

Country Name	Project on Improvement of Rice Productivity for Irrigation Schemes in the Valley of Senegal
Republic of Senegal	

I. Project Outline

Background	<p>Senegal was one of the largest rice consumers in West Africa with an annual rice consumption of 74kg per capita in 2003. On the other hand, the domestic rice production in the country only covered 20% of the domestic demand and more than 800,000 tons of rice per year had been imported because of the liberalization of rice imports and the growing demand on rice by the growing population. Therefore, an increase in the self-sufficiency of rice was a strategic priority issue for food security policy in Senegal. Under those situations, the government of Senegal requested the government of Japan to support preparation of a national development plan for the rice sector and JICA carried out “the Study on the Reorganization of the Production of Rice in Senegal” (2004-2006). Based on the results of the study, the government of Senegal requested the government of Japan a 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, the largest rice production area of the country.</p>										
Objectives of the Project	<p>Through provision of trainings for agriculture advisors of the National Corporation of Development and Operation of Delta and Valley of Senegal River and Falémé River (SAED), dissemination of the rice farming model in the pilot scheme by the SAED agriculture advisors and establishment and dissemination of a model of management and maintenance for the small-scale irrigation schemes, the project aimed at improvement of the rice farming productivity and profitability in the Dagana and Podor Departments, thereby contributing to improvement of the rice farming productivity and profitability in the Senegal River Valley.</p> <ol style="list-style-type: none"> Overall Goal: Improvement of the rice farming productivity and profitability in the Senegal River Valley. Project Purpose: Improvement of the rice farming productivity and profitability in the Dagana and Podor Departments. 										
Activities of the Project	<ol style="list-style-type: none"> Project Site: Dagana and Podor Departments in Saint-Louis Region (Pilot sites: Débi Tiguette, Podor 1 and Podor 2) Main Activities: 1) Trainings for the SAED agriculture advisors to improve farm advisory for farmers, 2) Trainings for farmers to practice a rice farming improvement plan, 3) Dissemination of the rice farming model in the pilot scheme by the SAED agriculture advisors, 4) Implementing rehabilitation works of small-scale schemes in the pilot sites, 5) Establishing and disseminating a model of management and maintenance for the small-scale irrigation schemes, etc. Inputs (to carry out above activities) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Japanese Side</td> <td style="width: 50%;">Senegalese Side</td> </tr> <tr> <td>1) Experts: 11 persons</td> <td>1. Staff Allocated: 19 persons</td> </tr> <tr> <td>2) Trainees Received: 8 persons</td> <td>2. Land and facilities: Project office, accommodation in Podor, etc.</td> </tr> <tr> <td>3) Equipment: vehicle, PCs, rice mills, rotary shifter, length sorter, lift, etc.</td> <td></td> </tr> </table> 			Japanese Side	Senegalese Side	1) Experts: 11 persons	1. Staff Allocated: 19 persons	2) Trainees Received: 8 persons	2. Land and facilities: Project office, accommodation in Podor, etc.	3) Equipment: vehicle, PCs, rice mills, rotary shifter, length sorter, lift, etc.	
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Project Period	February, 2010 – March 2014	Project Cost	(ex-ante) 490 million yen, (actual) 781 million yen								
Implementing Agency	National Corporation of Development and Operation of Delta and Valley of Senegal River and Falémé River (SAED: Société Nationale d'Aménagement et d'Exploitation des Terres du Delta du Fleuve Sénégal et des Vallées du Fleuve Sénégal et de la Falémé)										
Cooperation Agency in Japan	Nippon Koei CO., LTD.										

II. Result of the Evaluation

<Special perspectives considered in the ex-post evaluation>

[The target areas for the Project Purpose]

- Although the narrative summary of the Project Purpose is “Improvement of rice farming productivity and profitability in Dagana and Podor Departments, the achievement level of the Project Purpose was verified by the data in the pilot sites because the verifiable indicators indicated only pilot sites as the target areas to be verified.
- Because of the security reasons (the terrorist attack in Algeria and the conflict in northern Mali in January, 2013), the project activities, including the rehabilitation works for the irrigation schemes in the pilot site of Podor 2 and technical guidance for rice cultivation, had been limited until July, 2013 when the security precaution was partially relaxed. Although the rehabilitation works in Podor 2 was completed in December, 2013, rice cultivation after the rehabilitation of the irrigation scheme did not start before the project completion and the expected improvement of rice production in Podor 2 by the project was not able to be verified. Therefore, the achievement levels of the indicator 1, 2 and 3 were verified the results in the two pilot sites of Podor 1 with the rehabilitation works of the irrigation schemes and Debi-Tiguette without the rehabilitation works.

[The target year of the Overall Goal]

In PDM, the target year for achieving the Overall Goal is 2018 but this ex-post evaluation was conducted in 2017. Therefore, the achievement level of the Overall Goal was verified with the data for the post project period from 2014 to 2016.

1 Relevance

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

The project was consistent with the Senegal’s development policy of “The National Program for Self Sufficiency in Rice (NPSR) 2005”, “Poverty Reduction Strategy Paper II 2006-2010” and “The National Rice Development Strategy 2009-2012”, aiming at enhancing the productivity and quality of rice for strengthening the agricultural sector and reducing poverty. The policy priorities were

confirmed at both the time of ex-ante evaluation and the time of project completion.

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

The project was consistent with the Senegal's development needs of the small rice farmers in the irrigated areas in the Senegal River Valley to stabilize rice production and to improve profitability of rice production since they faced unstable and low quality of rice production, high production cost and unstable and inappropriate profits from rice production. The development needs were confirmed at both the time of ex-ante evaluation and the time of project completion.

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

The project was consistent with the Japan's ODA policy for Senegal, which was started to prepare in 2006, prioritizing to support "establishment of base for sustainable economic growth", including promotion of local industries and infrastructure development as one of the two priority areas at the time of ex-ante evaluation.

<Evaluation Result>

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

2 Effectiveness/Impact

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

The Project Purpose was partially achieved by the project completion. The average paddy production per ha (Indicator 1) of the in Podor 1 increased by 30% for the rainy season but fluctuated in the dry season for the period from 2009 to 2013. In Debi-Tiguette, the data was very limited since the farmers had difficulties to use corps credit and suspended cultivation for the three seasons from the rainy season in 2011 to the rainy season in 2012 due to the dissolution of the union in May 2011. Although only 9 cooperation producers for the project cultivated in the dry season in 2010 and 2013, the average paddy production per ha increased by 21% from 2010 to 2013. The income of rice farmers (Indicator 2) was able to be verified in only Podor 1 because of no or limited cultivation in Podor 2 and Debi-Tiguette. 25 producers of 5 Economic Interest Groups (GIEs)¹ increased their net income from rice farming 79% from 2009 to 2013. The paddy production (Indicator 3) of the benchmark producers in Podor 1 increased by 13% from 645 tons in 2010 to 728 tons in 2013. Although 0 ton in the dry season in 2011, it was because of repair and improvement works implemented in 2011. Also, the production for the rainy season decreased from 381 ton in 2010 to 338 ton in 2012 due to damages by inundation. The number of distributors purchasing from the 10 rice millers targeted by the project (Indicator 4) increased from 11 in 2011 to 18 in 2013 but no data of distribution volume of local quality milled rice in the main sale area (mainly in Dakar) was available while the processed rice volume by the 10 rice millers increased from 5,591 tons in 2011 to 7,892 tons in 2013. Although the data of sales volume of rice by the 10 rice millers (Indicator 5) was not available, it can be reasonably assumed that it may have increased because of the increase in the processed volume by the 10 rice millers and the number of distributors purchasing from them increased.

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

The project effects have been partially continued since the project completion. As for the rice farming model introduced by the project, all the 6 GIEs in Podor 1 which had participated in the project activities have still practiced the techniques and farming practices, such as pre-germination techniques, management of nurseries, recommended utilization of fertilizer, recommended management of irrigation and so on and the model has been disseminated to other GIEs by the agricultural advisors trained by the project. The number of GIEs practicing the model increased from 2 in 2013 to 39 in 2017 at the time of ex-post evaluation. On the other hand, 6 GIE in Podor 2 have practiced though they had no training on the rice farming model by the project due to the delay of the rehabilitation works of the irrigation schemes. As for the model of management and maintenance of small-scale irrigation schemes introduced by the project, all the 12 GIEs in both of Podor 1 and Podor 2 have continuously practiced but the model has not been disseminated to other areas in the departments of Dagana and Podor since the model was based on the participatory approach to directly train the users of the irrigation schemes and the SAED engineers had not been technically trained to disseminate the model. In Podor, the credit system introduced by the project is no longer functional and has not been disseminated due to cultural behaviors and customs that do not encourage the use of conventional credit system. In Podor area, most of the population is Muslim and comes from Puular ethnic group. Puular are known as conservative people, strongly attached to religions and customs. One of the principles of the Islamic religion is the opposition to the remuneration of the money lent and the interdiction of interest rate as practiced in conventional financial system. At the end of the project, it has been observed a lack of interest among the producers for the use of credit. However, the credit system introduced by the project has been continuously used by all the 9 GIEs in Debi-Tiguette which had participated in the project activities because they were used to use bank credit. The financial system introduced by the project is still functioning there. Some of producers have now more financial resources to support maintenance and functioning fees, such as water user fees and taxes, occasionally. But in general, till now, there is no a consistent fund for irrigation schemes management.

The paddy production and land productivity (ton/ha) in the pilot sites have been fluctuated year by year though the level of production volume differed by the sites. In terms of annual revenue from rice, the producers of Podor 1 have relatively stable revenue of around 20 million FCFA but the producers of Podor 2 faced much fluctuated revenue which increased to 42 million FCFA in 2014 and to decrease to 18 million FCFA in 2015. In Debi-Tiguette, revenues of producers have constantly increased from 222 million FCFA in 2013 to 556 million FCFA in 2016 because they had larger production volume by the large scale irrigation.

As for the distribution channel, all the 10 rice millers have continued their operation with the grading machine introduced by the project. The volume of milled rice by the 5 rice millers surveyed by the ex-post evaluation has increased to more than 12,000 tons after the project completion. While the number of distributors purchasing from the 10 rice millers increased from 18 in 2013 to 55 in 2016. The volume of rice distributed by them purchasing from the 4 rice millers surveyed by the ex-post evaluation also increased to 10,987 tons from 8,023 tons for the same period. As a result, the volume of rice from the 10 rice millers sold by retailers also increased to 3,804 tons in 2016 from 938 tons in 2013 but no data of the number of retailers selling the rice from them was available. The promotion activities for the improved rice produced in the pilot sites and the target departments have been continuously conducted in Dakar and Ross Bethio in the country and in Paris, France.

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

The Overall Goal has been achieved. The paddy production in the both departments of Podor and (Indicator 1) increased by 22% and

¹ GIE (Groupement d'Intérêt Économique) is a union of rice produces, and there are 7 GIEs in Podor 1, 6 GIEs in Podor 2 and 9 GIEs in Débi Tiguette.

44% in 2016, respectively, compared to the baseline in 2008. Also, the annual revenue from rice increased by 53% in Podor Department and 50% in Dagana Departments in 2016 from the baseline in 2008.

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

Some positive impacts were observed at the time of ex-post evaluation. According to SAED, because of the sorting machines installed by the project, the women engaged in rice mill have been able to reduce the volume of manual works and to use their time for other commercial activities. Also, rice processing has lead increases in their income due to diversified and more value added activities practiced by women. . In addition, the increase in the number of rice millers brought about less needs of paddy storage and less losses of paddy because the producers are able to directly bring paddy to the rice millers and to avoid risks of damages on paddy by insects and rain and degradation of quality during the storage. No negative impacts on natural environment by the project was observed at the time of ex-post evaluation and no land acquisition and resettlement occurred by the project.

<Evaluation Result>

In light of the above, the Project Purpose was partially achieved and the project effects have been partially continued. The Overall Goal has been achieved by the time of ex-post evaluation. Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results																																																																																																															
<p>(Project Purpose) Improvement of rice farming productivity and profitability in the pilot sites.</p>	<p>(Indicator 1) 15% increase in the paddy production per ha in the pilot sites.</p>	<p>Status of the Achievement: Partially achieved (Continued) (Project Completion)</p> <ul style="list-style-type: none"> ● Podor 1: increase by 30% for the rainy season and fluctuated in the dry season from 2009 to 2013 after completion of the rehabilitation works in January 2013. ● Podor 2: not verified because of the completion of the rehabilitation works in December 2013. ● Debi-Tiguette (without rehabilitation works): increase by 21% for the dry season from 2010 to 2013. <p>[Paddy Production in Podor 1 (ton/ha)]</p> <table border="1" data-bbox="663 846 1417 949"> <thead> <tr> <th colspan="2">2009</th> <th colspan="2">2010</th> <th>2011</th> <th colspan="2">2012</th> <th colspan="2">2013</th> </tr> <tr> <th>dry</th> <th>rainy</th> <th>dry</th> <th>rainy</th> <th>rainy</th> <th>dry</th> <th>rainy</th> <th>dry</th> <th>rainy</th> </tr> </thead> <tbody> <tr> <td>5.4</td> <td>5.0</td> <td>4.7</td> <td>4.4</td> <td>4.2</td> <td>5.8</td> <td>4.9</td> <td>5.4</td> <td>6.5</td> </tr> </tbody> </table> <p>*No cultivation for the dry season in 2011 due to the repair and improvement works **123 producers were sampled for the data in 2009. For the period from 2010 to 2013, the figures are based on the data from the benchmark producers in the Podor 1(20 producers from each GIE x 7 GIEs)</p> <p>[Paddy Production in Debi-Tiguette (ton/ha)]</p> <table border="1" data-bbox="663 1111 1417 1214"> <thead> <tr> <th colspan="2">2009</th> <th colspan="2">2010</th> <th colspan="2">2012</th> <th colspan="2">2013</th> </tr> <tr> <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> </thead> <tbody> <tr> <td>N.A.</td> <td>5.9</td> <td>5.7</td> <td>N.A.</td> <td>N.A.</td> <td>N.A.</td> <td>6.9</td> <td>N.A.</td> </tr> </tbody> </table> <p>*90 producers were sampled for the data in 2009. For the period from 2010 to 2013, the figures are based on the data from the cooperation producers in Debi-Tiguette (1 producer from each SV/GIE x 9 SV/GIEs)</p> <p>(Ex-post Evaluation)</p> <p>[Rice Production in Podor 1]</p> <table border="1" data-bbox="663 1370 1398 1491"> <thead> <tr> <th></th> <th>2014</th> <th>2015</th> <th>2016</th> </tr> </thead> <tbody> <tr> <td>Cultivated area (ha)</td> <td>165</td> <td>162</td> <td>163</td> </tr> <tr> <td>Production (ton)</td> <td>989.25</td> <td>847.26</td> <td>971.13</td> </tr> <tr> <td>Land productivity(ton/ha)</td> <td>6</td> <td>5.23</td> <td>5.96</td> </tr> </tbody> </table> <p>Source: The data provided by SAED Delegation, Podor</p> <p>[Rice Production in Podor 2]</p> <table border="1" data-bbox="663 1559 1398 1671"> <thead> <tr> <th></th> <th>2014</th> <th>2015</th> <th>2016</th> </tr> </thead> <tbody> <tr> <td>Cultivated area (ha)</td> <td>323</td> <td>251</td> <td>274.3</td> </tr> <tr> <td>Production (ton)</td> <td>1,968</td> <td>1,312.73</td> <td>1,658.76</td> </tr> <tr> <td>Land productivity(ton/ha)</td> <td>6.09</td> <td>5.23</td> <td>6.05</td> </tr> </tbody> </table> <p>Source : SAED Delegation, Podor</p> <p>[Rice Production in Debi-Tiguette]</p> <table border="1" data-bbox="663 1738 1533 1984"> <thead> <tr> <th></th> <th>Rainy 2014</th> <th>Dry 2014</th> <th>Rainy 2015</th> <th>Dry 2015</th> <th>Rainy 2016</th> <th>Dry 2016</th> </tr> </thead> <tbody> <tr> <td>Total Cultivated area (ha)</td> <td>235</td> <td>1,201</td> <td>1,015.43</td> <td>1,976.43</td> <td>410</td> <td>1,564.32</td> </tr> <tr> <td>Production (ton)</td> <td>1,351.25</td> <td>8,479.06</td> <td>5,046.69</td> <td>12,056.22</td> <td>2,029.50</td> <td>12,451.99</td> </tr> <tr> <td>Land Productivity (ton/ha)</td> <td>5.75</td> <td>7.06</td> <td>4.97</td> <td>6.1</td> <td>4.95</td> <td>7.96</td> </tr> </tbody> </table> <p>Source: SAED Delegation, Dagana</p>	2009		2010		2011	2012		2013		dry	rainy	dry	rainy	rainy	dry	rainy	dry	rainy	5.4	5.0	4.7	4.4	4.2	5.8	4.9	5.4	6.5	2009		2010		2012		2013		dry	rainy	dry	rainy	dry	rainy	dry	rainy	N.A.	5.9	5.7	N.A.	N.A.	N.A.	6.9	N.A.		2014	2015	2016	Cultivated area (ha)	165	162	163	Production (ton)	989.25	847.26	971.13	Land productivity(ton/ha)	6	5.23	5.96		2014	2015	2016	Cultivated area (ha)	323	251	274.3	Production (ton)	1,968	1,312.73	1,658.76	Land productivity(ton/ha)	6.09	5.23	6.05		Rainy 2014	Dry 2014	Rainy 2015	Dry 2015	Rainy 2016	Dry 2016	Total Cultivated area (ha)	235	1,201	1,015.43	1,976.43	410	1,564.32	Production (ton)	1,351.25	8,479.06	5,046.69	12,056.22	2,029.50	12,451.99	Land Productivity (ton/ha)	5.75	7.06	4.97	6.1	4.95	7.96
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(Indicator 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)	<p>Status of the Achievement: Partially achieved (Continued) (Project Completion)</p> <ul style="list-style-type: none"> ● Volume of rice sold from the 10 rice millers target: The number of retailers selling the rice from the 10 rice millers: increased from 8 in 2010 to 11 in 2013. <p>(Ex-post Evaluation)</p> <ul style="list-style-type: none"> ● The number of retailers selling the rice from the 10 rice millers: No data available <table border="1"> <thead> <tr> <th></th> <th>2013</th> <th>2014</th> <th>2015</th> <th>2016</th> </tr> </thead> <tbody> <tr> <td>Volume of rice from the 10 rice millers sold by retailers</td> <td>938.1</td> <td>3,219.5</td> <td>2,980.75</td> <td>3,804.42</td> </tr> </tbody> </table>		2013	2014	2015	2016	Volume of rice from the 10 rice millers sold by retailers	938.1	3,219.5	2,980.75	3,804.42																										
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Source : Project Completion Report (EN), Site Visit (Podor), the ex-post evaluation interviews with staffs of SAED, farmers, rice millers and distributors

3 Efficiency

The project cost and period exceeded the plan (ratio against the plan: 159%, 104%, respectively) because of the additional inputs for establishment of value chain and for the response to the new request identified as necessary by SAED and the Ministry of Agriculture during the project period, such as dispatch of additional experts and procurement of vehicles. Therefore, the efficient of the project is

low.

4 Sustainability

<Policy Aspect>

“The Acceleration Program of Cadence of Agriculture in Senegal (PRACAS) (2014-2017)” aims at expansion of paddy production to 1.5 million tons in 2017 through the five pillars including realization of new irrigation schemes, reinforcement of machinery and equipment and creation of commercialization fund. At the time of ex-post evaluation, PRACAS is in the final stage and is going to be evaluated in 2018. The Government of Senegal has been working on a new 5 year action plan to maintain the dynamics to achieve rice self-sufficiency in the coming program since the goal will not be achieved in 2017 as planned.

SAED incorporated the model in its 12th Mission Letter (2018-2020), which is currently being developed. In addition to this, the manuals prepared by the project are being integrated into the national strategy (PNAR).

<Institutional Aspect>

[SAED]

Although there has been no organizational change in SAED, a huge number of the staffs resigned and retired so that SAED has been recruiting new staffs. SAED takes responsibilities for disseminating the project effects across five areas (Podor, Dagana, Matam, Bakel and Lac de Guiers). The agricultural advisors have been deployed to each area is 25 for Podor, 26 for Dagana, 16 for Matam, 5 for Bakel and 4 for Lac de Guiers, but the number of them has not been sufficient to cover the areas. According to the staffs of SAED, the additional staffs are needed: 7 for Podor, 9 for Dagana, 4 for Matam, 1 for Bakel and 1 for Lac de Guiers. Although the engineers have been deployed 10 for Podor, 11 for Dagana, 6 for Matam, 3 for Bakel and 3 for Lac de Guiers, the number of them has not been sufficient to cover the areas as well. These problems are being caused by many resignation and retirements as well as lack of its budget and prospected to be solved with a wealthy recruitment plan of agricultural advisors and engineers being under preparation. However, despite of the limitation of budget, SAED was able to strengthen its system by recruiting 2 engineers for design and 2 engineers for construction. Recruitment of technical staff will continue with the 12th Mission Letter.

[ARN]

There was an institutional change in ARN. In March of 2017, ARN had organized elections, and the management staffs were completely changed. The new management staffs have the vision of ARN to be a central leader in rice transformation and processing and are going to provide ARN’s members subvention for purchasing equipment and rice paddy. These changes might positively affect the rice value chain for rice producers.

<Technical Aspect>

[SAED Agricultural Advisor]

They have sustained the knowledge and skills to continue and disseminate the rice farming model introduced by the project. Some training related to their knowledge and skills were held by multiple donors such as NGO, JICA and AfricaRice so that the agricultural advisors had regular opportunities to update their knowledge and skills. Concerning the model of management and maintenance for the small-scale irrigation schemes, the project has changed the target of the training; the target has been shifted from the agricultural advisors to engineers by taking into account that hydraulic engineers at SAED were in a better position to get full knowledge in this field Their mission is, among other things, to ensure the dissemination of it for agricultural advisors with the help of a more digestible illustrated manual... As for the advisors, although, they have not received any formal training during the project period to practice and disseminate the irrigation model, they have followed all the process of maintenance and management and have acquired the basic knowledge in this field. .

They continuously utilize the irrigated farming manual revised by the project as it provides not only pedagogical supports in the trainings for rice producers but also advices regarding rice fields and is recognized as a useful tool.

[SAED Engineers]

They have sustained the knowledge and skills related to the model of management and maintenance for the small-scale irrigation schemes by practicing the knowledge and skills to train the producers of their GIEs and areas on regular basis. However, because of the insufficient number of engineers, they are not able to widely disseminate the model. Also, the manual of repair and improvement of the irrigation schemes was invented by this project After receiving from the project the 12 documents of Manual on Repair and Improvement of the Irrigation System, SAED sent them to the various SAED Delegations and DAIH in both paper and electronic formats. It was subsequently proposed to synthesize them in a more didactic format for the distribution to agricultural advisor and producers. This concern will be taken into account in the 12th Mission Letter or the focus will be put on strengthening knowledge in this field.

[GIEs]

GIEs in Podor 1, Podor 2 and Debi Tiguette have sustained the knowledge and skills to practice the rice farming model and the model of management and maintenance for the small-scale irrigation schemes at a high level. They have some regular opportunities such as theoretical and practical trainings, participatory maintenance works, and sites visits which are organized by the SEAD agriculture advisors and others.

[Rice Millers]

The 10 rice millers trained by the project have sustained the knowledge and skills for the operation using the grading machine supplied by the project. In particular, the key rice millers trained by the project have supported other rice millers for the maintenance issues which had not been covered by the project.

<Financial Aspect>

[SAED]

SAED has had the total budget of 3.5 billion FCFA from 2013 to 2017, except for 4.1 billion FCFA in 2015. The data about the specific amount of the budget for sustaining the project effects is not available because no specific budget has been allocated for the activities related to the project and SAED has integrated those activities into their daily work which has been covered by the general budget. The budget for recruitment of new staffs is being considered. Despite these budgetary constraints, SAED was able to strengthen its system by recruiting 4 Engineers in 2017 at the Directorate-General level (3 DAIH and 1 DDAC) and 2 Agricultural Advisers for the Delegation of Podor.

[GIEs]

There is no available data on the balance of payments of GIEs. According to farmers of GIEs, they are able to cover only the cost for small repair works but they have limited access to the credit system to procure necessary inputs for the irrigated rice farming.

[Rice Millers]

There is no available data on the balance of payments for rice millers. According to them, they have a certain amount of revenues which can cover the cost for small repair and maintenance works but cannot renew their equipment. With the support of AFD, a credit line of 13 billion FCFA is available at CNCAS for investment credits such as equipment renewal.

<Evaluation Result>

In light of the above, no major problem has been observed in terms of the institutional, technical and financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair

5 Summary of the Evaluation

The project essentially achieved the Project Purpose and achieved the Overall Goal for improvement of the rice farming productivity and profitability in the Dagana and Podor Departments. As for sustainability, the SAED agriculture advisors have sustained the knowledge and skills the rice farming model and disseminated the model to other. On the other hand, the SAED engineers have necessary knowledge about the model of management and maintenance of the small irrigation schemes but have limited personnel and budget to widely. As for efficiency, the project cost and the project period exceeded the plan due to the additional inputs to establish value chain.

Considering all of the above points, this project is evaluated to be unsatisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

[For ARN]

- It is necessary to work with functioning organization. The lending system to rice milling companies has not been functioning till now. It is required to check the functionality and dynamism of counterpart organizations and to monitor their performance. It is also necessary to keep close linkage with qualified financial services.

[For SAED]

- Awareness creation of the ownership is the key issue for sustainability of the project facilities. Therefore, SAED needs to conduct activities to motivate producers to manage and maintain their own irrigation schemes instead of waiting for the government support for maintenance of the irrigation schemes.

Lessons Learned for JICA:

- Finalization of all manual and handbooks should be included in the project timeline and completed by the end of the project, and if not, JICA should have a follow-up system in place. Since the manual for irrigation and maintenance was at the draft stage at the end of the project and was supposed to be finalized by SAED, the agricultural advisors have not had technical document in order to more effectively support dissemination of techniques they have learned even after some trained staff members resigned.
- The participatory training to farmers should be conducted along with development of the dissemination model. And it is better to introduce more demonstration plots located in several irrigation schemes so that more farmers in the target areas could easily understand the technologies. SAED agricultural advisors, who are in charge of dissemination, were not properly involved in this activity since human resources for technical dissemination were insufficient to cover vast irrigation area. PAPRIZ has decided to provide direct technical guidance to farmers. Capacitated farmers could have played as extension agents to transfer technologies to other farmers, but the lack of the dissemination model affected their performance. Involvement of all stakeholders in project activities through the model is critical for dissemination of skills and knowledge in the post-project period.
- During the implementation of the project, several rice farmers who received guidance on rice cultivation increased significantly their yield, which indicated that further yields enhancement is possible with proper cultivation management practices, such as pre-germination techniques, ideal period for urea spreading, observation techniques and so on. As technical trainings which can bring direct benefit to farmers can be effective not only to extend the farming model but also to contribute to attainment of the national goal such as food self-sufficiency, it is essential to strategically design an effective farming model to increase agricultural production in broad areas.



Guiding workers how to use the machineries at the rice miller supported by the project in Ronkh



Small irrigation schemes rehabilitated in Podor (Podor 1)