

Republic of Senegal

FY2015 Ex-Post Evaluation of Technical Cooperation Project

“The Project on the Capacity Improvement of the Organizations and the Formation of the Leaders of Fishermen in the Domain of the Small Fisheries”

External Evaluator: Hiroshi NISHINO, Value Frontier Co., Ltd.

0. Summary

The aim of this project was to establish among Senegalese artisanal fishermen and related administrations in the project sites a co-management system for fishery resources and thereby to disseminate the experiences obtained at the project sites to other coastal villages, so as to extend fishery resource management.

The relevance of this project is considered “High,” since this project was consistent with Senegal’s development policies and needs, and also with Japan’s Official Development Assistance (ODA) policy. The project contributed to the establishment of a system of fishery resource co-management in the project sites, and the extension of this co-management system to other coastal villages. Thus, the effectiveness and impact of the project are evaluated as “High.” The efficiency of the project, however, is considered to be “Fair,” because the project cost exceeded the planned amount, and not all inputs were efficiently used although the project period was as planned. As for the sustainability of the project’s effects, since some minor concerns are observed in the organizational, technical, and financial aspects, the result is considered “Fair.”

In light of the findings above, this project is evaluated as “Satisfactory.”

1. Project Description



Pirogue Used by Artisanal Fishermen
Source: Taken by the evaluator



Octopus Pot¹
Source: Taken by the evaluator

¹ The pots are sunk in the sea and used as breeding grounds for octopuses.

1.1 Background

The sea around Senegal—which is located on the western edge of the African continent (see the map in Box 1)—has been traditionally known as an area rich in fishery resources, given its favorable natural environment (Sekino 2014). Socially and economically, the fishery sector has played a very important role in Senegal, as it has either directly or indirectly led to the creation of approximately 600,000 jobs (i.e., 17% of the workforce) (FAO 2006); additionally, as of 2009—the year in which this project was initiated—it accounted for 1.7% of total GDP and 12.7% of total export value (ANSD 2010). In particular, the importance of the artisanal fishery sector² targeted by the project was significant, as it accounted for 80% of Senegal’s total catch (ANSD 2010).

On the other hand, the reduction and degradation of fishery resources due to overexploitation have been recognized as serious problems. A study conducted by the Japan International Cooperation Agency (JICA) between 2003 and 2006 (the Study on Fisheries Resources Assessment and Management in the Republic of Senegal) reported that several species were in a critical state, thus indicating the need for proper resource management. Meanwhile, the results of the pilot project conducted as part of the study pointed to the effectiveness of a “bottom-up approach” and the co-management of fishery resources by both artisanal fishermen and local administrative bodies (JICA 2006).

Recognizing this situation, the government of Senegal worked to promote the co-management of fishery resources by establishing Local Councils of Artisanal Fishing (*Conseils Locaux de Pêche Artisanale*, CLPAs)³. However, due to various institutional constraints, the CLPAs could not sufficiently fulfill the expected role.

Under these circumstances, this technical cooperation project was initiated at the request of the government of Senegal to promote and establish the co-management of fishery resources, by both artisanal fishermen and local administrations by reinforcing CLPAs and strengthening the capacity of the actors concerned.

² Fishery in Senegal is divided into two main types—namely, artisanal fishing (*pêche artisanale* in French) and industrial fishing (*pêche industrielle* in French). Article 8 of Section 7 of the Fishery Code states that the division between the two is based on the equipment and materials used for fishing. According to Sarr (2012), fisheries “employing traditional undecked pirogues, using non-mechanized gear and only using ice and salt for the preservation of catches” (p.3) is defined as artisanal fishery, and so fishermen who practice such fishery are defined as artisanal fishermen.

In this report, unless otherwise specified, the terms “fishery” and “fishermen” are used interchangeably with “artisanal fishery” and “artisanal fishermen,” respectively.

³ A CLPA is an official organization, as defined by the Fishery Code, to handle issues that relate to artisanal fishing. The expected roles of a CLPA—consisting of local administration and the representatives of artisanal fishermen—cover fishermen’s opinion-sharing with administration, information-sharing among fishermen, the coordination of fishing groups (i.e., groups that use different fishing techniques), and supports for local administration, etc. (JICA 2013).

1.2 Project Outline

Table 1 Project Outline

Overall Goal		Under the initiative of fishery actors, examples of co-management between fishermen and the administrations concerned are disseminated to other small fishery villages along the coast
Project Purpose		Under the initiative of fishery actors, co-management between the fishermen and the administrations concerned is established at each project site
Output	1	Awareness and knowledge are promoted among fishermen at each project site of the importance of sustainable management of fishery resources
	2	A Local Council of Artisanal Fishing (Conseil Local de Pêche Artisanale, CLPA) is established at each project site, and its capacities are improved
	3	The capacity of actors to implement fishery resource management activities approved by CLPA is reinforced
Total Cost (Japanese Side)		426 million yen
Period of Cooperation		June 2009–March 2013
Implementing Agency		Maritime Fisheries Department (Direction des Pêches Maritimes, DPM), Ministry of Maritime Economy
Other Relevant Agencies/ Organizations		None
Supporting Agency/ Organization		None
Related Projects		<p>[JICA]</p> <ul style="list-style-type: none"> – Study on Fisheries Resources Assessment and Management in the Republic of Senegal (2003-2005) (Development Study) – Project for Study on Promotion of Fisheries Co-Management through Value Chain Development (2013-2017) (Technical Cooperation) – Project for the construction of marine production center in Lompoul in the Republic of Senegal(2004-2006) (Grant Aid)
		<p>[World Bank]</p> <ul style="list-style-type: none"> – Integrated Marine and Coastal Resource Management Project (2003-2012) – Sustainable Management of Fisheries Resources Project (2006-2012) – West Africa Regional Fisheries Program (2009-2015) <p>[USAID]</p> <ul style="list-style-type: none"> – Collaborative Management for a Sustainable Fisheries Future in Senegal (2011-2016) <p>[EU]</p> <ul style="list-style-type: none"> – Projet d'Aménagement durable des pêcheries (Project for Sustainable Improvement of Fishery) (2012-2016)

1.3 Outline of the Terminal Evaluation

1.3.1 Achievement Status of Project Purpose at the Time of the Terminal Evaluation

Fishery resource management activities were implemented at all three sites at which there had been a direct project intervention (Djifer, Joal, and Lompoul)⁴. However, in Djifer, the participation of fishermen in the resource management activities was not satisfactorily active, and thus Project Purpose was deemed at that site as having not been achieved.

1.3.2 Achievement Status of Overall Goal at the Time of the Terminal Evaluation

At the time of terminal evaluation, Overall Goal had not yet been achieved. On the other hand, some positive indications of achievement were reported; for example, some CLPAs had spontaneously increased the number of species to be regulated, and others had initiated discussions regarding cooperation with adjacent CLPAs.

1.3.3 Recommendations at the Time of the Terminal Evaluation

The terminal evaluation recommended the execution of an end-line survey; additionally, further capacity development among CLPAs and the finalization of guidelines with regards to co-management were left as tasks to be completed prior to project completion. As to activities to be done post-completion, the following were recommended: improvements to CLPA functionality (e.g., a reconsideration of membership composition, the development of measures for migrant fishermen⁵, membership renewals, and the establishment of thematic committees), networking among CLPAs, and ensuring that budgetary allocations were made by the government.

2. Outline of the Evaluation Study

2.1 External Evaluator

Hiroshi NISHINO (Value Frontier Co., Ltd.)

2.2 Duration of Evaluation Study

Duration of the Study: July, 2015 – April, 2017

Duration of the Field Study: September 13 – October 2, 2015. January 24 – February 5, 2016.

⁴ As will be discussed later, although the number of project sites was four (Djifer, Joal, Kayar, and Lompoul), the project directly supported the implementation of resource management activities at only three of them (i.e., Kayar was excluded). This is because Kayar has had a long tradition of self-initiated resource management activities on the part of the fishermen themselves, and so Kayar was selected as a model site of resource management.

⁵ “Migrant fishermen” refers to those who travel and practice fishing across regions, and sometimes across national borders. It tends to be difficult to obtain their cooperation in taking part in resource management activities, and conflicts between local and migrant fishermen sometimes occur.

3. Results of the Evaluation Overall Rating: B⁶)

3.1 Relevance (Rating: ③⁷)

3.1.1 Relevance to the Development Plan of Senegal

The national development plan at the time of project planning (“Poverty Reduction Strategy Paper 2006–2010”) refers to the importance of primary industry, including the fishery sector, in bringing about one of the three pillars of the national policy “Creation of Wealth”. It also sets “sustainable fishery resource management and conservation” as one of the sector’s objectives (Republic of Senegal 2006). In addition, that sector policy paper also states that “sustainable fishery resource management and conservation” are the primary objectives of the sector, and it highlights the necessity of improving governance within the sector, by introducing co-management activities (République du Sénégal 2007).

Additionally, in the national development policy at the time of project completion (“National Strategy for Economic and Social Development 2013–2017”), the fishery sector was listed as one of the sectors that facilitates economic growth, and “sustainable fishery resource management” was stated as one of the sector’s strategies. In addition, the national policy stated that the overexploitation of fishery resources could hinder economic growth, and that the proper management of natural resources was important to bringing about sustainable development (Republic of Senegal 2012).

Thus, this project was consistent with Senegalese development policies, from the time of project planning to its completion.

3.1.2 Relevance to the Development Needs of Senegal

As discussed in section 1.1, fishery—especially artisanal fishery—has traditionally played an important role in Senegal’s economy and society, and at the time of project completion, this importance had remained unchanged⁸. Regardless, the reduction and degradation of fishery resources pointed to a serious issue. The aforementioned study found that stocks of five of seven species studied in the study were in a critical state; other studies conducted at the beginning of the project and just before project completion reported that the amount and size of fish being caught had decreased (JICA 2013; internal documents provided by JICA).

In consideration of this information, this project—which focused on artisanal fishery and tackled a critical issue in the fishery sector (resource deterioration)—was evaluated to be consistent with Senegal’s development needs, both at the time of project planning and at the time of project completion.

⁶ A: Highly satisfactory; B: Satisfactory; C: Partially satisfactory; D: Unsatisfactory.

⁷ ③: High; ②: Fair; ①: Low.

⁸ Fishery products in 2013 accounted for 11% of total export value (ANSD 2014); additionally, the amount caught by artisanal fishermen as of 2011 represented 89% of the total catch (République du Sénégal 2013).

Box 1 Project Sites

In this project, four sites within the coastal area (Djifer, Joal, Kayar, and Lompoul) were selected as the project sites at which there would be project intervention.

According to the implementing agency, selection was done considering site location and size, as the project aimed to generalize resource management activities to the whole of the coastal area. In fact, two of the four sites are located along the coast north of Dakar (Grande Côte), and the other two are located along the southern coast (Petite Côte). Furthermore, while Joal and Kayar are relatively large sites, Djifer and Lompoul are relatively small.

Thus, the selection of project sites was well balanced and can be considered reasonable.

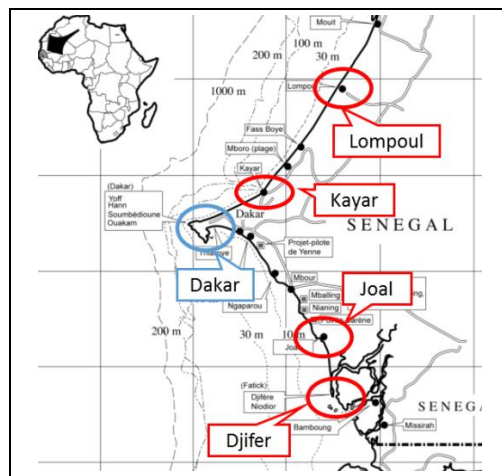


Figure 1 Project Sites

Source: Processed based on JICA (2006) pi

3.1.3 Relevance to Japan's ODA Policy

In “Country Assistance Program for the Republic of Senegal” (Ministry of Foreign Affairs 2009), rural development through income-generating activities for rural farmers and fishermen was emphasized as one of the objectives; initiatives by local residents in managing resources were considered important to achieving this objective. Additionally, to achieve another objective—namely, “Promoting Local Industries and Establishing the Infrastructure”—both agriculture and fishery were highlighted as potential sectors through which economic growth could be promoted. Therefore, at the time of project planning, this project was also consistent with Japan's ODA policy.

In light of this information, this project was considered highly relevant to Senegal's development policy and development needs, and to Japan's ODA policy. Therefore, its relevance is considered “High.”

3.2 Effectiveness and Impact⁹ (Rating: ③)

This project aimed to establish a fishery resource management system at each of the project sites, (Project Purpose) by conducting an awareness campaign with regards to the importance of fishery resource management (Output 1); organizing the CLPAs that plan and implement resource management activities (Output 2); and facilitating the implementation of resource management activities under the initiative of the CLPAs (Output 3) in order to disseminate to other coastal sites the resource management system developed at the project sites (Overall Goal), as shown in Figure 2. Bearing in mind this understanding, the remainder of this section discusses the project results.

⁹ Sub-rating for Effectiveness is to be put with consideration of Impact.

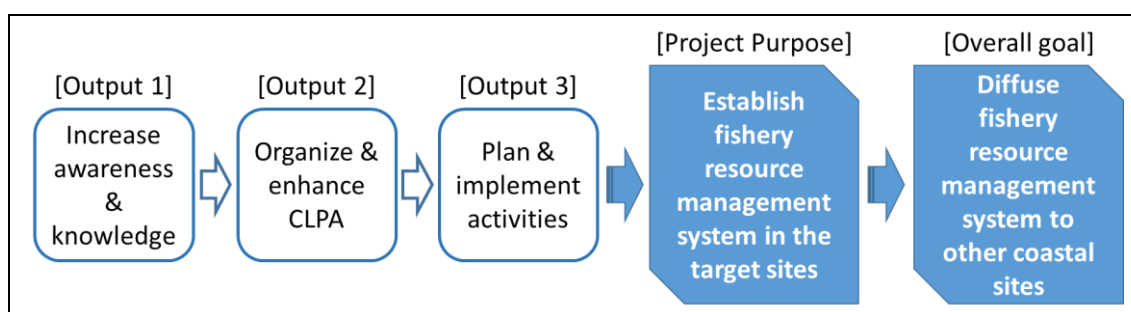


Figure 2 Project Logic

Source: External Evaluator.

3.2.1 Effectiveness

3.2.1.1 Achievement of Project Outputs

Regarding Output 1 (increased awareness and knowledge among actors of the importance of resource management), although there was no clear information at the time of project completion, the field study in the ex-post evaluation reveals that both administrative officers and fishermen have achieved sufficient understanding of the importance and necessity of resource management. The results of the beneficiary survey also show that on average, more than 50% of the fishermen increased their awareness and knowledge of the relevant issues¹⁰. Thus, Output 1 is assessed as having been achieved.

Output 2 was achieved, given that CLPAs had been formed at each site¹², and at least one activity had been approved and implemented. As for Output 3, participation in some

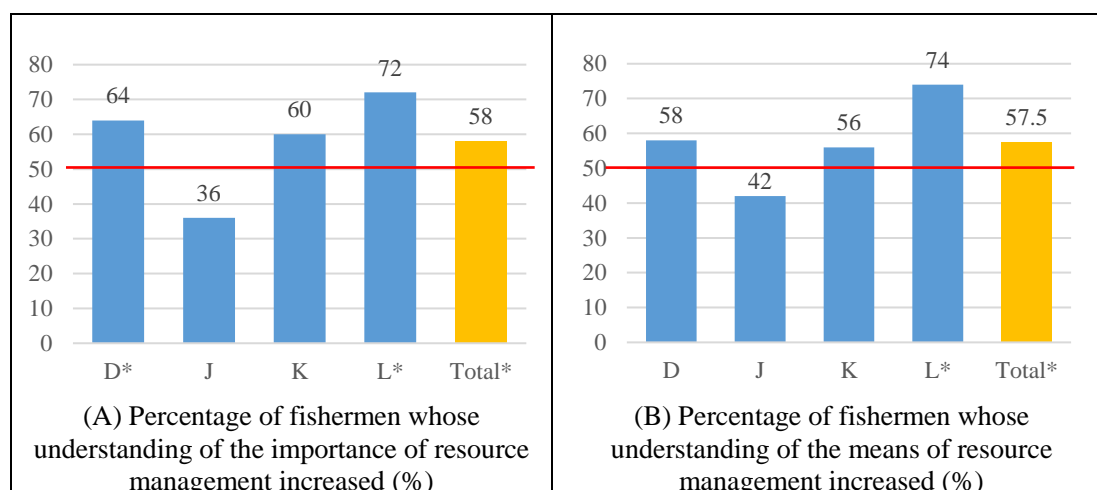


Figure 3 Survey of the Awareness and Knowledge of Fishermen¹¹

Source: Results of the beneficiary survey.

Note: D: Djifer; J: Joal; K: Kayar; L: Lompoul. Processors and middlepersons are also included.

* These figures are statistically significantly larger than 50%, at the 95% confidence level.

¹⁰ As for the details of the beneficiary survey, see Appendix 2.

¹¹ In Joal, the magnitude of change (i.e., improvement) was relatively small, as the initial state of understanding prior to project commencement had already been relatively high. The fact that a pilot project had been conducted in villages adjacent to Joal prior to this project might in part explain this.

¹² In Kayar and Joal, CLPAs had already been organized, prior to project commencement.

Table 2 Achievement Status Regarding Outputs

Output	Indicator	Achievement at the Time of Project Completion	
1 Awareness and knowledge of actors regarding the importance of resource management are improved.	(1) Compared to the baseline, the levels of awareness and knowledge are improved (2) More than 50% of actors show improvement	Awareness of and compliance to the Fishery Code increased by 50% and 30%, respectively, at the three sites other than Lompoul; the results of the field study and beneficiary survey confirms the increase in knowledge	Almost achieved
2 CLPAs are installed and function	(1) Organization and terms of new CLPAs are legally approved (2) At least one resource management activity is discussed and approved by CLPAs	In Lompoul and Djifer, CPLAs were newly organized and legally approved	Achieved
3 Capacity to implement resource management activities approved by CLPAs is reinforced	(1) Resource management issues are understood and shared among actors (2) Resource management measures are proposed to CLPAs (3) More than 50% of actors participate in activities approved by CLPAs	As shown in Table A (Appendix 1), some activities were implemented with the participation of more than 50% actors, but others were not	Partially achieved

Sources: JICA (2013); results of the field study.

Note: To conserve space, sentences have been summarized without departing from the original meanings.

activities was lower than the target value (50%); for this reason, Output 3 can be assessed as having been only partially achieved.

3.2.1.2 Achievement of Project Purpose

Project Purpose, its indicator, and its achievement status are provided in Table 3. Although there seems to be some duplication with Output 3 (Table A, Appendix 1), at least one activity was approved and implemented at each site, with the participation of more than 50% of actors. Therefore, it is reasonable to state that the resource management system functioned at the project sites, and thus that Project Purpose was achieved at the time of project completion.

Table 3 Achievement Status of the Project Purpose

Project Purpose	Indicator	Achievement at the Time of Completion	
Co-management between the fishermen and the administrations concerned is established at each project site	(1) At each site, at least one activity approved by CLPAs is implemented through actor involvement	At least one activity was approved and implemented at each site	Achieved
	(2) More than 50% of actors respect resource management activities	At least one activity was respected by more than 50% of actors, but others were not	Almost achieved

Sources: JICA (2013); internal documents provided by JICA; results of the filed study.

3.2.2 Impact

3.2.2.1 Achievement of Overall Goal

Overall Goal of the project, along with its indicator, are shown in Table 4. However, there was no information available on the number of sites that had initiated fishery resource management activities, since that information had not been collected; hence, it is not possible to determine directly the achievement status of Overall Goal through the use of the indicator. Thus, this ex-post evaluation looks to assess the achievement of Overall Goal by considering the results of (1) interviews with DPM, (2) a survey in the project site regarding cooperation with adjacent sites, and (3) a survey at several sites at which there was no direct project intervention (hereafter referred to as “non-targeted sites”)¹³.

Table 4 Overall Goal and Its Indicator

Overall Goal	Indicator
Examples of co-management between fishermen and the administrations concerned are disseminated to other small fishery villages along the coast	The number of sites that have initiated fishery resource management activities

Source: JICA (2013).

The examination of the three points above shows that in all the non-targeted sites surveyed, CLPAs had implemented some resource management activities over the previous year (2015); these included regulations with regards to fishing techniques and equipment, the setting of a non-fishing period, regulation with regards to at-night fishing, and the

¹³ As for (3), the survey was conducted at six sites (i.e., Dakar-Ouest, Fass Boye, Mbour, Refisque, Sindia-Nord, and Sindia-Sud). The criteria for the selection were (a) levels of CLPA functionality based on the result of a DPM study in 2012, (b) proximity to the project sites, and (c) proximity to the capital (Dakar). As for (a), both highly and poorly functional sites were selected. The criterion (b) was followed to examine causality in this project, and (c) was due to time limitations inherent in the survey schedule.

creation of protected areas¹⁴. These activities were planned on the basis of the stated needs and requests of fishermen; they were then discussed and approved by a CLPA, and fishermen were henceforth informed of CLPA decisions. This shows that the CLPAs have played the expected role in resource management, to some extent (although the level of functionality among them varies). In addition, some interesting cases of coordination and cooperation involving several CLPAs at the departmental level were observed (Box 2).

On the other hand, since not only JICA but also other donors—such as the World Bank, USAID, and EU—have been working in Senegal’s fishery sector, and CLPAs have been supported by those donors as well, it is not reasonable to attribute the extension of resource management activities to sites other than the JICA project sites solely to this project. However, the field study undertaken during this ex-post evaluation reveals that information and knowledge on resource management have been disseminated through mutual visits among the project sites and non-targeted sites, on account of project-based or daily communication among sites; additionally, administrative officers involved in this project took the initiative at their new posts to facilitate resource management activities. In consideration of these facts, one can say that the project has significantly contributed to an expansion of fishery resource management activities.

Meanwhile, the non-targeted sites where the field study was conducted had not been selected randomly (as mentioned in footnote 13), and so it is not possible to generalize the findings to Senegal’s entire coastal area¹⁵. However, at the time of project planning, Overall Goal was to extend resource management activities to seven villages; thus, based solely on the results of the survey of six CLPAs, it is possible to conclude that Overall Goal of the project had been achieved¹⁶.

Box 2 Resource Management Activities at the Departmental Level

In the Mbour department, four CLPAs implement the same activities at the departmental level. These CLPAs coordinate with local administration to obtain authorization from the department as an official network. This coordination was initiated in one of the project sites in the Mbour department, Joal, during the project period comprising octopus management activities.

Additionally, in the Dakar department, a certain fishing technique was prohibited at the departmental level. Taking the same measures at the departmental level leads to more effective implementation of activities and reduced inequality among CLPAs.

¹⁴ Four of the six CLPAs surveyed spoke of action plans for 2015, and had implemented activities based on the action plans.

¹⁵ The non-targeted sites might have conditions favorable to conducting resource management relative to average sites, because the non-targeted sites are closer to the project sites and the capital of Senegal.

¹⁶ Since most CLPAs encompass several villages, the total number of villages under the six CLPAs is at least 10.

3.2.2.2 Discussion

One of the factors to support the extension of resource management activities to non-targeted sites—besides supports from donors, including JICA—is the nature of fishery resource management itself. In the natural environment, fishery resources have a mobile characteristic (unlike forestry resources, for example), and so fishery resource management that takes place only in a certain area tends to be ineffective. (Even when a fishery resource management activity is implemented with success in a certain village, its overall effectiveness will be low if overfishing takes place in adjacent villages.) Thus, to ensure the effectiveness of fishery resource management activities, it is logical that the coverage area needs to be extended. In fact, the importance of said extension has been highlighted by CLPA members, and fishermen have a strong incentive to extend fishery resource management activities geographically¹⁷.

Box 3 Similar Technical Cooperation Projects

Two technical cooperation projects conducted in Senegal—namely, “Project Aimed at the Enhancement of Sustainability in the Mangrove Forest Management of Saloum Delta” and “Project on the Integrated Community Forestry Development”—resemble this project, in that they aim to properly manage natural resources (in this case, forest resources), and the projects were designed to extend the experience acquired during pilot activities (resource management activities and income-generating activities) to other areas.

On the other hand, ex-post evaluations of these two projects revealed the success of activities at the pilot sites conducted under direct project intervention, while the fulfillment of the overall goal (i.e., extending the results of pilot activities) was limited (JICA/FASID 2011).

On the other hand, there was no success in extending activities within similar projects (discussed in Box 3). One of the reasons for this could be that the management of forest resources (which are immobile) does not necessarily require coordination with other areas—unlike the management of mobile fishery resources. As for income-generating activities, it could be that villagers face a disincentive to extend activities, since such extension might lead to more competitors.

In comparison to these similar examples, the incentives of fishermen could constitute a factor that led to the achievement of Overall Goal.

3.2.2.3 Other Impacts

No problem was observed with regards to land acquisition and resettlement, as the nature of this project required neither of these. No other impact, be it positive or negative, was observed.

¹⁷ In the beneficiary survey, more than 90% of the respondents answered that it is important to cooperate with other CLPAs.

In summary, this project largely achieved the output and Project Purpose; it also contributed to the extension of resource management activities to villages not targeted by the project. Therefore, the effectiveness and impact of this project are evaluated as “High”.

3.3 Efficiency (Rating: ②)

3.3.1 Inputs

Table 5 Project Input		
Inputs	Plan	Actual
(1) Experts	Long term: Four experts (100Man-Month in total) Short term: No information	Long term: Four experts (86.62MM in total) Short term: Three experts (12.67MM in total)
(2) Trainees Received	Two trainees/year × three weeks (24 weeks in total)	11 trainees (between 20 days and two months)
(3) Equipment	Two vehicles, office supplies (10 million yen)	Two vehicles, office supplies, pirogue, etc. (9 million yen)
(4) Local Cost	32 million yen	62 million yen (including the amount for the aforementioned equipment)
Japanese-Side Total Project Cost	350 million yen	426 million yen
Senegal-Side Operational Expenses	Provision of a project office and land (Information on the amount was not available)	Provision of office and facilities, electricity fee, communication fee (Information on the amount was not available)

Sources: JICA (2009, 2013); internal documents provided by JICA.

3.3.1.1 Elements of Inputs

The project inputs are listed in Table 5. The dispatch of experts occurred largely as planned, and in terms of the other elements—such as equipment—there was no major divergence from the plans.

In Joal and Kayar, as an alternative income-generating activity meant to compensate for income reduced on account of resource management activities, fishmeal production was introduced; for this activity, a grinder mill (and its peripheral device) was provided at both sites. However, at the time of the ex-post evaluation, these machines had been utilized at neither of the two sites: there had been a machine breakdown at Joal and a machine specification mismatch at Kayar.

3.3.1.2 Project Cost

Although the initial plan called for a budget of 350 million yen, the actual cost was higher (426 million yen, or 122% of the initial plan). An additional survey of migrant fishermen and the extended dispatch of experts led to a 13 million yen increase in the cost. In addition, the number of trainees that came to Japan and the periods of training exceeded the initial plan, and the local cost was approximately twice as large as planned. (No information was available with regards to the reasons for this increase)

3.3.1.3 Project Period

As for the project period, the actual period was as initially planned—namely, 46 months (June 2009–March 2013; 100% of the plan). However, some CLPAs reported that some activities were interrupted by project closure and remained incomplete, as they had been initiated in a later project phase.

In summary, although the project period was as planned (100% of the plan), the project cost exceeded the plan (122% of the plan). Given the nature of this project (i.e., co-management of fishery resources), it was very difficult to determine beforehand the contents of the related activities, and thus to estimate project cost accurately¹⁸. However, because not all resources devoted to project implementation were optimally used, the efficiency of the project is rated as “Fair.”

3.4 Sustainability (Rating: ②)

As discussed in “Effectiveness and Impact,” this project aimed to implement pilot activities of resource management activities in the project sites (Project Purpose). It then sought to extend the experience gathered during the pilot activities to other coastal areas (Overall Goal). Therefore, based on this understanding, the political, organizational, technical, and financial sustainability of the project is analyzed from the perspectives of both the continuous implementation of activities at the project sites and continuous extension to other sites.

3.4.1 Related Policy and Institutional Aspects for the Sustainability of Project Effects

The paper that outlined national development policy at the time of the ex-post evaluation is “Plan for Emerging Senegal.” The strategy in the fishery and aquaculture sector is discussed

¹⁸ Because of the project process (awareness campaign to actors → establishment and strengthening of CLPA → identification and planning of resource management activities by fishermen → implementation of activities), it was very difficult to identify the activities actually implemented at the time of project planning, and so it was difficult to estimate the cost.

as one of three pillars in the paper, “Structural Changes in Economy and Growth.” Enhanced surveillance of illegal fishing and the control of access to fishery resources have been highlighted as important issues related to this project.

In addition, although Senegal’s Fishery Code was revised in 2015, the importance of resource management is maintained, and rather more strict regulations are added. Since proper resource management is positioned as an important issue in this sector, there is no problem in the sustainability from the political aspect.

3.4.2 Organizational Aspects of the Implementing Agency for the Sustainability of Project Effects

The implementing agency of the project was the DPM of the Ministry of Maritime Economy. Its local, site-level affiliate is called the control post, and the chief of each control post is assigned a post as a CLPA member²⁰. The departmental offices handle issues that cannot be resolved at the control post level; they also coordinate the various control posts. Regional offices are tasked with issues outside departmental jurisdiction; the DPM, meanwhile, deals with general issues at the national level, and it coordinates with external donors. The number of staff members is insufficient at every level, and so there are vacant posts and cases where multiple posts are appointed to a single staff member²¹.

CLPAs play a central role in implementing resource management activities. A CLPA consists of representatives of fishermen, processors, middlepersons, administrative officers, local authorities, and the like; member reelection takes place every two years. Although the resource management system implemented through each CLPA largely functions at the site

Box 4 Current Situation at the Project Sites

At the time of the ex-post evaluation, in Joal and Lompoul, CLPAs have continued to function, and resource management activities have been implemented. In Djifer, however, no CLPA activities have been implemented since project completion, and the CLPA itself is non-functioning. According to the results of interviews conducted in the field study, the difference in functionality between Djifer and the other two sites can be explained by the facts that (1) the Djifer chief who worked during the project period was replaced by a new one who lacked sufficient resource management knowledge, and that (2) it is difficult to implement activities in Djifer, as there are traditionally many migrant fishermen there¹⁹.

The above case highlights the importance of training in ensuring a minimum technical standard, so that resource management is not hampered by one individual’s skill set. Furthermore, the fact that even a CLPA that had once been active could become stagnant shows the necessity of continuous monitoring and supports.

¹⁹ These points are consistent with Gutiérrez et al. (2011) which points out the importance of leadership and social cohesion in communities, as well as existence of protected areas, as important determinants of success in co-management of fishery resource.

²⁰ Sometimes departmental officers are appointed, rather than control post chiefs.

²¹ For example, with respect to control post chiefs, at the time of ex-post evaluation 14 out of 38 posts are vacant and concurrently occupied by chiefs in adjacent posts.

level, some CLPAs fail to play their expected role (i.e., implement the activities discussed in Box 4). Although as a rule administrative officers (control post chiefs or departmental officers) are expected to facilitate CLPA activities, and regional offices should be in charge of monitoring, this system has not been sufficiently functional²². If resource management activities are to be continuously implemented, it is essential that monitoring and support systems be strengthened.

3.4.3 Technical Aspects of the Implementing Agency for the Sustainability of Project Effects

Both fishermen and administrative officers understand the necessity and importance of resource management, and there is no major technical problem in fulfilling day-to-day activities. On the other hand, there are needs pertaining to further technical improvements in organizational management skills and the implementation of complex activities—such as the creation of protected areas.

There is no formal training system by the Senegalese government²³, but seminars or training conducted by donors—including JICA, the World Bank, USAID, and EU—have been utilized to improve technical skills among CLPA members and administrative officers. In addition, the government strategically appoints staff members who sufficiently acquired skills through such opportunities, so that they can share their knowledge and experience with their colleagues.

However, not all CLPAs have benefitted from donor interventions, and there is an imbalance of training opportunities²⁴. As a result, there is disproportion among the CLPAs in terms of the skill levels among their personnel (see also Box 4). Thus, from a long-term perspective, it is necessary to establish a mechanism to ensure minimum technical standards—by, for example, establishing a training system, and preparing documents and manuals through which experiences imparted through donors' technical assistance can be shared.

3.4.4 Financial Aspects of the Implementing Agency for the Sustainability of Project Effects

Particulars of the financial status of the DPM are provided in Table 6. Although the budget–expense balance is even, it is just because all budget has been used up, and DPM is always facing financial constraint.

²² At this moment, technical and financial support to CLPAs at the site level has been provided by external donors.

²³ On the other hand, there exists advanced educational institutes which provide training to foster advanced specialists, such as National Centre for Training of Technicians of Fisheries and Aquaculture and Graduate Institute of Fishing and Aquaculture.

²⁴ For example, in one site visited in the field study, six trainings/seminars were conducted in 2015. On the other hand, in another site, only two training sessions/seminars took place in that year.

Table 6 Financial Status of the DPM

	2013	2014	2015
Budget	—	183.6	179.3
Expenses			
Personnel	—	165.1	160.8
Operation	18.5	18.5	18.5
Total Expense	—	183.6	179.3
Balance	0	0	0

Source: DPM.

Note: The unit is million FCFA²⁵. Some data were not available; however, it was confirmed that the balance was zero.

In addition to the DPM budget, there is a CLPA financing scheme that is referred to as the “Supporting Fund for Function of CLPA (Fonds d’Appui au Fonctionnement des CLPA, FAF)”²⁶; its sources comprise 60% of artisanal fishing license fees, 30% of middleperson registration fees, and other sources²⁶. As shown in Figure 4 (A), in the old system, the source funding was to be put into the national treasury and then distributed among the CLPAs. However, under this complex system, there was no case in which an FAF actually worked and money was distributed as intended. To improve the situation, a new system was introduced in January 2016, wherein source funding would be put directly into the departments’ bank accounts and then distributed to the CLPAs (see Figure 4 (B)). At the time of the ex-post evaluation, the new system was just being introduced, and so it is difficult to guarantee that the new system would work as expected. However, the new system can be regarded as more likely to work better than the old one. Meanwhile, in 2015, 3.2 million FCFA (approximately 0.61 million yen) was distributed to each CLPA, as a tentative funding measure. Sources other

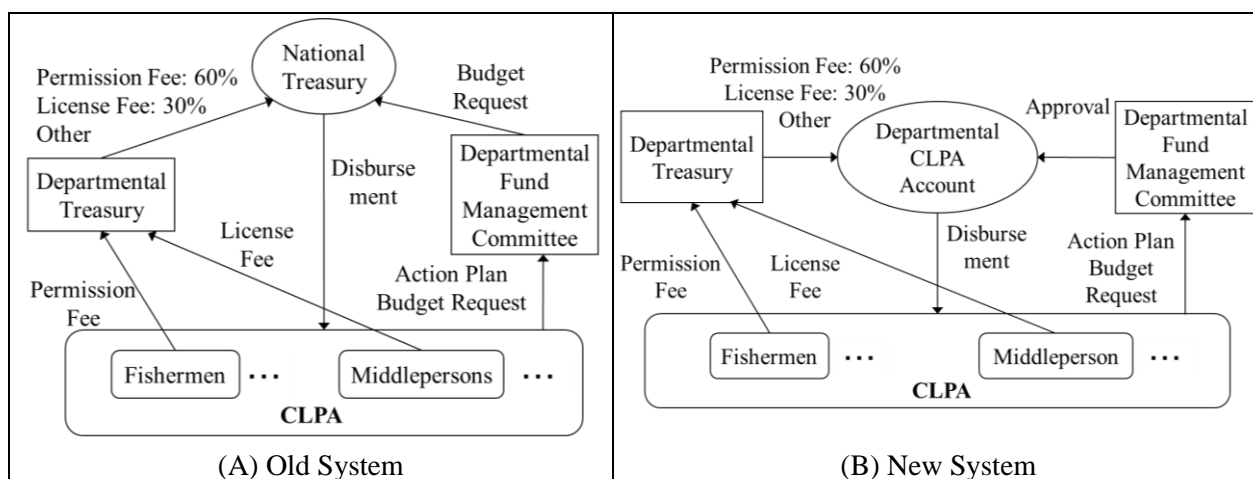


Figure 4 FAF System

Sources: JICA (2013); results of the field study.

²⁵ At the fixed rate, 1 euro is equivalent to 655.957 FCFA, and 1 FCFA is equivalent to 0.2 yen (as of February 2016).

²⁶ This is defined by intermenstrual order No. 003733; other funding sources include ministry subsidies and donor grants, for example.

than the FAF included, for example, donations from fish factories or local influential persons, and fines incurred by those who violated regulations.

In 2015, 3.2 million FCFA was distributed to each CLPA; this amount can be considered reasonable in underwriting CLPA activities²⁷. If the FAF is properly operated, it is possible to ensure financial resources for CLPAs, and so it is necessary to make the FAF work and continuously disburse essential funding to the CLPAs. Although it is more likely that the FAF will be operated properly on account of these improvements, no funding had been disbursed at the time of the ex-post evaluation; thus, there still remain minor concerns in consideration of past experience. It will be essential to follow up on the extent to which the FAF is being properly managed.

In light of these findings, since there are minor concerns of an organizational, technical, or financial nature, the sustainability of the project effect is assessed as “Fair.”

4. Conclusion, Lessons Learned, and Recommendations

4.1 Conclusion

The aim of this project was to establish among Senegalese artisanal fishermen and related administrations in the project sites a co-management system for fishery resources and thereby to disseminate the experiences obtained at the project sites to other coastal villages, so as to extend fishery resource management.

The relevance of this project is considered “High,” since this project was consistent with Senegal’s development policies and needs, and also with Japan’s ODA policy. The project contributed to the establishment of a system of fishery resource co-management in the project sites, and the extension of this co-management system to other coastal villages. Thus, the effectiveness and impact of the project are evaluated as “High.” The efficiency of the project, however, is considered to be only “Fair,” because the project cost exceeded the planned amount, and not all inputs were efficiently used although the project period was as planned. As for the sustainability of the project’s effects, since some minor concerns are observed in the organizational, technical, and financial aspects, the result is considered “Fair.”

In light of the findings above, this project is evaluated as “Satisfactory.”

4.2 Recommendations

4.2.1 Recommendations to the Implementing Agency

[Follow-up of Appropriate FAF Operation]

²⁷ JICA (2013) presents medium-term resource management plans, and the budgets needed to fulfill them are assumed to be in the range of 0.5–2.7 million FCFA. Considering these figures, the provision of 3.2 million FCFA is sufficient in allowing CLPAs to continuously implement their activities.

In the absence of sufficient financial resources, CLPAs cannot implement resource management activities or play their expected role. The existence of FAF—which finances CLPA activities—is advantageous, and funds are more likely to be disbursed to CLPAs. Thus, the remaining issue is the appropriate and effective operation of FAF; to that end, the DPM should follow up on the state of the FAF system to ensure that CLPAs will continue to have access to the financial resources that will fund their activities.

[Promotion of Cooperation and Coordination among CLPAs]

As discussed, in some areas, coordination and cooperation have emerged among several CLPAs. Such coordination and cooperation can (1) lead to more effective and efficient implementation of resource management activities, (2) facilitate knowledge-sharing (and reduce imbalances of donor intervention), and (3) allow the DPM to more easily monitor the functionality and activities of CLPAs. Since fishermen themselves understand the importance of coordination and cooperation with adjacent CLPAs, it is recommended that the DPM facilitate coordination among CLPAs by providing opportunities for CLPAs to come together and share their experiences, or by supporting mutual visits among sites²⁸.

4.2.2 Recommendations to the Implementing Agency and JICA [Consideration of Medium and Long-term Strategies]

Both the organization of CLPAs and the implementation of resource management activities at the site level have been brought about through cooperation among multiple donors, including JICA. Thus, in addition to

site-level activities, it is important from both the medium and long-term perspectives to seek out the creation of a mechanism by which to promote CLPA coordination, as discussed; maintain and improve technical competence among related actors; strengthen monitoring; and provide CLPAs with essential supports²⁹. Since the DPM is expected to receive external

Box 5 Example of a Monitoring System

The “Project on Improving Access to Quality Primary Education by Community Participation” was conducted in Niger to improve the functionality of the School Management Committee (COGES), which consists of local resident and school officials. The COGES model was extended nationally, to approximately 8,000 primary schools. However, given limited administrative resources, it was impossible to monitor all of the schools. Thus, the project established the “COGES Union,” which consists of several COGESs at the municipality level; this enabled more efficient monitoring, by providing oversight at the “COGES Union” level. Moreover, allowing each COGES to coordinate with adjacent COGESs has led to the more effective implementation of COGES activities in each school (Hara 2011).

Although careful examination is needed (given sector-based differences), this case provides us with thoughtful insight into those strategies by which a CLPA monitoring system could be strengthened and the effectiveness of CLPA activities improved.

²⁸ In May 2016, the decree regarding networking of CLPAs was issued, and the networking of CLPAs at departmental, regional, and national levels has been promoted to foster the function of CLPAs.

²⁹ As for monitoring, new monitoring mechanisms—namely, through the “Regional Monitoring and Evaluation

support from multiple donors (including JICA) over the next several years, the DPM should strategically leverage these opportunities from the medium and long-term perspective³⁰.

Taking into account the aforementioned findings, JICA should also continuously consider its cooperation strategy and detailed plans from both the medium and long-term perspectives, while aligning the strategies of the Senegalese government and those of other donors.

4.3 Lessons Learned

[Extension of Pilot Activities]

As discussed, this project aimed to extend pilot activities undertaken at the project sites to other coastal villages; this objective was largely achieved. One of the factors to contribute to this achievement was the incentive of fishermen, which in turn stemmed from the nature of fishery resource management.

This finding implies that it is important to carefully examine the incentives of local residents in extending pilot activities; this examination should be done at the project planning stage, when local residents are expected to play an important role in the extension of pilot activities. Additionally, a strategy that generates incentives should be considered: in cases where incentives are limited, a naïve project design (“pilot activities → extension of the pilot activities led by local resident”) should be reconsidered. Rather, it is important to identify actors who play a central role in the extension, and reinforce their capacity—or, consider another strategy by which to extend pilot activities.

Appendix 1: Fishery Resource Management Activities at Each Project Site

Appendix 2: Summary of the Beneficiary Survey

Appendix 3: Reference

Committee” at the regional level and the “Sectorial Monitoring and Evaluation Committee” at the central level—have been proposed in the revised fishery sector policy paper. JICA plans to support these new efforts.

³⁰ JICA is preparing a new project for the fishery sector; it will involve Senegal (as a leading country) and several other West African countries. In addition, according to the DPM, other donors are also planning to extend the timelines of existing projects.

[Appendix 1 Fishery Resource Management Activities at Each Project Site]

Table A Fishery Resource Management Activities at Each Project Site

Site	Activities Approved during the Project Period	Implementation Status at the Time of Project Completion	Achievement	Implementation Status at the Time of Ex-post Evaluation		Reason for No Implementation
Lompoul	10% reduction in the number of bottom gill nets (demersal fish)	53.1% of pirogue owners out of 81 in Lompoul and Sarédao participated	Achieved	○	Continuously implemented	—
	Enlargement of mesh size to 40 mm (demersal fish)	No net whose mesh size was <40 mm was observed in a random check of 20 nets	Achieved	○	Continuously implemented	—
Joal	Reduction or replacement of fishhooks for longline fishing (white grouper/thiof)	Approximately 25% of fishermen (white grouper/thiof) participated	Not achieved	×	Not implemented	Because the pilot activity of this was not completed in the project period, this activity ceased with project completion
	Immersion of octopus pots for spawning (*3CLPAs including Sindia and Mbour)	As of 2011, 3,800 pots were installed	—	○	In 2014, 5,000 pots were installed in four CLPAs	—
	Biological rest (no-fishing period; octopus) (*Throughout the country)	Largely respected	Achieved	○	In 2014, a one-month biological rest period was set (Sept. –Oct.); respect among 100% of fishermen	—
	Release of cymbium babies (*3 CLPAs including Sindia and Mbour)	In 2011, approximately 10,000 cymbium babies were released	—	○	Cymbium was released in the reproduction period (Jan.–Mar.)	—
	Immersion of artificial reefs made from discarded shells	155 reefs were installed (including 20 reefs installed as a trial)	—	×	Not implemented since project completion	It is impossible to cover necessary cost (especially cost for transport of reefs)
Djifer	10% reduction in the number of bottom gill nets (demersal fish)	Only 9% of fishermen participated in this activity	Not achieved	×	Not implemented	The nets fishermen had abandoned for the activities were not properly managed; they restarted using them and the activities stopped.
	Enlargement of mesh size to 46 mm (demersal fish)	50% of fishermen participated in this activity	Achieved	×	Not implemented	
	Introduction of artificial branches for spawning (cuttlefish)	57 of 105 (54.3%) cuttlefish pirogues used artificial branches	Achieved	△	Implemented by few fishermen	As it takes time to make artificial branches, many fishermen did not use them

Sources: JICA (2013); internal documents provided by JICA; results of the field study.

Note: As for the immersion of octopus pots, installation of artificial reefs, and release of cymbium, only the implementation status is shown, since it is impossible to make comparisons with the target value (50% fishermen respected or participated in activities).

No information is provided for Kayar, as resource management activities were initiated prior to the project and the project did not directly support resource management activities in Kayar.

[Appendix 2 Summary of the Beneficiary Survey]

<Sampling>

- Four sites targeted by the project (Djifer, Joal, Kayar, and Lompoul).
- At each site, the registry held by the DPM control posts was used as a sampling frame; 40 fishermen, five processors, and five middlepersons (N = 50) were randomly sampled for the interval sampling. There were 199 valid responses (response rate: 99%).
- Since the registry was used as a sampling frame, the population of this survey comprised fishermen, processors, and middlepersons registered in the registry; those not registered were outside the scope of this survey. As it is reasonable to assume that those who do not register are less likely to understand the importance of resource management and to participate in related activities, the survey results could be subject to a slight upward bias. However, on account of campaigns by the Ministry to promote registration, the number of unregistered fishermen is decreasing, and thus the effects of possible bias on the results, if any, can be considered minimal³¹.

<Methodology and Content>

- The field study used face-to-face interviews that employed a structured questionnaire prepared by the evaluator.
- The questionnaire covered various topics, such as knowledge of resource management activities, participation in activities, and cooperation with adjacent villages.



Figure A1 Registry (Sampling Frame)
Source: Photo taken by the evaluator.

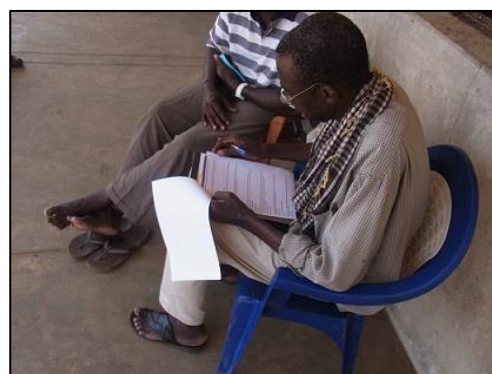


Figure A2 Interview
Source: Photo taken by the evaluator.

³¹ The result of interview in the field survey shows that, in Lompoul, for example, almost 100% of the fishermen are registered.

[Appendix 3 Reference]

English and French

- Agence Nationale de la Statistique et de la Démographie [ANSD] (2010) *Situation Économique et Sociale du Sénégal 2009*. ANSD.
- (2014) *Situation Économique et Sociale du Sénégal 2013*. ANSD.
- Food and Agriculture Organization [FAO] (2006) “Contribution of Fisheries to National Economies in West and Central Africa: Policies to Increase the Wealth Generated by Small-Scale Fisheries.” *Series of Policy Briefs on Development Issues*, No. 03.
- Gutiérrez, Nicolás L., R. Hilborn, and O. Defeo (2011) “Leadership, social capital and incentives promote successful fisheries.” *Nature* 470: 386-389.
- Sarr, M. (2012) “Fisheries Governance Reforms in Sénégal.” *Studies in Support of Country Reforms and Integration of Fisheries*. Partnership for African Fisheries.
- Republic of Senegal (2006) *Poverty Reduction Strategy Paper II*. Republic of Senegal.
- (2012) *National Strategy for Economic and Social Development 2013-2017: On the Way to an Emerging Economy*. Republic of Senegal.
- République du Sénégal (2007) *Lettre de Politique Sectorielle des Pêches et de l’Aquaculture*. République du Sénégal
- (2013) *Conseil Interministériel sur la Pêche*. République du Sénégal
- (2014) *Plan Sénégal Émergent*. République du Sénégal

Japanese

- Ministry of Foreign Affairs (2009) *Country Assistance Program for the Republic of Senegal*.
- Japan International Cooperation Agency [JICA] (2006) *Final Report: The Study on Fishery Resources Assessment and Management in the Republic of Senegal*. JICA.
- (2009) *Ex-Ante Evaluation: The Project on the Capacity Improvement of the Organizations and the Formation of the Leaders of Fishermen in the Domain of the Small Fisheries*. JICA.
- (2013) *Final Report: The Project on the Capacity Improvement of the Organizations and the Formation of the Leaders of Fishermen in the Domain of the Small Fisheries in the Republic of Senegal (COGEPAS)*. JICA.
- JICA / Foundation for Advanced Study on International Development [FASID] (2011) *Ex-Post Evaluation 2010: Package I-5 (Senegal)*. JICA.
- Sekino, Nobuyuki (2014) *Dare no Tame no Kaiyohogoku ka: Nishi Afurika no Suisanshigenhogo no Genba kara (For Whom Marine Protected Area Exists? From the field of Fishery Resource Conservation in West Africa)*. Sinneisha.
- Hara, Masahiro (2011) *Nishi Afurika no Kyoiku wo Kaeta Nihonhatsu no Gijutsukyoryoku: Nijeru de Hana Hiraita “Minna no Gakko Purojekuto” no Ayumi (Japanese Technical Cooperation Changed Education in West Africa: Path of “School for All Project” Flourished in Niger)*. Daiyamondosha.