Summary of the Result of the evaluation survey

1. Outline of the Project	
Country: Republic of Senegal	Project title: Project on Improvement of Rice Productivity for Irrigation Schemes in the Valley of Senegal
Issue Sector : Agricultural development	Cooperation scheme: Technical cooperation project
Division in charge: Senegal office	Total cost : approximately eight hundred fifteen million yen as of final evaluation
Period of Cooperation (R/D): November 24th 2009	Partner Country's Implementing Organization: SAED (Société Nationale d'Aménagement et d'Exploitation des Terres du Delta du Fleuve Sénégal et des Vallées du Fleuve Sénégal et de la Falémé)
February 2010 – March 2014 (50 months)	Supporting Organization in Japan: N/A

1-1. Background of the Project

With an annual consumption 74kg of rice per capita in 2003, Senegal is currently one of the largest consumers of rice in West Africa. However, the national rice production covers only 20% of the demand. Due to the liberalization of imports and the increase of the number of population, there has been a steady rise in imports, which are more than 800,000 tons per year. The dependence on imported staple food remains a major concern of the Government of Senegal (GoS) since the early 2000s, as the general increase in the food prices on the international markets has been affecting the domestic market dominated by imported rice from Asia. In this situation, the balance of Senegalese foreign trade stroked by imports of food products including rice is regularly deficit. Therefore, the growth rate of rice self-sufficiency is a priority in the strategy for food security in Senegal.

Given this context, the GoS requested to the Government of Japan (GoJ) to extend a technical cooperation to prepare the nation-wide master plan for the rice sector of Senegal.

In response to the request by the GoS, the GoJ through Japan International Cooperation Agency (JICA) carried out "the Study on the Reorganization of the Production of Rice in Senegal (2004-2006)". Within the framework of the Study, The GoS requested the GoJ to undertake the technical cooperation project to improve the productivity and quality of local rice through integrated approach from rice production to marketing in the Senegal River Valley which provides 70% of national rice production. The Record of Discussions (R/D) was signed on November 24, 2009. The project titled "Improvement of Rice Productivity for Irrigation Schemes in the Senegal River Valley" (the Project) started in February, 2010. Mid-term Review was conducted to monitor the progress and activities of the Project in June 2012. Since the Project terminates in March, 2014, it was planned to conduct the final evaluation of the Project.

1-2. Project Overview

(1) Overall Goal

Improvement of the rice farming productivity and profitability in the Senegal River Valley

(2) Project Purpose

Improvement of the rice farming productivity and profitability in the Dagana and Podor Departments

(3) Outputs

1) Establishment of high productivity rice farming in the target irrigation schemes of the Senegal River Valley
2) Establishment of appropriate mechanisms regarding the planning of new schemes, rehabilitations, management, and maintenance of pilot schemes in the Pilot sites
3) Establishment of measures to improve farmers' financial management
4) Establishment of appropriate quality milled rice distribution channels meeting the needs of Senegalese consumers

(4) Inputs

Japanese side: approximately eight hundred fifteen million yen as of final evaluation

Dispatch of Japanese Experts: 11 persons

Team Leader/Irrigation Engineering/Water Management, Sub team Leader/Irrigation Farming, Rice Cultivation/ Farm Management, Rice Milling/Post-harvest, Rice Distribution/Policy and Institution, Rice Marketing, Farmers Organization/Micro-finance Operation, Building Works, Irrigation Development/ Construction supervision, Coordination/Agricultural Extension, Coordination/Participatory Irrigation Development

Training in Japan and Overseas: 8 persons

Procurement of equipment: Vehicles, PC, printer, photocopy machine, rice milling machines, rotary shifters, rice grading machines, Lifters etc

Local cost

Senegal side:

Counterpart: 19 members in total

Facility and budget: Project Office, Accommodation facility in Podor

2. Evaluation Team

Members of Evaluation Team

Japanese side

Team Leader	Mr. Kazunao Shibata	Senior representative, JICA Senegal Office
Irrigated rice cultivation, Marketing, Post-harvest	Mr. Motonori Tomitaka	Senior Advisor, JICA
Irrigation Engineer	Mr. Nobuo Sambe	Senior Advisor, JICA
Evaluation Coordinator 1	Mr. Koji Sunazaki	Representative, JICA Senegal Office
Evaluation Coordinator 2	Ms. Marina Bambara	Consultant, JICA Senegal Office
Evaluation Analysis	Mr.Satoshi Nagashima	Consultant, Icons Ltd

Senegalese side

Team Leader	Mr. Amadou THIAM	Head of Monitoring and Evaluation Unit, SAED
Joint evaluation member	Mr. Seyni NDAO	Director, Development and Rural Planning Department (DDAR), SAED

	Joint evaluation member	Mr. Samba KANTE	Technical Advisor, PNAR Coordinator, MAER
	Joint evaluation member	Mr. Waly DIOUF	Technical Advisor, MAER
	Joint evaluation member	Mr. Salif DIACK	Responsible, Rice Program SAED
	Joint evaluation member	Mr. Oumar Samba SOW	Chief, Division of Support to Professionalization, SAED
	Joint evaluation member	Mr. El hadji MAR	Officer, Department of Irrigation Schemes and Facilities(DAIH), SAED
Period of Evaluation	October 2013 27th –November10th 2013		Type of Evaluation : Final Evaluation

3. Results of Evaluation

3-1 Verification of Achievement

(1) Limitation on the evaluation

In the course of evaluation process, there are some parts of difficulties to collect and obtain the indicators in Podor (Group 2) and the Dhe oup 2) an scheme due to unfinished work of irrigation facilities and organizational problem of Débi-Tiguette union on Project purpose and Output 1. Considering these situations, achievement of Project purpose and Output 1 are evaluated by the indicators of Podor (Group1) .

(2) Level of the Achievement of Outputs

Output 1: Establishment of a high productivity rice farming in the pilot sites

The achievement level of Output 1 is high. More than 50% of the farmers have applied inputs recommended in the manual through a series of trainings provided by the Project. In addition, the revised version of the manual of SAED is utilized by almost all agricultural advisors.

Output 2: Establishment of appropriate mechanisms for the planning of rehabilitations, management and maintenance in the pilot sites

The achievement level of Output 2 is high. For Podor, a facility improvement plan was prepared and estimation of the construction cost has been completed. After the participatory repair and improvement works, farmers continue the maintenance of the facilities. In addition, manuals were drafted based on the technical transfer. After these activities above, rice planted area of Group 1 has expanded to 185 % and the cost of fuel consumption was reduced by 29%. The manual for farmers was utilized almost 100% on the necessary part.

Output 3: Implementation of measures to improve the financial management of farmers

The achievement level of Output 3 is high. A baseline survey was conducted and a monitoring survey is being carried out to see the improvement of the balance of sampled famers. It is considered that the balance of income and expenditure of GIEs in Podor is improved. In whole pilot sites, utilization rate of credit systems in total is more than 60%.

Output 4: Establishment of appropriate distribution channels for quality milled rice that meets the needs of Senegalese consumers

The achievement level of Output 4 is relatively high. Rice grading machines were procured for 21 rice millers and number of rice millers who conduct rice grading became 21. Various promotion activities for local rice were carried out and rice distribution channels from rice millers to distributors have increased from 21 to 45. However, due to the delay of procurement of rice grading machines, credit system for rice millers hasn't started yet though the capital has been already kept.

(3) Level of the Achievement of Project purpose:

Project purpose: Improvement of rice farming productivity and profitability in the Dagana and Podor Departments

The achievement level of Project purpose is high for the Group 1 of Podor. The productivity of paddy increases more than 15% and income of farmers improves more than 20% due to improvement of rice cultivation techniques, expansion of the sown area and improvement of water management techniques, etc. The paddy production also increases 30-80% comparing with 2010.

In addition, distribution volume of rice in the rice millers increase about 23 % comparing with 2011 and sales quantity of local milled rice in the shops became approximately double comparing with 2010 due to improvement of the rice quality and improvement of recognition of local rice.

3-2 Summary of Evaluation results

(1) Relevance

The relevance is high as following reasons.

The Project meets the needs of small scale rice farmers in the Senegal River Valley which produces more than 70% of local rice. The Project has contributed to addressing their difficulties of old irrigation facilities, untimely supply of inputs, high production cost, low cropping intensity, lack of manpower, low rice quality, lack of organized marketing channel, etc.

The Project is in line with the policies of GoS. The GoS decided to achieve the self sufficiency of rice. To achieve this, the National Program for Rice Self-Sufficiency (PNAR) was enforced in 2005. GoS adopted the National Rice Development Strategy (NRDS) in 2009 under the Coalition for African Rice Development (CARD), which aims to double rice production in Sub-Sahara Africa within ten years. In addition Rice sector is one of priority areas of Japanese assistance to the Senegal.

(2) Effectiveness

Effectiveness is relatively high as following reason.

In Podor (Group 1), all indicators of the Project purpose were achieved and productivity and profitability of rice production were improved. In Podor (Group 2) and the Débi-Tiguette scheme, it was difficult to obtain the indicators because rice hasn't cultivated due to unfinished work of irrigation facilities, organizational problem of Débi-Tiguette union and floods.

The recognition of local rice was improved and the distribution quantities increased as well.

On the other hand, there are 2 inhibiting factors against the Project purpose as follows:

1) The farmers face difficulties in obtaining a loan.
2) Though rice double cropping is feasible for the farmers of Senegal River Valley, they have a tendency to favor gardening market with high added value and cash crops in the dry season.

3) There are a lot of flood damages.

(3) Efficiency

Efficiency is high as following reason.

Outputs 1, 2 and 3 were achieved effectively and all inputs were converted to attain the lines of the Outputs. As for Output 4, the delay in procurement of rice grading machines affected to establish a credit system for ARN.

Quality, quantity and timing of inputs were as planned though procurement of rice grading machines was delay slightly.

Regarding Outputs 1 and 2, the cost effectiveness was high in terms of levels of achievement. Direct cost of irrigating facility repair and improvement works in the pilot area is lower than 600,000FCFA/ha and the cost is relatively low compared with similar projects. Thanks to the synergy effect of water management and rice cultivation techniques, the average paddy yields in Podor (Group 1) have increased at 0.6ton/ha in dry season and at 1.0ton/ha in rainy season.

(4) Impact

Impact is moderate as following reasons.

At the time of final evaluation, it is difficult to verify the prospect of achievement of the overall goal. Toward the achievement of the overall goal, the activities of the Project need to be widely disseminated in the Senegal River Valley in order to meet the overall objective. In the future, certain ripple effect will be expected to the other areas, as a result of technical transfer to the counterparts as well as stakeholders in the pilot areas.

AFD is willing to apply the Project's participatory approach on repair and improvement of irrigation facilities in their project.

As the positive impact, the private sector (rice millers in particular) will be encouraged to make further investment. In addition, rice importers have also entered in the local rice market. There is no significant negative environmental impact related to the Project. However, it is necessary to take into account the environmental impact that may result from irrigation development.

(5) Sustainability

Sustainability is relatively high as following reasons.

1) Political and institutional aspects

Political sustainability is high because the activities of the Project have high validity on the policy of PNAR and NRDS.

2) Organizational aspects

Organizational sustainability is moderate.

Technical capacities of SAED staff have been developed through the Project. It is necessary for the SAED staff to take ownership of the Project's approach and include it in its consulting activities for the benefit of producers. But given time and resources required by this approach, it will be necessary to accelerate the human resource development of the private sector as well.

3) Financial aspects

Financial sustainability is high.

SAED established a rural irrigation maintenance fund (FOMPI) in 1998 for irrigation repair and maintenance. Producers can utilize the fund for the activities of irrigation repair and improvement if they

bear 10% of the cost.

4) Technical aspects

Technical sustainability is high.

Technical transfer to SAED counterparts has been done sufficiently through the Project activities. Therefore, they are capable to carry out farmers' training, monitoring and evaluation, and revision of manuals, etc.

3-3 Contributing factors to realize the effects

(1) On the contents of the Plan

The Project could broadly take measure for the problem of value chain of rice in Senegal. In addition, future problems to be tackled were also revealed by the results.

(2) On the implementing process

In the Project, support for rice millers was added in its activities, and the Project supported the private sector which is a major actor in the value chain of rice. Thus, it became a factor in great achievements to improve the rice quality and increase in distribution. It also contributed to increase in productivity and profitability of rice cultivation indirectly.

Farmers participated to the repair and improvement activities of small irrigation schemes, and it contributes not only reducing the maintenance and management cost in the future but also improving the ownership of farmer for the irrigation facilities.

3-4 Inhibiting factors to cause the problem

(1) On the contents of the Plan

The Project approach was appropriate in general. However, there were some problems on the inputs for each result. For example, construction of paddy warehouse in Output 3 was suspended during the Project period and the related activities were also deleted.

(2) On the implementing process

The Project was greatly affected by the external factors. By the organizational and financial problems in Débi-Tiguette Union, the rice production was suspended for 3 cropping seasons and it was impossible to confirm the result of the Project activities. In addition, part of activities was delayed because of deterioration of the security in Podor due to the effect of the political unrest in Algeria and Mali.

In addition, a part of the activities was delayed due to the delay of procurement of rice grading machines.

3-5 Conclusion

The Project has covered broad areas of irrigation, rice cultivation, processing and marketing during the limited period. By the enormous effort by SAED, Japanese experts and support staff of the Project, remarkable results have been obtained even though there were external inhibiting factors.

The Project has contributed to improve the rice productivity through the promotion of participatory irrigation development and extension of improved rice cultivation techniques. The manuals will be utilized for disseminating the approaches of the Project. In addition, the Project has also contributed to the improvement of marketability of milled rice through the introduction of rice grading machines and

promotion efforts.

It is necessary to strengthen the dissemination system of SAED for extension of the good results in Senegal River Valley.

3-6 Recommendations

The evaluation team recommends the following points:

(1) Sustainability and extension of the Project's achievements

SAED is recommended to take ownership of the Project's approach and include it in its consulting activities for the benefit of producers with its own budget.

(2) Building the capacities of SAED staff

It is recommended to build the capacities of the SAED staff in order to ensure the sustainability and extension of the Project's achievements.

(3) Sharing of the results and approach of the Project

MAER and SAED are recommended to share the experience and lessons learnt with stakeholders involved in the development of Senegal River Valley in the final workshop to be organized by the Project in March 2014.

(4) Promotion of participatory irrigation development

SAED is recommended to use the participatory approach to repair small-scale irrigation scheme. The inventory survey of the remaining schemes shall be carried out funds raised by SAED.

(5) Actual commencement and monitoring of the ARN credit system

The credit system of ARN is expected to be utilized for urgent needs of operation and maintenance of rice mills. SAED is recommended to provide necessary guidance of ARN for the system to operate as soon as possible. The Project must establish the monitoring system of the credit operation by SAED to enable JICA to be informed.

(6) Revitalization of the Debi-Tiguette Union

The Union of the Debi-Tiguette farmers' organisation has faced organizational problems during the Project's implementation. It is essential for SAED to support the revitalization process established with the management committee for rice production to continue.

3-7 Lessons learned from the project

(1) Strengthening of rice value chain in Senegal River Valley

The Project has addressed the various issues of not only the public sector but also the private sector. It is essential to further involve the private sector especially rice millers and agricultural machinery service providers in order to strengthen the rice value chain in Senegal River Valley.

(2) Positive impact resulting from the direct guidance of producers

The Project was effective in reinforcing the capacity and ownership of the farmers for ensuring the

sustainability of the Project. Those farmers in the pilot sites were well trained or received guidance directly by Japanese experts and SAED staff. The farmers are satisfied with rice cultivation and water management techniques. Farmers outside the pilot sites began to learn the techniques from those who were trained.

The approach and some used techniques could be duplicated as part of the implementation of the "Rainfed Rice Farming Development Project".