MINUTES OF MEETING
ON
THE FINAL EVALUATION
FOR
THE PROJECT ON IMPROVEMENT OF RICE PRODUCTIVITY FOR IRRIGATION SCHEMES IN THE VALLEY OF SENEGAL

The Japanese Final Evaluation Team (hereinafter referred to as "the Japanese Team"), organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA"), headed by Mr. Kazunao SHIBATA, senior Representative of the Japanese International Agency, Senegal Office and the Senegalese Final Evaluation Team (hereinafter referred to as "the Senegalese Team") headed by Mr. Amadou THIAM, Head of Monitoring and Evaluation Unit formed The Joint Evaluation Team (hereinafter referred to as "the Evaluation Team") to conduct a Final Evaluation of the Project on Improvement of Rice Productivity for Irrigation Schemes in the Valley of Senegal (hereinafter referred to as "the Project") from October 27 to November 8, 2013.

The Joint Final Evaluation Report (hereinafter referred to as "the Report") on the Project was prepared by the Evaluation Team after intensive study and analysis of the activities and achievements of the Project through field visits, interviews and series of discussions with Project personnel and other concerned Senegalese parties,

In reference to the result of the evaluation, the Japanese Team and concerned of the Government of Senegal had a series of discussions and agreed to report their respective governments the matters referred to in the document attached hereto.

Dakar, November 7, 2013

Mr. Kazunao SHIBATA
Senior Representative,
Japan International Cooperation Agency,
Senegal Office

Mr. Mamoudou DEME
General Director
National Company for the Development and Exploitation of the Senegal River Delta, Senegal River and Falémé Valley Lands
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Mr. Mame Ndiobo DIENE
General Secretary
Ministry of Agriculture and Rural Equipment,
Republic of Senegal

Major Points of Discussion

The Evaluation Team presented the Report to the joint meeting with concerned of the Government of Senegal held on 08 November, 2013, and Both the Japanese Team and concerned of the Government of Senegal approved the Report. The Report is in APPENDIX 1.

(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 Débi-Tiguette Union

The Union of the Débi-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.

Joint Final Evaluation Report
On
The Project on Improvement of Rice Productivity for Irrigation Schemes
In
The Valley of Senegal

Saint Louis, November 6, 2013

Mr. Shibata KAZUNAO
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Japan International Cooperation Agency,
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Abbreviations

AFD	French Development Agency
ARM	Market Regulation Agency
ARN	Rice Millers Association
CARD	Coalition for African Rice Development
CGER	Centre for Management and Rural Economy
CIRIZ	Rice Interprofessional Committtee
CMS	Crédit Mutuel de Sénégal
CNCAS	National Agricultural Credit Bank of Senegal
DAIH	Department of Irrigation Schemes and Facilities
DDAR	Development and Rural Planning Department
FCFA	CFA Francs
FIDAK	International Fair of Dakar
GA	Large-scale Scheme
GIE	Economic Interest Group
GMP	Power-Driven Pumps
GoJ	The Government of Japan
GoS	The Government of Senegal
ISRA	Senegal Agricultural Research Institute
JICA	Japan International Cooperation Agency
JPY	Japanese Yen
MAER	Ministry of Agriculture and Rural Equipment
NRDS	National Strategy for Rice Development
O&M	Operation and Maintenance
PAPRIZ	Project on Improvement of Rice Productivity for Irrigation Schemes in the Valley of Senegal
PDM	Project Design Matrix
PDMe	Project Design Matrix for Evaluation
PIP	Private Irrigation Scheme
PIV	Village Irrigation Scheme
PNAR	Rice Self-Sufficiency Program
PO	Plan of Operations
R/D	Record of Discussions
SAED	National Company for the Development and Exploitation of the Senegal River Delta, Senegal River and Falémé Valley Lands
SV	Village Section

1. Outline of the Final Evaluation

1-1 Objectives of the Evaluation

The evaluation activities were performed as follows:

(1) To collect necessary information and confirm the progress of inputs, activities and implementation process on the basis of Project Design Matrix(PDM) and Plan of Operation (PO) of the PAPRIZ

(2) To assess the achievement of Output and project purpose and overall goal

(3) To analyze and evaluate the overall effect of the PAPRIZ by the five evaluation criteria (Relevance, Effectiveness, Efficiency, Impact and Sustainability)

(4) To make recommendation based on the results of evaluation and identify lessons learnt useful for new projects and/or other ongoing projects

1-2 Schedule of the Evaluation

The schedule of the mission is indicated as below;

Day	Date	Time	Activities
28 Oct	Mon	09:00	Courtesy Call to MAER Meeting with JICA Senegal Office Move to Saint Louis
29 Oct	Tues	10:00 15:30	Courtesy Call to SAED Head Quarter Interview with SAED counterparts
30 Oct	Wed	08:00 10:00 PM	Move to Debi-Tiguette Interview with Debi-Tiguette union farmers and SAED Dagana counterparts Site visit of Debi-Tiguette irrigation scheme
31 Oct	Thus	15:30	The 1st Joint Evaluation Team meeting Meeting on Project Progress with SAED counterparts
1 Nov	Fri	08:00 11:30 15:00	Move to Podor Courtesy Call to SAED Podor Interview with SAED Podor counterparts Visit irrigation schemes at Podor (improvement of irrigation scheme site by PAPRIZ) Discussion with farmers
2 Nov	Sat	08:30 10:30 12:00 16:00	Visit GIE woman's rice milling group Visit Mbagam warehouse for paddy (Spanish aid) Visit Coumba Nor Thiam Rice Mill near Rosso (Grading machines were introduced by PAPRIZ) Visit Debi-Tiguette irrigation scheme
3 Nov	Sun	08:00	Drafting of the Evaluation Report Japanese Evaluation Team meeting
4 Nov	Mon	08:00	Drafting of the Evaluation Report
5 Nov	Tues		Discussion with Japanese expert on Evaluation Report

		11:00	The 2nd Joint Evaluation Team meeting Drafting of Minutes with Evaluation Team Modification of the Minutes and Evaluation Report
6 Nov	Wed	09:00	The 3rd Joint Evaluation Team meeting Signing of the Joint Evaluation Report Move to Dakar
7 Nov	Thus	AM 16:00	Signing of the Minutes of Meeting with MAER Report to Embassy of Japan
8 Nov	Fri	AM	Report to JICA Senegal Office

1-3 Members of the Evaluation

(1) Members of Senegalese side

No.	Name	Job title	Occupation
1	Mr. Seyni NDAO	Team Leader	Director, Development and Rural Planning Department (DDAR), SAED
2	Mr. Samba KANTE	Member	Technical Advisor, PNAR Coordinator, MAER
3	Mr. Waly DIOUF	Member	Technical Advisor, MAER
4	Mr. Amadou THIAM	Member	Head of Monitoring and Evaluation Unit, SAED
5	Mr. Salif DIACK	Member	Responsible, Rice Programme, SAED
6	Mr. Oumar Samba SOW	Member	Chief, Division of Support to Professionalization, SAED
7	Mr. El hadji MAR	Member	Officer, Department of Irrigation Schemes and Facilities(DAIH), SAED

(2) Members of Japanese side

No.	Name	Job title	Occupation
1	Mr. Kazunao Shibata	Team Leader	Senior representative, JICA Senegal Office
2	Mr. Motonori Tomitaka	Irrigated rice cultivation, Marketing, Post-harvest	Senior Advisor, JICA
3	Mr. Nobuo Sambe	Irrigation Engineer	Senior Advisor, JICA
4	Mr.Satoshi Nagashima	Evaluation Analysis	Consultant, Icons Ltd

5	Mr. Koji Sunazaki	Evaluation Coordinator 1	Representative, JICA Senegal Office
6	Ms. Marina Bambara	Evaluation Coordinator 2	Consultant, JICA Senegal Office

1-4 Method of the Evaluation

The Project was evaluated by the Japanese and Senegalese Joint Evaluation Team (hereafter referred as "the Team"). The Team was composed by seven (7) members from Japan side and seven (7) members from Senegalese side. The Team visited the Project sites and carried out a series of interviews and discussions with farmers' organizations, womens' groups, rice mills companies and also with SAED counterparts in Saint Louis, Dagana and Podor. The evaluation was designed to verify the following aspects based on the PDM and Operations Plan;

1) Achievements of the Project on the basis of indicators of PDM for evaluation (Annex 1) and Evaluation grid (Annex 3);
2) Process of the Project implementation; and
3) The five evaluation criteria.

The definition of the five criteria is as follows;

Relevance	The relevance of the plan for the Project has been reviewed in terms of validity of the Project objective and overall goal, in connection with the development policy of the Government of Senegal, the political support of the Government of Japan, the needs of beneficiaries, and the logical coherence of the Project.
Effectiveness	Effectiveness is considered by assessing the extent of achievement of the Project objective and the clarification of the relationship between the Project purpose and the outputs.
Efficiency	The efficiency of the implementation of the Project is analyzed with focus on the relationship between outputs and inputs in terms of time, quality and quantity of inputs.
Impact	The impact of the Project is evaluated on the basis of positive and negative influences generated by the Project.
Sustainability	Sustainability of the Project is evaluated on the political, institutional, financial and technical aspects for examining how the achievements of the Project would be sustainable after the period of the Project.

1-5 Revised contents of PDM (version 01) for evaluation

PDM for evaluation (PDMe) was prepared and proposed for the final evaluation of the Project. Some indicators of the PDM (version 01), which was revised after the mid-term review of the Project, didn't describe the whole picture of the Project. The Evaluation Team has agreed on the PDMe (Annex 1) for the evaluation in the 1st Joint Evaluation Team meeting on October 31, 2013 as follows;

Table1: Comparison of indicators between PDM and PDMe

	PDM (version 01)	PDMe
Specific	15% increase in the paddy production	No change

objective	per hectare in the pilot sites	
	20% increase in the incomes of rice farmers of the pilot sites	No change
	15% increase in the paddy production in the pilot sites	No change
		Quantity of sold milled rice and number of shops selling quality milled rice (20%-increase in the number of retailers and quality of local rice milled by beneficiary rice millers.)
		Quantity of milled rice sold and number of shops selling local quality milled rice (20% increase in quantity of local rice milled by beneficiary rice millers).
		The number of rice millers using the credit system (available for all members of the rice millers' association)
Output 1	Increase in paddy production per hectare in the pilot sites (15% increase)	Removed
	Efficiency of quantities of inputs used in the pilot sites (50% of the farmers in pilot sites)	No change
	The number of agricultural advisers using the proposed practical manuals (80% of agricultural advisors trained)	No change
Output 2	Elaboration of the design plans and small-scale irrigation scheme rehabilitation works (Debi-Tiguette scheme and Podor 12 pilot sites)	Elaboration of the design plans and small-scale irrigation scheme repair and improvement works (Debi-Tiguette scheme and Podor 12 pilot sites)
	Estimation of the rehabilitation works of small-scale irrigation schemes in Podor (12 pilot sites)	Estimation of the repair and improvement works of small-scale irrigation schemes in Podor (12 pilot sites)
	Evolution of sown areas (100% increase in 12 pilot sites) and fuel utilisation rate of power driven pumps in the pilot sites (20% decrease in fuel consumption per ha in 12 pilot sites)	No change
	Utilisation of scheme planning and management manuals by engineers of SAED and rice farmers (60% of 22 GIE of the pilot sites)	No change
		Maintenance and management has been continued after the participatory irrigation repair and improvement works in Pilot areas, and repair and improvement manual for small and large scale irrigation area is prepared based on the contents of technical transferring
Output 3	No change	

Output 4	Number of rice mills sorting rice (100% of beneficiary rice millers)	No change
	The number of distributors and distribution volume of local quality milled rice (20% increase in both numbers of distributors who purchased milled rice from beneficiary rice millers and distribution volumes of sorted local rice milled by beneficiary rice millers.)	Rearranged to the Project purpose
	Quantity of milled rice sold and number of shops selling local quality milled rice. (20% increase in both number of retailers and quantity of local rice milled by beneficiary rice millers.)	Rearranged to the Project purpose
	Number of rice millers using the credit system (available for any of the members of Rice Millers Association.)	No change
		Local rice is promoted.
		Number of distribution channels created between rice millers and middlemen by promotion activities.

2. Outline of the Project

2-1 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 increase 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". 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, 2013, it was planned to conduct the final evaluation of the Project.

2-2 Summary of the Project

The Project design is drawn in the PDM (attached as Annex 2), which was modified in Mid-term review and authorized by the forth Joint Steering Committee held on October 3, 2012 as Version 01. Its summary is as follows:

(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

2-3 Duration of the Project

Fifty one (51) months from February 2010 to March 2014

2-4 Implementing Agencies of the Project

Société Nationale d'Aménagement et d'Exploitation des Terres du Delta du Fleuve Sénégal et des Vallées du Fleuve Sénégal et de la Falémé (SAED)

2-5 Target Area of the Project

Saint Louis region, in the Dagana and Podor

2-6 Pilot Sites

Debi-Tiguette Irrigation Schemes, 12 PIV/PIPs in Podor

2-7 Target Groups of the Project

Rice producers of Debi-Tiguette pilot site (the big irrigation scheme) and Podor pilot sites (small irrigation schemes), rice millers, agricultural advisers (SAED)

3. Achievements and Implementation Processes

3-1 Achievements of the Project

3-1-1 Inputs

(1) Input from Japan side

1) Japanese experts

Japanese experts have been dispatched by Japan side. The detail is shown in "Annex 5: List of the Japanese Experts dispatched".

2) Machinery and Equipment

Machinery and Equipment have been procured by Japan side as "Annex 6: List of Machinery and Equipment".

3) Trainings in Japan

Trainings in Japan have been organized by Japan side as "Annex 7: List of counterparts benefiting from trainings in Japan".

4) Operational cost

Operational cost has been borne by Japan side as "Annex 8: Operational cost spent by the Project".

(2) Input from Senegal side

Counterpart personnel

Counterparts have been assigned by Senegal side as "Annex 9: Counterpart personnel".

3-1-2 Achievements of the Expected Outputs

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

(1) Efficiency of quantities of inputs used in the pilot sites

More than 50% of the farmers in the pilot sites have applied inputs recommended in the manual through a series of trainings provided by the Project.

(2) The number of agricultural advisors using the proposed practical manuals (80% of agricultural advisors trained)

SAED has distributed revised version manual to all agricultural advisors in March 2011, and rice cultivation techniques were disseminated by utilizing the manual in whole Senegal River Valley. Therefore it is assumed that all agricultural advisors utilize the manual. The Project conducted the training on the use of the Manual to agricultural advisors of SAED regional offices.

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

(1) Elaboration of the design plans and small-scale irrigation scheme repair and improvement works (Debi-Tiguette scheme and Podor 12 pilot sites)

For the first group of Podor (6 pilot sites), a facility improvement plan was prepared. The works of repair and improvement started in March 2011 and completed in January 2013. As for the second group (6 pilot sites), the works started in October 2012 and will be completed in December 2013. Training through the works to farmers is on-going accordingly.

(2) Estimation of the repair and improvement works of small-scale irrigation schemes in Podor (12 pilot sites)

Estimation of the construction cost for 12 pilot sites in Podor (554ha) has been completed and actual expenditures of the works are presented in the Table 2 below.

Table 2: Scale and the total cost of repair and improvement works in Podor

	Pilot sites	Developed area (ha)	Total costs (1,000FCFA)
Group 1	Diatar IT2	50	12,780
	Diatar 2	38	38,240
	Donaye IT4	50	21,134
	Diama Alwaly Korkadie	44	31,145
	Refugies de Moundouwaye	25	21,583
	Ngane	45	21,583
	Sub-total	252	146,465
Group 2	Diatar IT1	50	9,123
	Donaye IT2	50	9,123
	Donaye IT1	50	9,123
	Mboyo 4	47	9,123
	Mboyo 3	40	9,123
	Guede Ouro	41	9,123
	Sub-total	278	54,738
Total		530	201,203

Source: PAPRIZ

(3) Maintenance and management of irrigation schemes have been continued after the participatory irrigation repair and improvement works in the pilot sites, and repair and improvement manuals for small and large scale irrigation area is prepared based on the contents of the technology transfer.

1) Débi-Tiguette pilot site

Though irrigation and drainage facilities require some repairs, they are still functioning. Despite of organizational and financial problems, the Débi-Tiguette union has conducted operation and maintenance of the facilities.

2) Podor pilot sites

After the repair and improvement works, training of SAED staff and the farmers was conducted to enhance the capacities for maintenance of the facilities.

3) Manuals

By October 2013, 12 volumes of manuals were drafted based on the handouts in the workshops and practical guidance in the sites. The manuals consist of small scale irrigation and large scale irrigation for SAED staff and farmers. Currently, SAED staff is reviewing the contents.

(4) Expansion of sown areas (100% increase in 12 pilot sites) and fuel utilisation rate of power driven pumps in the pilot sites (20% decrease in fuel consumption per ha in 12 pilot sites)

Rice planted area of Group 1 (250ha) has expanded to 85 % from 60ha (rainy season in 2010) to 111ha (rainy season in 2011). Rice planted area of the rainy season in 2012 was 86ha of which only 66ha was harvested due to flood damage. The cost of fuel consumption of Group1 was reduced by 29% from 2010 to 2012. On the other hand, one of Group 2 (6 GIE) is not yet verified at the time of the final evaluation.

Table 3: Fuel consumption of pumps and planted areas of the pilot sites in Podor

Descriptions	Unit	2010 Rainy	2011 Rainy	2012 Rainy
Fuel consumption (FC)	liter	8,395	11,541	6,520
Planted area	ha	60	111	86*
FC per planted area	liter/ha	140	104	99**
Fuel cost per ha	FCFA/ha	84,000	62,400	59,400

Source: PAPRIZ

* Harvest area was 66ha.

** This value is calculated based on the harvest area.

(5) Utilisation of scheme repair and improvement manuals by engineers of SAED and rice farmers (60% of 22 GIEs of the pilot sites)

Currently, SAED engineers utilize the manuals for their activities. The manual for farmers was utilized during the procedure at each stage.

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

(1) Balance sheets of rice farming activities of producers' organisations and their members in the pilot sites (22 GIEs of the pilot sites and 5 farmers for each GIE)

For 16 GIEs of Débi-Tiguette and Group 1 in Podor, a baseline survey was conducted in early stage of the Project, and currently, a monitoring survey for 5 farmers of each GIE is being carried out. After the balance analysis for these 16 GIEs, the improvement situation will be confirmed quantitatively based on the comparison with the baseline.

On the other hand, a baseline survey of Group 2 in Podor was conducted in July 2012. However, construction works in Group 2 are still on-going. In parallel, rice cultivation trainings have been done.

According to a sample survey, the net incomes of rice farmers in Podor are improved. The balance of income and expenditure of GIEs in Podor is improved as a result of reduction of fuel consumptions.

As for the Débi-Tiguette scheme, it is difficult to prove improvement of balance sheet at present, because the management committee is at temporary and transitional stage and rice farmers do not currently cultivate in the scheme. SAED Dagana directs the effort to reinforce financial management capacities of the committee. It is expected that improvement of balance will be confirmed in the near future.

(2) Eligibility and utilisation rates of the credit system by farmers (60% of farmers of the pilot sites)

In 9 GIEs of Débi-Tiguette pilot sites, all farmers (100%) have used the loan system from CNCAS or CMS after lying fallow for last 3 cropping seasons. On the other hand, utilization rate of the loan system has remained at 44% in the 6 pilot sites Podor. Some farmers of pilot sites of Podor conduct their cultivation activities by their own expenses. In total, utilization rate in the whole pilot sites is more than 60%.

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

(1) Number of rice mills sorting rice (100% of beneficiary rice millers)

Twenty-one (21) rice millers, who belong to Rice Millers Association (ARN), were installed with rice grading machine by the Project. They started to operate the rice grading machines in the 2013 dry season.

(2) Number of rice millers using the credit system (available for any of the members of Rice Millers Association)

The rice millers paid 20% of 220 million FCFA of the procurement cost of grading machines. The total contribution standing at 44 million FCFA for ARN is used as seed fund for the established credit system. The fund is currently kept in CNCAS account.

(3) Local rice is promoted

The Project participated in domestic exhibition (FIARA and FIDAK) with SAED and the promotion activities were carried out for about 3000 of consumers in every exhibition at Dakar. The Project conducted local rice promotion as follows:

1) Juvenile pictures contest of Thieboudienne to advertise the local rice for 2,000 students of primary schools in 29 schools;
2) Local rice campaign using mass media; and
3) Improvement of the rice package.

(4) Number of distribution channels created between rice millers and middlemen by promotion activities

For about 12 rice millers and distributors related to local rice campaign in January 2013, marketing workshops was conducted. In addition, in the event of February 2013, a forum for matching was provided to meet with distributors in urban areas. According to a survey in August 2013, definitive increase of the distribution channels was observed.

Table 4: Change of distribution channels between rice millers and middlemen

	Result in 2010	Result in 2013
Number of distribution channels between rice millers and middlemen	21	45

Source: PAPRIZ

3-1-3 Prospects to Achieve the Project Purpose

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

(1) Fifteen (15) % increase in the paddy production per hectare in the pilot sites

In the pilot sites of Group1 in Podor, the average paddy yields were increased over 15% between 2010 and 2012 in both dry and rainy seasons. However, in Group 2 in Podor and the Débi-Tiguette scheme, rice farming is currently not operated due to delay of rehabilitation works in Podor and management problems of the Union in Débi-Tiguette.

Table 5: Average paddy yield (ton/ha)

Pilot Sites		2009		2010		2011		2012	
		Dry	Rainy	Dry	Rainy	Dry	Rainy	Dry	Rainy
Debi-Tiguette	Number of sampled producers	90	90	9	9	9	9	-	-
	Average paddy yield (ton/ha)	5.4	3.6	-	5.9	5.7	-	-	-

Podor (G1)	Number of sampled producers	123	123	91	54	-	122	82	56
	Average paddy yield (ton/ha)	5.4	5.0	4.8	4.4	-	4.2	5.8	5.0

NB: Producers sampled in 2009 are different from those sampled in 2010, 2011 and 2012.

(2) Twenty (20) % increase in the incomes of rice farmers of the pilot sites

In the pilot sites (Group 1) in Podor, the average paddy yield has increased more than 15% between 2011 and 2012 and the fuel for pump was saved about 30%. Therefore, income of rice farming has increased.

(3) Fifteen (15) % increase in the paddy production in the pilot sites

The planted area of paddy in Podor in rainy season fluctuated in past 3 years as follows.

Table 6: Rainy season paddy planted area and production in Podor (Group 1)

	2010	2011	2012
Number of pilot sites	5	6	4
Paddy cultivated area (ha)	60	111	86
Increasing rate from 2010 (%)	100	185	143
Paddy production (ton)	252	455	330
Increasing rate from 2010 (%)	100	181	131

Source: PAPRIZ

The paddy planted area increased by the repair and improvement of irrigation facilities. Paddy production has increased from 252 ton to 455 ton at Group 1 in Podor. Paddy planted area in 2012 reduced due to floods.

(4) The number of distributor and distribution volume of local quality milled rice in the main sales area (20% increase in distribution volumes of sorted local rice milled by beneficiary rice millers)

The amount of annual paddy processing in 21 rice mills increased from 72,200 tons to 88,650 tons which were provided with rice grading machines

Table 7: Annual paddy processing amount in 21 rice mills (ton)

2011	2012	2013 (estimate)
72,200	75,000	88,650

Source: PAPRIZ

It is estimated that the total amount of milled rice has increased by 20.4 %, and rice distributed volume has also increased in the same ratio.

(5) Quantity of milled rice sold and number of shops selling local quality milled rice (20% increase in quantity of local rice milled by beneficiary rice millers).

After installation of the rice grading machines, the quantity and the quality are monitored at 14 stores in Dakar and 5 stores in Saint Louis which deal with the local rice. Sales records were provided from 9 stores out of 14 stores in Dakar. As shown in the table 8 below, definitive increase of the sales quantity of local rice was confirmed.

Table 8: Change of sales quantity of local rice in the 9 stores in Dakar

	2010	2011	2012	2013
Sales quantity in the 9 stores in Dakar (ton)	704	1,143	1,342	1,441

3-2 Implementation Process of the Project

(1) Method of technical transferring

In the course of implementation of the Project, technical transfer has been made in collaboration of Japanese experts and SAED counterparts in the fields. Throughout the process of technical transfer, good relations were formed among stakeholders. Based on the experiences of technical transfers, manuals were developed and revised, then distributed to the stakeholders.

(2) Ownership of stakeholders

SAED counterparts were assigned in each component of the Project. They participated in the major activities and contributed to smooth implementation of the Project. There were other stakeholders such as GIE leaders, farmers and rice millers who received directly technical transfer under the Project. They have shown their ownership through pursuing improvement of irrigation facilities, rice cultivation practices, qualities of rice, etc. For sustaining Outputs of the Project, there are issues of budget and human resources limitation.

(3) Relation with other donors

French Development Agency (AFD) is currently carrying out a feasibility study (F/S) on rural development in Podor. The Project has provided them of information on farmers participatory work in small-scale irrigation development. Based on the results of the Project, GoS, JICA and AFD have agreed to collaborate with each other on promotion of rice sector in Senegal River Valley.

4. Results of the Evaluation

4-1 Results of the Evaluation based on the Five Criteria

4-1-1 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).

4-1-2 Effectiveness

Effectiveness is relatively high as following reason.

Project purpose was partially achieved as described in section 3-1-3. In Podor (Group 1), all indicators were achieved. In Podor (Group 2) and the Débi-Tiguette scheme, the achievements were limited mainly due to the external factors such as security issues surrounding the Project site, organizational problem of Débi-Tiguette union and floods.

The recognition of local rice was improved and the distribution quantities have 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 favour market gardening with high added value and cash crops in the dry season.

4-1-3 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 its achievement. Quality, quantity and timing of inputs were as planned.

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.

4-1-4 Impacts

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.

4-1-5 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.

Technology transfer to focal points of SAED was sufficiently carried out under the Project. As a result, they are capable of conducting training, monitoring and evaluation of farmers as well as reviewing manuals.

(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.

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.

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.

7. Lessons Learnt

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

The Project has addressed the various issues of not only public sector but also 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.

ANNEX -1: Project Design Matrix (PDMe)

Project Title : Project for the Improvement of Productivity in the Irrigation Schemes
Duration of the Project : 4 years, from January 2010
Target Area : Dagana and Podor Departments in the Saint-Louis Region
Pilot Sites : Debi-Tiguette Irrigation Schemes, 12 PIV/PIPs in Podor
Version: preliminary: November 2009, Revised version 01: October 2012 , Revised version PDMe: November 2013

Summary of the Project	Indicators	Means of verification	Assumptions
Overall Objective Improvement of the rice farming productivity and profitability in the Senegal River Valley	• 15% increase in the paddy production in 2018 compared to 2008, in the Senegal River Valley • 20% increase in the incomes of producers in 2018 compared to 2008, in the Senegal River Valley	• The statistical documents of SAED	• The Japanese inputs and activities are carried out as planned within the framework of the Food Security Programme: development of small scale irrigation schemes, dispatch of JOCVs, etc. • The inputs and activities of other donors and Government of Senegal are carried out as planned in the Senegal River Valley • The extension of the Projects' results are carried out
Specific Objective Improvement of rice farming productivity and profitability in the Dagana and Podor Departments	• 15% increase in the paddy production per hectare in the pilot sites • 20% increase in the incomes of rice farmers of the pilot sites • 15% increase in the paddy production in the pilot sites • The number of distributor and distribution volume of local quality milled rice in the main sales area (20% increase in distribution volumes of sorted local rice milled by beneficiary rice millers.) • Quantity of milled rice sold and number of shops selling local quality milled rice (20% increase in quantity of local rice milled by beneficiary rice millers).	• The statistical documents of SAED • Results of the sampled rice farmers follow-up survey	The Rice Self-Sufficiency Policy as part of the Food Security Programme is a priority

Expected results			
1. Establishment of a high productivity rice farming in the pilot sites	• Efficiency of quantities of inputs used in the pilot sites (50% of the farmers in pilot sites) • The number of agricultural advisers using the proposed practical manuals (80% of agricultural advisors trained)	• Reports by the Japanese Experts and counterparts • The statistical documents of SAED	• The stability of the rice production cost with the stability of the price of agricultural inputs. • Security of the pilot area won't be deteriorated. • The Union of Framers' Organisations works well. Twenty two (22) GIE are operational, i.e. 9 GIE of Debi-Tiguette Scheme and 13 GIE of 12 pilot sites in Podor
2. Establishment of appropriate mechanisms for the planning of rehabilitations, management and maintenance in the pilot sites	• Elaboration of the design plans and small-scale irrigation scheme repair and improvement works (Podor 12 pilot sites) • Estimation of the repair and improvement works of small-scale irrigation schemes in Podor (12 pilot sites) • Maintenance and management has been continued after the participatory irrigation repair and improvement works in Pilot areas, and repair and improvement manual for small and large scale irrigation area is prepared based on the contents of the technical transferring. • Evolution of sown areas (100% increase in 12 pilot sites) and fuel utilisation rate of power driven pumps in the pilot sites (20% decrease in fuel consumption per ha in 12 pilot sites) • Utilisation of scheme repair and improvement manuals by engineers of SAED and rice farmers (60% of 22 GIE of the pilot sites)	• Reports by the Japanese Experts and counterparts • The new development plans compared to the formers ones • Record of the pumping station service in the pilot schemes	
3. Implementation of measures to improve the financial management of farmers	• Balance sheets of rice farming activities of producers' organisations and their members in the pilot sites(22 GIE of the pilot sites and 5 farmers for each GIE) • Eligibility and utilisation rates of the credit system by farmers (60% of farmers of the pilot sites)	• Reports by the Japanese Experts and counterparts • The statistical documents of SAED • Service records of the farmers' new micro credit system	
4. Establishment of appropriate distribution channels for quality milled rice that meets the needs of Senegalese consumers	• Number of rice mills sorting rice (100% of beneficiary rice millers) • Number of rice millers using the credit system (available for any of the members of Rice Millers Association.) • Promotion of local rice. • Number of distribution channels created between rice millers and middlemen by promotion activities.	• Reports by the Japanese Experts and counterparts • The statistical documents of ARM	

Activities	Inputs	
1-1. Establishing a rice farming improvement and supervision plan based on the rice farming practical manual elaborated by the Africa Rice Centre (former WARDA) and SAED (National Company for the Development and Exploitation of the Senegal River Delta, Senegal River and Faleme Valley Lands) 1-2. Elaborating an appropriate model for each scheme, which implements a rice farming improvement plan in the following areas with agricultural advisers of SAED: a) Optimising investments in inputs (fertilizers, pesticides, etc.) b) Studying and implementing measures to reduce cultivation and harvest losses 1-3. Building the farm management capacities of producers' organisations in collaboration with agricultural advisers of SAED. 1-4. Building the training capacities of SAED in order to improve farm advisory in the fields mentioned in 1-3. 1-5. Dissemination of the rice farming model in the areas around the pilot schemes by the SAED agricultural advisers. 2-1. Choosing small-scale irrigation schemes as a result of a basic data collection study on the situation of schemes. 2-2. Supporting the planning of the design and execution of rehabilitation works in the former schemes by studying the possibilities of providing profitable and low-cost equipments and making a quantitative assessment 2-3. Carrying out the rehabilitation works of small-scale schemes targeted by SAED in collaboration with JICA based plans mentioned in 2-2 2-4. Carrying out and supporting the elaboration of plans for water management in the Valley irrigation schemes 2-5. Supervising and training the staff members or paid employees of the groupings in charge of the management of pilot schemes in the following fields: a) Water management b) Maintenance of equipments c) Organisational capacity building of groupings 2-6. Monitoring-evaluation of the rehabilitated pilot schemes and water management 2-7. Establishing appropriate models of management and maintenance of equipments in the pilot large-scale and small-scale irrigation schemes. 2-8. Putting in place an extension system for this model and proposing manuals and other extension materials 2-9. Disseminating the management and maintenance model of irrigation schemes located around the pilot schemes based on extension methods and materials mentioned in 2-8.	**Senegalese Side** ➢ Senegalese counterparts 1) Project Coordination (Project Team Leader)/Irrigated Agriculture 2) Rice farming/Improvement of farm management 3) Water management/Rehabilitation works 4) Farmers' Organisation/ Microfinance 5) Milling/post-harvest operations 6) Distribution and marketing 7) Others if necessary ➢ Offices in SAED, DAGANA and PODOR delegations ➢ Participation of agricultural advisers in training sessions ➢ Budget allocation for the project implementation and extension of the results	

Activities	Inputs	
3-1. Carrying out a socio-economic survey on the current situation of the financial management of farms in the pilot sites. 3-2. Supervising and training producers' groupings and their members in the following areas: a) Improvement of the financial management through the market information promotion b) Financial management improvement through the production of financial statements and balance sheets by the Management and Rural Economy Centres of the Valley (known as CGERs) c) Profitability improvement through the production cost rationalization d) Improvement of the access to credit capacity e) Improvement of the input supply and marketing of productions 3-3. Building the capacities of agricultural advisers in the fields specified in 3-2. 3-7. Carrying out the monitoring-evaluation of producers' financial management and credit system 3-9. Taking measures to improve the financial management and credit system and disseminating them in the areas around the pilot schemes 4-1. Supervising and training rice millers in the following areas: a) Improvement of the financial management: The financial statements and balance sheets of the production through the CGERs (Management and Rural Economy Centres) b) Use and maintenance of equipments c) Increase in the annual utilisation rate of machines d) Rice sorting and labelling e) Quality monitoring system 4-2. Providing rice millers, through SAED, with complementary equipments that are suitable for their processing units 4-3. Agreeing with the rice millers' association and SAED about the terms and conditions of the equipment transfer mentioned in 4-2. 4-4. Establishing and starting the pilot credit system meant for rice millers with the counterpart funds mobilized for the allocation of equipments mentioned in 4-2, in collaboration with the existing local financial institutions 4-5. Promoting the local rice sale through: a) Advertisement (awareness-raising campaigns, fairs, etc.), b) Improvement of the packaging and local rice image, c) Building the capacities of organisations in charge of the local rice marketing 4-6. Improving the local rice collection and distribution by carrying out the following actions: a) A study on milled rice financing and marketing channels and role of the different stakeholders: producers and traders b) Improvement of the rice collection and marketing system thanks to an efficient use of information on the rice market. c) Review of rice market system through the rice distribution improvement	**Japanese Side** ➢ Dispatch of Japanese experts 1) Direction/Irrigated Agriculture / 2) Rice farming/Improvement of farm management 3) Water management/Rehabilitation works 4) Farmers' Organisation/ Microfinance 5) Milling/post-harvest operations 6) Distribution and marketing 7) Coordination ➢ Training of the Senegalese staff in Japan ➢ Provision of equipment ➢ Budget allocation to implement the Project	

ANNEX -2: Project Design Matrix (PDM)

Project Title : Project for the Improvement of Productivity in the Irrigation Schemes
Duration of the Project : 4 years, from January 2010
Target Area : Dagana and Podor Departments in the Saint-Louis Region
Pilot Sites : Debi-Tiguette Irrigation Schemes, 12 PIV/PIPs in Podor
Version: preliminary: November 2009, Revised version 01: October 2012

Summary of the Project	Indicators	Means of verification	Assumptions
Overall Objective Improvement of the rice farming productivity and profitability in the Senegal River Valley	• 15% increase in the paddy production in 2018 compared to 2008, in the Senegal River Valley • 20% increase in the incomes of producers in 2018 compared to 2008, in the Senegal River Valley	• The statistical documents of SAED	• The Japanese inputs and activities are carried out as planned within the framework of the Food Security Programme: development of small scale irrigation schemes, dispatch of JOCVs, etc. • The inputs and activities of other donors and Government of Senegal are carried out as planned in the Senegal River Valley • The extension of the Projects' results are carried out
Specific Objective Improvement of rice farming productivity and profitability in the Dagana and Podor Departments	• 15% increase in the paddy production per hectare in the pilot sites • 20% increase in the incomes of rice farmers of the pilot sites • 15% increase in the paddy production in the pilot sites	• The statistical documents of SAED • Results of the sampled rice farmers follow-up survey	The Rice Self-Sufficiency Policy as part of the Food Security Programme is a priority

Expected results			
1. Establishment of a high productivity rice farming in the pilot sites	• Increase in paddy production per hectare in the pilot sites (15% increase) • Efficiency of quantities of inputs used in the pilot sites (50% of the farmers in pilot sites) • The number of agricultural advisers using the proposed practical manuals (80% of agricultural advisors trained)	• Reports by the Japanese Experts and counterparts • The statistical documents of SAED	• The stability of the rice production cost with the stability of the price of agricultural inputs • The Union of Framers' Organisations works well Twenty two (22) GIE are operational, i.e. 9 GIE of Debi-Tiguette Scheme and 13 GIE of 12 pilot sites in Podor The rice price controls are not effective
2. Establishment of appropriate mechanisms for the planning of rehabilitations, management and maintenance in the pilot sites	• Elaboration of the design plans and small-scale irrigation scheme rehabilitation works (Debi-Tiguette scheme and Podor 12 pilot sites) • Estimation of the rehabilitation works of small-scale irrigation schemes in Podor (12 pilot sites) • Evolution of sown areas (100% increase in 12 pilot sites) and fuel utilisation rate of power driven pumps in the pilot sites (20% decrease in fuel consumption per ha in 12 pilot sites) • Utilisation of scheme planning and management manuals by engineers of SAED and rice farmers (60% of 22 GIE of the pilot sites)	• Reports by the Japanese Experts and counterparts • The new development plans compared to the formers ones • Record of the pumping station service in the pilot schemes	
3. Implementation of measures to improve the financial management of farmers	• Balance sheets of rice farming activities of producers' organisations and their members in the pilot sites(22 GIE of the pilot sites and 5 farmers for each GIE) • Eligibility and utilisation rates of the credit system by farmers (60% of farmers of the pilot sites)	• Reports by the Japanese Experts and counterparts • The statistical documents of SAED • Service records of the farmers' new micro credit system	
4. Establishment of appropriate distribution channels for quality milled rice that meets the needs of Senegalese consumers	• Number of rice mills sorting rice (100% of beneficiary rice millers) • The number of distributors and distribution volume of local quality milled rice (20% increase in both numbers of distributors who purchased milled rice from beneficiary rice millers and distribution volumes of sorted local rice milled by beneficiary rice millers.) • Quantity of milled rice sold and number of shops selling local quality milled rice. (20% increase in both number of retailers and quantity of local rice milled by beneficiary rice millers. • Number of rice millers using the credit system (available for any of the members of Rice Millers Association.)	• Reports by the Japanese Experts and counterparts • The statistical documents of ARM	

Activities	Inputs	
1-1. Establishing a rice farming improvement and supervision plan based on the rice farming practical manual elaborated by the Africa Rice Centre (former WARDA) and SAED (National Company for the Development and Exploitation of the Senegal River Delta, Senegal River and Faleme Valley Lands) 1-2. Elaborating an appropriate model for each scheme, which implements a rice farming improvement plan in the following areas with agricultural advisers of SAED: a) Optimising investments in inputs (fertilizers, pesticides, etc.) b) Studying and implementing measures to reduce cultivation and harvest losses 1-3. Building the farm management capacities of producers' organisations in collaboration with agricultural advisers of SAED. 1-4. Building the training capacities of SAED in order to improve farm advisory in the fields mentioned in 1-3. 1-5. Dissemination of the rice farming model in the areas around the pilot schemes by the SAED agricultural advisers. 2-1. Choosing small-scale irrigation schemes as a result of a basic data collection study on the situation of schemes. 2-2. Supporting the planning of the design and execution of rehabilitation works in the former schemes by studying the possibilities of providing profitable and low-cost equipments and making a quantitative assessment 2-3. Carrying out the rehabilitation works of small-scale schemes targeted by SAED in collaboration with JICA based plans mentioned in 2-2 2-4. Carrying out and supporting the elaboration of plans for water management in the Valley irrigation schemes 2-5. Supervising and training the staff members or paid employees of the groupings in charge of the management of pilot schemes in the following fields: a) Water management b) Maintenance of equipments c) Organisational capacity building of groupings 2-6. Monitoring-evaluation of the rehabilitated pilot schemes and water management 2-7. Establishing appropriate models of management and maintenance of equipments in the pilot large-scale and small-scale irrigation schemes. 2-8. Putting in place an extension system for this model and proposing manuals and other extension materials 2-9. Disseminating the management and maintenance model of irrigation schemes located around the pilot schemes based on extension methods and materials mentioned in 2-8.	**Senegalese Side** ➢ Senegalese counterparts 1) Project Coordination (Project Team Leader)/Irrigated Agriculture 2) Rice farming/Improvement of farm management 3) Water management/Rehabilitation works 4) Farmers' Organisation/ Microfinance 5) Milling/post-harvest operations 6) Distribution and marketing 7) Others if necessary ➢ Offices in SAED, DAGANA and PODOR delegations ➢ Participation of agricultural advisers in training sessions ➢ Budget allocation for the project implementation and extension of the results	

Activities	Inputs	
3-1. Carrying out a socio-economic survey on the current situation of the financial management of farms in the pilot sites. 3-2. Supervising and training producers' groupings and their members in the following areas: a) Improvement of the financial management through the market information promotion b) Financial management improvement through the production of financial statements and balance sheets by the Management and Rural Economy Centres of the Valley (known as CGERs) c) Profitability improvement through the production cost rationalization d) Improvement of the access to credit capacity e) Improvement of the input supply and marketing of productions 3-3. Building the capacities of agricultural advisers in the fields specified in 3-2. 3-7. Carrying out the monitoring-evaluation of producers' financial management and credit system 3-9. Taking measures to improve the financial management and credit system and disseminating them in the areas around the pilot schemes 4-1. Supervising and training rice millers in the following areas: a) Improvement of the financial management: The financial statements and balance sheets of the production through the CGERs (Management and Rural Economy Centres) b) Use and maintenance of equipments c) Increase in the annual utilisation rate of machines d) Rice sorting and labelling e) Quality monitoring system 4-2. Providing rice millers, through SAED, with complementary equipments that are suitable for their processing units 4-3. Agreeing with the rice millers' association and SAED about the terms and conditions of the equipment transfer mentioned in 4-2. 4-4. Establishing and starting the pilot credit system meant for rice millers with the counterpart funds mobilized for the allocation of equipments mentioned in 4-2, in collaboration with the existing local financial institutions 4-5. Promoting the local rice sale through: a) Advertisement (awareness-raising campaigns, fairs, etc.), b) Improvement of the packaging and local rice image, c) Building the capacities of organisations in charge of the local rice marketing 4-6. Improving the local rice collection and distribution by carrying out the following actions: a) A study on milled rice financing and marketing channels and role of the different stakeholders: producers and traders b) Improvement of the rice collection and marketing system thanks to an efficient use of information on the rice market. c) Review of rice market system through the rice distribution improvement	**Japanese Side** ➢ Dispatch of Japanese experts 1) Direction/Irrigated Agriculture / 2) Rice farming/Improvement of farm management 3) Water management/Rehabilitation works 4) Farmers' Organisation/ Microfinance 5) Milling/post-harvest operations 6) Distribution and marketing 7) Coordination ➢ Training of the Senegalese staff in Japan ➢ Provision of equipment ➢ Budget allocation to implement the Project	

Evaluation grid of final evaluation for the Project on Improvement of Rice Productivity for Irrigation Schemes in the Valley of Senegal

Verification of Achievement

<table>
<tr><th>Item of evaluation</th><th colspan="2">Evaluation Questions</th><th>Result of Evaluation</th></tr>
<tr><th></th><th>Major items</th><th>Minor items</th><th></th></tr>
<tr><td>Achievement of Overall Goal</td><td>Improve of the rice farming productivity and profitability in the Senegal River Valley.</td><td>15% increase in the paddy production in 2018 compared to 2008, in the Senegal River Valley.
20% increase in the income of producers in 2018 compared to 2008, in the Senegal River Valley.</td><td>- By the distribution of the rice cultivation guide, the impact of the reform of awareness of farmers by the participatory irrigation facility repair and improvement in Podor etc, the achievement of the Overrall Goal is expected.</td></tr>
<tr><td>Achievement of Project Purpose</td><td>Improve of the rice farming productivity and profitability in the Dagana and Podor Departments.</td><td>15% increase in the paddy production per hectare in the pilot sites.</td><td>Table: Average Paddy Yield (ton/ha)
<table>
<tr><th rowspan="2">Pilot Sites</th><th></th><th colspan="2">2009</th><th colspan="2">2010</th><th colspan="2">2011</th><th colspan="2">2012</th><th colspan="2">2013</th></tr>
<tr><th></th><th>Dry</th><th>Rainy</th><th>Dry</th><th>Rainy</th><th>Dry</th><th>Rainy</th><th>Dry</th><th>Rainy</th><th>Dry</th><th>Rainy</th></tr>
<tr><td rowspan="2">Debi-Tiguette</td><td>Number of Sampled Producers</td><td>90</td><td>90</td><td>9</td><td>9</td><td>9</td><td>9</td><td>-</td><td>-</td><td></td><td></td></tr>
<tr><td>Average Paddy Yield (ton/ha)</td><td>5.4</td><td>3.6</td><td>-</td><td>5.9</td><td>5.7</td><td>-</td><td>-</td><td>-</td><td>-</td><td>--</td></tr>
<tr><td rowspan="2">Podor (G1)</td><td>Number of Sampled Producers</td><td>123</td><td>123</td><td>91</td><td>54</td><td>-</td><td>122</td><td>82</td><td>56</td><td></td><td></td></tr>
<tr><td>Average Paddy Yield (ton/ha)</td><td>5.4</td><td>5.0</td><td>4.8</td><td>4.4</td><td>-</td><td>4.2</td><td>5.8</td><td>5.0</td><td></td><td></td></tr>
</table>
Source: PAPRIZ
- In small-scale irrigation schemes in Podor, the rice production per ha has increased over 15% in dry season and rainy season (2010: dry-season 4.8ton/ha, rainy season 4.4ton/ha → 2012: dry season 5.8 ton / ha, rainy season 5.0ton/ha).
- However, in other pilot area in Podor (group 2), delay occurs on the irrigation facilities repair and</td></tr>
</table>

<table>
<tr><td></td><td></td><td></td><td>improvement and the rice cultivation training due to the external factors (limitation of activity due to safety measures by Algeria and Mali incident), and in large-scale irrigation scheme in Débi-Tiguette, the rice cultivation has stopped due to the external factors (demolition of Union and financial problems) and there was a similar delay on the activities. Therefore the level of the part of achievement in the pilot area has been limited.</td></tr>
<tr><td></td><td></td><td>20% increase in the incomes of rice farmers of the pilot sites</td><td>- In small-scale irrigation schemes in Podor, the average yield has increased more than 15% and the fuel for pump was saved about 30%. Therefore it is expected that income of producers have increased. (A sample survey will be carried out including Débi-Tiguette area)
- A trend of increasing the market price of local rice is seen and it will contribute for increasing the income of farmers.</td></tr>
<tr><td></td><td></td><td>15% increase in paddy production in the pilot sites</td><td>- Aging of the acreage in the rainy season is as follows. The rice acreage has increased by the irrigation facilities repair and improvement from 60ha to 111ha for the group 1, and rice production has increased from 455 ton to 252 ton at small-scale irrigation schemes in Podor. However, because flood zone rise extensively by abnormal water level in the Senegal River in rainy season of 2012, it was forced to decrease the number of cultivated area and the acreage.

Table: Irrigating zone for rainy season rice culture from 2010 to 2012
<table><tr><td>rainy season rice culture</td><td>2010</td><td>2011</td><td>2012</td></tr><tr><td>Number of cultivated area</td><td>5</td><td>6</td><td>4</td></tr><tr><td>Acreage of cultivated area</td><td>60 ha</td><td>111 ha</td><td>86 ha</td></tr><tr><td>Increasing rate from 2010</td><td>0%</td><td>85% increase</td><td>43% increase</td></tr></table>Source: PAPRIZ</td></tr>
<tr><td></td><td></td><td>The number of distributor and distribution volume of local quality milled rice in the main sales area (20% increase in distribution volumes of sorted local rice milled by beneficiary rice millers.)</td><td>- Change of the amount of annual paddy processing in 21 rice milling plants which were provided the rice grading machines is as follows.
Table: Result and estimation of the amount of annual paddy processing in 21 rice milling plant which were provided rice grading mahcines
Unit: ton
<table><tr><td></td><td>Result of 2011/12 and 2012/13</td><td>Estimation of 2013/14</td></tr><tr><td>Result and estimation of the amount of annual paddy processing</td><td>73,600</td><td>88,650</td></tr></table>- It is estimated that the total amount of rice milling plants that introduced rice grading machines has increased 20.4 percent, and rice sales volume has also increased in the same ratio. Though there were also some plants where processing amount was reduced by the aging of the devices at the rice milling plants, update of the equipment has been actively promoted and in the future, amount of the milled paddy (that is same as sales of high quality rice) is expected to increase further.</td></tr>
<tr><td></td><td></td><td>Quantity of milled rice</td><td>- After installation of the rice grading machines, the quantity and the quality are monitored at 14 stores</td></tr>
</table>

<table>
<tr><td></td><td></td><td>sold and number of shops selling local quality milled rice (20% increase in quantity of local rice milled by beneficiary rice millers).</td><td>in Dakar and 5 stores in Saint Louis who deal with the local rice.
- Sales amount was provided from 9 stores out of 14 stores in Dakar which the sale quantity has been monitored by the project. As shown in the table below, definite increase of the sales quantity of local rice was confirmed

Table : Change of sales quantity of local rice in the 9 stores in Dakar
Unit : Ton
<table><tr><td></td><td>2010</td><td>2011</td><td>2012</td><td>2013</td></tr><tr><td>Sales quantity in the 9 stores</td><td>704</td><td>1,143</td><td>1,342</td><td>1,441</td></tr></table></td></tr>
<tr><td rowspan="4">Achievement of Outputs</td><td rowspan="2">Output 1:
Establishment of a high productivity rice farming in the pilot sites</td><td>Efficiency of quantities of inputs used in the pilot sites (50% of the farmers in pilot sites)</td><td>- By trainings from this project, farmers have used the CNCAS loan, and majority of the farmers has also followed the farming work procedure and applying inputs recommended in the manual.</td></tr>
<tr><td>The number of agricultural advisers using the proposed practical manuals (80% of agricultural advisors trained)</td><td>- The project respects the policy of “one manual” by SAED, and regards that the rice cultivation manual developed in 2011 is the official manual. SAED has been distributed this manual to all agricultural advisors in March in 2011, and rice technical dissemination by utilizing this is deployed in whole Senegal River Valley. Therefore it can be said that the utilization ratio of rice cultivation manual is close to 100%.</td></tr>
<tr><td rowspan="2">Output 2:
Establishment of appropriate mechanisms for the planning of repair and improvement, management and maintenance in the pilot sites</td><td>Elaboration of the design plans and small-scale irrigation scheme repair and improvement works (Debi-Tiguette scheme and Podor 12 pilot sites</td><td>- For the first group of Podor (6 areas), a facility improvement plan was prepared. The works started in March 2011 and have completed in January 2013. For the second group (6 areas), after status survey, facilities improvement planning and getting the consensus from farmers, the work has been started in October 2012. Work progress (expenditure-based) in August 2013 was 63%. Technical transfer to farmers is progressing steadily. It is planned to complete the technical transfer to farmers through use of the manual by December 2013.</td></tr>
<tr><td>Estimation of the repair and improvement works of small-scale irrigation schemes in Podor (12 pilot sites)</td><td>- Estimation of the construction cost for 12 areas of Podor (554ha) has been completed. The project was carried out urgent repair and improvement selectively up to maximum of 600 000 FCFA / ha of investment unit price.

Table: Scale and the total cost of repair and improvement works in Podor
<table><tr><td></td><td>Name</td><td>Develop Area (ha)</td><td>Total Cost (1,000FCFA)</td></tr><tr><td>Group 1</td><td>Diatar IT2</td><td>50</td><td>12,780</td></tr><tr><td></td><td>Diatar 2</td><td>38</td><td>38,240</td></tr><tr><td></td><td>Donaye IT4</td><td>50</td><td>21,134</td></tr></table></td></tr>
</table>

			Diama Alwaly Korkadie	44	31,145
			Refugies de Moundouwaye	25	21,583
			Ngane	45	21,583
			Total	252	146,465
		Group 2	Diatar IT1	50	9,123
			Donaye IT2	50	9,123
			Donaye IT1	50	9,123
			Mboyo 4	47	9,123
			Mboyo 3	40	9,123
			Guede Ouro	41	9,123
			Total	278	54,738
				530	201,203

Maintenance and management has been continued after the participatory irrigation repair and improvement works in Pilot areas, and repair and improvement manual for small and large scale irrigation area is prepared based on the contents of the technical transferring.	Débi-Tiguette area - Though the facility was old, it is still functioning. Operation of the irrigation pump and drain pump was properly done, and the record has been kept for a long period. Podor area - After the initial repair and improvement works, it is planned to train farmers in the field along with the SAED to monitor and evaluate the damage of the facility in a timely manner and to be able to carry out proper and regular maintenance and repair works. - In October 2013, total 12 volumes of draft manuals were developed based on the handouts in the workshops and practical guidance in the sites. The manuals are made up for small scale irrigation, for large scale irrigation, for SAED and for farmers, and currently, person in charge of PAPRIZ in SAED are reviewing the contents. In addition, part of the manuals is being translated in French
Evolution of sown areas (100% increase in 12 pilot sites) and fuel utilisation rate of power driven pumps in the pilot sites (20% decrease in fuel consumption per ha in 12 pilot sites)	- Sown area of the group 1 (250ha) has expanded from 60ha (rainy season in 2010) to 111ha (rainy season in 2011) and it is 85 % increase. Sown area of the rainy season in 2012 was limited at 66ha due to delay in planting and flood damage (However, possible irrigation area became 120ha). For the fuel, the consumption was 84,000 FCFA / ha (the rainy season in 2010), 62,400 FCFA / ha (the rainy season in 2011), and 59,400 FCFA / ha (the rainy season in 2012), and it has achieved 29% decline from 2010. - On the result of group 2 (6 GIE), it is difficult to check the result at the time of this final evaluation because of the external factor as deterioration of the security. Table: Fuel consumption of pumps and planting areas of the pilot sites in Podor

Descriptions	Unit	2010 Rainy	2011 Rainy	2012 Rainy
Fuel consumption (FC)	lit	8,395	11,541	6,520

<table>
<tr><td></td><td></td><td>
<table>
<tr><td>Planting area</td><td>ha</td><td>60</td><td>111</td><td>86*</td></tr>
<tr><td>FC per planting area</td><td>lit/ha</td><td>140</td><td>104</td><td>99**</td></tr>
<tr><td>Fuel cost per ha</td><td>FCFA/ha</td><td>84,000</td><td>62,400</td><td>59,400</td></tr>
</table>
Source: PAPRIZ
** Harvest area was 66 ha.
** This value is calculated based on the harvest area.
</td></tr>
<tr><td></td><td>Utilisation of scheme repair and improvement manuals by engineers of SAED and rice farmers (60% of 22 GIE of the pilot sites)</td><td>- A manual for farmers was developed based on the hand-outs that have been employed in practical trainings in workshops and on-site. The manual was utilized toward the farmers during the procedure between investigation and operation in large-scale irrigation scheme (Débi-Tiguette area) and small-scale irrigation schemes (Podor department, 12 areas). In 12 sites of Podor (13 GIE), the manual has already been conjugated (more than 80%), but in Débi-Tiguette area, the repair and improvement work has not been carried out and only water management manual have been utilized (the achievement rate is 30 %).
- Currently, the number of agricultural advisors who are using the manual for agricultural advisors is three (100%).</td></tr>
<tr><td>Output 3:
Implementation of measures to improve the financial management of farmers</td><td>Balance sheets of rice farming activities of producers’ organisations and their members in the pilot sites(22 GIE of the pilot sites and 5 farmers for each GIE)</td><td>- For total 16GIE of Débi-Tiguette and group 1 in Podor, a baseline survey was conducted in early stage of the project, and currently, a monitoring survey for 5 farmers of each GIE is being carried out. After the balance analysis for these 16GIE, it seems to be able to confirm the improvement situation quantitatively based on the comparison with the baseline.
- On the other hand, a baseline survey of group 2 in Podor was conducted in July 2012. Irrigation works in group 2 is on-going and it will complete in mid-December 2013. In parallel with the construction, rice cultivation trainings were continued for the farmers of group 2, it is expected that the cultivation techniques have improved some extent. However, because the next cropping season is the dry-season in 2014 (start from March 2014), it is a difficult situation to verify the results of technical transfer during the project period in conjunction with the effect of the construction.
- It is expected that the balance and income of each farmer are improved, but for the Union (irrigation association), it can be difficult to determine at present that the balance may or may not be improved by improvement of income of each farmer because the Union is the non-profit organization whose main purpose is operation and maintenance of irrigation facilities. However, by change of awareness of facility maintenance of farmers, it is expected to proceed to reserve the maintenance and management fund which is currently difficult to collect. (Currently, each farmer is obligated to bear only the cost of fuel for pump, but it is necessary to have the fund for maintenance and improvement of facilities in the future)</td></tr>
<tr><td></td><td>Eligibility and utilisation rates of the credit system by farmers (60% of farmers of the pilot sites)</td><td>- In 9 GIE of Débi-Tiguette area, all farmers (100%) have used the loan system from CNCAS or CMS after lying fallow for 3 cropping seasons. On the other hand, utilization rate of the loan system has remained at 44% in the 6 pilot sites Podor. However, total utilization rate in the whole pilot area is more than 60 %.</td></tr>
<tr><td>Output 4:</td><td>Number of rice mills</td><td>- Installation of the rice grading machines for 21 suppliers of Rice Millers' Association (ARN) started</td></tr>
</table>

<table>
<tr><td></td><td rowspan="4">Establishment of appropriate distribution channels for quality milled rice that meets the needs of Senegalese consumers</td><td>sorting rice (100% of beneficiary rice millers)</td><td>since February 2013. Installation of equipment has been started from the rice millers who paid 20% of the procurement cost of the equipment to ARN by the end of June 2013. 21 rice millers who could procure harvested paddy in the dry-season in 2013 have already started to use the rice grading machines.</td></tr>
<tr><td>Number of rice millers using the credit system (available for any of the members of Rice Millers Association.)</td><td>- The rice millers have paid 20% (20% of 220 million FCFA of procurement cost will be 44 million FCFA) of procurement costs to ARN, and funds of the loan system was in place. The funds are currently kept in CNCAS account. CNCAS hinted to provide credit to ARN at the same amount, but the loan terms, etc. hasn't been finalized yet. Project team are waiting for the answers from CNCAS.
- Member companies of ARN in July 2013 were 28 and 21 companies out of 28 were provided the rice grading machines. On the other hand, rest of 7 companies wasn't obliged to pay the contribution, but they also cannot use the loan system in the current rule of ARN. For all member companies can use the loan system even some rice millers who did not pay the contributions, ARN is considering to revise the rule now.</td></tr>
<tr><td>Local rice is promoted.</td><td>- The project team participated in domestic exhibition (FIARA and FIDAK) with SAED and the promotion activities were carried out for 2000-3000 of general consumers in every exhibition.
- In November 2011, juvenile pictures contest of Thieboudienne was implemented to advertise the local rice for 2000 students of primary school in 29 schools, 5 regions where JOCV members were working.
- In December 2011, local rice consuming campaign was carried out and main rice millers and distributors were participated. There were 400 visitors and TV, radio and newspapers reported the event.
- Among the rice distributors related to local rice campaign, ambitious distributors were selected to improve the rice package, and a sample package was developed by February 2013. In addition, a questionnaire survey for the consumer was conducted during the event. Based on the results, the package will be finalized and after June 2013 when local rice become in short supply, PR campaign was held in front of shops with retailers in urban areas.</td></tr>
<tr><td>Number of distribution channels created between rice millers and middlemen by promotion activities.</td><td>- For about 12 rice millers and distributors related to local rice campaign in January 2013, marketing workshops was conducted. In addition, in the event of February 2013, a forum for matching was provided to negotiate with distributors in urban areas.
- According to the survey in August 2013, definite increase of the distribution channels was confirmed.
Table: Change of distribution channels between rice millers and middlemen
<table>
<tr><td></td><td>Result in 2010</td><td>Result in 2013</td></tr>
<tr><td>Number of distribution channels between rice millers and middlemen</td><td>21</td><td>45</td></tr>
</table></td></tr>
</table>

Input Provided	Japan side 1. Dispatch of Japanese expert 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 2. Equipment（Vehicles, PC, printer, photocopy machine, rice milling machines, rotary shifters, rice grading machines, Lifters etc） 3. Training in japan 4. Operation budget	
	Senegal side 1. C/P 2. Project office 3. Accommodation facility in SAED Podor 4. Operation budget	
Precondition	N/A	

Verification of Process of the Project Implementation

Item of evaluation	Evaluation Questions		Result of Evaluation
	Major items	Minor items	
Method of technical transferring	Is the method of technical transferring appropriate?		- For the participatory irrigation repair and improvement works and improvement of water management techniques, the technical transfer has been made in a repetitive manner until farmers can acquire practical techniques through joint works on site with SAED. Therefore, the technique level has reached a stage that farmers can continue the activities on a voluntary basis after completion of the project. However, unless there is appropriate time to engage in said operations and a vehicle that can be always usable, application of the transferred techniques to the fields will be very limited. - For the works of rice cultivation, C/P in headquarter of SAED is researcher level and there is no need of technical transfer. On the other hand, for the technical transfer to the agricultural advisors in the field, it is necessary for further efforts. Up to now, though they have had many opportunities of various trainings from the cooperation of donors, most of them are theoretical training and it is not the light of the situation where the farmer in the field placed, and the application does not work. - For the works of rice processing, there is no department for technical advising to private millers on post-harvest processing techniques (rice milling techniques) in SAED, and there is no personnel in charge. In the future, it is necessary to carry out a technical transfer on how to use the devise on a regular basis for agricultural advisors of SAED.
Relation between stakeholders	Is the relationship well among Japanese experts and SAED C/P.	Has the mutual trust been built among the stakeholders? Is the mutual satisfaction high?	- Both the Japanese expert's side and SAED side realized that the relationship between them is in good and mutual trust has been built.
		Is the mutual communication enough?	- For project operation and management, a meeting has been continuously held once a week, on the progress of works and concerns. - For training on participatory irrigation facilities repair and improvement and on water management technique improvement, workshops and weekly meetings have been held with SAED staffs and farmers. - For training of rice cultivation, a meeting has been continuously held once a week on the progress of works and concerns.
	Is the demarcation and of each level (central, regional and sites), of relevant agencies and personnel and chain of command clear? Cooperation, information sharing system are better?		- The demarcation and of each level (central, regional and sites), of relevant agencies and personnel and chain of command is clear.

Ownership of Stakeholders	Have the appropriate C/Ps arranged?	Have the appropriate numbers of C/Ps been arranged? Do the C / P participate in the project activities voluntarily?	- For works on participatory irrigation facilities repair an improvement and on technical improvement for water management, one technician was assigned at the SAED headquarter and he receives the documents from the project and attends the workshop. However, because of the limitation of budget and staffs, an engineer responsible for the project of headquarter and an engineer of Dagana branch and Podor branch are in charge for technical side, and zone chief of agricultural advisors in the field is in charge for organization side as much time as possible. - For works of rice cultivation, project team is able to work closely with C/P of headquarter of SAED. On the other hand, there was no fulltime support from branch office because they have also other duties. - For works of rice processing, chief C/P plays a central role and contribute a vigorous cooperation on organization reinforcement of ARN and collaboration with financial institutions. However, there was no participation on technical cooperation as installation, operation guidance and maintenance and management of rice grading machines, and technical transfer haven't been made in the field. This is because there is no department in charge of post-harvest treatment in the SAED (including the agricultural extension sector), and there is no person in charge.
	Is SAED aware the activities of the Project sufficiently?		- By the interview survey at SAED headquarter, it was confirmed that the contents of the project are well understood.
	Is the budget of Senegal government ensured and spent as planned?		- SAED bears personnel expenses of C / P and provision of a project office, and these have been provided without any problems. Other budget related to this project is not recorded in particular.
Relation between other donors	Is there any cooperation relationship or unnecessary duplication of activities with other donors?	AFD	- French Development Agency (AFD) is currently carried out F/S on the rural development projects in Podor (including irrigation component), and this project provides them the result of farmers participatory work in small-scale irrigation schemes. In addition, information of 3PRD has been provided. - From Canadian International Development Agency (CIDA), there is a proposal on joint production of rice techniques dissemination guide, the cooperation possibilities have been discussed continuously. - The project accepted the group training of West African States rice experts conducted by AfricaRice Benin headquarters (funding source is from Canadian) and technical training was provided the rice processing techniques. - USAID has tried branding of rice by introducing a marketing organization that put the axis to build a value chain of rice and maize in the Senegal River Valley, and the expansion of the results through the collaboration is expected.
		USAID	
		Spanish Cooperation	
		Others	

Relevance

Item of evaluation	Evaluation Questions		Result of Evaluation
	Major items	Minor items	
Necessity	Is the project objective and the needs of Senegal side (target group) corresponded?		- The direct beneficiary of this project, "Small scale farmers engaged in irrigated rice in the Senegal river valley" is not in the environment to gain a reasonable profit by rice cultivation and to continue the rice cultivation in a sustained manner because of old irrigating facilities, unstable procurement of input, high production cost, low cropping intensity and lack of manpower, low rice quality, lack of organized marketing channel and market information etc. Therefore, this project which carries out a direct support for irrigated rice cultivation area of the Senegal River valley meets the needs of beneficiaries. - Though Senegal people's staple food is rice, about 80% of the total supply in the local rice market is shared by the imported rice which is the origin of Indochina countries. For a point of view from food security side and the trade balance, increasing rice production is a high priority for Senegal.
	Is the project objective and needs of target community correspond?		- The project area is a granary area to cultivate the 70% of Senegal local rice, and the practice of the model project that is mainly aimed for increasing rice production, improving the rice milling quality in the region. It is expected to contribute significantly for the development of Senegal rice sector.
Priority	Are the overall goal and the project objective consistent with the National Development Plan, Agriculture Sector development plan, other relevant policies?		- The government of Senegal decided the self-sufficiency achievement of rice as a priority item for part of food security. To achieve this, there is PNAR (the National Program for Rice Self-Sufficiency) which was enforced in 2005. To promote this PNAR, Senegal government enforced SNDR (the National Strategy for the Development of Rice Cultivation). This project is in line with the policy above.
	Is the project objective consistent with Japan's aid policy and country cooperation plan of JICA?		- In the 4th International Conference on African Development, which was held in Yokohama in May 2008 (TICAD IV), our country declared to the international community with relevant organizations to double the rice production in Africa over the next 10 years, the initiative "Coalition for African Rice Development (CARD)" - In the Country Assistance Program currently under development, agriculture and rice sector is positioned in "rural economic improvement support program (tentative name)" which is one of the small goal II of "primary industrial development". The project is positioned as the primary input of the program and it is actively engaged with the introduction of other components, and it is expected to express a high synergistic effects.
Suitability as a Means	Are the strategies appropriate to fight against country's development difficulties in the field of agriculture sector in Senegal?	Is the project's approach was appropriate.	- On the approach of this project, there is validity in general. However reexamination of the part of components was done during the project period, and some problems were observed on the contents. Though a detail planning study was not been conducted for this project, it was necessary to carry out the study to examine the project components in order to design a feasible project during the project period,.
		What kind of synergy has been with other donors?	- In rice sector, there are many preceding projects. If this project can collaborates with the activities of distribution and marketing area which other donors focus, and this project just concentrates the production side and improvement of the quality of rice milling, there is a possibility of efficient

			achievement towards increasing rice production (15%) and increasing the revenue of producer (20%) of the project objective.
	Does the effect of the project spread other than target groups now or is there possibility to spread in the future?		- At present, dissemination to non-target group hasn't specifically observed. However, on the cultivation technique of the producers, revised rice manual was not only used for the technical guidance in the pilot area, but it was transferred to SAED staffs and agricultural advisors in the field. Therefore, it is expected to disseminate other than target groups of the project target area.
	Is the benefit of the effect or the burden of the cost distributed fairly?		- Participatory approach was taken for the irrigation facility repair and improvement, and the load was shared equally. - There are a tradition rules and customs in the rural community. Though outsiders cannot intervene too much, it is carefully observed not imposing too much burden by the socially weak person.
	Are there the comparative advantages of technology of Japan?	Is the experience of technical cooperation projects of JICA utilized?	- The results on seven technical transferring programs which were conducted in the master plan survey before this project were effectively used.
		Is the experience in Japan utilized?	- There are quality standards of paddy and rice managed by competent authorities. However, in the scene of selling of paddy from farmers to rice milling plants and paddy distributors or selling the rice from rice milling plants to rice distributors, the price of transaction haven't been determined based on the quality standard above. The price is determined by the judgment of quality by the "sense". In Japan, there are deep experience and knowledge on the measurement, analysis and management of rice quality and it is considered to be able to contribute to this situation significantly.
Others	Is there any change on the environment (policy, economy and society) surrounding the project after the Mid-term evaluation?		N/A

Effectiveness:

Item of evaluation	Evaluation Questions		Result of Evaluation
	Major items	Minor items	
The Prospect of the Project objective Achievement	How much level has the project objective been achieved?(Forecast)	Is the productivity and profitability of rice production in the departments of Dagana and Podor improved?	- In Débi-Tiguette area, because two cropping season in 2012 became fallow due to the problem of the Union, delay of activities was seen. However, the training of cultivation techniques and post-harvest techniques were implemented by using the manuals, and producers in the pilot area were enhancing the productivity. - In Podor area, though the activities were restricted because of Algeria incident and political situation in Mali in January 2013, the acreage was expanded and the yield has increased by the result of the irrigation facilities improvement works. In addition, the trial utilization of small farm machinery (rice milling machines, cultivator, etc.), it became clear in building up the distribution channels of paddy and in improvement of the work efficiency, and further expansion of production volume is expected in the future. - By the improvement activities for promotion and distribution of the local rice, the recognition was improved and the distribution volume is increasing. Increasing the distribution volume will contribute to improve the productivity and profitability of rice production in the pilot area.
		Is the setting up of indicators of project objective appropriate?	- After revision of indicators of outcome and indicators of the project objective in PDM, the indicators are appropriate.
Causal Relations	Are outputs of the project contributed to achieve the project objective? (Achievement of project outputs has been caused by the Outputs.)		- The output of this project is made up of 4 as (1) high productivity rice cultivation is carried out, (2) irrigation facilities repair and improvement was formulated and maintenance is carried out properly, (3) the measure to improve the management of producers is established and (4) rice processing based on the taste of consumers is made and the processed rice is distributed smoothly. Synthetic support of “rice cultivation”, “irrigation”, “management of farming “, “post-harvest processing,” and “distribution and marketing “ aim to achieve expansion of the production of local rice. Through these activities, the results of each area are expressed with an organic link, and it is possible to confirm a causal relationship leading to project objective.
	Is there other necessary matter to achieve the objective of the project?		N/A
	Is there any change on the important assumption? Is there any effect of the important assumption to the project objectives ranging from the output to the project objective, or had the impact of external	【Important assumption】The stability of the rice production cost with the stability of the price of agricultural inputs	- The main problem of the primary industry (agriculture) in Senegal is high production cost and instability of agricultural products includes rice, and there is no change of important assumption.
		【Important assumption】Security of the pilot area won’t be deteriorated.	- After incident in Algeria and political unrest in Mali in January 2013, activities in Podor were restricted. As the result, the irrigation construction and the technical training for rice cultivation had been insufficient. Part of safety measures were reduced in the middle of July 2013 and the construction have continued in a fast pace right now. Though the irrigating facilities repair and

	conditions?		improvement of another 6 area (Group 2) will be completed in December 2013, but time is limited for technical training in dry-season of 2014 (start from February-March).
		【Important assumption】The Union of Framers' Organisations works well	- Because of liabilities of the Union in Débi-Tiguette area, the Union was dismantled in May 2011. As a result, farmers cannot get loans from CNCAS, and they left a field for 2 cropping season in 2012. Normalization of the Union has not been fulfilled. The arbitration of SAED and local government in dry-season of 2013, farmers obtained the loan from the CNCAS and CMS for only 1 cropping season, and planting has been resumed. Some of the cooperating farmers who were initially targeted for monitoring of this project stick the recommended agricultural procedure, and high yield has been promised. However, it is difficult to achieve expected expansion of the surrounding area within the remaining period.
		Is there other important assumption?	- Nothing particular
	What are the inhibiting or contributing factors to achieve the project objective?		Contributing factor - As a contributing factor, it is expected that the interest in local rice from consumer increases and in the future, the investment from the private sector may increase. Inhibiting factor - It is difficult that farmers receive a CNCAS loan when necessary. - Though the semiannual crop is feasible for the farmers of Senegal River valley, they have a tendency to grow vegetables and cash crops in the cool dry season.

Efficiency

Item of evaluation	Evaluation Questions		Result of Evaluation
	Major items	Minor items	
Achievement of output	Is the achievement level of output adequate?	Have the output achieved as planned? If not, what is the obstacle?	- For Output 1, part of the activities was inhibited because two cropping season between 2011 and 2012 became fallow due to the problem of the Union of Débi-Tiguette, and restriction of activities in Podor area due to the political situation of Algeria and Mali incident in January 2013. However it is expected that the output will be achieved. - For Output 2, achievement of results was inhibited somewhat by a delay of the repair and improvement of the second half of 6 irrigation areas in Podor and it is difficult to confirm the result within the project period. - For Output 3, even though the construction of paddy ware house was canceled and related activities utilizing it were deleted from the output during the mid-term evaluation, other activities have been progressing as planned. - For Output 4, by delays in procurement of rice grading machines, establishment of loan system by ARN has been delayed.
		It the indicators for each output level appropriate?	- After revision of indicators of outcome and indicators of the project objective in PDM, the indicators are appropriate.
Causal relationship	Were the activities necessary and sufficient to produce the output?		- If there was no problem of various elements such as the problem of the Union in Débi-Tiguette, deteriorating security in Podor province, delays in procurement of rice grading machines, all activities would be necessary and sufficient. - The suspension of the construction of the rice warehouse in Débi-Tiguette area, opportunity of trainings were lost such as inventory management, timely rice marketing and financial management of warehouse storage charges.
	Were the quality, the quantity and the timing of the input appropriate comparing to the achievement of the output?	Were the number of dispatched Japanese experts, their expertise, timing and the period appropriate?	- Number and the period of dispatched Japanese experts are appropriate. In addition, local consultants hired by the project cover the absent period of the Japanese experts and the continuity of the activities was assured.
		Were the specifications, type, quantity, the timing of procurement on equipment provided appropriate?	- Though introduction of the rice grading machines was delayed (the arrival in Senegal was after December 2012), the technical transferring has been completed. - Paddy warehouse construction in Débi-Tiguette area was canceled. - For procurement of other equipment, there was no problem.
		Were the qualification, the field, the training content, the training period, the acceptance period for the trainings in Japan appropriate?	- According to the interview survey with C/P who participated the training in Japan, the contents and the period was appropriate.
		Were the numbers of C / P of	- Full-time C/P wasn't assigned from SAED side. Though C/Ps had other works, they allocates their

		Senegal side, the deployment status, or the ability appropriate?	time as much as possible.
		Was the budget of the field activities of the Japanese side appropriate?	N/A
		Was the budget allocation of Senegal side appropriate?	- SAED supported the project by providing the project office and the salary of staffs for supporting Japanese experts. However an operation budget (ex: transporting expense for rice milling machines etc) wasn't appropriated.
Cost	Comparing to the similar projects (cooperation conducted by the JICA project and other donors), output is commensurate with the input costs?		- Direct cost of irrigating facility repair and improvement works in the pilot area is 600,000FCFA and the cost is relatively low comparing with similar project. Due to the synergy effect of water management and technical transferring of rice cultivation techniques, the average paddy yield has improved at 0.6ton/ha in dry season and at 1.0ton/ha in rainy season. Increased revenue became 200,000FCFA/ha (if paddy price is 123FCFA/kg) and it was high cost-benefit irrigation development. In addition, because participatory works by farmers was promoted and the techniques were accumulate in the farmers' organizations and it is expected the long term reduction of the maintenance cost. - The paddy processing capacity of 21 rice millers that rice grading machines were introduced is 89,000ton and this is same as 24% of total paddy yield in Senegal River Valley. Though the cost to procure the rice grading machines was 220 million FCFA, the meaning is high to produce 57,000 ton of local rice which has high market demand by the quality. In addition, with introduction of the machines, rice millers union was organized and credit system for rice millers was also established and high cost-benefit technical transferring was conducted through the introduction of the rice grading machines.
	Comparing to the similar projects (cooperation conducted by the JICA project and other donors), the achievement level is commensurate with the input costs?		- In this project, various programs were conducted to aim increasing the attention to the local rice by cooperating with the private sector such as rice miller and rice distributors, mass media and domestic manufacturers. In these activities, all companies which had same interests cooperated and high cost performance outputs were observed such as cost sharing, sponsorship and mass media publicity with no charge.
	Were the local resources utilized effectively?	Were the existing organizations or facilities utilized effectively?	- It was expected to use the rice milling machine which was granted in 2005 at Devi soup district was renovated a free business in Japan, but since maintenance is not performed for a long time, it has become unusable now. - Local resources were used such as Débi-Tiguette scheme which was granted by Japan, training facilities of CIFA, know-how of the rice sector organization guidance of CGER, AfricaRice, rice firming study result of ISRA and cooperation with the existing exhibition management body such as the FIARA and FIDAK.
		Were the results of previous similar projects utilized	- The results of the technical transferring components in the master plan survey which was carried out in the past were effectively utilzied.

		effectively?	
Factors which affect the effectiveness of implementing process of the Project	Were there any causes which obstruct the effectiveness of the project		- Because the procurement of rice grading machines was delayed, , on the establishment of small credit system which was the axis of the organizational management for ARN, it is almost impossible to confirm the results by March 2014.

Impact

Item of evaluation	Evaluation Questions		Result of Evaluation
	Major items	**Minor items**	
The Prospect of the Overall Goal Achievement	Is the Overall Goal expected to be achieved?		- Toward the achievement of the overall goal, it is necessary that the activities of this project will be widely deployed in the area, but at the moment, ripple effect has not been confirmed in particular. In the future, the result of technical transfer to the C/P organizations as well as stakeholders in the pilot areas, certain ripple effect will be expected to the other regions. However, in the current situation, the budget and implementing system of SAED for dissemination isn't unclear.
	Is the achievement of the Overall Goal expected to influence the development policy of agriculture sector in Senegal?		- Part of the activity is still experimental level and further practice in the field is necessary for integrating the activities into the agriculture sector development policy in Senegal.
	s the important assumption from the Project purpose to the Overall Goal correct at present?	【Important Assumption】 The Rice Self-Sufficiency Policy as part of the Food Security Programme is a priority	- For food security in Senegal, rice is the most important crop and the priority of sustainable production is extremely high. In this stage, this is an applicable important assumption and the possibility to be inhibiting factor is very low.
	Is there other factor to inhibit the achievement of the Overall Goal?		N/A
Causal relationship	Isn't there significant gap between the Overall Goal and the Project purpose? Does the achievement of the Project purpose contribute the achievement of the Overall Goal?		- It is observed that there is no certain gap in particular between project objectives and overall goals, and achievement of the project goal will contribute the achievement of the overall goal.
Ripple effect	Is there other ripple effect?	Is there other positive or negative effect except the Overall Goal?	<u>Positive impact</u> - It is expected that the activation of the private sector (rice millers, rice distributors, agricultural machinery manufacturers, etc.) involved in local rice will contribution the economic effect. In addition, imported rice distributors who have adequate capital have also entered in the local rice distribution area. These factors can be expected for economic effect of food security and saving the foreign exchange. <u>Negative impact</u>

			- It is necessary to consider the environmental impact by irrigation development. In particular, there are some risks of salinization of soil in poor drainage land (salt damage risk). - There is a risk, such as the occurrence of water pollution and water-borne diseases caused by drainage from the field.

Sustainability

Item of evaluation	Evaluation Questions		Result of Evaluation
	Major items	Minor items	
Policy and system aspects	Is the possibility to continue the political assistance high after the termination of the cooperation?		- The activity of this project has high validity on the policy because of PNAR and SNDR, and the possibility of continuing the political support is high.
	Do the activities of pilot sites include a system to disseminate after the completion of the Project?		- Small-scale irrigation development component in Podor has been added in the rural development project of AFD and assistance may continue.
Organizational aspects	Will the link between SAED and organizations be maintained after the termination of the Project?		- For the irrigation development, not only to establish the administrative system and the human resource development of government officials but to upgrade techniques of private sector as consultants and contractors is essential. SAED is not in charge of direct management for large-scale operations, and even though human resource development of SAED staffs has been advanced in this project, it is also necessary to consider the mechanisms for human resource development of the private sector as well.
Financial aspects	Is the enough budgets secured to continue the Project activities?		- For support of rice sector, funding of donor countries as World Bank, AFD etc is expected. - Necessary expense of SAED is very little for continuing the current activities and it is possible to secure the financial resources. However, allocation of the budget isn't clear for the activities of dissemination of the output to other area.
Technical aspects	Is it possible that SAED monitor and evaluate the activities and revise manuals by their effort if necessary?		- Technical transferring to C/P of SAED has been done sufficiently through the project activity and it is expected the monitoring and evaluation and revision of manuals etc by self-effort.
Social, Cultural and Environmental aspects	Is there any factor to inhibit the sustainability on Social, Cultural and Environmental aspects?	Are the weak risk groups considered?	- N/A

Others

Item of evaluation	Evaluation Questions		Result of Evaluation
	Major items	Minor items	
Notes until the end of the project	Is it necessary to reconsider the contents of the input, the activities and the output?		- It is required for reinforcement for additional staff employment, vehicle purchase and other costs as the financial side of SAED. For the activities of participatory irrigation facilities renovation and improvement of the water management technique, one additional staff to engage in full-time is necessary. Further, in the participatory rehabilitation techniques, after reaching a certain technical level, organizational and financial problems of the scheme will be a bottleneck. - One additional staff member is necessary to engage in full-time for farmers' organizations. With respect to these points, in the future, it is necessary to provide sufficient explanation to the SAED by the end of the project. For financially, reinforcement is required to purchase a vehicle for the timely transportation and for other expenses.
	What are the important factors to be aware until the end of the project?		- It is required to establish a mechanism (organizational, financial framework) such as manuals developed in the project are utilized and disseminate the result to the other area etc.

Annex 4: Progress of the Project Activities

Plan		Objective	Progress and result	achievement	Reason of delay	Schedule
No.	Contents					
1-1	Formulating a plan of improving and guiding rice farming techniques based on the revised practical manual on irrigated rice cultivation elaborated by the Africa Rice Centre (former WARDA) and SAED (National Company for the Development and Exploitation of the Senegal River Delta, Senegal River and Faleme Valley Lands)	• The plan of technical guidance for disseminating appropriate rice farming practice is formulated based on the results of field monitoring and baseline survey, so that flexible farm management guidance is possible according to the farmers' farming scale, methods, and technical level. • An extension guide is prepared for the major subjects on the rice farming techniques to supplement the revised extension manual.	• The rice farming practices were monitored at the selected 9 rice farmers' field for Debit-Tiguette and the 12 farmers' field for 6 PIV/PIP in Podor, respectively, throughout a cropping season to identify constraints on limiting or hampering further rice yield increase from the viewpoints of rice farming techniques. Based on the results, a series of technical training was given to extension workers and the farmers in the two pilot areas putting emphasis on the rectification of those techniques. • A draft extension guide was prepared showing the dissemination way of improved farming practices to the farmers using the materials used in the training courses, photos taken during the monitoring period. • The extension guide in draft form was shared with the SAED extension workers as well as researchers of Africa Rice and ISRA, and comments on the appropriateness in the design and contents of the extension guide.	3	On schedule	• The extension guide is finalized.
1-2	Elaborating appropriate models to the following themes with the agricultural advisers of SAED for each scheme through the execution of the plan of the rice farming improvement					

a)	Optimizing investments in input (fertilizers, pesticides, etc.)	Use of good seeds, rational use of agro-chemicals and timely application of recommended dosage of fertilizer are promoted, and farming practices are improved to make fertilizer application and spraying chemicals more effective. Through those efforts, cost-effectiveness is optimized.	• Through the monitoring of rice farming practices in the pilot areas, it was found that timely use of input including fertilizer, agro-chemicals and seeds was inappropriate, and that proper farming which satisfy the conditions for rice plants to benefit from the input were not practiced. • Rectification of the inappropriate farming practices was made through the training and farm guidance based on the revised rice cultivation manual, and they were incorporated into the extension guide. • A series of on-farm trials for improving fertilizer application was made to pursue further yield increase with SAED and Africa Rice.	4		
b)	Studying and implementing measures to reduce cultivation and harvest losses	Actual conditions of grain loss during the cultivation period and at harvest are clarified, and direction for the improvement is shown.	• The grain loss during the cultivation period is occurred by bird attack at grain filling, by strong wind at grain filling, or by extreme temperature at heading inducing sterilization. Grain loss by sterilization was avoided by adjusting cropping calendar. • The grain loss at harvest was caused by shattering due to over ripening. It was avoided through timely harvesting.	4		

1-3	Building the capacity of GIE/SV on crop management in collaboration with agricultural advisers of SAED	Reasonable rice cultivation techniques including on-farm water management are demonstrated at cooperative farmers' field.	• Through the detail monitoring of the farming practices at each of all GIE/SV in the pilot areas, it was shared among GIE/SV members that the use of varieties with similar growth duration, shortening of nursery period, and the respect of cropping calendar contributed to the reduction of irrigation water amount. • As specific farm operations which enhances water use efficiency, support of collective purchase of single variety of rice seed and training session on collective nursery preparation were provided to Podor GIEs to show the possibility of water saving through the reduction of irrigation duration and through the saving of nursery water requirement. • Small agro-machinery including power tillers and power threshers was introduced at Podor GIEs to enhance work efficiency of land preparation and threshing. A series of training sessions on operation and maintenance of the machinery was provided.	3	On schedule	Important farming practices which should be dealt with by GIE/SV are emphasized in the extension guide.
1-4	Building the training capacities of SAED in order to improve farm guidance in the fields mentioned in 1-3.	Agricultural advisors of SAED understand the training themes on farming techniques to be dealt with by GIE/SV.	Training themes on the improvement of farming techniques to be dealt with by GIE/SV are enumerated.	3		A training session for SAED agricultural advisors is organized to explain how to guide the farmers on rice farming techniques to enhance the capacities of GIE/SVs.
1-5	Disseminating the rice farming model in the areas around the pilot schemes by the agricultural advisers of SAED	Appropriate irrigated rice farming techniques which have been confirmed at pilot sites are transferred to the agricultural advisors of SAED assigned to the surrounding irrigation areas.	A series of training sessions on the contents of revised irrigated rice farming manual and the extension guide was provided to the agricultural advisors in SAED delegations.	3	Dans les délais prévus	

2−1	Choosing a large-scale scheme and small-scale irrigation schemes as a result of a basic data collection study on the situation of schemes	The pilot schemes including one large-scale and six small-scale schemes are selected. Farmers' intention to participate in PAPRIZ is confirmed.	The Debi-Tiguette scheme and the 6 schemes (252ha in total, 600 households) in Podor were selected as pilot schemes. In the 3rd year, additional 6 schemes of 275ha managed by 383 households were selected. With this addition, the small-scale irrigation schemes in Podor have became 12 schemes, with 527ha and 983 households in total.	4		
2−2	Supporting plan formulation including design and cost estimate for repair and improvement of the selected irrigation schemes around a concept of low inputs	• Farmers' interview and field investigation are carried out to clarify development constraints in the selected schemes. • Level of appropriate investment to repair and improvement works is agreed with SAED. • The plan of repair and improvement of the selected schemes is formulated.	<u>Debi-Tiguette scheme</u> • Improvement of the water management technology is needed. As the facilities are functioning as required, the urgent repair and improvement works are not needed. • Installation of the discharge measurement devices for the water management was recommended. <u>PIVs/PIP in Podor</u> • The unit development cost was justified to be 600,000 FCFA/ha that was used by the past rehabilitation and development project in Dagana. • The project works were selected around the concept of improvement of water use efficiency by repair and improvement of the existing facilities. • Cost estimate was prepared to cover procurement of construction materials and tools, rental charge of heavy equipment and wages of semi-skilled labor.	4		

2−3	Carrying out repair and improvement works of small-scale schemes targeted by SAED in collaboration with JICA based plans mentioned in 2-2	Repair and improvement works are properly implemented.	• One engineer out of two engineers in the SAED Podor delegation has been assigned as the officer in charge of PAPRIZ. He worked for repair and improvement works together with the JICA Project Team. • The works for the original 6 schemes (Group 1, 252ha in total) were completed in 20th January 2013. • The works for the additional 6 schemes (Group 2, 275ha in total) are ongoing as scheduled to be completed by the end of December 2013.	3	• As for the original 6 schemes (Group 1), farmers' participation in the works was lower than planned. • The progress of the works during cropping seasons was decreased than planned. • Inundation along the Senegal River adversely affected the work progress. However, after then, the works have been resumed and will be completed as scheduled.	The construction works for the additional 6 schemes (Group 2) in Podor will be completed by the end of December 2013.
2−4	Preparing water management plan	The water management plan is prepared.	The handouts were prepared for the workshops both for the Debi-Tiguette scheme and the Podor schemes. Those were incorporated into the O&M manuals.	4		

2−5	Guidance and training for the staff in charge of the water management and the regular maintenance and repair. a) Water management	The proper water management and regular maintenance and repair method is mastered and applied.	<u>Debi-Tiguette scheme</u> The proper water management practices were proposed. The field training was carried out. Further, in March 2013 just before the irrigation was resumed, the pending matters were reconfirmed with the members of the irrigation committee. It was understood that the minor damages can be repaired by each of the 9 GIE/SV with the participatory approach without waiting for the works by the irrigation committee of the union. <u>PIVs/PIP in Podor</u> The proper water management practices were proposed. Then, the guidance through the actual water management practices was conducted. At first, the training for the pump operation record and fuel consumption record was provided. Then, the guidance on the measurement of the irrigation water use volume by the irrigation block and the recording were conducted. Now, the calculation of the irrigation efficiency by the block has become possible.	4		

	b) Regular maintenance and repair of irrigation facilities	The proper method of the regular maintenance and repair is mastered and applied.	<u>Debi-Tiguette scheme</u> • The basic consideration of the regular maintenance and repair was presented in the workshop and the guidance was conducted. The necessary works were executed with the farmers at the damaged parts found through the walk along the canals. • After the resume of the irrigation, the proposal that the technical guidance would be extended with the SAED Dagana delegation for the farmer workers who should be selected out of the farmers belonging to the 9 GIE/SVs was presented and understood. <u>PIVs/PIP in Podor</u> The basic consideration of the regular maintenance and repair was presented in the workshops and the guidance was conducted. The guidance is extended on the site to make the plan for the regular maintenance and repair. The works were executed in accordance with the plan.	4		

	c) Organisational capacity building of groupings	The water management and the regular maintenance and repair are properly executed.	Debi-Tiguette scheme The basic consideration was proposed in the workshops and the guidance was conducted. Further, in the workshop in May 2013 after the resume of the irrigation, the importance of the organization was explained and understood. PIVs/PIP in Podor The regular maintenance and repair works are being executed in the schemes concerned since 20 January 2013 when the initial repair and improvement works were completed. The daily guidance with the visit to the places and through the workshops was repeatedly extended to express the necessity of the proper operation of the organization that is consisting of not only the irrigation committee members but also the management members such as president, the secretary and the treasurer. as well as the common members who are actually in charge of the construction works and understood by the scheme members.	4		
2-6	Monitoring-evaluation of the repaired and improved pilot schemes and water management	Decrease condition of the pump fuel consumption (l/ha) is examined.	The facilities have become old but still functioning. The operation records of the irrigation pump and the drainage pump have been kept for a long time. Through the examination of the records, the fact that the gravity gate operation is improper and takes too much excess water, which makes the drainage pump operation time long time, has been monitored and evaluated. PIVs/PIP in Podor For the preparation of the implementation plan of regular maintenance and repair, the facilities condition is monitored and evaluated. As for the water management, the pump operation hour and the fuel consumption (l/ha) was quantitavely examined. The irrigation water use volume by the irrigation block in the scheme was grasped.	4		

2−7	Establishing appropriate models of management and maintenance of equipments in the pilot large-scale and small-scale irrigation schemes.	The method possible even under the present budgetary condition of SAED is formulated and actually practiced.	The proposal was presented and discussed. The major points of the workshops are as follows: <u>Debi-Tiguette scheme</u> It was repeatedly explained and the scheme understood that, in consideration of the low cost and the timely execution, the maintenance and repair of the on-farm irrigation facilities are to be executed with the participatory approach by the farmers as it is common way in the world. <u>PIVs/PIP in Podor</u> The maintenance and repair of the irrigation facilities were executed with the participatory approach by the farmers putting stress on the proper operation of the irrigation organization.	4		
2−8	Putting in place an extension system for this model and proposing manuals and other extension materials	The suitability of the manual and the materials is examined to complete them with the modification.	<u>PIVs/PIP in Podor</u> • All the drafts of manuals were completed in October 2013 both for the small-scale schemes and the large-scale schemes. At present, the engineers in charge of PAPRIZ in the SAED headquarters and the Podor and Dagana delegations are reviewing the contents. • The said manuals were made at two kinds for the SAED and for the farmers. • The two kinds for the SAED and for the farmers were respectively composed of the three volumes such as “Investigation, survey, planning and design”, “Initial repair and improvement works” and “Operation and maintenance (including the water management and the regular maintenance and repair)”.	3	Now, the drafts are being examined by SAED.	• After SAED finishes the examination, the discussion and the modification will be made to finalize the contents. • Then, “Initial repair and improvement works” and “Operation and maintenance” both for the small-scale irrigation schemes and the large-scale ones will be translated into French.

2-9	Disseminating the management and maintenance model of irrigation schemes located around the pilot schemes based on extension methods and materials mentioned in 2-8	The suitability of the dissemination method is examined to complete it with the modification.	(not commenced yet)	1	In Podor, the activities of water management for the irrigation water use by the irrigation block were finished in June 2013. Therefore, the material for the disseminating activity had not been ready by that time.	PIVs/PIPs in Podor With use of the manuals mentioned above, the practical method for the repair and improvement of the facilities, the water management and the regular maintenance and repair are introduced in November 2013.
3-1	Carrying out a socio-economic survey on the current situation of the financial management of farms in the pilot sites.	The present socio-economic conditions of the pilot areas are clarified.	• The baseline survey of the farmers of both the Debi-Tiguette scheme and Group 1 schemes of Podor was completed in September 2010. • The baseline survey of the financial conditions of the Debi-Tiguette Union, and 9 GIE/SV, 6 PIV/PIP of Podor and 13 rice millers was completed by CGER in December 2011. • The baseline survey of the farmers of Group 2 was completed in July 2012.	4		
3-2	Supervising and training producers' groupings and their members in the following areas:					
a)	Improvement of the financial management through the market information promotion	Farmers recognize that unit prices of paddy and milled rice are affected highly upon their grain qualities.	• Paddy prices are discussed and decided in the joint meeting of CIRIZ (inter-professional rice committee) held prior to every crop season. PAPRIZ attends the meeting to monitor the discussion. Farmers gather the price information from SAED extension workers. • PAPRIZ instructs farmers through the workshop and the study tours that unit prices of paddy and milled rice are raised by improvement of their grain qualities. • PAPRIZ continues the monitoring of grain qualities of paddy storage, which verified that grain qualities tend to be lowered according to the duration of storing periods. Low grain quality of paddy results in lower milling recovery rates.	4		

b)	Financial management improvement through the production of financial statements and balance sheets by the Management and Rural Economy Centres of the Valley (known as CGERs)	Data and information concerned financial management are properly analyzed.	• Necessary advices were provided to both Union and 9 GIE/SV of the Debi-Tiguette scheme and 13 rice millers by CGER. • CGER provided the technical guidance of record keeping to 7 GIE in Podor.	3	It became difficult to perform to continue the financial management guidance to the Debi-Tiguette Union.	Farm guidance will be continued to the farmers of Podor schemes.
c)	Profitability improvement through the production cost rationalization	Technical guidance is provided for profitability improvement through the production cost rationalization.	• Appropriate farm input supply was introduced to farmers by referring to Irrigated rice farming manual produced by SAED and rice farm guideline by PAPRIZ. • On-farm experiment was carried out to prove and demonstrate benefits of the appropriate farm input supply. • The experimental results were shared among the SAED extension workers, who are in a position to introduce to other farmers.	4		
d)	Improvement of the access to credit capacity	Farmers using the agricultural credit are increased and the capacity to pay of GIE is improved.	• In response to the PAPRIZ's request, CNCAS resumed the crop credit for two (2) schemes of Podor. • CNCAS and CMS provided the credits to 9 GIE and CMS for the 2013 dry season paddy after three fallow seasons.	3	・ The committee of the Debi-Tiguette Union has not been operational since may 2011. ・ Outstanding due of CNCAS loans in the past	PAPRIZ will support the farmers of Podor the access to the crop credits.
e)	Improvement of the input supply and marketing of productions	Farm inputs are timely supplied to the farmers and market channels of paddy grains are mobilized.	• PAPRIZ assisted the farmers of Podor the timely procurement of certified seeds and pump fuel. • PAPRIZ introduced agro machinery including hand tractors and power threshers to the Podor pilot areas as a trial to enhance the efficiency of rice cultivation. • PAPRIZ introduced farmers new market channels through the technical transfer of rice milling and marketing in Podor.	3		PAPRIZ continues the technical trainings of rice milling and marketing in Podor for the 2013 rainy season rice.

3−3	Building the capacities of agricultural advisers in the fields specified in 3-2	SAED extension workers provide the technical training of farm management to farmers organization and farmers.	• SAED extension workers provided the price information and the supports for market channels formation. • CNCAS and CMS provided the credits to 9 GIE and CMS for the 2013 dry season paddy after three fallow seasons.	3		The guidance and training will be carried out for SAED extension workers through the access to the crop credits and its monitoring for the farmers of Podor.
3−7	Carrying out the monitoring and evaluation of producers' financial management and credit system	Monitoring and evaluation of farm management and credit system are carried out.	• The periodical monitoring for the credit users was carried out. • The guidance to GIE of Podor was made for appropriate record keeping for pump fuel consumption, fund formation for repair and improvement, contribution for each member, distribution of farm inputs supplied under CNCAS, etc.	3		The guidance and training will be carried out for SAED extension workers through the access to the crop credits and its monitoring for the farmers of Podor.
3−9	Taking measures to improve the financial management and credit system and disseminating them in the areas around the pilot schemes	Financial management and the credit system is improved around the pilot schemes.	PAPRIZ through SAED extension workers supported farm management and credit operation in the other schemes around the pilot schemes.	3		The SAED extension workers will be supported the access to the crop credits for the farmers around the pilot schemes.
4-1	Business skill training forrice millers in the following areas:	Supervising and training rice millers in the following areas:				
a)	Improvement of the financial management: preparation n of the accounting reports and balance sheets with aide of CGERs (Management and Rural Economy Centres)	Rice millers become capable for appropriate financial analysis and preparation of annual plan.	• The reports of the baseline survey and the financial analysis were prepared with aid of CGER. • Present conditions of rice millers' management were compiled into a portfolio by PAPRIZ.	4		
b)	Operation and maintenance of rice mill machines	Capacity for operation and maintenance of the existing rice mill machines is improved.	All rice grading machines have been installed to 21 rice mills. After completion of the installation work, the training of operation, adjustment, and maintenance was intensively carried out for the rice mill operators. In parallel, the training for existing machines was carried out, and their capability for machine maintenance has been improved.	4		The periodical training of operation, adjustment, and maintenance work will be carried out for individual rice millers.

c)	Increase of the annual working hours of machines	Idling periods of rice mills due to technical troubles is reduced.	To increase working hours of milling machines, the following activities were carried out.. (1) Proper maintenance works (2) Financial arrangement to purchase paddy (3) Elongated operation periods by storing paddy grains in storage Rice millers could process more paddy grains by keeping the rice mill machines operational. More installation of paddy storage is crucial.	3	Rice millers have gradually increased the processing amount year by year. However, it will take more time to reach the maximum level due to limited financial capacity for paddy procurement.	In addition to more access to CNCAS, the ARN lending system will be reinforced to meet financial requirement for paddy procurement.
d)	Promotion of rice sorting, quality standard and labeling	• Pragmatic quality standard of milled rice classified into head, large broken and small broken rice is accepted in the market.. • Rice quality is indicated on rice packages.	• Introduction of the rice grading machines by PAPRIZ accelerated the establishment of the quality standard, • As a result of introduction of the rice grading machines, 21 rice millers can produce and release the milled rice products according to pragmatic quality standard. • Rice millers tend to indicate rice quality, namely “head rice” or “broken rice”, on plastic bags together with rice variety.	3		Pragmatic quality standard will be promoted to assist establishment of official quality standard.
e)	Quality monitoring system	Official quality monitoring system is functioning.	Official monitoring system does not exist in Senegal.	-		
4-2	Supply of rice grading machines to the selected rice millers through SAED	Rotary sifters and length graders are handed over to 21 rice millers.	All grading machines have been installed at 21 rice mill factories by the end of June 2013.	4		
4-3	Mutual consensus on supply conditions of the rice grading machines mentioned in 4-2 between ARN and SAED.	• ARN is registered as GIE. • ARN opened a bank account under name of the association. • Supply conditions are confirmed. • Rice millers contribute 20% of procurement cost of grading machine to ARN.	• ARN completed the registration of GIE in November 2012. • ARN opened the bank account in CNCAS under the name of ARN in December 2012. • All 21 millers deposited their contribution, 20% of the cost, in the bank account of ARN.	4		

4-4	Establishing and starting the pilot lending system for the millers in collaboration with financial institutions as mentioned in 4-3	• Contributions are deposited in the bank account of ARN to establish the fund. • Financial institution makes a decision for financial assistance with additional loan to ARN.	All the contribution was deposited in the bank account of ARN. ARN is negotiating with some financial institutions for additional loans	3	The delayed supply of the grading machines resulted in delayed actions for establishment of the lending system.	The earliest commencement of the operation of the lending system is realized.
4-5	Rice marketing promotion through the following activities.					
a)	Public relations (awareness-raising campaigns, fairs, etc.)	Local rice and its values are recognized more by Senegalese consumers.	Awareness creation of local rice among consumers was promoted through various opportunities. To establish value-chain of local rice, the market information especially of rice quality preferred in the market was shared by rice farmers, millers and traders through the following activities. (1) Participation in exhibitions (FIARA and FIDAK) (2) Rice campaign (3) Thiebou dienne painting contest by school children (4) PR by mass-media	3	It is difficult to have a sense of togetherness for rice millers or distributors etc., because they are in rivalry mutually. However, consciousness reform of pursuing common profits has been started.	To proceed the adjustment towards cooperation with other donors, such as USAID or AFD etc.
b)	Improvement of packages and image enhancement of local rice	Local rice distributors and retailers are motivated for establishment of brand equity through improvement of package and PR of shops.	• Rice millers are confidence in quality, and some large millers introduced original transparent plastic bags to show quality rice in the bags. • Some millers started selling rice with packages of various sizes from 5 to 25 kg. • Retailers became keen to appeal to consumers where local rice is available.	3		• To study how to advertise the information of the rice retail shop.
c)	Capacity development of organisations for rice marketing.	Business match making is organized among farmer's groups, rice millers, distributors, wholesalers and retailers to formulate the business clusters.	• Cluster formation of local rice has been promoted by taking opportunities of local rice campaign and so on. • As millers' organization, ARN was established to improve the competitiveness of local rice.	3		To provide opportunities for business matching between rice millers and distributors with rice sellers in Dakar.

4-6	Improve the local rice collection and distribution system by following actions:					
a)	Invest distribution channel of local rice and the stakeholders of distribution channel, such as producers, rice millers or distributors.	Distribution channel of local rice and profit structure of stakeholders are clarified.	In order to clarify the distribution channel and stakeholder's profitability, price investigation etc. for rice millers, distributors and retailers was conducted.	3		Strengthen the monitoring capability for commercial milling by rice millers.
b)	Improve the capability for quality control, collection, packaging and marketing of local rice by effective utilization of market information.	The market information of local rice is clarified and the information is fed back to the persons involved in production, processing, distribution and sales of local rice.	Based on the above mentioned investigation, exchange the following commercial information with the stakeholders. (1) Consumers' information (2) Paddy information (3) Rice millers' information (4) Rice traders' and distributors' information (5) Rice retailers' information	2	Since concentrate market information analysis of local rice, result of the analysis is not fed back to the stakeholders yet.	
c)	Re-examine the rice marketing system by improvement of the rice distribution.	Make trial sales of local rice at paddy or milled rice warehouse and analyse the profitability. Build up the know-how of introduction promotions for new products, such as perfumed rice.	• Local rice with innovated package began to be sold. • Importance of the paddy warehouse for shipment adjustment or prevention from deterioration is confirmed. • It is confirmed that sales promotion of local perfumed rice is effective to gain recognition of local rice and to increase the added value. • Local perfumed rice becomes popular commodity in the market.	2	Since concentrate local rice promotion campaign etc., activity towards improvement of distribution is not carried out.	To build the mechanism which can promote local rice consumption periodically. (including perfumed rice)

Note: 4 Complete

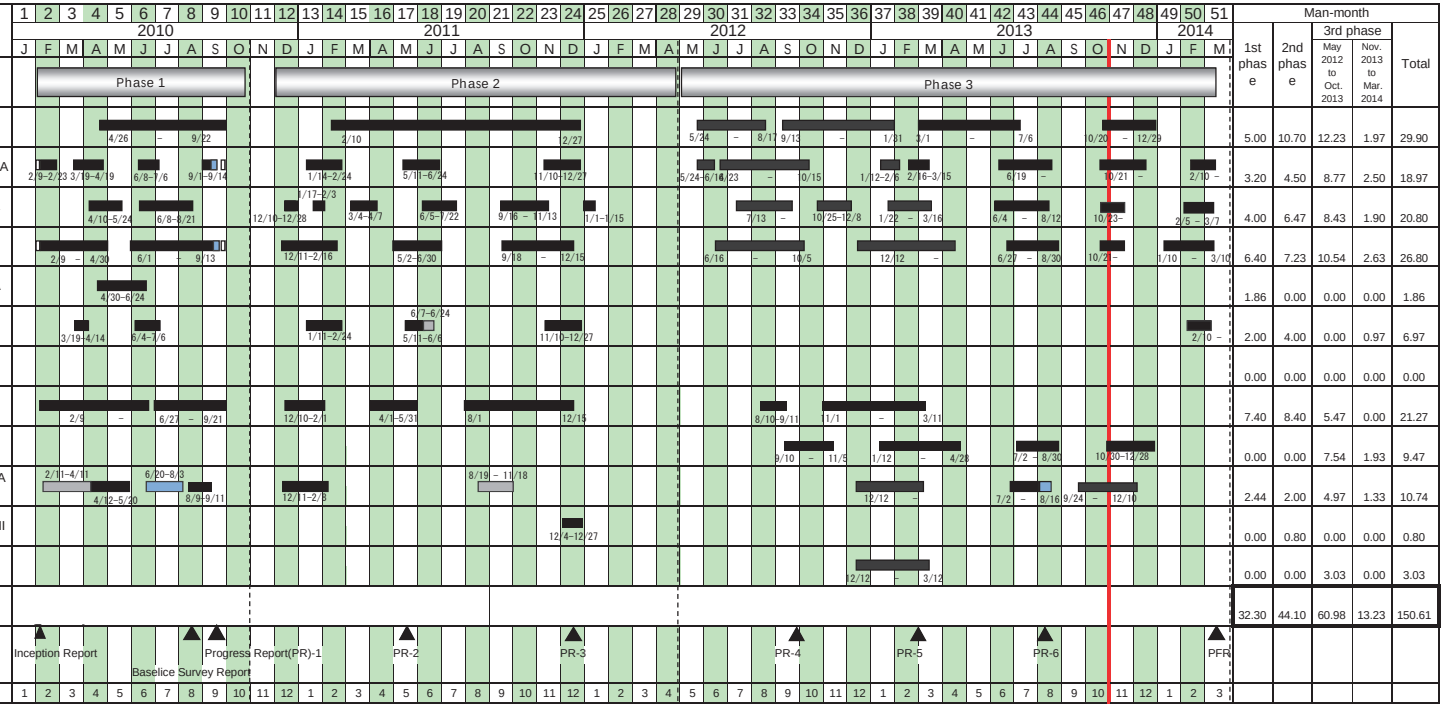
3 Nearly complete

2 Remain some issues

1 No activities

Annex-5: List of Japanese Experts Dispatched

No.	Position	Name	Man-month 1st phase	2nd phase	3rd phase (May 2012 to Oct. 2013)	3rd phase (Nov. 2013 to Mar. 2014)	Total
	Phase						
*1	Team Leader / Irrigation Engineering / Water Management	Mr. Kuninobu NODA	5.00	10.70	12.23	1.97	29.90
*2	Irrigation Farming	Mr. Masayuki KOYAMA	3.20	4.50	8.77	2.50	18.97
*3	Rice Cultivation / Farm Management	Mr. Takashi KIMIJIMA	4.00	6.47	8.43	1.90	20.80
*4	Rice Milling / Post-harvest	Mr. Teruhisa AOKI	6.40	7.23	10.54	2.63	26.80
5	Rice Distribution / Policy and Institution	Mr. Yoshihiko OGATA	1.86	0.00	0.00	0.00	1.86
6	Rice Marketing	Ms. Sachiho OTOWA	2.00	4.00	0.00	0.97	6.97
7	Formulation of Micro finance system	Ms. Yuki KOBAYASHI	0.00	0.00	0.00	0.00	0.00
8	Farmers Organization / Micro-finance Operation	Mr. M. Sylla	7.40	8.40	5.47	0.00	21.27
9	Irrigation Development / Construction Management	Mr. Takashi HOTTA	0.00	0.00	7.54	1.93	9.47
10	Agricultural Extension	Mr. Haruhiko AOYAMA / Ms. Yukiko JOHO	2.44	2.00	4.97	1.33	10.74
11	Architecture	Mr. Takayuki MIYOSHI	0.00	0.80	0.00	0.00	0.80
12	Coordination / Participatory Development	Mr. Ryosuke MAKINO	0.00	0.00	3.03	0.00	3.03
			32.30	44.10	60.98	13.23	150.61
	Report						



ANNEX-6 : List of Machinery and Equipment

Date of arriving at the site	Name of equipment	Manufacturer name and model	Purchase price Unit price : XOF is indicated between ( )	Place of installation	Place of purchase	Purpose of use	Main administrator and checking procedure of the work	State of current functioning
June 2010	Desktop computers : (2 units)	Hewlett-Packard (HP) DX7500	3.216DUS (850.000FCFA)	Project office	In Senegal	Managemnt of the office	Supervision assured during use by the project team	Good condition, works regularly
March 2010	Laptops : (5 units)	HP 610	5.992DUS (633.500FCFA)	Project office	In Senegal	Use by the project staffs	Supervision assured during use by the project team	Good condition, works regularly
March 2010	Projector (1 unit)	Sony VPL	784$ (414.200FCFA)	Project office	In Senegal	Presentations of the meetings and workshops	Supervision assured during use by the project team	Good condition, works regularly
March 2010	Laser printers (2 units)	HP CP1515N HP CP3525DN	2.082$ (1.100.400FCFA)	Project office	In Senegal	Report printing	Supervision assured during use by the project team	Good condition, works regularly
March 2010	Ink jet printers (A4 size) (2 units)	HP D2663	265$ (70.000FCFA)	Project office	In Senegal	Managemnt of the office	Supervision assured during use by the project team	Good condition, works regularly
March 2010	Ink jet printer (A3 size) (1 unit)	HP K7000	544$ (287.680FCFA)	Project office	In Senegal	Printing of drawings	Supervision assured during use by the project team	Good condition, works regularly
March 2010	Copy machine (2 units)	Canon IR2318	9.120$ (2.410.420FCFA)	Project office	In Senegal	Managemnt of the office	Supervision assured during use by the project team	Required maintenance, works regularly
March 2010	Fax (2 units)	Canon JX500	625$ (165.200FCFA)	Project office	In Senegal	For the communication	Supervision assured during use by the project team	Good condition, works regularly
March 2010	Digital cameras (2 units)	Sony DSC-180	965$ (255.000FCFA)	Project office	In Senegal	Site monitoring	Supervision assured during use by the project team	Good condition, works regularly
March 2010	Scanner (1 unit)	HP 2410	179$ (94.400FCFA)	Project office	In Senegal	To scan questionnaires, etc.	Supervision assured during use by the project team	Good condition, works regularly
February 2010	Car (1 unit)	Mitsubishi PAJERO Station Wagon	13,675,000FCFA (13,675,000FCFA)	Project office	In Senegal	For the Project activities	Supervision assured during use by the team leader	Good condition, works regularly
February 2010	Car (1 unit)	Toyota Pick up HILUX	16,600,000FCFA (16,600,000FCFA)	Project office	In Senegal	For the Project activities	Supervision assured during use by the team leader	Good condition, works regularly
May 2010	Car (1 unit)	Mitsubishi PAJERO Station Wagon	13,675,000FCFA (13,675,000FCFA)	Project office	In Senegal	For the Project activities	Supervision assured during use by the team leader	Good condition, works regularly
May 2010	Car (1 unit)	Toyota Pick up HILUX	16,600,000FCFA (16,600,000FCFA)	Project office	In Senegal	For the Project activities	Supervision assured during use by the team leader	Good condition, works regularly
May 2012	Car (2 units)	Mitsubishi PAJERO	27,350,000FCFA (13,675,000FCFA	Project office	In Senegal	For the Project	Supervision assured during use by the	Good condition, works regularly

		Station Wagon	)			activities	team leader	
June 2011	Diesel cultivator with a rotavator	Agritech	XOF 6,700,000 (3,350,000)	Diatar and Ngane	In Senegal	For the technical guidance	Supervision assured during use by the project team	Not in use
June 2011	ASI thresher	Agritech	XOF 4,800,000 (2,400,000)	Diatar	In Senegal	For the technical guidance	Supervision assured during use by the project team	Good condition, works regularly
June 2011	Carried cutter bar	Agritech	XOF 5,200,000 (2,600,000)	Diatar and Ngane	In Senegal	For the technical guidance	Supervision assured during use by the project team	Not in use
November 2011	Engelberg type small rice milling machne (6 units)	Agritech	XOF 15,300,000 (2,550,000)	Women groups	In Senegal	For the technical guidance	Supervision assured during use by the group members	Good condition, works regularly
February 2013	Rotary shifter (17 units)	Yanmar FS-57T	¥15,491,114 (5,955,826)	Rice mills	In Japan	Improvement of rice quarity	Supervision assured during use by SAED and rice miller	Good condition, works regularly
February 2013	Length grader (17 units)	Yanmar YCS150	¥8,526,520 (3,278,170)	Rice mills	In Japan	Improvement of rice quarity	Supervision assured during use by SAED and rice miller	Good condition, works regularly
February 2013	Bucket elevator (24 units)	Yanmar BBS700	¥9,477,360 (2,580,982)	Rice mill	In Japan	Improvement of rice quarity	Supervision assured during use by SAED and rice miller	Good condition, works regularly

Annex-7 : List of training in Japan

PARTICIPANT	DEPARTMENT	NAME OF TRAINING	TYPE	NUMBER	DATE OF DEPARTURE AND RETURN
MSARR Mignane	SAED (at that time)	Adaptive Watershed Management for Food Counterm	Group	J0900784	16/08/2009 - 17/10/2009
FALL Sidy	SAED, DAIH (at that time)				
FAYE Paul Marie Diomaye	SAED, Matam Delegation	Processing after harvest of the rice (for the countries of Africa French speaker)	Region	J0904223	30/08/2009 - 27/09/2009
TIDIANI cheikh Yacouba	SAED, Bakel Delegation				
DIA ousmane	SAED, Head office, in charge of the program with OMVS	Adaptive Watershed Management for Flood Countermeasures by Climate Change and Conservation of Ecosystem"	Group	J1100668	10/06/2011 - 02/07/2011
SARR Khassim Malick	SAED, DDAR	Implementation and Promotion of Agribusiness for African Countries	Region	J1104174	28/10/2011 - 10/12/2011
THIENE Mamadou Bra	SAED, DDAR				
LO Eladji Mbargou	SAED, Bakel Delegation	Improvement of Agricultural Machinery and Equipment for Growth in Agricultural Productivity for African Countries	Region	J1104123	09/01/2012 - 02/03/2012

ANNEXE-8 : Operational cost spent by the Project

（Unit : JPY '000）

	JFY 2010	JFY 2011	JFY 2012	JFY 2013	Total
Remuneration for the national staff	10,982	31,157	23,789	17,555	83,483
Maintenance of vehicles and equipments	441	2,778	1,445	1,987	6,651
Office consumables and fuel	2,323	19,977	13,538	5,128	40,966
Allowances of the counterparts	625	987	908	582	3,102
Telephone and internet	296	914	2,283	642	4,135
Preparation of reports and the other documents	121	97	202	294	714
Rental fee of vehicles and heavy machines	233	3,658	201	1,298	5,390
Expenses of water and electricity of the office	88	231	395	208	922
Trade fairs and workshops	594	3,797	1,404	400	6,195
Purchases of vehicles	16,300	7,392	0	0	23,692
Purchase of office equipments	2,624	0	0	0	2,624
Purchase of the other equipments	7,355	3,106	0	0	10,461
Local consultants	0	3,909	0	0	3,909
Other including the maintenance of the office	231	29	216	3	479
Total	42,213	78,032	44,381	28,097	192,723

Note :
JFY = Japanese Fiscal Year (from April to March)

ANNEX-9: Counterpart personnel

Name	Speciality	Training dulation	Names of the experts which made the technology transfer	Working years within the agency of execution	Notes
M. Seyni Ndao	Rural development, project coodination	3years and 6 months, from April 2010	M. M. Koyama M. J. Moreira	25 years frrom 1988	Director, DDAR, SAED
M. Oumar Samba SOW	Post-harvest, marketing	3years and 6 months, from April 2010	M. T. Aoki M. J. Moreira Mlle S. Otowa	25 years frrom 1988	DDAR, SAED
M. Salif DIACK	Agronomist	3years and 6 months, from April 2010	M. T. Kimijima M. J. Moreira	9 years frrom 2004	Responsible for Rice Program, SAED
M. Mouhamadou Touré	Agronomist	1 year 8 months, from April 2010 to Dec. 2011 (retired)	M. T. Kimijima	34 years frrom 1978	Chief, DMOC, SAED
M. Amadou Thiam	Agronomist	3years and 6 months, from April 2010	M. M. Koyama	14 years frrom 1999	Chief, CSE, SAED
M. Aboubacry Sow	Irrigation engineer	3years and 6 months, from April 2010	M. K. Noda	24 years frrom 1989	Director DAIH, SAED
M. Djibril Sall	Irrigation engineer	2 years and 9 months, from April 2010 to Dec. 2012	M. K. Noda	5 years frrom 2007	Water management o GA, SAED
Mr Elhadji Mar	Irrigation engineer	9 months from Jan. 2013	M. K. Noda	2 years frrom 2001	DAIH, SAED
M. Mbaye Niass	Irrigation engineer	2 years and 10 months , from Aug. 2011	M. K. Noda	23 years frrom e 1990	Engineer Delegate, SAED
Mr Babacar Wade	Irrigation engineer	1year and 5 months, from June 2012	M. K. Noda	32 years frrom 1981	Chief of Downstream Delta Sector
M. Mamadou Ba	Agronomist	3years and 6 months, From April 2010	M. T. Kimijima	15 years frrom 1998	Débi/Tiguette extension officer, SAED
Mr Sadibou Coly	Agronome	1year 5 months, from April 2010 to sept. 2011 (dead)	M. M. Koyama M. K. Noda M. J. Moreira	28 years frrom 1984	Engineer Delegate, Podor, SAED
Mr Sogui Sow	Administrator	4 months, from Jan. 2013 to April 2013	M. T. Aoki	from 2013	Administration, Dagana Delegation
Mme Aissatou Ndiaye Samb	Women Organization	5 months, from May 2013	M. T. Aoki	24 years frrom 1989	Adviser on female promotion, Dagana
M. Alassane Bâ	Agronomist	3years and 6 months, From April 2010	M. M. Koyama M. K. Noda M. J. Moreira	12 years frrom 2001	Engineer Delegate, SAED
M. Samba Ba	Agronomist	2 year and 4 months, from June 2011	M. T. Kimijima M. K. Noda	33 years frrom 1980	CPSE of Podor, SAED
M. Malic Dione	Irrigation engineer	3years and 6 months, From April 2010	M. K. Noda	12 years frrom 2001	DAGE of Podor, SAED
M. Aboubacry Ly	Irrigation engineer	3years and 6 months, From April	M. K. Noda	6 years frrom 2007	Water management, SAED

		2010			
M. Alassane B Ndiaye	Extension Agent	3years and 6 months, From April 2010	M. T. Kimijima M. K. Noda	29 years frrom 1984	Donaye, Diatar and Mboyo Chief, SAED
Mme Mariame Diop	Women Organization	1 year 4 months, from July 2012	M. T. Aoki	24 years frrom 1989	GIE Coordinator
M. Omar Samba Ndiaye	Marketing	3years and 6 months, From April 2010	M. M. Koyama Mlle S. Otowa M. J. Moreira	N.A.	ARM

ANNEX-10 : List of Seminar Training and Workhop Conducted

Month and year	Name and contents of the training/workshop	Date	Duration	Number of participants	Participants	Place
April 2010	Press conference on the occasion of the launch of the project	1 April 2010	1 day	35	Counterparts, rice sector actors, presses	Saint Louis
April 2010	Workshop for rice miller	12 April 2010	1 day	18	Rice millers	Dakar
June 2010	Steering committee	30 June 2010	1 day	31	Steering committee members	Dakar
Jully 2010	Workshop for the zone of Podor with the exception of the village of Ngane	31 Jully 2010	1 day	30	Farmers, SAED staffs	SAED Podor Delegation
August 2010	Training on the improvement of rice production	12 August 2010	1 day	32	Farmers, SAED staffs	SAED Podor Delegation
February 2011	FIARA	2-13 February 2011	11 days	-	Rice millers, consumers	Dakar, Exposition
February 2011	Workshop for the zone of Podor with the exception of the village of Ngane	8 February 2011	1 day	30	Farmers, SAED staffs	SAED Podor Delegation
March 2011	Training on the improvement of rice production monitoring	15-16 March 2011	2 days	16	Farmers, SAED staffs	SAED Podor Delegation
March 2011	Training on the improvement of rice production monitoring	22-23 March 2011	2 days	25	Farmers, SAED staffs	SAED Podor Delegation
March 2011	Training on the improvement of rice production monitoring	29-30 March 2011	2 days	39	Farmers, SAED staffs	SAED Podor Delegation
May 2011	Workshop for Podor irrigation schemes	24 May 2011	1 day	36	Farmers, SAED staffs	SAED Podor Delegation
June 2011	Western CONAT Africa; grouping of the storekeepers	1-5 June 2011	5 days	-	Member of women groupes	Dakar, Exposition
June 2011	Steering committee	6 June 2010	1 day	28	Steering committee members	Dakar
June 2011	Workshop for Podor irrigation schemes	11 June 2010	1 day	20	Farmers, SAED staffs	SAED Podor Delegation
June 2011	Training on the improvement of rice production monitoring	22-24 June 2011	3 days	25	Farmers, SAED staffs	SAED Podor Delegation
Jully 2011	Training on the functioning and the maintnance of agricultural machines	14 Jully 2010	3 days	8	Farmers, SAED staffs	SAED Podor Delegation /Moundouwaye
Jully 2011	Training on the functioning and the maintnance of agricultural machines	24-26 Jully 2011	3 days	6	Farmers, SAED staffs	SAED Podor Delegation /Donaye, Diatar
September 2011	Workshop for Podor irrigation schemes	27 September 2011	1 day	33	Farmers, SAED staffs	SAED Podor Delegation
September 2011	Training on the improvement of rice production monitoring	28 September 2011	1 day	-	Farmers, SAED staffs	Ross-Béthio
October 2011	Training on the improvement of rice production monitoring	6 October 2011	1 day	49	Farmers, SAED staffs	Débi-Tiguette, Dagana

Month and year	Name and contents of the training/workshop	Date	Duration	Number of participants	Participants	Place
October 2011	Workshop for Debi-Tiguette irrigation schemes	20October 2011	1 day	26	Farmers, SAED staffs	Débi-Tiguette, Dagana
November 2011	Workshop for Podor irrigation schemes	3 November 2011	1 day	19	Farmers, SAED staffs	SAED Podor Delegation
November 2011	Workshop for Podor irrigation schemes	10 November 2011	1 day	26	Farmers, SAED staffs	SAED Podor Delegation
November 2011	Workshop for Debi-Tiguette irrigation schemes	17 November 2011	1 day	17	Farmers, SAED staffs	Débi-Tiguette, Dagana
November 2011	Workshop on the commercial promotion of the local rice	22 November 2011	1 day	17	Rice miller, consumers, buyers etc.	PAPRIZ Office /St-Louis
November 2011	Workshop for Debi-Tiguette irrigation schemes	24 November 2011	1 day	24	Farmers, SAED staffs	Débi-Tiguette, Dagana
November 2011	Study tour	28 November – 1 december 2011	4 days	30	Farmers, SAED staffs	Dagana, Podor
December 2011	FIDAK	1-12 December 2011	12 days		Rice miller, buyers, donners	Dakar, Exposition
December 2011	Training on the improvement of rice production monitoring	9-11 December 2011	3 days	7	Farmers, SAED staffs	SAED Podor Delegation/ Donaye
December 2011	Campaign for local rice promotion	15-19 December 2011	5 days	-	Rice miller, buyers, donners	Dakar, Exposition
December 2011	Training on the improvement of rice production monitoring	12-14 December 2011	3 days	8	Farmers, SAED staffs	SAED Podor Delegation/ Mboyo
December 2011	Steering committee	22 December 2011	1 day	28	Steering committee members	Dakar
January 2012	Training on the improvement of rice production monitoring	9 January 2012	1 day		Farmers, SAED staffs	SAED Podor Delegation/ Ngane
January 2012	Training on the improvement of rice production monitoring	10 January 2012	1 day		Farmers, SAED staffs	SAED Podor Delegation /Korkadie
January 2012	Training on the improvement of rice production monitoring	11 January 2012	1 day		Farmers, SAED staffs	SAED Podor Delegation/ Diatar
October 2012	Steering committee	3 October 2012	1 day	29	Steering committee members	Dakar
October 2012	Workshop for Podor irrigation schemes in Group 2	9 October 2012	1 day	30	Farmers, SAED staffs	SAED Podor Delegation
November 2012	Workshop for Podor irrigation schemes in Group 1	29 November 2012	1 day	30	Farmers, SAED staffs	SAED Podor Delegation
December 2012	Workshop for Podor irrigation schemes in Group 1	27 December 2012	1 day	29	Farmers, SAED staffs	SAED Podor Delegation
January 2013	Workshop for Podor irrigation schemes in Group 1	22 January 2013	1 day	36	Farmers, Material supplyers, SAED staffs	SAED Podor Delegation
March 2013	Steering committee	12 March 2013	1 day	32	Steering committee members	Dakar

Month and year	Name and contents of the training/workshop	Date	Duration	Number of participants	Participants	Place
April 2013	Workshop for Podor irrigation schemes in Group 2	18 April 2013	1 day	34	Farmers, Pump worker, SAED staffs	SAED Podor Delegation
May 2013	Workshop for Podor irrigation schemes in Group 1	23 May 2013	1 day	34	Farmers, SAED staffs	SAED Podor Delegation
May 2013	Workshop for Debi-Tiguette irrigation schemes	28 May 2013	1 day	22	Farmers, SAED staffs	Debi-Tiguette, Dagana
June 2013	Workshop for Podor irrigation schemes in Group 1	12 June 2013	1 day	26	Farmers, SAED staffs	SAED Podor Delegation
Jully 2012	Training on preparation of seedling	24 Jully 2012	1 day	16	Farmers in Donaye IT4	Podor Paddy field of Donay IT4
Jully 2012	Training on the functioning and the maintnance of motorized thresher	28 Jully 2012	1 day	5	Farmers in Diatar 2	Podor Paddy field of Diatar 2
December 2012	Training on vulgarization guide for rice cultivation	4-5 December 2012	2 days	31	SAED staffs	Ndiaye Africa Rice
January 2013	Training on the rice cultivation technique for female farmers	29 January-14 February 2013	Total 3 days	247	Female Farmers in Podor	Podor Villages of Ngane, Moundouwaye, Diama-Alwaly, and Korkadie
February 2013	Training on preparation of seedling	18-23 February 2013	Total 3 days	50	Farmers in Donaye IT4 and Ngane village	Podor Paddy fields of Donaye IT4 and Ngane village
March 2013	Training on the rice cultivation technique for farmers	27-28 March 2013	2 days	47	Farmers in Mboyo and Guédé Ouro	Podor Villages of Mboyo and Guédé Ouro
March 2013	Special training on the use of herbicide	27 March-10 May 2013	Total 6 days	136	Six GIE of Podor Groupe 1	Podor Paddy fields of Diatar 2, Diatar IT2, Donaye IT4, Diama-Alwaly, Korkadie, and Moundouwaye
April 2013	Training on the rice cultivation technique for farmers	27 April 2013	1 day	45	Farmers in Debi-Tiguette	Debi-Tiguette
Jully 2013	Training on the functioning and the maintnance of motorized thresher	15-18 Jully 2013	2 days	20	Farmers in Diatar IT2 and Diatar 2	Podor Diatar IT2 and Diatar 2
August 2013	Steering committee	14 August 2013	1 day	26	Steering committee members	Dakar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