etc. On the other hand, some interviewees pointed out the concern that a few farmers in the model site were not well successful and burdened loans.
	2. To the Overall Goal of the Project, the impact of training for other irrigation schemes.	Experts, C/P, other data	Interview with the relevant as to whether the training for other irrigation schemes has any impact especially for the achievement of overall goal.	During the project, some extension officers, leaders in farmers organizations, farmers are invited to the training programmed from other schemes. There seems to be a positive enhancement in other schemes in the sense that the component technologies of the project are acquired by these training participants, although there is no substantial proof that they apply such skills into their fields yet.
	3. Possibility to accomplish the Overall Goal of the Project.	Experts, C/P, other data	Interview with the relevant as to whether the project can accomplish the overall goal and, if not, whether there are any obstacles for it. Especially about the preparedness of training and extension for other irrigation schemes.	Referring the current financial situation of GIDA (and Ghana itself), it seems to be very unlikely that GIDA (IDC) can extend the full-fledged activities of SSIAPP to other irrigation schemes simultaneously. It requires further efforts to make the extension programme and its contents of technologies into more realistic ones.
Sustainability	1. Institution 1-1. Future continuity of GIDA(IDC)	Experts and C/P	To check the capability of GIDA(IDC) through interview with experts, C/P.	Opinions are divided on the future continuity of GIDA and IDC. A reason for continuity of GIDA is that irrigation will be the center issue of Ghanaian government's agricultural policy and GIDA is the main governmental body, while the obstruction of the continuity is the financial vulnerability of Ghana.

Evaluation Grid

-ANNEX 8 (E-Grid 4/4)

Criteria	Indicators	Source of Information	Method	Evaluation
	GIDA(IDC)'s strategy to 1-2. promote the training and extension.	Experts, C/P	To check as to whether GIDA(IDC) has a clear strategy for promotion of the training and extension through interview with C/P.	There is the annual proposal made by GIDA for budget which includes some extension plans, but there is no long-term programmed strategy how to achieve the extension for other schemes.
	2. Finance 2-1. Financial condition of GIDA(IDC)	C/P	To consider as to whether GIDA(IDC) can exist with regard to financial aspect.	Every interviewee sees that financial condition of GIDA is very weak and unstable. It is not only for GIDA, but also for the national economy of Ghana.
	2-2. Financial source to promote the training and extension.	C/P	To check as to how C/P think about finance in order to continue the training and extension after the cooperation period is end .	Currently there is no financial source which can be used for the extension activities. Some C/Ps consider to look for the other donors to fund their activities.
	3. Technology 3-1. Possibility for C/P to manage the technology acquired by the project.	Expert and C/P	To check as to whether C/Ps can manage and develop FSR/E technologies by their own after cooperation period finishes.	Most of the interviewees admit that C/Ps can deal with management of the technologies such as monitoring of farming activities, minor modification of technologies, but C/Ps are not seen as capable to develop own technologies by their own.
	3-2. Continuity of C/P	Experts and C/P	To check as to whether C/P will continue working in the center.	Most of the interviewees see that C/Ps will leave GIDA if other more income-promising job is offered. A few C/Ps admit that working in GIDA is still attractive because of opportunities for learning and experiencing.
	3-3. Sustainability of knowledge and skills for farmers in the two model schemes.	Experts and C/P	To check as to whether trained farmers will continue applying the acquired skills into fields by own; To check how to share the knowledge and skills among them.	According to the opinions of relevant and observation by visiting project sites, knowledge and skills are well transferred to farmers in Ashaiman, who would be capable to continue the activities, although some periodical technical supports will be needed. In Okyereko, where the progress is not satisfactory, it is necessary to foster more skilled farmers in order to sustain the effective farming activities by their own.
	3-4. Sustainability of knowledge and skills for farmers in other irrigation schemes.	Experts and C/P	To check as to whether trained farmers will apply the acquired skills into fields by own. To check how to share the knowledge and skills among them.	Some farmers participating training courses from other schemes seem to apply some components of the SSIAPP project into their field. It is not necessarily concluded as sustainability of the transferred knowledge and skills of them, but it would be a positive symptom.
	4. Risks against sustainability	Experts, C/P	To interview what the most likely risk to obstruct the sustainability of the project. (GIDA(IDC))	Almost all interviewees point out that finance is the main serious concern for the future of GIDA (IDC). Possible solutions mentioned are to promote more income generation activities such as consulting works, to establish a research fund, to make a new project for new inputs, and so on.

Progress of the project activities

ANNEX 9

Summary of activities and outputs of the Small-scale Irrigated Agriculture Promotion Project in accordance with its Tentative Schedule of Implementation (TSI) (1/5)

Output 1: Farmers situation and farming systems of irrigation schemes are analyzed.

(As of January 2002)

Main activities mentioned in the TSI							Progress of the Project		Final target level (B)	A/B (%)	Prospect of sustainability	
Activities	Period						In-charge(s)	Activities				Results/Outputs (A)
	97	98	99	00	01	02						
1-1 Conduct, analyze and evaluate baseline survey in the two model schemes		■					All Sections	Each Section (Unit) conducted a baseline survey for 2 model schemes at the initial stage. One of the surveys covered 146 farmers out of 151 farmers in Ashaiman and Okyereko schemes. Results of the survey were utilized during the preparation of TSI and monitoring of the Project.	The SSIAPP has recognized the importance of activities as improvement of human resources on crop husbandry, water management, labour saving mechanization, cropping pattern, and farming support services. Availability of capital, machinery and/or water were major factor affecting the start of rice cultivation.	Results of the surveys are used as baselines of project activities and outputs. Capacity of SSIAPP staff is enhanced through organizing questionnaire, implementing survey and analyzing the results.	100	SSIAPP staff have improved the capacity of conducting similar surveys. Differences of socio-economic and socio-cultural background of the two model sites should be taken into consideration during the implementation of SSIAPP.
1-2 Survey of farming situation of rainfed field around the two model schemes			■				All Sections	The survey was concentrated at Okyereko site where rainfed farming was important. Staple food crops such as maize, groundnut, cassava are widely produced in rainfed conditions. Farmers who did irrigation farming also planted crops in the rainfed conditions.	The SSIAPP initiated a credit for groundnut producing women group. It also educates farmers to limit the area of planting crops within the farming resources and time frame.	Farmers utilize both irrigated and rainfed lands for their farming under good division of labours and other farming resources.	90	Traditional upland farming is important for Okyereko people. Labour is one of limiting factors for maximizing utilization of irrigated land at the moment.
1-3 Collection of information on farming situation of other irrigation schemes			■				All Sections	Information of GIDA's irrigation projects have been accumulated through SSIAPP staff visiting the projects and project staff and farmers attending the training courses organized by SSIAPP.	Capacity of Irrigation Development Centre (IDC)/Operation Department on training and guidance has been improved through collection and accumulation of information on farming and management of GIDA's irrigation projects.	IDC/Operation Department improves its capacity on training GIDA staff and farmers on site-specific irrigation project management.	90	It is necessary for IDC/Operation Department to upgrade information on respective irrigation projects every year.

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Progress of the project activities

ANNEX 9

Summary of activities and outputs of the Small-scale Irrigated Agriculture Promotion Project in accordance with its Tentative Schedule of Implementation (TSI) (2/5)

Output 2: Component technology is improved.

(As of January 2002)

Main activities mentioned in the TSI							Progress of the Project		Final target level (B)	A/B (%)	Prospect of sustainability	
Activities	Period						In-charge(s)	Activities				Results/Outputs (A)
	97	98	99	00	01	02						
2-1 Crop cultivation			█				Crop Section	(1) Varieties, (2) Cultural practices, (3) Pest and disease control measures, (4) Cropping systems were conducted for rice and upland crops. Rice cultivation guide was prepared.	(1) Rice varieties were selected, (2) Rice cultural practices were established. (3) Vegetable production technologies are not yet stable. (4) Croppin systems have been demonstrated.	Sustainable and profitable production technologies of rice and vegetables are established at the experimental field.	60	It is necessary to re-visit rice varieties based on consumers' preferences. It requires further efforts to establish sustainable vegetable production technology.
2-2 Water management			█				Water Management Unit	(1) Improvement of water utilization efficiency and (2) Improvement of Operation and Maintenance (O&M) of irrigation facilities have been studied.	(1) Computer program for irrigation water delivery scheduling has been made and monitoring system has been improved. (2) Manuals for O&M were prepared and used in the training courses.	Both GiDA and farmers' cooperatives become aware of importance of water management through improvement of plot-base and system-base management.	80	It is necessary to monitor some data (e.g. water level of the reservoir, pump operation) everyday; there is a necessity of logistic support.
2-3 Agricultural machinery			█				Agricultural Machinery Unit	Testing and improvement of tools and machines on land preparation, irrigation, seeding, weeding, agro-chemical spraying, harvesting and post-harvesting has been tried.	There are seeders, weeders, sickles, ridgers, threshers, winnowers and others made at IDC. Animal power has been also utilized to hauling farm yard manure. Other machines are displayed.	Low cost and sustainable farming tools and machines become available to small scale farmers.	80	Farmers need diversified farming tools and machines, but their per capita production area is small. Group use of power tillers and tractors may work if they are well managed.
2-4 Farm management			█				Farm Management, Extension and Farmers' Organization Section	Farming Systems Research and Extension (FSR/E) methodology was adopted for monitoring and improvement of farming. Workshops were conducted to teach farmers on farm plan preparation and record keeping.	FSR/E has been adopted as a extension method, and data are being accumulated. Farmers are gradually improving their skill of farm plan preparation and crop budget analysis.	Monitoring and feedback system of FSR/E becomes functioning. Farm plans for input credit request of farmers and record kecpins on farming activiteis of FSR/E collaboration farmers were started.	80	Collection and analysis of farming information can be done. However, it requires time for farmers to become familiar with such activities.

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Progress of the project activities

ANNEX 9

Summary of activities and outputs of the Small-scale Irrigated Agriculture Promotion Project in accordance with its Tentative Schedule of Implementation (TSI) (3/5)

Output 3: Farming system is verified in the two model schemes.

(As of January 2002)

Main activities mentioned in the TSI							Progress of the Project		Final target level (B)	A/B (%)	Prospect of sustainability	
Activities	Period						In-charge(s)	Activities				Results/Outputs (A)
	97	98	99	00	01	02						
3-1 Verification of integrated technologies at the experimental field							All Sections: Led by Crop Section	Integrated technologies for rice cultivation were demonstrated in 2001 rainy season. Farmers were invited to participate in important stages. Integrated technologies for vegetable cultivation are not yet demonstrated.	Paddy yield was 8.18 t/ha and 5.88 t/ha for transplanted method and direct sowing method, respectively.	Integrated technologies of crop production such as land preparation, farming practices, harvesting of rice and other crops are demonstrated to the farmers as direction of improving irrigation farming.	60	There are production guides for transplanted method and direct sowing method of rice cultivation developed by SSIAPP. But it is not easy to establish integrated technologies for vegetable cultivation (e.g. chilli, okra).
3-2 Verification of farming system on farmers' fields in the two model schemes.							All Sections: Led by Farm Management, Extension and Farmers' Organization Section	Since completion of rehabilitation of the irrigation facilities in March 2000, the farmers in Ashaiman and Okyereko resumed the irrigation farming. The SSIAPP has been collaborating with the farmers' cooperatives on preparation of farm plans, land preparation by machinery services, irrigation water distribution schedule, farming input credit management, extension services, etc.	Ashaiman (total irrigation area rehabilitated: 56ha with 4ha for IDC): Cultivated 49.4ha (2000 rainy season), 33.8ha (00/01 dry season), 52.7ha (01 rainy season). Okyereko (total irrigation area rehabilitated: 81ha): Cultivated 12.4ha (2000 early season), 32.7ha (00/01 dry season), 41.5ha (01 rainy season). Rice yield in 2001 rainy season was 5.6t/ha and 4.4t/ha for Ashaiman and Okyereko, respectively. Chilli production in Okyereko in 00/01 dry season was not successful. Water utilization efficiency has been improved.	Irrigation farming is established and improved through accomodating site-specific socio-economic factors into irrigation scheme management.	50	Water distribution schedule is not totally agreed between the farmers' cooperatives and GIDA. Due to pump operation cost, the farmers in Okyereko have to pay high irrigation service charge (ISC). Vegetable cultivation technologies are not well established yet. There are problems of marketing both for rice and vegetables.

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Progress of the project activities

ANNEX 9

Summary of activities and outputs of the Small-scale Irrigated Agriculture Promotion Project in accordance with its Tentative Schedule of Implementation (TSI) (4/5)

Output 4: Farming supporting system is improved in the two model schemes.

(As of January 2002)

Main activities mentioned in the TSI							Progress of the Project		Final target level (B)	A/B (%)	Prospect of sustainability	
Activities	Period						In-charge(s)	Activities				Results/Outputs (A)
	97	98	99	00	01	02						
4-1 O&M system of irrigation facilities							Water Management Unit	Conducted workshops to let farmers familiar with farmer participatory irrigation scheme management and importance of Irrigation Service Charge (ISC) collection and management.	Ashaiman and Okyereko farmers pay ₦ 250,000 and ₦ 1,000,000/ha/season, and 94% and 78% of total amount respectively (as of December 2001). Irrigation facilities have been repaired.	The ISC is decided based on necessary O&M cost of irrigation facilities, paid by farmers on time, mutually managed by GIDA and farmers' cooperatives with active farmer participation.	80	Some of the facilities (c.g. maintenance of dam, replacement of the pump) are taken care by GIDA. The ISC for Okyereco may be influenced by fluctuation of the fuel price.
4-2 Agricultural credit system							Farm Management, Extension and Farmers' Organization Section	Farming Input Credit (FIC) was conducted for 9 seasons; all but one season, 100% of repayment were observed. Farmers Bank was established as a control body of the fund and materials.	The farmers got benefits from FIC and recognized the importance of repaying the loan. It has been managed within a limitation of the fund.	FIC is continuously functioned by the farmers cooperatives of 2 model schemes and GIDA.	60	The farmers are willing to contribute their roles. Because of long way of establishing the FIC management system, it requires time for development of an appropriate system.
4-3 Extension system							Led by Farm Management, Extension and Farmers' Organization Section	Farming Systems Research/Extension (FSR/E) methodology has been adopted since 2000 and farming operation has been monitored for some farmers in the model schemes.	Only 3 farmers in Ashaiman were observed in 2000 rainy season. It has been increased to 13 farmers for Ashaiman and 7 farmers for Okyereko in 2001. Data are being accumulated and analyzed.	Based on the observation of different categories of farmers (e.g. rice farmers, vegetable farmers, combined farmers), directions of farming improvement of respective categories are identified.	50	It requires a long-term continuous commitment between GIDA and farmers on taking farming records.
4-4 Mobilization of farmers' organization							Led by Farm Management, Extension and Farmers' Organization Section	Workshops have been conducted for all the stakeholders of the model schemes on diversified aspects of establishment and improvement of sustainable irrigation farming.	The farmers have re-activated their cooperatives, and improved collection of ISC and repayment of FIC. Machinery operators' skills have improved.	The farmers' organizations become partners of O&M of GIDA's irrigation scheme and they will gradually take over responsibility of the management as their capacity improve.	60	Under the current situation of without the subsidy from the government, it is necessary for both GIDA and farmers' cooperatives to establish the farmer participatory irrigation scheme management.

Progress of the project activities

ANNEX 9

Summary of activities and outputs of the Small-scale Irrigated Agriculture Promotion Project in accordance with its Tentative Schedule of Implementation (TSI) (5/5)

Output 5: Extension officers, staff of farmers' organizations and farmers are trained.

(As of January 2002)

Main activities mentioned in the TSI							Progress of the Project		Final target level (B)	A/B (%)	Prospect of sustainability	
Activities	Period						In-charge(s)	Activities				Results/Outputs (A)
	97	98	99	00	01	02						
5-1 Training for extension officers of irrigation schemes							Training Unit with all other Sections	The training courses for extension officers (19 days) and middle-level management staff (5 days) were conducted for 39 participants and 49 participants attended, respectively.	The participants felt thankful to the SSIAPP for organizing such long waited training courses. They became aware of no funds from GIDA for operation and maintenance of irrigation facilities unless it derived from farmers.	GIDA's middle-level staffs become aware of current policy, strategies and situation of the government on irrigation development and management.	90	There are some irrigation projects which need rehabilitation before training become meaningful. There are other problems such as marketing, land tenure, pump operation cost, etc.
5-2 Training for staff of farmers' organizations in irrigation schemes							Training Unit with all other Sections	Leaders of the model schemes were intensively trained. Twenty-three (23) leaders of 22 irrigation projects were trained for 5 days. Later 33 leaders of farmers' organizations were trained with 20 project managers together (2 courses).	There was an improvement of communication between GIDA and farmers' organizations at the project level. Both sides recognized that the government (GIDA) did not have fund for ordinary operation and maintenance costs of irrigation projects.	Through attending the training courses together, GIDA staffs and farmer leaders understand the roles, responsibilities, strength and weakness of the each other as bases of participatory irrigation project management.	80	Joint training courses of GIDA personnel and farmers may be useful to pursue farmer participatory irrigation project management. It is expected that the good relationship will continue.
5-3 Training for farmers in irrigation schemes							Training Unit with all other Sections	Farmers of the model schemes were intensively trained on diversified aspects of irrigation farming. There were 4 training courses for extension officers and key-farmers; 83 key-farmers of the 7 irrigation projects attended the course (12 days).	Participants of other than the model schemes prepared farming improvement plans based on their problems and resources. The plans were compiled and brought back to respective projects.	With collaboration of the internal and external resource persons of SSIAPP, extension officers and key-farmers prepare attainable farming improvement plans which can be implemented with available local resources.	80	It needs some fund for monitoring and follow-up the activities of ex-participants of the training courses. It is recognized that training is important to improve the farmer-based organization; scheme management courses at the sites will be effective.

Notes: indicates planned period of preliminary activities, major activities and follow-up activities, respectively.

Cooperation period of the SSIAPP is from August 1, 1997 to July 31, 2002.

2002

プロジェクト名: ガーナ共和国 灌漑小規模農業振興計画

期 間: 1997.8.1~2002.7.31

プロジェクトエリア: 主に2モデル事業地(アシャマン・オチョレコ)

ターゲットグループ: 2モデル事業地の農民 (最終受益者: 灌

漑事業区農民)

作成日:2002/02/11

プロジェクトの要約	指 標	入手手段	外部条件
スーパーゴール 農民の収入が増加する。	灌漑事業区の農民の農業収入が増加する		
上位目標 灌漑公社管轄下の各灌漑事業地の営農システムが改善する。	2005年7月31日までに、 1.灌漑公社の他の事業区において、営農システムを実施することにより生産が増加する。 2.他の事業区において水利費の納入率や農業投入財融資の返済率が90%以上になる。	・ GIDAによる調査報告書等 ・ 農業統計	a. ガーナ政府が灌漑農業を支持する政策を継続する。
プロジェクト目標 灌漑公社管轄下の灌漑農業地域において、モデル営農システムが確立する。	2002年7月31日までに、 1. 2事業地において、80%以上の農民がSSIAPPプロジェクトによって営農が改善したと認識する。 2. 2事業地において、水利費の納入率や農業投入財融資の返済率が90%以上になる。 3. 他の事業地からの研修参加者の80%が、モデル営農システムの内容が、各自の事業地に適応可能であると認識する。	1. プロジェクト、GIDA、JICAによる調査報告書等 2. プロジェクト、GIDA、JICAによる調査報告書等 3. 研修にかかるプロジェクト文書(可能であればアンケート結果)	a. GIDA(IDC)等が研修・普及活動を継続していく。 b. 灌漑施設が現状のレベルで維持されている。 c. その他の灌漑事業区において異常気象が発生しない。
成果 1. 灌漑事業地における農民の状況と営農システムが明らかになる。 2. 個別技術が改善される。 3. 2モデル事業地で、営農システムが実証される。 4. 2モデル事業地で、営農支援システムが改善される。 5. 普及員、農業組合職員、農民がモデル営農システムに関する知識と技術を身につける。	1-1. 必要な情報と各評価段階において使用されるベースラインデータが文書やレポートにまとめられる。 1-2. 営農改善のための問題・課題の数が8以上(4分野x2事業地)になる。 2-1. プロジェクトが改良した現地に適用可能な技術数が4以上になる。 2-2. 提案された個別技術の生産性、経済性、及び有効性がレポートの中で確認される。 3. 営農システムを農民が実施することにより、モデル事業地での生産性、経済的効率性、及び有効性が高まる。 4. 営農支援システム(灌漑施設管理、農業融資システム、普及システム、農民組織)が、2モデル事業地に導入され、運用されている。 5-1. 現地のニーズや技術的視点からみて適正な内容で研修が実施されている。 5-2. 80%以上の研修参加者が必要な知識と技術が移転されたと認識する。	1. ベースライン調査報告書およびその他のプロジェクト文書 2. 個別技術にかかるプロジェクト文書 3. 営農システムにかかるプロジェクト文書 4. 営農支援システムにかかるプロジェクト文書 5-1. 研修カリキュラム・研修資料 5-2. 研修にかかるプロジェクト文書(可能であればアンケート結果)	a. プロジェクト運営に重大な影響を及ぼすような人事異動は行われない。

活動	投入		a. MOFA 及び GIDA によって遅延なく研修施設が供与される。 b. GIDA によってモデル地区の灌漑施設が改善される。 c. 2 事業地において異常気象が発生しない。
	日本	ガーナ	
1. 農民の状況と営農システムの調査 A. 2 モデル事業地におけるベースライン調査の実施・分析・評価 B. 2 モデル事業地周辺の天水畑地の営農状況調査 C. 他の灌漑事業地の営農状況に関する情報収集 2. 個別技術の改善 2-1 栽培 2-2 水管理 2-3 農業機械 2-4 営農 3. 2 モデル事業地での営農システムの実証 3-1 試験圃場における総合技術の実証 3-2 2 モデル事業地の農家圃場における営農システムの実証 4. 2 モデル事業地での営農支援システムの改善 4-1 灌漑施設の維持管理 4-2 農業融資システム 4-3 普及システム 4-4 農民組織の活動強化 5. 個別技術、営農システム、支援システム運営の研修 5-1 灌漑事業地の普及員研修 5-2 灌漑事業地の農民組織職員研修 5-3 灌漑事業地の農民研修	<専門家派遣> ・長期専門家 1. チームリーダー 2. 調整員/研修 3. 栽培 4. 水管理 5. 農民組織 / 営農 6. 農業機械 ・短期専門家 必要に応じ。 <機材> ・車両 ・調査用機材 ・営農用機材 ・研修用機材 ・事務用機材 <研修員受け入れ> 年間 2~3 名 <ローカルコスト負担> 試験圃場の改良費	ガーナ <土地、予算、施設> ・プロジェクト及び 2 モデル地区にかかる土地、建物 ・合意に基づく必要な建物、施設 <人材> (カウンターパート) ・プロジェクトダイレクター 1. Chief Director, MOFA 2. Chief Executive, GIDA 3. Director, IDC ・技術分野 1. 栽培 2. 水管理 3. 農業機械 4. 農民組織 5. 研修 <日本側が供与しない機材> <ローカルコスト> ・ Emolument ・ Operation and management of facilities ・ Utilities ・ Administrative fees for training ・ Other running expenses ・ 研修予算	前提条件 a. 農民がプロジェクトを受け入れる。 b. GIDA がその行政的役割を継続する。

*"モデル営農システム": 灌漑施設を活用した水田作・畑作複合経営実施に必要な営農技術と GIDA の監督による農民組織及び農民を支援する制度システムからなる総合的なシステム (R/D 仮訳)

"Model Farming System" means a comprehensive system which comprises both appropriate farming technologies, to promote multiple farming based on paddy rice and other crops utilizing irrigation facilities, and institutional systems to support farmers' organizations as well as farmers under supervision of GIDA. (quoted from R/D)

*"営農システム": 灌漑農業にかかる栽培、水管理、農業機械、営農の各分野技術を統合した営農のしくみ。

*"営農支援システム": 灌漑農業を営むために必要な灌漑施設の維持管理、農業融資、普及、農民組織などの支援のしくみ。

*"生産性": 単位あたりの収量 (t/ha)

*"経済性": コスト便益 (B/C)

*"有効性": 土地・制度など外部環境に適応しているか。

3. 達成度グリッド、評価グリッド

達成度グリッド

項目	指標	情報源	評価手法	最終評価	マイナス要因	プラス要因
投入	(日本側)					
	J-1. 専門家派遣	報告書等、専門家の意見	投入がどの程度なされたかを確認する。またタイミングはどうだったかも確認する。	11名の長期専門家と16名の短期専門家が派遣された。短期専門家の期間が短すぎる。前任者からの引継ぎが不十分などの問題が関係者から指摘されている。	技術移転という面からの評価分析が不足していた。引継ぎ期間の短さが十分でなかった。	
	J-2. 機材供与	報告書等、関係者の意見等	投入がどの程度なされたかを確認する。どの程度使われているか、タイミングについても確認する。	必要な投入はなされた。一部の投入機材が十分に活用されていない。	投入計画が十分に分析されていない。ポンプ機材の機材供与制度がない。	
	J-3. 研修員受け入れ	報告書等、関係者の意見等	投入がどの程度なされたかを確認する。質についても情報があれば入れる。	17名のカウンターパートが、TBIC、IDACA、及び農水省で研修された。	関係機関の十分な連携	
	J-4. ローカルコスト支援	報告書等、関係者の意見等	投入実績を確認する。	約94百万円が日本側より供出された。		
	(ガーナ側)					
	G-1. 土地、建物、施設	報告書等、施設	投入実績を確認する。	必要な投入はなされた。		ガーナ側GIDAの努力
	G-2. 人材の配置	報告書等、関係者の意見等	投入がどの程度なされたかを確認する。またタイミングはどうだったかも確認する。	各日本人専門家に対して1~3名程度のカウンターパートが配置された。一部のカウンターパートはプロジェクトを離れた。IDCの副総裁への人事が半年遅れた。	ガーナの不安定な財務状況、人材不足。	
	G-3. 機材	報告書等、関係者の意見等	投入がどの程度なされたかを確認する。またタイミングはどうだったかも確認する。	トレーニング用の机、いす、換気設備の配置が十分でなかった。	ガーナの不安定な財務状況。	
	G-4. ローカルコスト	報告書等、関係者の意見等	必要な予算執行がなされたかを確認する。	光熱費などは支出されているが、他の必要なコストは期待されたほどは支出されていない。	ガーナの不安定な財務状況。	
活動	1. 成果1に係る活動「農民の状況と営農システムの調査」	活動実績表	活動実績表や関係者からの聞き取りにもとづき、計画通りの活動が実施されたか否かを確認する。	アシャマンとオチョレコにおいて調査が実施され、必要な情報およびベースラインデータが収集され、分析された。(達成度平均 93%)		優秀な日本人専門家
	2. 成果2に係る活動「個別技術の改善」	活動実績表	活動実績表や関係者からの聞き取りにもとづき、計画通りの活動が実施されたか否かを確認する。	各四分野の改善にかかる調査・研究が実施された。(達成度栽培60%、水管理80%、農業機械80%、営農80%)	野菜栽培面での専門家の不足	
	3. 成果4に係る活動「2モデル事業地での営農システムの実証」	活動実績表	活動実績表や関係者からの聞き取りにもとづき、計画通りの活動が実施されたか否かを確認する。	稲の栽培については活動は圃場レベルほぼ実施されたが、野菜については技術的な理由から進捗が遅れている。また現地適用の際、以下の問題から進捗が遅れている。農民組合とGIDAが排水計画について同意がなされていない。ポンプ運転費にかかる水利費を農民が負担できない。米と野菜の市場の閉鎖。(達成度平均 55%)	ベースライン調査で社会的なデータが収集されていない。	
	4. 成果5に係る活動「2モデル事業地での営農支援システムの実証」	活動実績表	活動実績表や関係者からの聞き取りにもとづき、計画通りの活動が実施されたか否かを確認する。	制度・ルールづくりのため、時間がかかる活動が多く、進捗状況はスムーズとはいえない。その他、施設維持費の問題、燃料費の問題、組織運営費の問題など資金的な問題が大きく影響している。(達成度 灌溉施設維持管理80%、融資システム60%、普及システム50%、農民組織60%)	社会・組織面での調査が十分でなかった。	
	5. 成果3に係る活動「個別技術、営農システム、支援システム運営の研修活動」	活動実績表	活動実績表や関係者からの聞き取りにもとづき、計画通りの活動が実施されたか否かを確認する。加えて、他の事業地に対しての研修実施。	モデル事業地のリーダーや農民にはプロジェクト期間を通して、集中的に研修が実施された。加えて、以下のようなさまざまな研修が積極的に実施されている。普及員(39名19日間)、中間管理者(49名5日間)、灌溉地リーダー(23名5日間、33名6日間)、灌溉事業所長(20名6日間)、他の灌溉地中核農民(83名12日間)。(達成度平均 87%)	リーダーの研修への熱意	
成果	1. 灌溉事業地における農民の状況と営農システムが明らかになる					
	1-1. ベースラインデータの状況	プロジェクト報告書等	ベースラインとなる資料が収集されてレポートの形でまとめられているか。	ベースライン調査により、後のBefore-After分析の比較対象となるベースラインデータが抽出された。		
	1-2. 営農改善のための問題と課題の数	プロジェクト報告書等	営農改善事例(問題と課題)が3以上か。(2モデルx4分野)またその内容は適切なものが確認する。	モデル事業地における各技術分野別の問題(営農のための融資制度の欠如、機材の不足、未熟な灌溉運営手法等)が抽出された。ここから、解決のための課題(マイクロクレジットの導入、農民組織の強化、農民研修の強化、女性組合の育成等)が明らかになった。		
	2. 個別技術が改善される。					
	2-0 開発された技術数	プロジェクト報告書等	プロジェクトによって開発された技術数が4分野以上になったかどうかを確認する。	すべての分野で1以上の技術改善がなされている。詳細は以下参照。		
	2-1 栽培についての改善状況	プロジェクト報告書等	その生産性、経済性、有効性から改善された技術が優位なものかどうかを確認する。	優良品種の選定(5品種)、優良品種の供給、耕種基準の確立、諸経費の積算など水稲栽培技術は確立され事業地での実証試験も進んでいる。反面、野菜栽培などの営農システム構築へ向けての活動実施に遅れが生じている。	野菜栽培の遅れ。専門家の不足。	
2-2 水管理についての改善状況	プロジェクト報告書等	その生産性、経済性、有効性から改善された技術が優位なものかどうかを確認する。	水管理委員会の設立、配水計画の策定、実施、モニタリング、施設の維持管理方法の指導など水管理技術は確立され実施されている。事業地域による技術移転度は差異があるもの分野での技術開発は終了している。水利費徴収、農民側の維持管理委員会の指導など農民組織の維持に向け特に営農分野との技術の統合が必要である。	モデル営農システムというものがない。コンセンサスの不十分に対応する。計画のなかで組合への推進ができていない。		
2-3 農業機械についての改善状況	プロジェクト報告書等	その生産性、経済性、有効性から改善された技術が優位なものかどうかを確認する。	農業機械を利用した効率的各種技術の改善、農業機械員等の開発は実施されてきた。また農作業と機械投入経費に関する適正コストの研究も営農システムの実証に向け実施された。今後は、営農システム/営農支援システムの確立に向けて関係他セクションとの合同研究の実施が必要と思われる。	モデル営農システムというものがない。コンセンサスの不十分に対応する。計画のなかで組合への推進ができていない。		

達成度グリッド

項目	指標	情報源	評価手法	最終評価	マイナス要因	プラス要因
	2-4 営農についての改善状況	プロジェクト報告書等	その生産性、経済性、有効性から改善された技術が幾度なものかどうか確認する。	営農情報の収集、投入財マイクロクレジットの導入、農家営農活動モニタリング、農民組織強化の実施など活動は実施されている。農業機械同様な分野間の情報の共有、集積された情報の広報等外部へ向けての活動は、実施されていない。営農システム実証は、上記のモニタリングで実施との理解であるが、他分野との合意形成はなされていない。	モデル営農システムというもののあいまい性とコンセンサスの不十分に起因する。前面のなかで統合化への配慮ができていない。	
	3. 2モデル事業地で、営農システムが実施される。					
	3-1 アシヤマン事業区における実施の状況	プロジェクト報告書、現地調査	生産性、経済性、有効性が以前よりも高まっているか、確認する。	IDCの実験農場及び農民の農地において、各個別技術の生産性、経済性、有効性が実証された。しかし、農民の収入向上のための営農システムとしては、完全に形成されてはいない。	モデル営農システムというもののあいまい性とコンセンサスの不十分に起因する。前面のなかで統合化への配慮ができていない。	
	3-2 オチョレコ事業区における実施状況	プロジェクト報告書、現地調査	生産性、経済性、有効性が以前よりも高まっているか、確認する。	野菜に関するものを除いて、農民の農地において、各個別技術の生産性、経済性、有効性が実証された。しかし、農民の収入向上のための営農システムとしては、完全に形成されてはいない。	モデル営農システムというもののあいまい性とコンセンサスの不十分に起因する。前面のなかで統合化への配慮ができていない。	
	4. 2モデル事業地で、営農支援システムが改善される。					
	4-1 営農支援システム(灌漑施設管理、農業融資システム、普及システム、農民組織)のアシヤマンでの導入状況。	プロジェクト報告書、現地調査	灌漑施設管理、農業融資システム等の導入状況を確認する。	灌漑施設管理と農民組織の分野ではうまくいっている。普及システムも、個別分野については、普及員やIDCの技術員によって形成された。農民融資は2年間は回転してきているが、最近の米価の低迷の影響も受けている。	米価の影響	アシヤマン農民の企業家精神
	4-2 営農支援システム(灌漑施設管理、農業融資システム、普及システム、農民組織)のオチョレコでの導入状況。	プロジェクト報告書、現地調査	灌漑施設管理、農業融資システム等の導入状況を確認する。	灌漑施設管理と農民組織の分野ではうまくいっている。普及システムも、個別分野については、普及員やIDCの技術員によって形成された。農民融資はまだ始まったばかりであり、最近の米価の低迷の影響も受けている。	オチョレコの地区としての特性(保守的)。米価の低迷。	
	5. 普及員、農業組合職員、農民がモデル営農システムに関する知識と技術を身につける。					
	5-1 研修計画・研修カリキュラムが現地ニーズや技術的視点から適正なものか。	研修スケジュール、研修カリキュラム	研修計画(及び内容)や実施プロセスなどを確認して、各農に必要な実践・技術の内容を含んでいるものか、確認する。	研修にかかる報告書によると、他灌漑地からの参加者のほとんどが、研修内容を自分のところで実施したいという意思を持っている。実際、参加者の一部が適応を始めている例があることを評価団は聞くことができた。施設面では、研修施設の椅子等が十分に提供されていないことはひとつの制約要因となっている。	ガバナの財務状況。	
	5-2 80%以上の研修参加者が必要な知識と技術が移転されたと認識する。	研修にかかわる報告書等	研修参加者の満足度などを測ったアンケートなどあるか、あればそれを確認する。	プロジェクトの報告書によると、アシヤマンとオチョレコの両モデル事業地農民の97%が、このプロジェクトによる研修が便益をもたらしたと認めている。		

達成度グリッド

項目	指標	情報源	評価手法	最終評価	マイナス要因	プラス要因
目標達成度	1. 2事業地における80%以上の農家がSSIAPPプロジェクトによって営農が改善したと認識する。	ローカルコンサルタント報告書	ローカルコンサルタントの報告書を確認。内容について分析。	ローカルコンサルタントの報告書によると、モデル事業地のほぼ100%の農家が、このプロジェクトによって彼らの営農が改善したと認めている。しかしながら、このプロジェクトは技術援助であり、灌漑施設の建設/改修はプロジェクトの投入ではないことを鑑みると、この結果をプロジェクトの独自の成果として認めることには再考を要する。有効性を測るにはさらなる分析が必要となる。(例えば、同報告書によると、本プロジェクトでの技術移転の効果は、農民は、アシャマンでは54%、オチョレコでは72%しか平均でとめていない。)		施設も含めた十分な投入。
	2. 2事業地において、水利費の納入率や農業投入財融資の返済率が90%以上になる。	ローカルコンサルタント報告書	ローカルコンサルタントの報告書を確認。内容について分析。	水利費の回収率は、アシャマンでは94%、オチョレコでは78%である。(2001年12月)だが、その絶対額は、GIDAの活動を続けられるほどのものではない。マイクロクレジットの回収率は現在ではほぼ100%を維持してきている。しかしながら、これらの結果は本プロジェクトの最終期間でやっと達成されたものであり、これが安定して続くという保証はどこにもない。加えて、実際の貸付額も特にオチョレコでは低いものにとどまっている。	社会的要因。分析不足? もしくは計画そのものに無理あり。	
	3. 他の事業地からの研修参加者の80%がモデル農業システムの内容が各自の灌漑地に適用可能と認識する。	研修にかかわる報告書等	報告書を確認。モデル農業システムのモデルとしての適応性について農家の意見から分析する。	研修についてのアンケートの結果は、モデル適応性について特に言及したものはなかったが、他灌漑地からの研修参加者は研修内容を高く評価している。評価団がタウエーニャ地区を視察したときも、この地区からの研修参加者が、研修内容を実際に応用していることを確認している。		十分な研修活動。
	4. モデルとしての完成度、システムとしての統合性。	各種報告書や関係者の意見から評価	モデルとしてのモデル農業システムの完成度と統合性から、プロジェクト目標の達成度を再検証する。	各関係者がそれぞれ、なにがモデル農業システムであるかという独自のイメージをもっており、コンセンサスはできていないようである。このような多義性から、評価のみならず、プロジェクト実施も困難なものになっているという感がある。	計画時の議論不足。	
外部条件	1. MOFA及びGIDAによって遅延なく研修施設が供与される。	専門家ほか、関係者	外部条件の実現化状況について確認する。	日本の無償資金援助を利用して、IDCの研修施設が2000年に供与されている。(時期的にはプロジェクト期間中盤)		
	2. GIDAによってモデル地区の灌漑施設が改善される。	専門家ほか、関係者	外部条件の実現化状況について確認する。	日本の無償資金援助を利用して、灌漑施設が2000年に改修されている。(時期的にはプロジェクト期間中盤)		
	3. 2事業地において異常気象が発生しない。	専門家ほか、関係者	外部条件の実現化状況について確認する。	2002年の雨季に、多雨から、オチョレコ地区で洪水が発生した。		
	4. プロジェクト運営に重大な影響を及ぼすような人事異動は行われない。	専門家ほか、関係者	外部条件の実現化状況について確認する。	影響を及ぼすような人事異動は起こっていない。		
	a1. その他、プロジェクトの進捗に影響を及ぼした外部条件	専門家ほか、関係者	PDMには設定されていないが、プロジェクトの進捗に影響を及ぼしたものがあろうか。	米価の低迷。その他は、特にプロジェクトに大きな影響を与える外的要因は発生していない。		
その他(実施プロセス)	1. プロジェクトの実施方法について、役割分担、関係者のコミュニケーションなど問題はないか。もしくは他のプロジェクトも参考になるような実施上の改善方法はあるか。	専門家・C/P	関係者にインタビューする。	プロジェクトの前半においては、主に地理的に実施地が離れていることから、専門家及びカウンターパートの間で、コミュニケーション上の問題が存在した。この問題は、その後頻りにミーティングを実施することによって、徐々に改善された。(技術委員会が隔週、専門家会議は毎週)	人間関係が地理的な状況から悪化。	
	2. モニタリング(プロジェクトの進捗状況の確認)はどのようにしていたか。責任はどのように分担していたか。	専門家・C/P	関係者にインタビューする。モニタリングの資料があれば確認。	TSI(Tentative Schedule of Implementation)が、すべての関係者によって使用され、かつモニタリングされている。		TSIの活用
	3. GIDA(IDC)のカウンターパートへの技術移転状況。	専門家・C/P	技術移転という観点から、その達成度を関係者にインタビューする。	カウンターパートへの調査の結果、技術移転達成度は約72%であり、技術移転はある程度成功を収めたといえる。一方で、短期専門家の期間が短すぎることで、勉強したい分野と派遣専門家との分野に差があることなどが指摘された。	入念な技術移転計画の不足。	
	4. 中間評価の「提言」事項の実現度。(どのような対応をしたか。)	プロジェクト報告書、専門家・C/P	報告書を確認。関係者にインタビューする。	中間評価からの提言に対して、技術委員会が設立され、農民とのミーティングが強化され、さらに各個別技術の統合が進められた。		

評価グリッド




項目	指標	情報源	評価手法	最終評価	マイナス要因	プラス要因
妥当性	1. プロジェクト目標・上位目標の受益者ニーズからみた妥当性	専門家、C/P、関係者	関係者にインタビューし、現在でも、プロジェクトの結果、普及される技術が現場の農民及び社会にとって、有益なものか、ニーズはあるのか、を確かめる。	ローカルコンサルタントの報告によると、2モデル事業地の農民はプロジェクトを心から高く評価しており、かつ灌漑農業は彼らの生活そのものである。このことは、評価団の現地視察でも十分に感じられた。		フィールド重視のプロジェクト活動。
	2. プロジェクト目標・上位目標の上位政策からみた妥当性	ガーナの上位期計画等	最新の開発戦略のなかで、農業(灌漑)がいまでも重点がおかれているのか確かめる。	ガーナの農業政策において、灌漑は主要課題のひとつである。特に高い輸入米依存を軽減するために、国内の米作を奨励することは、ガーナの国策の緊急課題として位置づけられている。さらに農民参加型の灌漑農業ということは現政権でも推奨されている。よって国家政策との妥当性は非常に高い。		援助の要請主義
	3. JICAの援助政策からみた妥当性	JICA担当者	JICAの援助政策としてプロジェクト目標・上位目標が妥当なものか調べる。	JICAの対ガーナ個別援助戦略ペーパーでは、農民組織との参加型アプローチを利用した灌漑農業の推進を、支持している。		
有効性	1. プロジェクト目標の達成度	達成度グリッド	達成度グリッドからみてプロジェクト目標は達成したのか。	指標をみるかぎりでは、プロジェクト目標はプロジェクト期間終了時点では達成する見込みである。一方で、モデル農業システムの定義があいまいであり、かつオチョレコ地区での進捗が遅れているという状況で、指標の達成がすなわちモデル農業システムの確立ということになるかということは議論となることである。	モデル農業システムという概念の多義性。計画時の入念な計画分析の不足。	TSIにもとづく重要なプロジェクト運動。施設も含めた多大な投入。
	2. モデル事業地での農業改善の要因(本当にプロジェクトの結果なのか)	農民の意見	農業改善に対するプロジェクトの効果は、灌漑施設の建設/改善の効果を通じて推測するために、以下の要因の中で何が改善をもたらしたのかということも農民に聞く。聞き方は、5つの要因(灌漑施設の建設、機械の供与、研修による技術向上、融資制度の導入、農民組合の強化)について、一人3項を挙げる。	アシャマンでの結果は、灌漑施設は32%、機械は22%、研修による技術向上は2%、融資制度は32%、農民組織強化は11%であった。(ミニッツAnnex8を訂正) オチョレコでは、灌漑施設は24%、機械は22%、研修による技術向上は22%、融資制度は19%、農民組織強化は13%であった。灌漑施設は本プロジェクトの投入ではないことから、達成度のすべてがプロジェクトによる効果とはいえないようである。アシャマンの農民は研修による技術向上を高く評価しているが、これは同地農民のももとの技術力が高かったためである。よって、アシャマンにおけるプロジェクトの有効性はむしろマイクロクレジットなどの高度な側面で見られる。一方で、オチョレコでは、技術研修も高く評価されており、プロジェクトが全般的な側面でも有効性があったといえる。	農民が技術援助と無償を関係できない。	灌漑施設のインパクトの大きさ。
	3. プロジェクトの影響外の灌漑地農地における状況。(比較の対象として)	資料・関係者訪問を取り	プロジェクト影響外の灌漑農地が選ばれ、その地域の農地を調べる。そして比較対象として、プロジェクトの有効性を調べる。	それぞれの灌漑地の特性が違うために、単純に比較できるデータは存在しないが、平均では収穫3~5トン/ヘクタールという範囲である。プロジェクト以前、オチョレコは低開墾地区であり、アシャマンにおいても灌漑施設が稼働していなかったことを鑑みると、プロジェクトの有効性は、すなわち、これらの後進地区を全国平均レベルに引き上げたということと説明できる。		施設と技術の組み合わせという多大な投入。
	3. 外部条件など、プロジェクト目標の達成に影響を及ぼしたものは何か。	現状観察の結果	評価者が外部条件のチェックおよびその影響の評価。その他、プロジェクトの目標達成が本当にプロジェクトによるものか確認。	オチョレコで2001年に洪水が発生しており、特に野菜栽培に関するプロジェクト活動に支障があった。ポンプ灌漑施設の完成がプロジェクト期間の中盤になってからであり、オチョレコでの成果達成に影響があった。	施設計画の失敗。農情との連携がとれていない。	
効率性	1. 投入の達成度	達成度グリッド	達成度グリッドの「投入」をまとめる。	日本側からは必要な投入のほとんどがなされた。一方、ガーナ側からは財務的困難から一部の投入が変更または遅滞した。	財務的な困難性。	
	2. 成果の達成度	達成度グリッド	達成度グリッドの「成果」をまとめる。	成果のほとんどは達成済みまたはプロジェクト期間中に達成される見込みであるが、一方で個別分野の統合という面では達成が十分であるとはいえない。	農業システムという概念の多義性。	TSIとモニタリングに基づく活動
	3-1. 投入と成果の比較	「成果」と「投入」の比較	達成された成果と投入の規模を算出して、十分に投入が成果の達成に活かされたかを調べる。	投入が一部遅延したが、期待された成果はほぼプロジェクト終了時点までに達成される見込みである。これは投入が十分に活用された結果であるということ、その意味で効率性は高められる。		関係者の柔軟な対応。
	3-2. 他のプロジェクトとの比較	JICA担当者	他の同様のプロジェクトと比較し、その成果に比した投入量は妥当なものか。	JICAの他の類似案件(例、フィリピンのボホールプロジェクト)と比較すると、現地コスト支援が比較的高額である。これは、現在のガーナの財政危機を鑑みれば、妥当な額であるといえる。また対象地区も小さいが、これはこのプロジェクトの成果が他の灌漑地にも普及されるといういみでは妥当なものであるといえる。	ガーナ経済の困難性	
3-3. 投入の組み合わせ	専門家、C/P	想像で、プロジェクトマネージャーの立場になってもらい、投入の組み合わせの変更が必要かどうかを質問する。加えて、もし、資金が死した場合は、反対に資金が増加した場合に、投入でどの部分を減らすか、または増やすか、その理由を述べてもらう。	インタビューの結果、特に「不必要」または「多すぎた」という意見が集中した投入はなかった。			
3-4. 活動の組み合わせ	専門家、C/P	想像で、プロジェクトマネージャーの立場になってもらい、活動の組み合わせの変更が必要かどうかを質問する。加えて、もし、資金が死した場合は、反対に資金が増加した場合に、活動でどの部分を減らすか、または増やすか、その理由を述べてもらう。	インタビューの結果、特に「不必要」または「多すぎた」という意見が集中した活動はなかった。			

評価グリッド

項目	指標	情報源	評価手法	最終評価	マイナス要因	プラス要因
	3-5. 無償等、他の協力形態とのリンケージなど、それが効率性を高めるような結果となったかどうか。	専門家、JICA担当者	無償などの海外協カスキームや、国内の事業との連携などの、協力関係があるかどうか。それが結果として効率が上がったといえるかどうかを確認。	オチョレコで診療所が草の根無償で建設されており、農民の生活上上という意味で、本プロジェクトと連携している。この診療所は、野口研究センタープロジェクトからも情報支援をうけている。この連携は効率性を高めたといえる。		
インパクト	1. 関係者が感じた、プロジェクトがもたらした周辺の変化	プロジェクト報告書、専門家、C/P、その他	プロジェクト報告書を確認。加えて、関係者にインタビューし、プロジェクトによって、何がどのように変化したのか、を自由に話してもらおう。	以下のような多くのインパクトが聞かれた。1)プロジェクトサイトの農民の所得が60%近くも上昇した。 2)より多くの子供が学校に通えるようになった。 3)女性の地位が向上した。 4)農民が自信を持てるようになった。 5)IDC内のセクター間のコミュニケーションがスムーズになった。 6)IDCのカウンターパートの能力が向上した、等。 一方で、関係者インタビューでは、農民の中には事業に失敗して負債を抱えてしまったものも一部いることが、懸念されていることが判明した。		プロジェクトがフィールド重視の活動を多く行っていたこと。
	2. 上位目標に関して、他の灌漑地区への研修の効果。	専門家、C/P、その他	関係者にインタビューし、他の灌漑地区への研修でどのような変化(効果)が生まれたか。	プロジェクト実施期間中に、他の灌漑事業地からプロジェクトマネージャー、普及員、農民組織リーダー及び中核農民らが、プロジェクトの研修プログラムに参加している。他事業地の関係者が個別技術を獲得することによって、他の事業地への技術普及が一部なりともなされているといえるが、一方で、これらの技術を実際に応用しているという確証はない。	統合化されたシステムとしては確立していない。	研修活動の重視
	3. 上位目標の達成可能性(具体的には他の灌漑地区への展開の可能性)	専門家、C/P、その他	関係者にインタビューし、プロジェクトに上位目標が達成することは可能か。それを阻害する要因はなにかを聞く。特に、今後の研修を実施していく時期が近づいているのか。(外観条件の確認)	現在のGIDA(そしてガーナ国も同様に)の財務状況を鑑みると、GIDAまたはIDCが、当該プロジェクトの活動をそのままの形で、他の事業地に同時に進めていくことはほとんど現実性がない。このためには現在の普及プログラム及び技術の内容をより現実的なものに適応させていく更なる努力が必要であると考えられる。	ガーナ側の財務難	
自立発展	1. 制度面からみた自立発展性					
	1-1. GIDAとIDCの将来性	専門家、C/P	専門家、C/Pへのインタビューを通して、GIDAとIDCの将来性を調べる。	GIDAとIDCの将来の継続性については関係者で意見が分かれた。継続性の根拠としては、GIDAはガーナ農業政策の要となる政府組織であることであり、一方の愛蔵される要因としては、ガーナの財政面での問題が指摘されている。	ガーナ側の財政難	GIDAが債務を重視する政府の、灌漑関連機関であること。
	1-2. 今後の研修・普及戦略	C/P	C/Pへのインタビューを通して、GIDAが、今後も研修をしていく意欲があるか、明確な戦略があるかを調べる。	各年度の予算計画の中に普及活動も入っているが、長期的な視点からのプロジェクト的な普及戦略は持っていない。	長期的がリソースがない。	
	2. 財政面からみた自立発展性					
	2-1. GIDAとIDCの財務状況	C/P	財政面から、GIDAとIDCが今後も存続していくのかを調べる。	すべての関係者が、GIDAの財務状況は良好でなく、かつ不安定であることを認めている。これはGIDAのみの問題ではなく、ガーナ国全体の経済の問題でもある。	ガーナ側の財政難	
	2-2. 研修・普及の資金源	C/P	プロジェクト終了後、普及活動をするための資金をどのように、C/Pが考えているかを調べる。	現況では、他の事業地にプロジェクト活動を拡大していくための十分な財源は確保されていない。このためにカウンターパートは、多くのドナーを見つけることを検討している。	ガーナ側の財政難	

評価グリッド

項目	指標	情報源	評価手法	最終評価	マイナス要因	プラス要因
3. 技術面からみた自立発展性						
3-1. 技術の定着可能性		専門家、C/P	プロジェクト終了後、カウンターパートがFSR/E技術を日本人専門家の補助無しで維持・開発しているか。	GIDA/ IDCのカウンターパートは、移転された技術の管理、例えば畜農活動のモニタリングや技術の簡単な改良であれば実施できるが、独自に技術を開発できるというレベルには完全には達成していない。	期間の限られた中での技術移転の限界。	技術移転のある程度の成功。
3-2. C/Pの定着可能性		専門家、C/P	プロジェクト終了後、GIDAでC/Pが積極的に動機をしてくかどうかを調べる。	カウンターパート自身のGIDAへの定着性は、現状の財務状況からみて、確実視はできない。一方で、GIDAでの仕事は学びの機会があり、魅力的であるとの意見もあった。	ガーナ側の財政難	プロジェクトを導引できるGIDAの能力。
3-3. 農民への技術の定着可能性		専門家、C/P	プロジェクト終了後、農民が技術を独自に維持していくことができるか。農民組織の中に知識、技術を共有していくような体制があるか。	モデル灌漑事業地において、特にアシャマン地区では、農民への知識・技術が移転されており、今後は要所的なサポートは必要であるが、農民だけでも畜農活動は続けていける状況である。一方のオテヨレコ地区では、灌漑状況は比較的に遅れており、畜養を続けていくためには、更なる技術をもった農民の育成が必要である。	期間の限られた中での技術移転の限界。オテヨレコ地区での保守活動の遅延。	アシャマンの農民のももとの技術が高い。
3-4. 他の地域の研修した農民が自立的に研修後畜養をしていけるか。		専門家、C/P	プロジェクトで研修した他の地域農民は自立的に畜農活動をやっているかどうか。その阻害要因はなにか。	その他の灌漑事業地の農民については、研修参加者の一部が研修の内容の一部を自分の土地に運用してきている。これは良い兆候ではあるが、これが自立発展的に拡大していくところまではいっていない。	研修活動の内容・数が十分でない。	熱心な研修活動の結果
4. 自立発展性の阻害要因		専門家、C/P	プロジェクト終了後、GIDAの活動をする上で一番の阻害要因はなにであるかを調べる。	ほとんどの関係者が、財政的な問題をもっとも憂慮される問題として指摘している。期待される解決としては、コンサルティングのような取入に直結するような活動、調査基金の設立、新しいプロジェクトを申請するなど。	ガーナ側の財政難	

	削除あるいは移動したもの
	新たに加えられたもの
	表現の変化等

PDM (目標) の変遷

	実施協議時	運営指導 (計画うち合わせ)	中間評価
Overall Goal	To establish sustainable farming system for small scale farmers utilizing irrigation facilities.	1. To establish sustainable farming system for small scale farmers utilizing irrigation facilities. 2. Farmers' income is increased.	1. To establish sustainable farming system for small scale farmers utilizing irrigation facilities. 2. Farmers' income is increased.
Project Purpose	To improve a Model Farming System in irrigated agriculture area under the supervision of GIDA.	To establish a Model Farming System in irrigated agriculture area under the supervision of GIDA.	A model farming system is established in irrigated agriculture area under the supervision of GIDA.
Outputs	1. Problem identification and analysis is conducted at the Model Sites	1. Problems are identified, analyzed and evaluated.	1. Farmers' situation and farming systems of irrigation schemes are analyzed.
	2. The farming technologies at the Model Sites are improved. a. Cultivation techniques are improved. b. Water management and irrigation facilities for irrigation facilities are improved. c. The farmer's income and farm management is improved. d. The operation and maintenance techniques of agricultural machinery are improved and adjusted to the site conditions.	2. Component technology is improved. a. Crop cultivation is improved. b. Water utilization is improved. c. Farm machinery utilization is improved. d. Farm management/ extension is improved.	2. Component technology is improved. 小項目については活動へ移動 (内容は変化なし)
	3. Farming technologies are integrated into a farming system and appropriate institutional supporting system is strengthened.	3. Farming system is verified. 4. Supporting system is improved. 4-1 Operation and maintenance of irrigation facility is improved. 4-2 Agricultural credits are provided to farmers. 4-3 Extension is intensified. 4-4 Farmers' organization is strengthened.	3. Farming system is verified in the two model schemes. 4. Farming supporting system is improved in the two model schemes. 小項目については活動へ移動 (内容は変化なし)
	4. Extension officers to train extension officers and farmers is strengthened.	5. Staff of GIDA, farmers and farmers' organization are trained.	5. Extension officers, staffs of farmers' organizations and farmers are trained.

5. プロジェクト実施体制図

