Ex-Post Project Evaluation 2015: PackageI-7 (Burkina Faso, Senegal, Gabon, Nigeria)

"Participatory and Sustainable Forest Management in the Province of Comoe" "The Project on the Capacity Improvement of the Organizations and the Formation of the Leaders of Fishermen in the Domain of the Small Fisheries" "Project for the Construction of the Support Centre for Small Fisheries in Libreville" and "The Project for Improvement of Medium Wave Radio Broadcasting Network"

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Burkina Faso

FY2015 Ex-Post Evaluation of Technical Cooperation Project

"Participatory and Sustainable Forest Management in the Province of Comoe"

External Evaluator: Chiaki Yamada, Value Frontier Co., Ltd.

0. Summary

The objective of this Project was to formulate the Plan d'aménagement Forestier (PAF)[1] in four Classified Forests (CFs), to improve the capacity of forest administrative agencies for supporting activities and the capacity of Groupement de Gestion Forestière (GGF)[2]/Union des Groupement de Gestion Forestière (UGGF)[3] for sustainable forest management. Moreover, by strengthening the cooperative relationship between forest administrative agencies and the GGF/UGGFs, this Project intends to have the GGF/UGGFs appropriately implement sustainable forest management activities. The implementation of this Project at both the ex-ante evaluation and ex-post evaluation was relevant to the development policy and needs of Burkina Faso, a country where serious decrease in forest areas and related problems have been confirmed and the appropriate implementation of forest management has been an object of focus. The Project also conformed to the measures taken under Japan's ODA policy toward Burkina Faso as of the ex-ante evaluation. The relevance of the Project is therefore rated as high. Regarding the effectiveness of the Project, zoning borders were clarified in the target CFs, and the GGF/UGGFs acquired forest management knowledge and techniques through the project implementation. In addition, the PAF was formulated and forest activities were commenced based on the PAF. Moreover, as a series of flows were developed for the sale of timber and non-timber forest products (hereinafter referred to as "forest products"), one of the main project purposes, namely, that expected "activities be implemented for forest management by the local people", was achieved. The GGF/UGGFs have continuously implemented activities in accordance with the PAFs. Although members in three out of four GGFs have decreased, all of the members pay GGF membership fees and continuously implement forest management activities. The overall goal, which aims at practicing ongoing

[1] Pursuant to the approval of the *Revised Forest Act* during the national legislature held on April 5, 2011, the *Plan d'aménagement et de gestion forestière* (PAG), the plan to be used at the start of the Project, was changed to the PAF. Since then, it has been called the PAF. The PAF is to be used in this report. According to the Revised *Forest Act*, the PAF is defined as a legal and technical document that describes the types of forests to be developed; the objectives in classifying the CFs; the types of forestry practices used in certain areas; the period and the methods used in implementing forestry practices; and the division of production and costs for forest management. The PAF is composed of two plans, the first is the forest development plan as a technical guideline, and the second is the forest management plan as a financial guideline. The forest development plan and the forest management plan are revised/formulated every 20 years and five years respectively. The forest management plan is scheduled to be newly revised/formulated in 2017.

[2] The GGFs are established for the improvement of life conditions and the appropriate utilization of forest products. Their main roles are wildfire prevention, afforestation, monitoring patrol in the CFs and development of seedlings. The budget for the implementation of the activities is funded from the income generated by forest management activities and is partly pooled to cover the running cost of the GGFs. The GGFs are officially registered after approval by the departmental offices (Source: Documents provided by JICA).

[3] A UGGF is a union of GGFs and acts as a window between the forest department/external agencies and GGFs. It also coordinates each activity of the GGFs about forest development and management. As with the GGFs, the UGGFs are officially registered after approval by the departmental office. A UGGF consists of GGF members but not necessarily representatives of the GGFs. The operational costs of a UGGF are collected as UGGF union dues by each GGF (Source: Documents provided by JICA).

forest management (or ongoing implementation of the activities) by the local people, was therefore achieved. Moreover, the living conditions of the local people were drastically improved and ongoing cooperation between companies/associations and GGF/UGGFs was confirmed. Another project effect, such as the implementation of activities for formulating the PAF in other areas, was confirmed, so the project impact is also rated as high. From the reasons mentioned above, the effectiveness and impact of the Project are rated as high. The project cost and project period both exceeded the plan, so the efficiency of the plan is rated as fair. Concerning the project sustainability, no problems were observed in institutional and technical aspects. The fund management capacity, however, has not been firmly established in the GGFs, and the GGF/UGGFs failed to secure necessary budgets for the implementation of forest management activities written in the PAF as planned. As such, problems with the financial aspects of the Project were confirmed. The performance of some of the forest management roles was also confirmed to be incomplete, as sufficient budgets for implementing the activities were not secured. Under these circumstances, the sustainability of the project expected effect is rated as fair.

In light of the above, this Project is evaluated as satisfactory.

1. Project Description

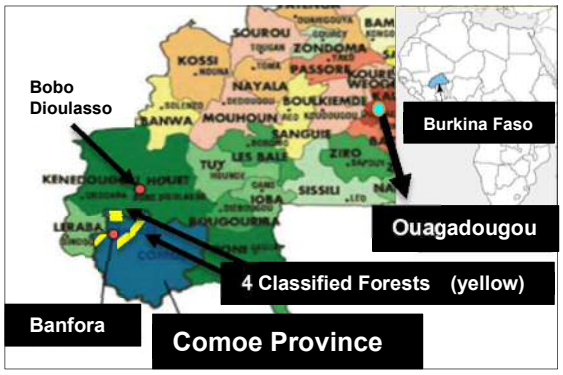

Figure 1 Project Locations

Figure 2 Bounouna Classified Forest

1.1 Background

The northern part of Burkina Faso, which belongs to the Sahel zone, faces a serious and spreading problem of desertification. The degradation and loss of forests is remarkable even in the southern part of the country, an area relatively rich in forest resources. As such, the need to preserve the precious forest resources is increasingly pressing throughout the country as a whole. Against this background, the Government of Burkina Faso responded to this crisis by drawing up a *National Forest Policy (NFP)* in 1995. The Ministry of Environment and Sustainable Development (Ministère de l'environnement et du development durable) (MEDD)[4], the body in charge of forest management, has implemented community-based sustainable forest management

[4] At the time of the project completion, MEDD was called Ministère de l'Environnement et du Cadre de Vie (MECV).

based on the *NFP*, but problems with the funding and structure of the implementation have impeded implementation. Funding and the spontaneous implementation of activities by local people have both been necessary to maintain sustainable forest management. The establishment of a system for reliably securing funds has therefore been awaited and desired.

Responding to a request by the Government of Burkina Faso, JICA therefore conducted the *Comoe Province Forest Management Plan Survey (August 2002 - June 2005)*, and it proposed a direction and approach for formulating a participatory forest management plan in five CFs[5] in Comoe Province. However, the staff of the forest administration agencies had no experience in the implementation of the forest management project and the necessary knowledge and skills for project implementation were lacking. The Government of Burkina Faso therefore requested JICA to implement the technical cooperation Project, *Participatory and Sustainable Forest Management in the Province of Comoe (July 2007 - June 2012)*, with the aim of implementing participatory and sustainable forest management activities by local people through the GGF/UGGFs, and the Project was carried out as proposed. With regard to implementation, the project expected that it would be difficult to secure funds from the Government of Burkina Faso to sustain project effects after project completion. The Project therefore sought to achieve a certain level of sustainability by conducting activities for securing funds through local people with leading roles such as the GGF/UGGFs.

[5] The five Classified Forests (CFs) are Bounouna, Toumoussénni, Gouandougou, Kongoko and Dida. The survey activities could not be completed in Dida, for security reasons. Hence, only the four other CFs were determined as targets of the project.

1.2 Project Outline

Table 1　Project Summary

Overall Goal		Participatory and sustainable forest management by local people [6] is continuously conducted in four project target Forêt Classée (Classified Forests: CFs).
Project Purpose		Activities for forest management are commenced in four project target CFs (Bounouna, Toumoussénni, Gouandougou and Kongoko) by local people through the GGF/ UGGFs. * GGF, Groupement de Gestion Forestiére; UGGF, Union des Groupement de Gestion Forestiére
As to the differences between the overall goal and project purpose, the overall goal means "The forest management activities have been continuously implemented" and the project purpose means "The forest management activities have been commenced."[7]		
Outputs	Output 1	The national and local forest administrative agencies have an enhanced capacity to support the local people in implementing participatory forest management.
	Output 2	The GGF/UGGFs have an enhanced capacity in sustainable forest management in the target villages.
	Output 3	The living conditions of the local people are improved.
	Output 4	The plan d'aménagement et de gestion forestière (PAF) in the four target CFs is formulated and put into practice.
	Output 5	The cooperative relationship between the national/local administrative agencies and forest administrative agencies is strengthened to implement sustainable forest management.
Total cost (Japanese Side)		463 million yen
Period of Cooperation		July, 2007 - December, 2012 (Expanded period: July, 2012 - December, 2012)
Implementing Agency		・ Forest Department (Direction des Foret : DiFor), Directorate General for Natural Conservation (Direction Générale de la Conservation de la Nature : DGCN), Ministry of Environment and Sustainable Development (Ministère de l'environnement et du development durable : MEDD) ・ Regional Directorate for Environment and Sustainable Development in Cascade (Direction Régionale de l'Environnement et du Développement Durable :DREDD, Cascades) ・ Provincial Directorate for Environment and Sustainable Development in Comoe (Direction Provinciale de l'Environnement et du Développement Durable : DPEDD, Comoé)
Other Relevant Agencies/ Organizations		N.A.
Supporting Agency /Organization in Japan		Forestry Agency in Ministry of Agriculture, Forestry and Fisheries, Japan Forest Technology Association (JAFTA)

[6] Local people mean GGF and UGGF members who live in target areas. The direct beneficiaries of the Project at the project planning stage consist of GGF members (approx. 950) and UGGF executive board members (approx. 32) who assume forest management roles in each CF, forest administrative staff from the Ministry and Comoe province, and forest officers (approx. 20). The indirect benefit reached were approximately 36,000 people living around the four CFs, 80,000 people living in Banfora and areas around Banfora where forest products are mainly sold, and 15 forest officers in Cascade province (excluding the Comoe Province). The local people were assumed to be the people living around the CFs at the project planning stage. After the project commenced, a clear distinction was made between the people who lived around the CFs (hereinafter referred to as "villagers") and the GGF/UGGF members. The recommendation was made and approved by persons related to the Project that the project focus on the improvement of the livelihoods of GGF/UGGF first, and improvement of the livelihoods of villagers would be led by GGF/UGGF's initiatives in the future. Therefore, the latter was assumed mostly not to receive any physical or direct benefit from the project activities. (Source: Documents provided by JICA, interviews with the Japanese consultant)

[7] The original overall goal and project purpose were overlapping in this project, thus for the ex-post evaluation, they were redefined as mentioned.

Related Projects	Technical Cooperation Project ・ The Study on the Management of Forest Reserves in the Province of Comoe (2002 - 2005) ・ Project of Support for Seedling Production Sector (2010 - 2013) Grant Aid Project ・ Project for Rehabilitating of Regional Nurseries (1999 - 2000) ・ The Project for the rehabilitation and reinforcement of the capacity of National Center of Forest Seed and four regional forest seed departments（2004 - 2005) Other International Organization and donors ・ Financial Investment Program[8]（Establishment year : 2008, The 1st Phase : 2009 - 2015）

(Source: Documents provided by JICA)

1.3 Outline of the Terminal Evaluation

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

It was confirmed, at the terminal evaluation, that the zoning for forest management in each CF was conducted in accordance with Forest Development Goals[9], in order to clarify the zoning borders fundamental to forest management activities (Indicator 1). Because the forest management activities were confirmed to have been implemented in accordance with these goals as of the terminal evaluation (Indicator 2), there were expectations that the project purpose might be achieved by the time of project completion. The achievement of each output refers to Table A in Attachment-1.

1.3.2 Achievement Status of Overall Goal at the Time of the Terminal Evaluation (including other impacts.)

The formulation of the PAF in each CF was in the final stage. Positive impacts were generated in terms of both improved income for GGF members and improved relations between forest officers and the GGF/UGGFs. Given that the sales mechanism for forest products is starting to function, good relationships with local private companies are ongoing, and sales channels for forest products are developed, the overall goal was more likely to be achieved by the time of the ex-post evaluation.

1.3.3 Recommendations at the Time of the Terminal Evaluation

Table 2 shows six recommendations for the rest of the project period pointed out in the terminal evaluation, and the follow-up situation as of the ex-post evaluation.

[8] The program was a multilateral fund mechanism of the United Nations established by the World Bank to support climate control in developing countries.
[9] Refer to Table C in Attachment-1.

Table 2 Recommendations as of the terminal evaluation and follow-up condition as of the ex-post evaluation

NO	Recommendations as of the terminal evaluation	Follow-up condition as of ex-post evaluation
1	Japanese experts were evacuated temporarily from Burkina Faso for three months due to deteriorating public safety, making it difficult to achieve Output 4. The project period is therefore extended.	In consideration of the results of the terminal evaluation, the project period was extended for six months and terminated in December, 2012.
2	The PAF formulated by the Project is approved at the national level. A mechanism for official sharing of the contents of the PAF with persons related to the Project is developed.	As a result of the consultation between JICA and MEDD, the approval of the PAF was confirmed to be difficult at the national level during the project period. It was therefore determined that approval at the regional level was to be targeted. As a result, the PAF was approved by the provincial approval committee of the PAF and regional approval committee of the PAF on 9th and 16th November, 2012, respectively. The PAF was not yet approved, however, at the national level by the time of ex-post evaluation, and no mechanism for sharing the approval process among persons related to Project was sufficiently developed.
3	Determine a policy to assure the sufficient use of the Guide on the methodology for forest development and the Manuals for the participatory and sustainable forest management practices prepared by the Project.	A "Workshop for dissemination of the Guide and Manuals", an activity targeting forest officers and resource persons related to forest management in the Cascade region, was conducted on 14th September, 2012. The utilization of the Guide and the Manuals by persons/agencies related to forest management such as Ecole nationale des eaux et forêts (ENEF) as a course material was discussed.
4	In order for UGGFs to be able to play a role in both coordinating activities among the GGFs and negotiating with other agencies/institution/private companies including customers of forest products, the capacity of the UGGFs is strengthened	GGF/UGGF executive board members[10] took the initiative in negotiating with Rakieta Association and Phytofla Laboratory concerning the supply of non-timber forest products, instead of Japanese experts who previously played a central role in this negotiation. As a result, GGF/UGGF executive board members' capacity to negotiate was improved.
5	Practical experience related to continuous forest preservation activities by the GGF/UGGFs is accumulated as knowledge. Opportunities are set up for sharing the experience with donors and NGOs in addition to persons related to the Project.	In order to inform the project outputs and accumulate the experience as knowledge, a documentary video presenting project outcomes was produced as an initiative of JICA Burkina Faso Office and distributed to related forest management agencies. In addition, forest administrative agencies at the national, provincial, and departmental levels and persons related to forest management were invited to a seminar conducted on 23rd November, 2012 to share the project overview and the project outputs.
6	The results of the terminal evaluation were shared with persons related to the Project. Discussion among these persons on the possibility of extending the project period is needed.	The extension of the project period was discussed among persons related to the Project. A "Record of the Discussion" which described the extension of the project period for six months was signed by JICA and MEDD.

(Source: Documents provided by JICA and Results of the interviews with the Japanese consultant)

[10] GGF/UGGFs executive board members are basically comprised of seven people: representative, secretary, accountant, organization enhancement staff, communication staff, fund manager, and advisor. In addition to this, some GGF/UGGFs station vice secretary, vice accountant, vice organization enhancement, vice communication and forest management depending on the situation within GGF/UGGFs. Although the number of women in the executive board varies depending on GGF/UGGFs, it is confirmed that each board has at least 2-3 women members and about half at most in each executive board. It is also confirmed that forest officers care about the promotion of women's participation for example whether women that are actively participating in forest management activities when the officers support GGF.

2. Outline of the Evaluation Study

2.1 External Evaluator

Chiaki Yamada (Value Frontier Co., Ltd.) [11]

2.2 Duration of Evaluation Study

The study of the ex-post evaluation was carried out during the following periods.

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

Duration of the Field Study: February 29 - March 18, 2016, May 30 - June 6, 2016

3. Results of the Evaluation (Overall Rating: B[12])

3.1 Relevance (Rating: ③[13])

3.1.1 Relevance to the Development Plan of Burkina Faso

3.1.1.1 Relevance to Higher Development Plan

At the time of the ex-ante evaluation of the Project, *Poverty Reduction Strategy Paper II (PRSP II)* (2004), a development plan of Burkina Faso targeted the conservation of CFs for ecosystem management and the provision of goods and services to people.

At the project completion, *Strategy for Growth and Sustainable Development (SGSD) (2011-2015)*, a strategy formulated after *PRSP II*, stressed the importance of the mitigation of forest degradation and effective utilization of forest resource for ensuring environmental sustainability as one measure for poverty reduction.

3.1.1.2 Relevance to Environmental Sector Plan

At the time of the ex-ante evaluation of the Project, *NFP* (1995) aimed to create employment and stabilizing people's income while engaging forest conservation and management with the sustainable utilization of this natural resource. *National Program for Forest Management (NPFM)*, a program for executing *NFP*, established a goal related to sustainable forest management by the local people and promoted its implementation. *Forest Act* (1997) stated that "Forests are national properties and that sustainable forest management is an obligation of the people. Forests are developed in participatory approach." In particular, Article 39 specified that "Forest management is implemented based on the PAF rules approved by MEDD, in charge of forest management." Furthermore, rules that stressed the importance of a participatory approach, including rules on livelihood improvement through the participatory forest management by the local people, were described in the *Guideline for Forest Management* (2002).

NFP (1995) and *NPFM* (1996) were continuously valid at the project completion. The

[11] The evaluator is a subcontractor from INGÉROSEC Corporation.
[12] A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory
[13] ③: High, ② Fair, ① Low

Forest Act (2011), stated the promotion of sustainable forest management which the *Forest Act of 1997* similarly stated. There was no change in the positioning of forest management in the *Guideline for Forest Management* at the time of the project completion. There were newly confirmed descriptions of efforts to promote the establishment of the GGF/UGGFs as entities with key roles in management in the CFs. The *Rural Sector National Program (2011-2015)*, an initiative newly established though not yet formulated at the time of the ex-ante evaluation of the Project, emphasized the sustainable development of natural resources as one of the axes in the national strategy. The program also stated that forest management and preservation and appropriate management of forest ecosystems are a prioritized challenge.

As mentioned above, from the time of the ex-ante evaluation to the project completion, as a prioritized sector for poverty reduction, the needs for sustainable natural resources development such as the effective use of forest resources had been shown consistently.

3.1.2 Relevance to the Development Needs of Burkina Faso

The total forest area in Burkina Faso was 6,847,000ha in 1990 and had dramatically decreased by about 13.1% as of 2005. The decrease in forest area was significant (FAO[14], 2010). The decrease was attributed to an increased demand for forest resources due to the growth of the population, while people rely on forest resources as a major source of domestic energy (FAO, 1996) [15]. The drastic decrease of forest resources was to be slowed through appropriate and sustainable forest management. Additionally, the forest officers have moved away from their role of conventional forest monitoring towards forest management in cooperation with the local people and support for the activities implemented by the local people. The forest officers were required to re-realize their own roles and acquire skills for both participatory and sustainable forest management and the monitoring and evaluation of forest management activities by the local people.

It was confirmed at the project completion that the degradation or loss of forests was still remarkable not only in the Northern part of Burkina Faso, where serious deforestation was spreading, but also in the Southern part, where forest resources were still relatively rich. The forest area of the country declined from 5,649,000ha in 2010 to 5,467,000ha in 2013. The rate of decrease increased from 0.9%/year in the 1990s to 1.0%/year since 2010 (FAO, 2010 and 2015) [14]. The Cascade region, where the project target areas are located, has an electrification rate of 23.8% (Ministere De L'economie Et Des Finances, 2010)[16]. While some households use gas as an energy source, most are obliged to rely on forest resources for their domestic energy. In view of these situations, there was a need for the Government of Burkina Faso and Aid

[14] Global Forest Resources Assessment (Food and Agriculture Organization of the United Nations: FAO)
[15] Domestication and commercialization of non-timber forest products in agroforestry systems (FAO)
[16] l'Enquête intégrale sur les conditions de vie et des ménages (2010)

agencies to organize training for participatory sustainable forest management, targeting the forest officers at the local administration level. While the decentralization was in progress in particular, it is confirmed that the importance of training for forest officers who can implement appropriate forest management was stressed. This project was implemented with the aim for improving the forest management skills of the forest officers. And through the project outcomes, the abilities of the forest officers were improved in the project target areas. However, the target areas for the project were limited and the number of forest officers capable of forest management was confirmed to be insufficient to enable an extension of the forest management areas.

As mentioned above, an ongoing need for appropriate and sustainable forest management projects and for improved capacity for forest officers was confirmed to be a requisite at the time of the project completion.

3.1.3 Relevance to Japan's ODA Policy

At the time of the project planning, the *Medium-Term Policy on Official Development Assistance (ODA)* (2005) cited correspondence for global issues as a priority issue and declared that Japan's commitment to environmental issues was to be strengthened. The *Country Assistance Policy for Burkina Faso* (2006) stated that rural development through sustainable and effective conservation and utilization of natural resources was a priority area for assistance. The Project, which implements sustainable forest management, was therefore relevant to Japan's ODA policy.

As mentioned above, the implementation of the Project, which contributes to sustainable forest management by the GGF/UGGFs through improved support capability for forest administration agencies and the formulation of the PAF, has been highly relevant to Burkina Faso's development plan and development needs, as well as Japan's ODA policy both at the time of the ex-ante evaluation and the project completion. Its relevance is therefore high.

3.2 Effectiveness and Impact (Rating: ③)

3.2.1 Effectiveness

3.2.1.1 Achievement of Project Purpose

Project Purpose: Activities for forest management are commenced in four project target CFs (Bounouna, Toumoussénni, Gouandougou and Kongoko) by local people through the GGF/UGGFs.

Given that the five following outputs are achieved, the Project is assumed to have achieved its purpose. As for Output 1, in order for GGF/UGGFs to implement participatory and sustainable forest management, capacity of the national and local forest administrative agencies to support the GGF/UGGFs was improved. By enhancing the capacity of GGF/UGGFs in

relation to sustainable forest management (Output 2), the living conditions of the GGF/UGGFs were improved (Output 3). Furthermore, in order for GGF/UGGFs to implement the forest management activities continuously, the PAF was formulated (Output 4). The cooperative relationship between the national and local administrative agencies and forest administrative agencies was strengthened, in order for GGF/UGGFs to implement activities with the aim of the sustainable forest management even after the project completion (Output 5).

The cooperative relationship between forest administrative agencies and the GGF/UGGFs was improved. Forest officers who participated in trainings by the Japanese experts were assigned to give lectures for forest management technical training for the GGFs; thus their cooperation was confirmed. Thirteen existing GGFs confirmed at the ex-ante evaluation were re-activated. Fourteen GGFs were newly established by the Project, so the total number of GGFs reached 27 in total. Two existing UGGFs were re-activated and another two were newly established, so the number of UGGFs reached four in total. Various training activities focused on forest management activities such as activities for institutional enhancement, honey and shea butter production were conducted, which gave the GGF/UGGFs sufficient confidence in their forest management capacity. It was confirmed, at the project completion, that the GGFs were implementing ongoing forest management activities with the use of techniques learned through the training. During the project period, a PAF was formulated for each CF to promote participatory forest management. In addition, three existing manuals for charcoal making, seedling production, and wildfire management were continuously utilized for the Project. Five types of participatory and sustainable forest management practice manuals were newly prepared, and eight types of manuals were ready in total. The achievement of the project purpose is shown in Table 3.

Table 3 Degree of achievement of the project purpose

Purpose	Indicator	Degree of achievement
Project Purpose	Indicator 1: Classified Forests (CFs) are clearly zoned as an underlying foundation for the forest management activities by the GGF/UGGFs	Indicator 1: Achieved ・ In order to clarify the forest zoning border, the following three activities were implemented in the project target CFs. 1. CFs were zoned in land use maps for management. 2. Transect cutting was conducted to clarify forest zones. 3. Sign boards showing forest zoning were manufactured and erected in the CFs (See Figure 3).
	Indicator 2: The Forest Development Goals are clarified in each target CF; forest management activities were implemented by the GGF/UGGFs based on the Forest Development Goals	Indicator 2: Achieved ・ According to the interviews with the implementing agency, it is confirmed that the Forest Development Goals in each CF were formulated during the project period and the forest management activities have been commenced based on the target. ・ It was confirmed that from nine to eleven types of activities commenced during the project period were still being implemented at the time of the project completion. Although each GGF commenced various activities during the project period, as a result of the actual implementation of these activities and determination of what activities are suitable for each GGF, seven to eleven types of activities considered appropriate by the GGFs for ongoing implementation were selected at the time of the project completion. The average persistency rate was 94% for the activities (See Table B in Attachment -1). ・ At the project completion, seven out of eleven activities[17] were being continued by all GGFs. It was confirmed that some GGFs stopped implementing the other four activities. Although the GGFs were confirmed to have decreased the number of activities during the project period up to the project completion, this decrease was due to thorough deliberations on which activities were suitable for each GGF.

(Source：Documents provided by JICA, Interviews with the implementing agency, Beneficiary survey[18])

As shown in Table 3, zones for forest management activities were clarified and a PAF was formulated in each CF for the implementation of forest management activities by the GGF/UGGFs. Moreover, the activities for achieving the forest management target set by the Project were commenced during the project period and the ongoing implementation of these activities was confirmed at the project completion. Therefore, the project purpose is deemed to have been achieved.

[17] The eleven types of activities are as follows: clearing space for fire protection, honey production, shea butter production, Sumbala production (seeds of Parkia Biglobosa (leguminosae) and products processed from them are used for food such as soups), saba syrup production (Saba Senegalensisis is a naturally grown vine plant mainly processed to make syrup), seedling production, afforestation, medical plant utilization, logging, charcoal making, and pasture grass production.

[18] Beneficiary survey consists of targeted three groups, four UGGF executive boards, 27 GGF executive boards and GGF members. In the four CFs, executive board members of both four UGGFs and 27 GGFs, and 270 GGF members randomly selected out of 1,665 in total answered the questionnaire in face-to-face interviews. The male-to-female ratios in the mixed interviews in each GGF were deemed to roughly match the ratios in the total GGF memberships, as were the ratios of the scale of members in each GGF/UGGF to a maximum extent. There are more women GGF members than there are men (See Table 4.1). This is because there are many activities such as shea butter production and quality improvement of Sumbala that women traditionally handle. The specific number of members interviewed is shown in Table D in Attachment - 1.

Figure 3 Forest zoning signboard in a CF

Figure 4 GGF members drying doribara[19]

3.2.2 Impact

For the evaluation of the overall goal, "participatory and sustainable forest management by local people is continuously conducted", whether the local people continue the following two activities based on the PAF is evaluated. The first is the function of the CFs upgraded through the caring for forests[20] such as planting, thinning, or pruning of trees, and the second is forest products produced and sold by the local people in the targeted areas. Effects generated by the implementation of the forest management (change or improvement of the forest state such as increased absorption amount of carbon, reduced illegal logging, and conservation of biodiversity) are omitted from consideration in the evaluation of the achievement of the overall goal. As the specific activities described in the two activities mentioned above had been initiated during the project period, the continuity of these activities after the project period is evaluated. If the GGF/UGGFs continuously implement forest management activities appropriately based on the PAF after the completion of the Project, the overall goal is considered to be achieved. In order for the GGF/UGGFs to continue the forest management activities appropriately, securing budgets are necessary in this regard. That, in turn, requires not only the ongoing use of the sales channels exploited during the project period for selling forest products, but also new sales channels for continuing the forest management activities. Moreover, the GGF/UGGFs are expected to secure and supply stable products, and thereby secure well-established sale income. For the achievement of the overall goal going forward, it is necessary for GGF members to remain members for a longer time and acquire established techniques.

3.2.2.1 Achievement of the overall goal

Overall goal: Participatory and sustainable forest management by local people is continuously conducted in four project target Forêt Classée (Classified Forests: CFs).

Table 4 shows the indicators to measure the overall goal and the level of achievement of

[19] Doribara is a medical plant and its academic name is N'dribala. Dried dribara is used as medicine to prevent malaria.
[20] Based on the internal regulation of GGF, all GGF members are obliged to participate in an activity such as caring for forests which does not generate income. However, compensation is not paid to GGF members if GGF participate in such activities.

each indicator. As the Indicator 1 was redundant with one of the indicators for project purpose, the Indicator 2, "The number of GGF members is increased", was added in order to measure the achievement of the overall goal appropriately at the time of the ex-post evaluation. Thus achievement of the overall goal was measured based on the two indicators.

Table 4 Degree of the achievement of the impact

<table>
<tr><th>Goal</th><th>Indicator</th><th>Degree of achievement</th></tr>
<tr><td rowspan="2">Overall Goal</td><td>Indicator 1 : Activities introduced by the Project in the four target CFs are implemented continuously by the GGF/UGGFs based on the PAF</td><td><u>Indicator 1: Achieved</u>
・ The beneficiary survey confirmed that all GGF/UGGFs have implemented the activities based on the PAF continuously as of the ex-post evaluation. The average persistency rate for the activities is 85% (See Table B in Attachment-1).
・ However, regarding one of the forest management targets in the PAFs formulated by each CF, which is "to secure supply of goods to large consumption areas such as Bobo Dioulasso," GGF/UGGFs have been struggling to achieve this as sales channels have yet to progress, primarily due to lack of funds. It is confirmed that targets (except those mentioned above) are achieved at the ex-post evaluation.</td></tr>
<tr><td>Indicator 2 : The number of GGF members is increased</td><td><u>Indicator 2: Not achieved</u>
・ The numbers of GGF members in the Bounouna UGGF, Toumoussénni UGGF, and Kongoko UGGF as of the ex-post evaluation are either unchanged or slightly decreased from the last tally at the project completion. On the other hand, the number of GGF members in the Gouandougou UGGF decreased by approximately 20% versus that at the project completion.

Table 4.1 Change in the numbers of GGF members
(Unit: person, except for the rate of increase-decrease (%))
<table>
<tr><th rowspan="2">Name of UGGF</th><th colspan="2">At the project completion</th><th colspan="2">At the ex-post evaluation</th><th colspan="2">Rate of increase-decrease (%)</th></tr>
<tr><th>M</th><th>F</th><th>M</th><th>F</th><th>M</th><th>F</th></tr>
<tr><td>Bounouna</td><td>19</td><td>90</td><td>17</td><td>87</td><td>-11</td><td>-3</td></tr>
<tr><td>Toumoussénni</td><td>105</td><td>227</td><td>93</td><td>227</td><td>-11</td><td>±0</td></tr>
<tr><td>Gouandougou</td><td>211</td><td>405</td><td>176</td><td>339</td><td>-17</td><td>-16</td></tr>
<tr><td>Kongoko,</td><td>290</td><td>383</td><td>335</td><td>391</td><td>+16</td><td>+2</td></tr>
<tr><td>Total</td><td>625</td><td>1105</td><td>621</td><td>1044</td><td>-1</td><td>-6</td></tr>
</table>
(M: Male, F: Female)</td></tr>
</table>

(Source: Beneficiary survey)

For the Indicator 1, eight out of 11 activities sustained at the project completion were still being continued by more than 80% of the GGFs at the time of the ex-post evaluation. As forest management activities were discussed and reselected within each GGF in response to the local situation and market demand, the communication within GGFs was considered good and the GGFs made appropriate arrangements to sustain their activities. Eight out of 11 GGFs engaged in the production of saba syrup and nine out of 18 GGFs engaged in charcoal

manufacture had stopped those activities by the time of the ex-post evaluation. A high non-persistency rate was observed within two activities. The saba syrup production was discontinued due to difficulties in procuring bottles necessary for the activity. Concerning charcoal, as it was indispensable for daily life, there were many people who produced coal in places other than CFs. Regarding the sales of charcoal, there were no outstanding features in the charcoal produced in CFs compared to the charcoal produced in other areas, therefore, it was not able to dominate in sales.

For the Indicator 2, the beneficiary survey confirmed that the GGF members increased in Kongoko UGGF. In Bounouna UGGF, Toumousséni UGGF, and Gouandougou UGGF, meanwhile, the number of GGF members was decreased. One reason for the decreased number of GGF members was a failure of the activity to bring in the target income defined in the PAF. Another reason was that the GGF executive board members decided to limit GGF memberships to people who were eager to commit to forest management activities, who actively participated in them regularly, and who regularly paid their membership fees[21]. The decision was made in the course of discussing the terms and conditions of membership for the implementation of sustainable activities. Some members reported that new membership rules pared out less motivated members. With only the highly motivated members remaining within the GGFs, they explained, their activities had become more active and motivated. The same point was confirmed through the interviews with the implementing agency (forest officers).

As mentioned above, although the number of GGFs members had decreased between the time of project completion and the time of ex-post evaluation, approximately 80% of the GGF members continued the forest management activities using the skills learned and experience obtained during the project period. Project effects were delivered continuously as a result. Although the GGF/UGGFs kept no accounting books, they carried on their activities based on the PAF. The GGF/UGGFs also responded appropriately to the situations at hand, for example, by adjusting sales price to suit the current conditions. As such, the rate of project goal achievement is rated as high.

3.2.2.2 Impact generated by the Outputs and Project Purpose

1. (Impact generated by Output 1) Changes in the implementing agency (among departmental forest officers)

According to the beneficiary survey, the departmental forest officers who work closely with the GGF/UGGFs gained a better understanding of participatory forest management through the Project. As a result, the GGFs and departmental forest officers enjoyed better relations and engaged in more frequent communications as of the project completion. As of the ex-post evaluation, all 27 GGFs answered that, “The forest officers understand the activities of the

[21] The membership fees are 300-2,000FCFA/month (680FCFA/month on an average) and they vary by GGF.

GGFs better now compared to the beginning of the project planning. The better relationship built through the project period is still maintained".

2. (Impact generated by Output 2) Continuity of activities

With regard to continuity of the forest management activities, it was confirmed as of the ex-post evaluation that some GGFs stopped some of the activities that they started during the project implementation period although they had received training. It is because that the GGFs had discussed these activities and had deliberately chosen to discontinue them in light of the local situation and market demand. Three of the 11 forest management activities, namely, wildfire management, shea butter production, and seedlings production, had particularly high persistency rates. The persistency rates for activities such as saba syrup production and charcoal manufacturing, on the other hand, were quite low.

3. (Impact generated by Output 3) Improvement of the living conditions of GGF members

According to the beneficiary survey, about 96% of GGF members (260 out of 270 members) answered that they had increased their household income by the time of the ex-post evaluation, compared with their income before the project implementation. The increased income was derived from the sales of forest products. The average annual income[22] from forest products increased from about 3,000FCFA[23]/year at the project planning stage to about 58,000FCFA/year as of the ex-post evaluation[24]. Additionally, about 87% of GGF members (235 out of 270 members) answered that, "Communication amongst GGF members has become more detailed and frequent". About 24% of GGF members (65 out of 270 members) answered that, "We are enjoying the forest management activities". In response to the question on "GGF member satisfaction with the project", all 270 members answered that they were satisfied with the project effects. The major reasons for their satisfaction were increased income, increased knowledge of forest management, and strengthened community ties. GGF members are not supposed to obtain forest products in CFs for personal use. Instead of the members, GGF/UGGFs sell the forest products and distribute their sales to GGF members. Therefore, collection of more forest products by GGF members would not directly lead to improvement in individual living.

4. (Impact generated by Output 3) Reinvestment situation

Through the beneficiary survey, it was found that about 48% of GGFs (13 out of 27 GGFs) reinvested in equipment and materials necessary for forest management activities as of the

[22] Average income among GGF members who responded to the beneficiary survey.
[23] FCFA is a common currency used mainly in the former French West and Equatorial African countries.
[24] It is assumed that limiting GGF members to people who were eager to commit to forest management activities and acquired knowledge and skills on forest management activities contributed to the increase of the average annual income of GGF members.

ex-post evaluation. The remaining GGFs (14GGFs) did not reinvest in their activities considering the following factors: (1) activity status, (2) GGF scale, and (3) need for thorough maintenance of equipment and materials purchased during the project period. Because of these reasons, at the time of the ex-post evaluation, it was confirmed that they considered the reinvestment was unnecessary, thus they were saving money for future reinvestment.

5. (Impact generated by Output 4) National approval process of PAF

The interviews with the implementing agency confirmed that the PAF was already formulated but had yet to be approved at the national level[25] due to the lack of a formal approval process for the PAF in MEDD. It was confirmed that no PAF in Burkina Faso had yet been officially approved at the national level. However, the implementing agency recognized the necessity that all of the PAFs, including that under this project, be approved. Legal Department within MEDD has been working since 2015 to establish an official approval process for the PAF.

6. (Impact generated by Output 5) Cooperation with three private companies and one association

According to interviews with three companies and one association[26] that were working together with the GGF/UGGFs at the time of the project completion, GGF/UGGFs still had sales relationships with two of the companies, A-Danse Company and Phytofla Laboratory. They were no longer cooperating with Bomba Techno or the Rakieta Association. The cooperation with Bomba Techno was no longer needed because that company's technology had already been transferred to the GGFs during the project period. The Rakieta Association, meanwhile, was no longer operating by the time the interviews were conducted. A-Danse Company, Phytofla Laboratory, and the leadership of the GGF/UGGFs were all keen to continue their current relationship. While no new partnerships with companies or associations have commenced since the project completion, it was confirmed that the GGF in Bounouna set up a forest product sales office in an attempt to open up a new market (See Figure 6).

[25] PAF was approved by the provincial approval committee of the PAF and regional approval committee of the PAF on 9th and 16th November, 2012, respectively.

[26] The three private companies are a Japanese company limited called A-Danse and two private local companies called Phytofla Laboratory and Bomba Techno. The association is a civic association called Rakieta Association.

Figure 5 Doribara production

Figure 6 Forest products sale office operated by Bounouna UGGF[27]

7. (Impact generated by effects of the project) Appropriate forest management and changes in the status of the forests

According to the interviews with the Japanese experts and the implementing agency, the project target areas were classified as CFs. Until then, no PAF was formulated in these CFs, forest management were not carried out appropriately, and illegal logging and hunting were taking place in these areas. According to the forest officers, the number of illegal logging and hunting incidents reduced after appropriate forest management were put in place. However, the data on the impacts or changes in the status of the forest status resulting from this project were not available.

3.2.2.3 Other impacts

1. Impacts on the Natural Environment

Based on the interviews with the implementing agency and Japanese experts, it was confirmed that the CFs were a mixture of conserved forests and productive forests[28]. Because all of the GGF/UGGFs implemented forest management activities in a proper manner in the CFs, the number of illegal logging and hunting incidents were reduced. Thus, the CFs can be said to be properly conserved. At the ex-post evaluation, the information on the tree species in the CFs was available, but not on the number of trees and areas where trees were planted. Thus, while increased carbon absorption in the CFs was estimated, the degree of contribution towards reduction of greenhouse gas emission was not measureable.

2. Land Acquisition and Resettlement

As the project activities were implemented in existing CFs, no land acquisition or resettlement took place as a result of the project implementation.

[27] Shea butter, saba syrup, and sumbala are sold in the forest products sale office run by Bounouna UGGF.
[28] Most of the PAFs are conserved forests where logging and afforestation are not done. Places where afforestation is implemented partly are classified as productive forests.

3. Other indirect project impacts

- According to the beneficiary survey and interviews with the implementing agency, the local NGO named Natural Resources and Wildlife Management Association conducted a study to the activity status of some GGF members who were beneficiaries of this project. The survey confirmed that the NGO was making an effort at improving forest management activities by introducing locally tailored methods into their activities and etc., in order to sort out issues that had been raised as of the project completion. Note, also, that according to the interview with the headmaster of the Ecole nationale des eaux et forêts (ENEF), the ENEF used the *Manual on Grazing Management Techniques* as a book of reference. The *Guide on Forest Management Methodology* and another four manuals from the project were also used as the main textbooks in their lectures.
- Through the interviews with the implementing agency, it was found that activities and preparations for the formulation of a new PAF were underway. At Niangoloko Department in Comoe Province, the formulation of a new PAF was under preparation with help from the international organization such as the International Union for Conservation of Nature and Natural Resources. People working for the formulation of the new PAF in Niangoloko participated in both the joint coordination committee (JCC) and the GGF training during the project period. In the JCC, they learned that one of the Bounouna CFs was managed appropriately under GGF/UGGF management even after the project completion. This alerted them to the need for the formation of the PAF in Niangoloko. New activities for the formulation of the PAF were also observed at three UGGFs (Kuinima, Kua, and Hippos Pond) in Houet Province[29]. These three UGGFs participated in the training during the project period, which gave them the opportunity to get to know the PAF and to learn that the implementation of forest management based on PAF enables forests to be managed appropriately. Additionally, after the project completion, the members of these GGFs saw tangible improvements in their living conditions as a result. It can be said that this beneficial outcome promoted and increased new activities for the formation of the PAF.

Turning to the project purpose, the areas for GGF/UGGF forest activities were clearly zoned, as described earlier. The GGFs, equipped with the techniques and knowledge learned through the training, had continued most of the activities that were started during their operations (94% persistency rate). It can therefore be determined that sustainable forest management activities have been carried out by the GGF/UGGFs. Turning to the achievement of the overall goal, the GGF/UGGFs implemented ongoing activities in line with the PAF (persistency rate of 85%), albeit without recording any data in accounting books or the like. Although the number of

[29] Houet Province is located in the southwest area, named Haut Bassins, of Burkinafaso.

members has decreased slightly, the members retained in GGFs are of a sufficiently high quality and it was concluded that the overall goal has been achieved. In addition, the beneficiary survey revealed that approximately 96% of the local people have improved their income through selling forest products and have continued their relationships with the private companies and association. As a ripple effect of the Project, in terms of the formulation of a PAF, was confirmed in other areas where they have been inspired by the Project and the decrease of illegal logging, the impact is rated as high. Therefore, as the project effects generated by the Project as planned were confirmed, effectiveness and impact of the Project are high.

3.3 Efficiency (Rating :②)

3.3.1 Input

The planned and actual project inputs are shown in Table 5.

Table 5 Plan and actual of the project inputs

Project inputs	Planned	Actual（at project completion）
(1) Experts dispatched	3 long-term experts[30]	6 long-term experts[31] (103.5 man months)
(2) Training in Japan	Not mentioned	4 members
(3) Materials & equipment provided	Four-wheel drive vehicles, off-road motorbikes, equipment for forest management, materials and equipment required for the activities supporting the local people	Vehicles, motorbikes, other equipment and materials costing about 3 million yen, As an infrastructure development for forest management; cutting down trees and plants were conducted for forest zoning clearly; and 27 warehouses were constructed for the storage of equipment and materials for the GGFs.
(4) Local cost burden	Not mentioned	46 million yen
(5) Others	Not mentioned	3 facilitators
Japanese side Total Project Cost	Total 380 million yen	Total 463 million yen
Burkina Faso side Total Project Cost	Total 39 million yen	Total 25 million yen

(Source: Documents provided by JICA, Interviews with the implementing agency)

3.3.1.1 Elements of Inputs

1. Japanese side

・ Although no Japanese experts such as participatory development and livelihood improvement were initially planned as project input, the necessity of these experts for promoting a participatory approach encompassing livelihood improvement through forest management was confirmed. Three Japanese experts were therefore added as inputs from the Japanese side. This made the project possible to conduct the project activities from a multilateral perspective. Additionally each expert performed activities in a collaborative

[30] One chief advisor, one participatory forest management, and one coordinator. Man months are not described.
[31] One chief advisor/forest management, one deputy chief advisor/forest management, participatory rural development (1) and participatory rural development (2), one coordinator and one training management.

way; hence these added inputs produced more positive project effects.

- After the project commencement, the necessity of facilitators who can understand local languages and French and are familiar with the project target areas and its circumstances were confirmed in order for the Project to establish relationships with the GGF/UGGFs, communicate smoothly, and implement the forest management activities. Based on the facts found, three facilitators were also newly added as project inputs. Considering the project implemented through participatory approach, facilitators to support the GGF/UGGFs directly were vital and had to be assigned as of the ex-ante evaluation. The importance of the facilitators was also confirmed at the ex-post evaluation by both the beneficiary survey and interviews with the implementing agency. In spite of the time constraints faced during the ex-ante evaluation, the importance of the facilitators for the project implementation should have been recognized and facilitators also had to be assigned into the Project.

2. Burkina Faso side

- Only one national coordinator was assigned to the project as a counterpart, chiefly due to a budget decrease and delay. Overall, the inputs from the Burkina Faso were not planned appropriately and this became an obstructive factor for the project implementation. The Japanese side responded to the budgetary shortfall by supporting the expenses. After it provided the expenses, the Burkina Faso side was able to fund their budget and the cost burden on the Japanese side was reduced.

3.3.1.2 Project cost

The actual project cost from the Japanese side was 463 million yen, while the planned cost was 380 million yen. Therefore, the actual project cost was higher than planned (121% of the planned cost). The increased cost was mainly attributed to the following three points.

1) Infrastructure development for the purpose of forest management such as development of roads around the CFs, and transect cutting for clarifying forest zones;
2) Construction of warehouses for storing project equipment and materials in each GGF; and
3) Additional employment of three facilitators not included in the plan.

Although point 1) was not allocated in the project cost at the ex-ante evaluation, JICA and the persons related to the project agreed at the project commencement stage that a minimum of infrastructure construction would be necessary to achieve the project purpose. Eventually, point 1) was provided by the Japanese side. Concerning point 2), there were initially no warehouses for storing equipment and materials for forest management and forest products. Individual houses in many GGFs therefore had been used instead. Under the decision that in order to manage equipment and materials sustainably and appropriately, the construction of the storage warehouses was necessary, there was a request from the recipient country during

the implementation of the Project. Storage warehouses for equipment and materials were therefore constructed for all 27 GGFs. Concerning point 3) is as mentioned above. There was no change in the output due to this increase in the input, given that additional input was presumably required for the planned output calculation. The facilitators were thus determined to be necessary inputs.

3.3.1.3 Period of Cooperation

Political instability in Burkina Faso forced the Japanese experts to evacuate the country for three months in the 4th year of the Project. The project activities were therefore delayed. To make up for the activities that had been suspended during the evacuation time, the project was lengthened by three months followed by another three-month extension. The planned project period was a total of 60 months between July 2007 and June 2012. The actual project period was 66 months between July 2007 and December 2012. After excluding the three months of evacuation and adding the three-month extension, the total project period was 63 months (105% of the planned period) and longer than planned.

As mentioned above, the actual project cost and actual project period both exceeded the plan (121% and 105%, respectively). Therefore, the efficiency of the Project is rated as fair. For the achievement of the outputs and project purpose, the increase of the project cost was determined to be vital for the smooth project management and the extension of the project period was determined to be an indispensable input to deal with factors beyond uncontrollable factors.

3.4 Sustainability (Rating:②)

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

As of the ex-post evaluation, it was confirmed that due to the PAF being not officially approved by the Government, there was no legal obligation binding the GGF activities based on the PAF, in effect. If, for example, a GGF implemented an inappropriate activity from the viewpoint of forest management, there was nothing binding the GGF to comply with the rules of the PAF. Once the approval process for the PAF is officially set up within MEDD, the Government is required to approve the PAF by following the approval process. It was confirmed from the interviews with the implementing agency that the official approval process for the PAF was discussed within MEDD. It was also confirmed from the interview that the Forest Management Plan, which is a part of the PAF, was valid from 2012 to 2016. The plan therefore needs to be formulated for the targeted period after 2017.

On the other hand, the valid Burkina Faso Development Policies (including sectoral policies) such as *SGSD*, *NFP*, and *NPFM* at the time of the ex-post evaluation prioritized poverty reduction as an important sector. They also aim for forest conservation and management with the sustainable utilization of this natural resource. Generating employment and stabilizing

people's income were also targeted through activities of forest conservation and management. The *Guideline for Forest Management* promotes the set-up of GGFs to implement a participatory approach focused on forest management activities. Article 39 of the *Forest Act* revised in 2011, which remains unchanged from the earlier version of the Act, states that the management of the national forests, including the CFs, should be implemented based on the PAF formulated by the Forest Department and approved by MEDD.

As mentioned above, it is confirmed that the sustainable management of the CFs as national forests with PAF-based participatory approach by the GGF/UGGFs has been continuously recommended. Therefore, the sustainability of the project within the terms of the policies and institutions is rated as high.

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

In order for the project effects to be sustainable, the GGF/UGGFs are required to continue their forest management activities while each participating agency fulfills their roles. Table 6 and 7 show the roles of the respective agencies (national, regional, provincial and departmental level) confirmed by the interviews with the implementing agency. The CFs targeted by this project are categorized as government-owned areas within the national forests. But the management roles and responsibilities for the national forests are placed into different agencies within the Region, Province, and Departments and are defined.

Table 6 Roles of the agencies connected with the Project

Forest management roles	National level	Regional level	Provincial level	Departmental level
Promotion of forest management by the local people	-	○	○	○
Preparation of PAF (supports for formulating PAF included)	○	○	○	○
Approval of PAF at the national level	○	-	-	-
Approval of PAF at the regional level	-	○	-	-
Approval of PAF at the provincial level	-	-	○	-
Update of PAF[32] (management plan for every five years and development plan for every 20 years)	○	○	○	○
Securing budgets for preparation of PAF	○	-	-	-
Management of forest management fund	-	○	-	-
Monitoring patrol for illegal logging and hunting	-	-	-	○
Supports and monitoring of forest management activities	-	As necessary		○

(Source: Interviews with the implementing agency, Beneficiary survey)

[32] Formulated PAF needs to be approved by provincial, regional and national levels.

Table 7　Roles of UGGF and GGF

Group involved	Roles of forest management activities
UGGF	・ Coordination and problem resolution inside and outside of GGF/UGGFs ・ Management of forest management fund jointly with the regional directorate
GGF	・ Forest management activities (including monitoring of forests)

(Source: Beneficiary survey)

Specifically, the departmental office has the role of monitoring the forest management activities. The forest officers at the departmental offices who work closely with the GGF/UGGFs therefore play a key role in the monitoring. It was confirmed as of the ex-post evaluation that necessary communications were exchanged between the Ministry, the Region, the Province, and the Departments. These agencies communicated closely and formed smooth partnerships through reporting by telephone or meetings.

It was also confirmed that the forest officers visited the GGF/UGGFs and provided support to help solve any types of problems when emerging in those groups. At least three forest officers were placed at each of the three target departmental office; shortages in the number of forest officers were not confirmed as a problem.

From the above, the roles and responsibilities of the agencies for forest management are clear, as are the roles of GGF/UGGFs. There are no major issues with the organizational aspects interfering with the project sustainability.

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

According to the beneficiary survey, all 207 respondents answered, “By participating in training activities, we have acquired the necessary skills for providing forest management and gained confidence in our skills of activities”; and further, “Regular meetings are held within the GGFs to maintain our forest management skills, especially our technical competencies. During the meetings, the meeting participants shared the progress of the activities among them and discussed problems generated in the methods or techniques for management to seek for solutions”. Twenty GGF members answered that they had conducted studying sessions together with members of other GGFs. Table 8 shows the rates at which the manuals prepared during the project are being used.

Table 8　Rates at which the manuals are in use（Number of GGFs）

Name of manuals	In use	Not in use	Excluded[*1]
Technical manual for the quality improvement of shea butter	20	3	4
Technical manual for the quality improvement of sumbala[*2]	7	3	15
Technical manual on the utilization of medical plants	5	19	3
Technical manual on grazing management	6	9	12
Manual for the improvement of organization capacity	16	11	

(Source：Beneficiary Survey)

(Remark[*1]: GGFs not engaged in the activities covered in the manuals are excluded.

[*2]: Two GGFs left the question about the “technical manual for the quality improvement of sumbala” unanswered. The other 25 were confirmed to have given valid answers.)

When GGF members face a problem, they tend to solve it by talking to the leaders of each activity or other members instead of using the manual. It was confirmed that the new GGF members mostly learned their skills through direct instructions from experienced GGF members.

According to the beneficiary survey, the equipment (bee boxes, etc.) provided during the project period are properly functioning and still in use, by making necessary repairs upon necessity. The warehouses were set up for storing equipment in the all GGFs and were also confirmed to be still in use, as well. Spare parts for the equipment used for the project activities are basically available in Comoe Province and have been purchased when necessary. No problem in purchase of spare parts is confirmed. There are no reports on technical problems with the maintenance and management of their equipment.

According to the beneficiary survey, as of the ex-post evaluation, all 27 GGFs answered, "Thanks to the skills and knowledge acquired through the training, we keep conducting our forest management activities with confidence". This is a sound indication that the forest management skills are well established amongst the GGFs. One of reasons that the manual was not often used during the Project was because the manuals were written in French. According to some GGFs, if these manuals had been written in local languages they would have been used more frequently. However, the issue mentioned above was considered during the Project. That being said, the manuals written in French language were the choice by default given the high number of local languages used, so the GGF members who understood French (all male members and some female members) were determined to translate the manuals for the other members. In spite of the low rate of manual use, communications were frequent among GGF members and skills were duly passed on among the members and improved. On the other hand, the skills for the accounting and recording for the appropriate management of the income generated through forest management activities were not adequately established in the GGF/UGGFs[33]. The GGF treasurers were also confirmed to lack adequate information on production and sales amounts for each activity. As a result, the GGFs failed to perform the financial management necessary to assess how far the actual amounts fell short of the PAF targets.

The above findings indicate that the technical skills for forest management activities were appropriate in terms of generating income, while the financial management skills were still poorly established within the GGFs. Thus, financial management is still an issue.

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

According to the interviews with the departmental forest offices, these offices have the main roles in monitoring and supporting the forest management activities implemented by

[33] Through Activity 2-2 "Techniques and institutional capacity of GGF/UGGFs existed in areas connected to the Project are enhanced", "Record and accounting", and "Management of income" were implemented.

GGF/UGGFs. Although the Government had financial difficulties, fines were collected from persons who illegally log and hunt, and fees from permission certificates issued for logging outside of the CFs were paid to MEDD; thus, there was no budget allocated directly for forest management. Therefore, none of the offices secured an annual budget for monitoring forest management activities.

The project plans initially called for a financial system of the following type to sustain the project effects after the project completion. A part of the GGF income generated through the economic activity was to contribute to the training costs incurred by the GGF/UGGFs and the Forest Management Fund used to cover the monitoring costs of the departmental forest offices. Furthermore, a basic framework enabling the collection of operating funds was supposed to be embodied and established to reliably cover expenses for the activities of the GGF/UGGF executive board members and the maintenance and exchange of equipment and materials provided by the Project. The income for the GGFs was to be broken down into that for the producers, the GGF/UGGF Fund, forest taxes, and the Forest Management Fund.

With respect to situation and plan mentioned above, although the Forest Management Fund is funded from the income generated from forest management activities, the actual sales from the forest management activities under the above conditions have fallen short of the sales estimates in the PAF. Once the dividend was secured for improved living conditions, too little was left over to pay into the Forest Management Fund or cover necessary expenses for monitoring. One reason for the income shortfall for the GGF/UGGFs is the limited access to the market to sell forest products. At the same time, it is confirmed that the GGF/UGGFs lack budget for exploring new sales channels with their current income. The GGF/UGGFs keep no financial records of the sale of forest products, which makes it difficult to verify the actual shortfall of their funds. The ex-post evaluation failed to confirm the difference between the amount targeted under the PAF, the amount sold, and the amount paid into the Forest Maintenance Fund as savings.

On the other hand, all 27 GGFs have been continuing their income-generating activities using the income already received and 13 out of 27 have already made the necessary reinvestments to purchase additional equipment, etc. after the project completion.

In view of above situation, although the ex-post evaluation failed to ascertain the precise shortfall of funds, the above indicates that the shortfall exceeds the estimate mentioned in the PAF. Hence, the GGFs have been struggling to secure funds for monitoring. The GGFs have been improving living conditions and reinvesting in forest activities with the income earned, but there is some concern in terms of financial sustainability.

Some minor problems have been observed in terms of the technical and financial aspects of the implementing agency. The sustainability of the project effects is therefore rated as fair.

4. Conclusion, Recommendations and Lessons Learned

4.1 Conclusion

The objective of this Project was to formulate PAF in four CFs, to improve the capacity of forest administrative agencies for supporting activities and the capacity of GGF/UGGF for sustainable forest management. Moreover, by strengthening the cooperative relationship between forest administrative agencies and the GGF/UGGFs, this Project intends to have the GGF/UGGFs appropriately implement sustainable forest management activities. The implementation of this Project at both the ex-ante evaluation and ex-post evaluation was relevant to the development policy and needs of Burkina Faso, a country where serious decrease in forest areas and related problems have been confirmed and the appropriate implementation of forest management has been an object of focus. The Project also conformed to the measures taken under Japan's ODA policy toward Burkina Faso as of the ex-ante evaluation. The relevance of the Project is therefore rated as high. Regarding the effectiveness of the Project, zoning borders were clarified in the target CFs, and the GGF/UGGFs acquired forest management knowledge and techniques through the project implementation. In addition, the PAF was formulated and forest activities were commenced based on the PAF. Moreover, as a series of flows were developed for the sale of forest products, one of the main project purposes, namely, that expected "activities be implemented for forest management by the local people", was achieved. The GGF/UGGFs have continuously implemented activities in accordance with the PAFs. Although members in three out of four GGFs have decreased, all of the members pay GGF membership fees and continuously implement forest management activities. The overall goal, which aims at practicing ongoing forest management (or ongoing implementation of the activities) by the local people, was therefore achieved. Moreover, the living conditions of the local people were drastically improved and ongoing cooperation between companies/associations and GGF/UGGFs was confirmed. Another project effect, such as the implementation of activities for formulating the PAF in other areas, was confirmed, so the project impact is also rated as high. From the reasons mentioned above, the effectiveness and impact of the Project are rated as high. The project cost and project period both exceeded the plan, so the efficiency of the plan is rated as fair. Concerning the project sustainability, no problems were observed in institutional and technical aspects. The fund management capacity, however, has not been firmly established in the GGFs, and the GGF/UGGFs failed to secure necessary budgets for the implementation of forest management activities written in the PAF as planned. As such, problems with the financial aspects of the Project were confirmed. The performance of some of the forest management roles was also confirmed to be incomplete, as sufficient budgets for implementing the activities were not secured. Under these circumstances, the sustainability of the project expected effect is rated as fair.

In light of the above, this Project is evaluated as satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Implementing Agency

< Recommendations to MEDD >

Timely approval of the PAF at the national level

It was confirmed from the interviews with the implementing agency that the approval process for the PAF had been officially discussed within MEDD from 2015 onward. Now that three years have passed since the project completion, the finalization of the approval process of PAF and the approval of PAF are required as early as possible at the national level. It is confirmed as of the time of the ex-post evaluation that the approval of the PAF at the national level has been delayed by a lack of an official approval process set up within MEDD. This lack of official approval has weakened the legal obligations to implement the GGF activities or set up unit prices for forest products in some of the four targeted CFs. It has also been confirmed that the implementation of activities based on the PAF could not be encouraged even though some GGFs implemented forest management activities. From the above, MEDD needs to set up an official approval process for the PAF in the legal department by March 2017, and then, MEDD should encourage PAFs to be approved promptly at the national level according to the process established.

< Recommendations to DREDD-Cascades and DPEDD-Comoe >

Formulation of the Forest Management Plan (2017-2021)

The current Forest Management Plan is valid from 2012 to 2016. The plan therefore needs to be formulated at some point in 2016 for the next targeted period of 2017 - 2021. The formulated plan needs to conform to the actual situation, to reflect the issues confirmed under the current Forest Management Plan, and to bring about improvements such as the setting of pricing rules for forest products. In addition, the executive board members of the GGF/UGGFs need to be involved in the work for formulation of the Forest Management Plan as necessary.

Securing the budgets for forest management

In securing the budgets for the implementation of participatory forest management, although plans for securing forest management budgets were mentioned in the PAF, the amount of planned savings has not reached the target values due to less income from selling forest products, than expected. As a result of this shortfall, there has been insufficient money to secure and save the budgets necessary for forest management such as the Forest Management Fund which would be used in the future to cover infrastructure maintenance and the monitoring costs for forest officers.

One countermeasure the GGF/UGGFs could take to overcome this challenge would be to discuss their ongoing forest management activities with the forest administrative agencies (regional, provincial, and departmental levels) and evaluate which activities can be more productive and profitable in the future. They could also evaluate which activities are to be

maintained and which are to be expanded. It is expected that they will be able to increase sales by focusing on some of these identified profitable activities to be expanded. The accountants for each GGF, meanwhile, were unable to comprehend the respective forest management activities, and clear account management based on the PAF has been lacking. Therefore, each activity member needs to work closely with its accountant. This enables GGFs to consider which activities need to be focused and improved upon. The forest administrative agencies are required to implement this by March 2017 and clarify the direction of their activities.

4.2.2. Recommendation to JICA

It is recommended that JICA perform a monthly follow-up with the implementing agency on the process of approval of the PAF at the national level and on the update of the Forest Management Plan. If progress slows or concerns arise, JICA needs to discuss the situation with the persons connected with the PAF approval process and to follow up to enable a smooth approval.

4.3 Lessons Learned

Involving local people in the formulation of the Forest Management Plan

Although the GGF/UGGFs implement the forest management activities based on the Forest Management Plan, a big gap between the estimated sales in the Forest Management Plan and the actual sales from the forest management activities of the GGF/UGGFs was confirmed. Sales of the GGF/UGGFs have been much lower than estimated since the project completion. If a portion of profits will be distributed to GGF/UGGFs, financial concerns, such as the GGF/UGGFs not securing funds for the Forest Maintenance Fund to cover the forest maintenance and monitoring costs of the forestry officers, may arise. There are also concerns over future financing. One of the reasons for the shortfall of sales, confirmed after the project completion, is limited access to the market in order to sell forestry products. Considering the big gap between the estimated sales in the Forest Management Plan and the actual sales from the forest management activities of the GGF/UGGFs, it appears likely, in retrospect, that the income estimates were off target.

Circumstances like this suggest that the local people should be more actively involved in the planning of the Forest Management Plan in order to reflect their opinions from actual experience such as the operational issues during the implementation of forest management activities based on the PAF. Developing a plan for putting the capital to work towards its appropriate functions is also important. Likewise, companies in project target areas and in surrounding areas should be involved in the search for new sales channels for forestry products and potential collaboration from the time of project implementation.

Smooth communication with local people in the participatory project

After the project completion, facilitators to support the preparation of training and the work of formulating the PAF were confirmed to be necessary for the smooth implementation of the project activities and the establishment of good relations with the Project and GGF/UGGFs. Considering the design of the project, facilitators to directly support the GGF/UGGFs were inevitable and should have been included as an input item for the Project at the ex-ante evaluation. When formulating and implementing similar participatory forest management projects in the future, it will be important to elaborate the design and sufficiently examine necessary inputs, including facilitators.

Securing a budget which covers all expenditure necessary to carry out activities

The actual project cost exceeded the planned project cost due to the following two reasons, in addition to the employment of additional facilitators mentioned above. First, the clarification of forest zoning, which was the base for forest management activities, was set as one of the indicators for the project purpose. The cost related to this, however, was not actually secured in the project budget, nor did the project plan mention any person who would share this cost. It was assumed to be difficult, at the time of the project planning, to allocate an accurate budget under the project items, given that the clarification of the zoning for the activities was itself a project activity. This necessary cost, however, should have been at least estimated based on the information gained from the implementing agencies and etc. The need to construct warehouses for equipment and materials was confirmed as another reason, and the construction cost for this was added. As of the time of the project planning, the management and storage of equipment examined (i.e., who had the administrative responsibility of where and what to store) are assumed to be inefficient. When formulating similar projects in the future, it will be necessary to elaborate the activities of the project at the project sites and re-examine necessary items for inputs, with reference to the budget items and lessons learned from similar projects in the past. It is also important that any inputs of project cost which can be approximately estimated during the project planning need to be included in the project budget, or be agreed upon to share with the partner country.

Appropriate setting of the outputs, project purpose, overall goal, and indicators

Ambiguous descriptions have been observed in the project purpose, overall goal, and indicators.

(1) There are overlaps between the project purpose and overall goal. Both purport the following as an aim: “Activities are implemented by the local people through the GGFs and UGGFs aiming for sustainable forest management (the word “sustainable” was removed from the project purpose at the ex-post evaluation)”.
(2) There is a similarity between the Indicator 2 for the project purpose and the Indicator 1 for the overall goal (The only difference is that the latter includes the word “sustainable” while the former does not). These are not quantitative indicators and also unclear if they target “the number of GGF/UGGFs that are continuing their activities” or “the number of activities that

are continuously being implemented" (Multiple aspects were therefore analyzed in the ex-post evaluation to assess the level at which each GGF would continue its activities).

(3) In order to analyze the achievement of the Indicator 1 for the overall goal, "forest management activities are implemented according to the PAF", it was unclear if the indicator would be sufficient for the forest management activities so long as they were "following the PAF" or so long as the indicator should both "follow the PAF" and "achieve the target based on the income and expenditure plan described in the PAF" (The former interpretation was applied to the ex-post evaluation).

(4) As the Indicator 1 was a duplicate of the overall goal itself, the Indicator 2 of the overall goal, which shows an increased number of GGF members, was therefore added.

A number of issues raised, such as a duplication of the target and indicators and the lack of indicators, made it difficult to evaluate this particular project. In order to clarify the aims of the Project, when planning the Project and revising the PDM, the outputs, project purposes, overall goals need to be checked whether they are clearly defined, and also whether indicators for each are properly set.

Attachment - 1

Table A Project outputs at the project completion and achievement level of output indicators

Output	Indicator	Achievement
Output 1: The national and local forest administrative agencies have an enhanced capacity to support the local people in implementing participatory forest management Status of achievement: Achieved	Indicator 1: Forest officers connected with the Project participate in training for participatory forest management four times at the regional level and 11 times at the national level and cooperate with local persons connected with the Project[34].	Status of achievement : Achieved As a result of the training conducted four times at the regional level and 11 times at the national level, the cooperative relationship between forest administrative agencies and the Project was improved. In addition, the forest officers who participated in the training not only served as lecturers for forest management technical training for the GGFs, but also widened their knowledge about forest management. These experiences helped them become confident as forest officers.
Output 2: The GGF/UGGFs have an enhanced capacity in sustainable forest management in the target villages Status of achievement: Achieved	Indicator 1 : 27 GGFs and 4 UGGFs are newly established or re-activated.	Status of achievement : Achieved The existing 13 GGFs were re-activated and 14 GGFs were newly established (27 GGFs in total). Two existing UGGFs were re-activated and two UGGFs were newly established (4 UGGFs in total).
	Indicator 2 : GGF/UGGFs use techniques learned through the training and commence the forest management activities.	Status of achievement : Achieved All GGF/UGGFs started the activities using techniques learned through the project training. Table A.1 shows the techniques learned through the training and actually used by the GGF/UGGFs.

Table A.1 Techniques learned by the GGF/UGGFs through the training and techniques applied by the GGF/UGGFs

Name of activities /training	Techniques learned through the training	Applied techniques
Clearing space for fire protection	Management of clearing space for fire protection	Same as in the left column
Honey production	Set of beehives, collecting/harvesting honey	Same as in the left column
Shea butter production	The fruit harvest, management of post-harvest (milling, boiling and filtration, etc.)	Same as in the left column
Sumbala production	Harvest to processing (removing hulls, cleaning, storage, boiling, steaming and fermenting)	Same as in the left column
Saba syrup production	Method for collecting mackerel, drying processing and method for processing	Same as in the left column
Seedling production	Nursery management at nurseries, methods for procuring seeds	Same as in the left column

[34] The local persons are GGFs.

<table>
<tr><th>Output</th><th>Indicator</th><th>Achievement</th></tr>
<tr><td></td><td colspan="2"><table>
<tr><td>Afforestation</td><td>Afforestation techniques</td><td>Same as in the left column</td></tr>
<tr><td>Utilization of medical plants</td><td>Collection and processing of medicinal plants (drying and storage)</td><td>Same as in the left column</td></tr>
<tr><td>Logging</td><td>Logging technique</td><td>Same as in the left column</td></tr>
<tr><td>Charcoal making</td><td>Collection of firewood, cutting method, and management of kettles</td><td>Same as in the left column</td></tr>
<tr><td>Pasture grass production</td><td>Grazing, harvesting, and storage of dried plants</td><td>Same as in the left column</td></tr>
</table></td></tr>
<tr><td rowspan="2">Output 3: The living conditions of the local people are improved
<u>Status of achievement:</u>
Mostly achieved</td><td>Indicator 1 : The GGFs in the target CFs commence income-generating activities using timber and non-timber forest products.</td><td><u>Status of achievement : Achieved</u>
The GGFs implemented the income-generating activities[35] with the use of timber and non-timber forest products. Their income was improved as a result.</td></tr>
<tr><td>Indicator 2 :
The GGFs reinvest for the purchase of equipment and materials necessary for project implementation.</td><td><u>Status of achievement : Achieved</u>
All of the GGFs pooled parts of their income from income-generating activities and secured running costs for the forest management activities. Twelve to 18 of the 27 GGFs reinvested for the purchase of equipment and materials during the project[36].</td></tr>
<tr><td rowspan="3">Output 4: The plan d'aménagement et de gestion forestière (PAF) in the four target CFs is formulated and put into practice
<u>Status of achievement:</u>
<u>achieved</u></td><td>Indicator 1 : A PAF is formulated in each target CF; four PAFs are formulated in total.</td><td><u>Status of achievement : Achieved</u>
A PAF was formulated in each target CF (four PAFs were formulated in total). However, the Japanese experts were evacuated from Burkina Faso temporarily in the 4th year of the project. This precluded efficient consultations when the PAFs were in the finalization stages.</td></tr>
<tr><td>Indicator 2 : The Guide on the methodology for forest development in the South-Sudan climate zone was prepared</td><td><u>Status of achievement : Achieved</u>
The work to prepare the Guide on the methodology for forest development in the South-Sudan climate zone was commenced in the 3rd project year and completed in the 5th project year.</td></tr>
<tr><td>Indicator 3 : At least eight types of the participatory and sustainable forest management practice manuals are prepared for the local people.</td><td><u>Status of achievement : Achieved</u>
The following five types of participatory and sustainable forest management practice manuals were prepared for the GGF/UGGFs by the Project.
・ Technical manual for the quality improvement of sumbala production quality
・ Technical manual on grazing management
・ Technical manual for the quality improvement of shea butter quality</td></tr>
</table>

[35] There were 11 income-generating activities: honey production, seedling production, logging, shea butter production, medical plant production, charcoal-making, wildfire protection, pasture grass management, forest thinning, sumbala production, and saba syrup production.

[36] The widely variable estimate in the number of GGF, from 12 to 18, was due to a lack of detailed information from each GGF. The extent to which the GGFs duplicated their reinvestment in the activities could not be determined.

Output	Indicator	Achievement
		・ Technical manual on the utilization of medical plants ・ Manual for the improvement of organization capacity Three types of manual (charcoal making, seedling production, and wildfire management) were not prepared because the three existing manuals were adopted.
	Indicator 4 : The GGF/UGGFs continuously learn at least four types of techniques for forest management activities and implement the activities based on the PAF.	Status of achievement : Achieved It is confirmed that all GGFs learned the techniques to perform more than eight out of eleven types of income-generating activities and implemented those activities based on the PAF.
Output 5: The cooperative relationship between the national/local administrative agencies and forest administrative agencies is strengthened to implement sustainable forest management Status of achievement: Partly achieved.	Indicator 1 : Consultative meetings between local stakeholders and persons in ministries concerned are held three times per year.	Status of achievement : Achieved Although the consultative meetings were actually held twice a year, less frequently than planned, the GGFs reported their own activities and the participants exchanged opinions. Mutual understanding on forest management activities and cooperative relationships among participants were therefore promoted. It was also confirmed that the GGF/UGGFs had overcome their earlier fears regarding their forest officers.
	Indicator 2 : The partnership agreement between the Project and regional office is concluded.	Status of achievement : Achieved Regional directorate desired to sign the partnership agreement with the Project with the aim of obtaining financial supports when they participate in project activities. However, the amount of support shown in the proposed agreement by the Project was smaller than the regional directorate expected. The regional directorate therefore determined that there was no advantage in executing the agreement and ultimately turned it down. Hence, no cooperation agreement was signed.
	Indicator 3 : Cooperative relationships are established between the Project and local private companies.	Status of achievement : Achieved Cooperative relationships between the UGGFs and three private companies/one association [37] were established. The UGGFs commenced the sales of shea butter, medical plants, etc. While no cooperation has yet commenced between the GGFs and local private companies, a relationship among them was newly built and an income source for the GGFs was generated.

[37] The three private companies are a Japanese company limited called A-Danse and two private local companies called Phytofla Laboratory and Bomba Techno. The association is a civic association called Rakieta Association.

Table B The number of GGFs in each activity implemented during the project period, at the project completion, and at the ex-post evaluation

Name of activities	During the project period (A)	At the project completion (B)		At the ex-post evaluation (C)	
	Number of GGFs	Number of GGFs	Persistency rate (B) / (A)	Number of GGFs	Persistency rate (C) / (B)
1. Clearing space for fire protection	27	27	100%	27	100%
2. Honey production	24	26	108%	27	104%
3. Shea butter production	24	24	100%	23	96%
4. Sumbala production	9	10	111%	9	90%
5. Saba syrup production	10	11	110%	3	27%
6. Seedling production	27	27	100%	27	100%
7. Afforestation	27	27	100%	26	96%
8. Utilization of medical plants	27	27	100%	24	89%
9. Logging	27	18	67%	12	67%
10. Charcoal making	24	18	75%	7	39%
11. Pasture grass management	25	20	80%	14	70%
Average rate	22.8	21.4	94%	18.1	85%

(Source: Beneficiary Survey, 27 GGFs targeted)

Table C Forest Development Goals of PAF formulated for each CF

Toumoussénni CF, Gouandougou CF and Kongoko CF	・ Conservation of biodiversity[38] ・ Provision of forest products to Banfora and Bobo Dioulasso, where consumption of commercial goods is high. ・ Provision of opportunities for income-generating activities to the local people ・ Implementation of reliable management in the area of natural resource management
Bounouna CF (Set by each zone)	< Production zone> ・ The productive capacity of firewood, bar wood, timber, and non-timber forest products is improved to secure/guarantee supplies to the high consumption areas such as Banfora and Bobo Dioulasso ・ Income is generated by making the best possible use of non-timber forest products <Recreation zone> ・ Recreational space is installed in the CF for environmental education and entertainment ・ Employment opportunities are provided for the local people ・ Conservation of biodiversity is ensured

(Source: Documents provided by JICA)

[38] Forest management is implemented without disturbing the balance of the ecosystem in the CFs (for example, to protect, etc. the home range of the vegetation and animals without overhunting).

Table D Details of the beneficiary survey

No	UGGF	(1) No. of UGGF executive board members	GGF	(2) No. of GGF executive board members	(3) No. of GGF members		The total number of members	
					Men	Women	Men	Women
1	Bounouna	1	Bounouna	1	2	10	4	45
2			Labora S	1	4	8	6	12
3			Labora N	1	3	9	7	30
			Total		9	27	17	87
4	Toumousenni	1	Toumousenni Male	1	6		25	
5			Toumousenni Female	1		6		56
6			Soubaka Male	1	5		15	
7			Soubaka Female	1		5		30
8			Djongolo Male	1	5		18	
9			Djongolo Female	1		5		31
10			Tagnana Male	1	6		35	
11			Tagnana Female	1		6		110
			Total		22	22	93	227
12	Gouandougou	1	Gouandougou	1	4	8	13	40
13			Dakie	1	4	8	13	21
14			Gouara	1	4	8	46	115
15			Ouratenga	1	4	8	10	20
16			Tonga	1	4	8	20	30
17			Wenga	1	5	6	21	18
18			Bougousso	1	4	8	15	25
19			Dandougou	1	4	8	38	70
			Total		33	62	176	339
20	Kongko	1	Kassande	1	5	7	29	47
21			Fougangoue	1	6	6	20	25
22			Pima	1	6	6	50	54
23			Djanga	1	6	6	50	35
24			Bade	1	6	6	75	90
25			Faradjan	1	7	4	50	35
26			Kadio	1	5	7	40	65
27			Banakoro	1	5	7	21	40
			Total		46	49	335	391
Total		4		27	110	160	621	1,044
					270		1,665	

* The beneficiary survey, as mentioned in Footnote 18, is comprised of all interviews with (1) UGGF executive board members, (2) GGF executive board members, and (3) GGF members (selected at random).

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 Pot[1]
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 sector[2] 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.

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[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		[JICA] − 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)
		[World Bank] − Integrated Marine and Coastal Resource Management Project (2003-2012) − Sustainable Management of Fisheries Resources Project (2006-2012) − West Africa Regional Fisheries Program (2009-2015) [USAID] − Collaborative Management for a Sustainable Fisheries Future in Senegal (2011-2016) [EU] − 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 fishermen[5], 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: B[6])

3.1 Relevance (Rating: ③[7])

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 unchanged[8]. 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.

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[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.

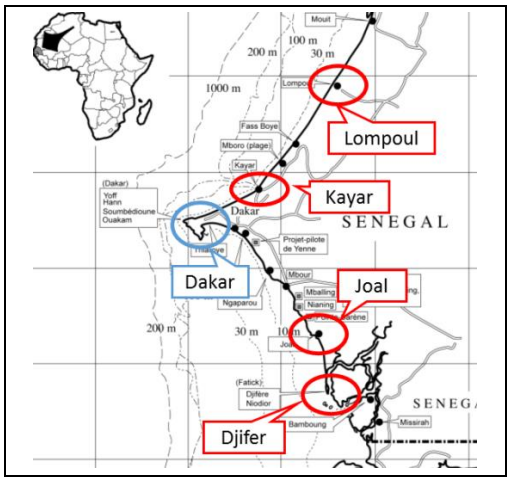


Figure 1　Project Sites
Source: Processed based on JICA (2006) pi

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 Impact[9]　(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.

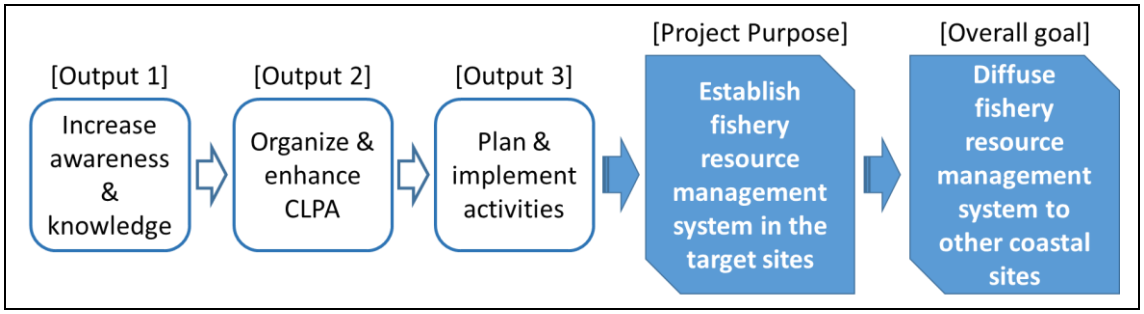


Figure 2 Project Logic

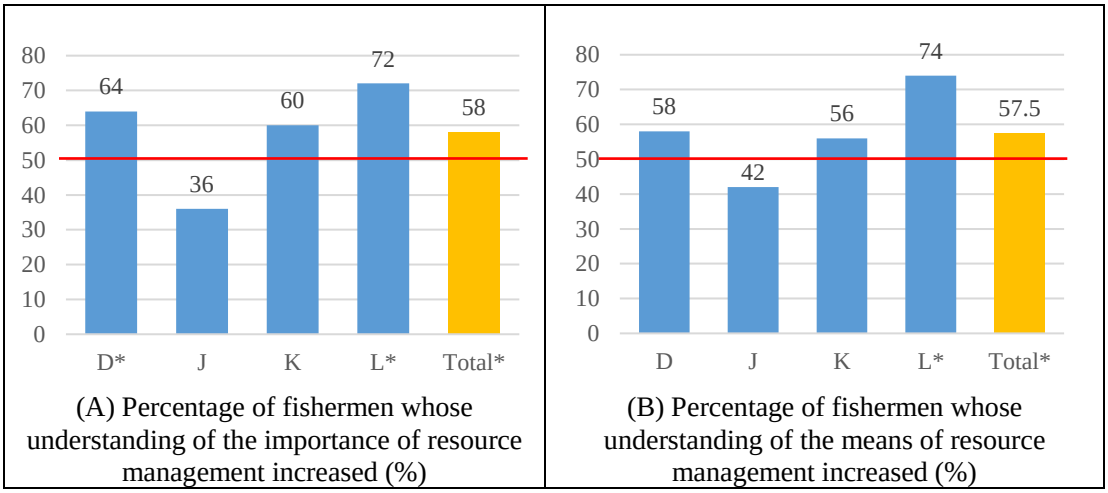
Source: External Evaluator.

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 issues[10]. Thus, Output 1 is assessed as having been achieved.

Output 2 was achieved, given that CLPAs had been formed at each site[12], and at least one activity had been approved and implemented. As for Output 3, participation in some



(A) Percentage of fishermen whose understanding of the importance of resource management increased (%)

(B) Percentage of fishermen whose understanding of the means of resource management increased (%)

Figure 3 Survey of the Awareness and Knowledge of Fishermen[11]

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 areas[14]. 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 area[15]. 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 achieved[16].

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 geographically[17].

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 accurately[18]. 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 member[20]. 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 member[21].

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 there[19].

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 evaluation14 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 functional[22]. 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 government[23], 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 opportunities[24]. 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.

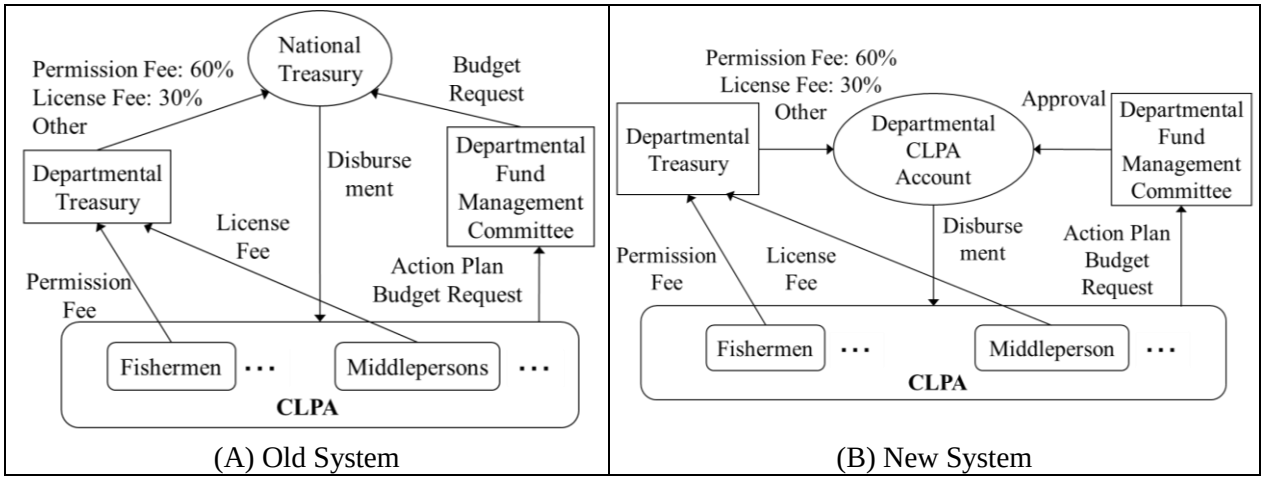
[22] At this moment, technical and financial support to CLPAs at the site level has been provided by external donors.
[23] On the other hand, there exists advanced educational institutes which provide training to foster advanced specialists, such as National Centre for Training of Technicians of Fisheries 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 FCFA[25]. 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)"; its sources comprise 60% of artisanal fishing license fees, 30% of middleperson registration fees, and other sources[26]. 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



(A) Old System (B) New System

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 activities[27]. 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 sites[28].

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.

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 supports[29]. Since the DPM is expected to receive external

[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 perspective[30].

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	Achieve-ment	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 minimal[31].

<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.

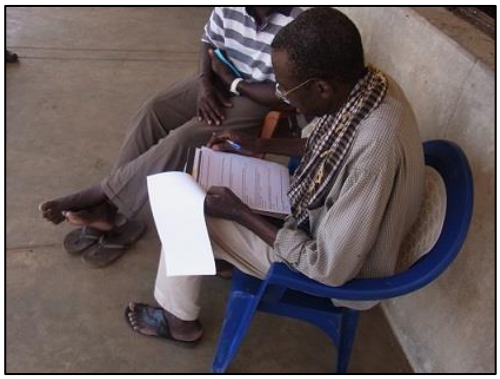


Figure A2　Interview
Source: Photo taken by the evaluator.

[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

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Gabonese Republic

FY2015 Ex-Post Evaluation of Japanese Grant Aid Project

"Project for the construction of the support centre for small fisheries in Libreville"

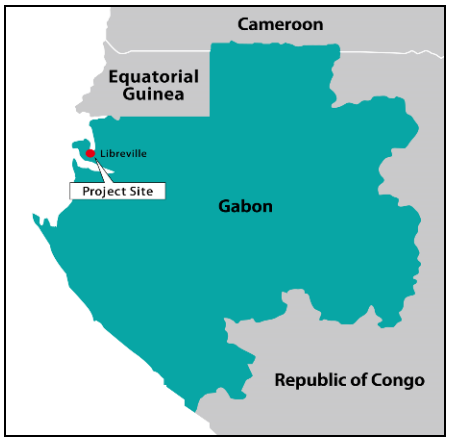
External Evaluator: Koichiro Ishimori, Value Frontier Co., Ltd

0. Summary

The objective of the project was to integrate the existing landing places into the Support Centre for Small Fisheries in Libreville (CAPAL)[1] by developing the Centre, thereby contributing to the improvement of a hygienic environment and the supply chain of marine products. The project was in line with the development policies and needs of Gabon as well as Japan's ODA policies. However, it turned out that the project planning was not appropriate enough, and thus its relevance is fair. Although the project cost was as planned, the project period was longer than planned. Moreover, the construction of the access road that was supposed to be completed during the project period by the Government of Gabon was completed after the project period, and thus its efficiency is fair. The quantitative effects (i.e., number of artisanal ships for landings, volume of landings, and volume of ice supply) are significantly lower than planned and the qualitative effects are limited. As a result, the expected impacts are also limited, and thus the effectiveness and impact of the project are low. The sustainability of the project effects is insufficient and so are the institutional aspects of operation and maintenance of the facilities and equipment. The technical aspects of the project have minor problems and its financial aspects have major concerns about its outlook, thus the sustainability of the project effects is low.

In light of the above, the project is evaluated to be unsatisfactory.

1. Project Description



Project location

Main entrance of CAPAL

1.1 Background

[1] Centre d'Appui à la Pêche Artisanale de Libreville.

Gabon is situated on the central coast of West Africa and surrounded by Equatorial Guinea in the northwest, Cameroon to the north, and the Republic of Congo to the east and the south. It has approximately 0.27 million square kilometres of land that is almost the equivalent to 71% of Japan's land area, and it had approximately 1.4 million people (2006) that is almost equivalent to 1% of Japan's population. Almost half of the population in Gabon have been living in and around the capital city of Libreville. The economy of the country heavily has depended upon the oil industry whose share in GDP was approximately 55% (2006). However, oil production has decreased since its peak of 0.217 million barrel per day in 1997 and is expected to be depleted sometime in the future, like other oil countries. Therefore, the Government of Gabon has been trying to grow out of its dependency on the oil economy and diversify its industries. Among many other options, the fishing industry especially has been considered to have a high potential for development; however, while the annual potential volume of landings was estimated to be approximately 0.3 million tons, the actual volume was approximately 38,000 tons or the equivalent of just under 13%.

1.2 Project Outline

The objective of the project was to integrate landing places into CAPAL by developing it, thereby contributing to the improvement of a hygienic environment and the supply chain of marine products.

G/A Grant Amount / Actual Grant Amount	1,162 million yen/1,162 million yen
Exchange of Notes Date / Grant Agreement Date	June, 2009/June, 2009
Implementing Agency	Directorate General of Fisheries and Aquaculture (DGPA[2]), Ministry of Fishery and Animal Husbandry[3]
Project Completion Date	August, 2011
Main Contractor(s)	Iwata Chizaki Inc.
Main Consultant(s)	ECOH Corporation
Basic Design	April, 2009
Detailed Design	―
Related Projects	"The Study on the Master Plan of Integrated Development of Small-Scale Fishery and Inland Aquaculture in the Republic of Gabon (2009)"

[2] Direction Générale de la Pêche et Aquaculture.

[3] At the time of the project planning, the name of the implementing agency was Ministry of Forest Economy, Waters, Fishery and Aquaculture. However, it changed several times because of organizational restructuring and was the Ministry of Fishery and Animal Husbandry at the time of the ex-post evaluation in 2015.

2. Outline of the Evaluation Study

2.1 External Evaluator

Koichiro Ishimori, Value Frontier Co., Ltd

2.2 Duration of Evaluation Study

The ex-post evaluation was conducted according to the following schedule.

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

Duration of the Field Study: November 8, 2015 – November 20, 2015, and February 6, 2016 – February 12, 2016

3. Results of the Evaluation (Overall Rating: D[4])

3.1 Relevance (Rating: ②[5])

3.1.1 Relevance to the Development Plan of Gabon

The "Document de Stratégie de Croissance et de Réduction de la Pauvreté (DSCRP)" in 2005, the mid-long term national development plan of the Government of Gabon at the time of project planning in 2009, was attempting to grow out of its dependency on the oil economy and diversify its industries and considering the fishing industry that had abundant marine resources as an industry with a high potential for development. The "Plan de Développement de la Pêche et de l'Aquaculture" in 1998, the mid-long term sector plan of the Government of Gabon, was planning to develop fishery infrastructures for promoting the fishery industry. The "Plan Stratégique Gabon Emergent -Vision 2025 et Orientations Stratégiques 2011-2016" in 2012, the mid-long term national development plan of the Government of Gabon at the time of the ex-post evaluation in 2015, was trying to develop modern fishing ports for landings, storages, and processing of marine products at Mandji Island in the West, Mayumba in the South, and Libreville in the North and considering the development of CAPAL as important. There has been no subsequent sector plan[6] after the "Plan de Développement de la Pêche et de l'Aquaculture" in 1998, and thus the original Plan is still valid.

In light of the above, the project is judged to have been in line with the development policies of Gabon both at the time of the project planning and the ex-post evaluation.

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[4] A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

[5] ③: High, ② Fair, ① Low

[6] At the time of the ex-post evaluation, there was a concept of "the Gabon Blue" that may be pertinent to the fishery sector. According to the Government of Gabon, however, it was just trying to promote sustainable use of the marine resources (e.g., marine minerals, dissolved substances in seawater, and marine life) and, for this reason, to establish marine protected areas as well as strengthen law enforcement, such as the crackdown on illegal fishing. Thus, it did not mean, for example, that it was trying to forbid artisanal fishing in the sea and shift fishery policies from artisanal fishing in the sea to the inland water aquaculture. Considering this, the ex-post evaluator has judged that the concept has no particular effect on the sector planning. According to the Government of Gabon, an official paper on the concept has not been undertaken.

3.1.2 Relevance to the Development Needs of Gabon

At the time of the project planning in 2009, the volume of consumption of marine products on the national annual average per person was approximately 30kg, which was significantly higher than the African annual average per person of 9.1kg.[7] Marine products were also important sources of nutrition because they accounted for approximately 40% of animal protein intake.[8] As Gabon has a tropical climate with high temperatures and high humidity, fungi that adhere to marine products are inclined to breed. For this reason, there was a demand for maintaining good hygiene to preserve the freshness of marine products. However, there were no hygienic facilities for landings and ice making at the existing landing places in and around Libreville where almost half of the population live, and thus the environment for landings and the distribution of marine products was not hygienic.

At the time of the ex-post evaluation in 2015, the volume of consumption of marine products on the national annual average per person was approximately 39kg, which was significantly higher than African annual average of per person 9.7kg.[9] Marine products were also important sources of nutrition because they still accounted for approximately 40% of animal protein intake.[10] There were still no fishery facilities with a hygienic environment for landings and distribution of marine products in and around Libreville except for CAPAL.

In light of the above, the project is judged to have been in line with the development needs of Gabon both at the time of the project planning and the ex-post evaluation.

3.1.3 Relevance to Japan's ODA Policy

The "ODA Charter" in 2003, the aid policy of the Government of Japan at the time of project planning in 2009, was trying to develop economic and social infrastructures that were important for economic activities; it was doing so in order to support sustainable growth of developing countries in one of its four pillars, sustainable growth. The "Mid-term Policy of ODA" in 2005 was also prioritizing the development of economic and social infrastructures including port developments in one of its four pillars, sustainable growth. Moreover, the "data book for Gabon" in 2009 was prioritizing the fishery sector that had an underdeveloped but significant potential for development to diversify industries in Gabon.

In light of the above, the project is judged to have been in line with Japan's ODA Policy at the time of the project planning.

3.1.4 Relevance to Appropriateness of Project Planning

[7] FAO, "The State of World Fisheries and Aquaculture 2012"
[8] JICA document
[9] FAO, "The State of World Fisheries and Aquaculture 2014"
[10] DGPA document

At the time of the project planning, the Japan International Cooperation Agency (JICA) insisted, based on the understanding that it was necessary to close the existing landing places in and around Libreville and integrate them into CAPAL in order to promote its usage, that DGPA should take necessary policy measures. DGPA agreed in return that it would close them because their hygienic environments were in bad condition. However, they are not closed even today. Moreover, it was considered desirable to construct a seawall so as to improve the tranquillity of the seawater in front of the CAPAL pier at the time of the project planning because Gabon had a season of high waves. After having considered the limitation on the budget of the project, however, it was agreed that the Government of Gabon would construct the seawall outside of the project's scope. Nevertheless, this has not yet been realized. Moreover, artisanal fishermen in Gabon have been avoiding using the CAPAL pier because they are not used to using piers, even under the normal wave conditions. For these reasons and others, CAPAL has not been utilized as much as planned, as explained later.

Bird's eye view of CAPAL

DGPA did not take necessary policy measures to close the existing landing places during 27 months of the project period, and it was not until February 2012, six months after the project completion, that it drafted an ordinance. However, a decision on the ordinance has not yet been made. As a result, the existing landing places are not closed. At the time of the project planning, JICA should have grasped precisely the probability of enforcing closure of the existing landing places by DGPA and then taken positive measures accordingly. Moreover, at the time of the project planning, JICA requested, based on the understanding that it was desirable to construct a seawall in order to promote usage of CAPAL, that DGPA should construct it as a desirable condition rather than as a prior condition for implementing the project because it was outside of the project's scope. DGPA answered in return that it would construct it with the funds from the African Development Bank (AfDB). Nevertheless, it has not yet been realized. In fact, DGPA obtained 300 million CFA francs from AfDB as the cost for constructing it (both for design and civil work) and implemented the design study. However, it ended incompletely owing to insufficient capability of the DGPA and the consulting company to implement it. Meanwhile the Japanese consultant for this project estimated that it would cost 2 billion CFA francs for the civil work alone. Therefore, even if the design study had been properly completed, 300 million CFA francs would have been far from enough to construct the seawall. It is acknowledged that JICA has been continuously following this issue from the time of the project planning to the time of the ex-post evaluation. However, it is considered that JICA and DGPA should have understood precisely this issue related to the construction costs by examining the AfDB-funded construction

project in more detail, and then taken positive measures accordingly at the time of the project planning. Moreover, based on the fact that artisanal fishermen in Gabon were used to landings on sand beaches but not used to piers, it is also considered that JICA and DGPA should have included a soft component for transferring landing techniques at piers in the project at the time of the project planning.

In light of the above, it is hard to say that the project planning was appropriate enough.

In conclusion, this project was highly relevant to Gabon's development plan and development needs, as well as to Japan's ODA policy. However, the way that it was planned was not appropriate enough. Therefore, its relevance is fair.

3.2 Efficiency (Rating: ②)

3.2.1 Project Outputs

Table 1: Outputs

	Planned outputs	Actual outputs
Japanese side		
(1) Civil engineering facilities	Pier and shore protection.	As planned
(2) Architectural facilities	Support centre building (including ice makers and storage), toilets, engine repair building, and processing plant.	As planned
(3) Equipment	Equipment for handling fish (including carts, weighing machines, cool boxes, tables), equipment for processes, equipment for hygiene and quality control, equipment and tools for engines, and equipment for engine repair building.	As planned
Gabonese side		
(1) Civil engineering facilities	Access road.	As planned[11]
(2) Architectural facilities	Fence, gates, and gatehouse.	As planned
(3) Construction	Electricity, water, and telephone.	As planned

Source: DGPA documents

3.2.2 Project Inputs

3.2.2.1 Project Cost

While the planned project cost on the Japanese side was 1,162 million yen, the actual cost was the same as planned. The planned project cost on the Gabonese side was 66 million yen, but the actual costs have not been revealed.

3.2.2.2 Project Period

[11] However, it was not completed during 27 months of the project period (June 2009 to August 2011) because of delays in payment for the road construction on the Gabonese side. It was completed around January 2013 after completion of the project.

The planned project period was 20 months from June 2009 (signing of Grant Agreement (G/A)) to January 2011 (completion of construction), during which 7 months were intended for the design study and 13 months for the construction of civil engineering facilities and architectural facilities as well as procurement of equipment. In reality, however, it was 27 months from June 2009 (signing of G/A) to August 2011 (completion of construction), because the construction of civil engineering facilities and architectural facilities as well as procurement of equipment took 20 months due to 7 months of delays in Gabonese construction and procurement, although the design study took the same 7 months. Thus, the project period was longer than planned (135% of the planned project period).

In conclusion, although the project costs were the same as those planned, the project period exceeded the plan. The access road which the Gabonese side was supposed to have completed during the project period was also completed after the project period. Therefore, efficiency of the project is fair.

3.3 Effectiveness[12] (Rating: ①)

3.3.1 Quantitative Effects (Operation and Effect Indicators)[13]

Table 2: Operation and effect indicators

	Baseline	Target	Actual achievement				
	2009	2013	2011	2012	2013	2014	2015
	Baseline year	2 years after completion	Completion year	1 year after completion	2 years after completion	3 years after completion	4 years after completion
Operation indicators							
Indicator 1: Integrating four existing landing places into CAPAL	4 places	1 place[14]	4 places	4 places	4 places	4 places	4 places
Effect indicators							
Indicator 2: Daily average number of artisanal ships for landings at CAPAL	0 ship	60 ships[15]	NA	NA	NA	NA	1.3 ships[16]

[12] Sub-rating for Effectiveness is to be put with consideration of Impact.

[13] At the time of the project planning, the indicators for quantitative effects were 1) the integration of four existing landing places into CAPAL, and 2) the daily maximum volume of ice supply at CAPAL (from 0 t/day to 9t/day) alone. However, the external evaluator added two more indicators, daily average number of artisanal ships at CAPAL and daily average volume of landings at CAPAL, because it was difficult to properly measure quantitative effects by using the original indicators alone. Moreover, the daily average volume of ice supply at CAPAL was used because the daily maximum volume of ice supply at CAPAL (from 0 t/day to 9t/day) was nothing but the total capacity of the procured three sets of ice makers.

[14] It is considered appropriate because the project attempts to integrate four existing landing places into CAPAL.

[15] It is considered appropriate because it is the total of the daily average number of artisanal ships on busy days at four existing landing places (12 ships for Jeanne Ebori, 11 ships for Oloumi, 21 ships for Pont Nomba, and 16 ships for Owendo).

[16] As DGPA has not made and kept the appropriate records, the external evaluator used data on average for three months from January to March 2015 that the JICA expert obtained as well as data on average for one month in November 2015 that the external evaluator obtained.

Indicator 3: Daily average volume of landings at CAPAL	0t	8.9t[17]	NA	NA	NA	0.17t	0.09t
Indicator 4: Daily average volume of ice supply at CAPAL	0t	5.5t[18]	NA	NA	NA	NA	1.3t[19]

Source: Information and data obtained from JICA and DGPA documents, JICA experts, and the external evaluator

Indicator 1: Integrating the four existing landing places into CAPAL

Although the hygienic environments of the four existing landing places in and around Libreville (Jeanne Ebori, Oloumi, Pont Nomba, and Owendo) have been still in bad condition, these four landing places are becoming more utilized along with installation of new ice makers and other factors. Consequently, there has been no progress in their integration into CAPAL.

Present situation of Oloumi

At the time of the project planning in 2009, JICA demanded, based on the understanding that it was desirable to integrate the four existing landing places into CAPAL in order to promote its use, that DGPA should take necessary policy measures. DGPA answered in return that it had a plan to close them because their hygienic environments were in bad condition. In fact, DGPA drafted such an ordinance in February 2012 after completion of the project. However, the Government of Gabon has not yet made a decision on issuing the ordinance and, consequently, the four existing landing places are not yet closed.

Indicator 2: Daily average number of artisanal ships for landings at CAPAL

The actual achievement rate of the planned target at the time of the ex-post evaluation in 2015 was approximately 2% and significantly low. Concerned parties[20] point out numerous hard (objective) and soft (process-oriented) factors as the reasons, including 1) - 4) below. 1) As mentioned in the section on Indicator 1, integrating the four existing landing places into CAPAL, at 3.3 Effectiveness, the four existing landing places are not closed. 2) As mentioned in the section on Relevance, the Appropriateness of Project Planning at 3.1 Relevance, the seawall has not yet been realized at CAPAL. Moreover, artisanal fishermen, who are used to landings on sand beaches but not used to piers, consider that it is rather difficult, if not impossible, to safely dock their small wooden ships (pirogues) to the CAPAL pier and land fish not only under high wave conditions but also under normal wave conditions. 3) Artisanal fishermen perceive that fish retailers do not come to CAPAL. 4) Although the majority of artisanal fishermen are legal

[17] It is considered appropriate because it is the figure obtained by multiplying the daily average number of artisanal ships at CAPAL by the daily volume of landings per ship (i.e., 60 by 147.1kg).
[18] It is considered appropriate that the project expected two ice makers to be operated at a 90% operation rate on a regular basis, although three ice makers with the capacity of 3t per day each were installed to meet the highest demand of 8.6t per day on busy days.
[19] It is the same as footnote 16.
[20] Concerned parties are CAPAL staff, JICA experts, and any artisanal fishermen who have used CAPAL before.

immigrants with a permitted right of residence in Gabon, they are inclined to avoid CAPAL in order to avoid the sometimes unnecessarily strict crackdowns that often take place in the sea nearby; these are undertaken to maintain maritime order by the maritime police (Gendarmerie Nautique) and the Directorate General of Documentation and Immigration, and to ensure the preservation of maritime resources and safe navigation by the national agency for national parks and DGPA.

Indicator 3: Daily average volume of landings at CAPAL

The actual achievement rate of the planned target right before and at the time of the ex-post evaluation in 2014 and 2015 were significantly low at approximately 2% and 1%, respectively. This was because of numerous factors, both hard and soft, including 1) - 4) above. The reason why the actual achievement in 2015 is lower than that of 2014 is that a marine product processing company (Gabon Seafood Inc.), which was doing business at CAPAL, terminated its contracts with artisanal fishermen and those fishermen then stopped using CAPAL for landings.

Indicator 4: Daily average volume of ice supply at CAPAL

The actual achievement rate of the planned target at the time of the ex-post evaluation in 2015 was significantly low at approximately 18%. This is because of the significantly low volume of landings at CAPAL caused by numerous factors, both hard and soft, including 1) - 4) above. Although the project installed ice makers for the purpose of improving the distribution of marine products that were landed at CAPAL, most of the usage of ice was not to provide ice for the supply chain of marine products as planned but to provide ice for artisanal ships[21] that were about to go fishing, and thus the actual achievement rate of indicator 4 is slightly higher than indicators 2 and 3.

3.3.2 Qualitative Effects

(1) Hygienic improvement in handling marine products

Before the project, marine products that were landed at the four existing landing places were displayed and sold outside on unhygienic sheets. With the integration of the existing landing places into CAPAL, the project expected that marine products landed at CAPAL would be displayed and sold on hygienic tables inside CAPAL. At the time of the ex-post evaluation, however, the existing landing places were not integrated into CAPAL and marine products that were landed there were still displayed and sold outside on unhygienic sheets. Moreover, the small volume of marine products that were landed at CAPAL were put into cool boxes without ice and then sold to fish retailers with no use of the hygienic tables inside CAPAL; the fish retailers put the products into their own tubs and took them to markets in town without using

[21] Such artisanal ships do not necessarily return to CAPAL for landing.

ice. For this reason, the effects on hygienic improvement in handling marine products are considered to be limited in comparison with the planned effects.

Present situation of the market at Pont Nomba

Fish wholesaler and a tub

(2) Improvement in distributing marine products

Before the project, marine products were landed at the existing landing places in and around Libreville and distributed to six markets in town. With the integration of the existing landing places into CAPAL, the project expected that fish retailers would be able to purchase fish at CAPAL in an efficient manner and take them to markets using cool boxes and ice so as to maintain their freshness. At the time of the ex-post evaluation, however, the existing landing places were not integrated into CAPAL and the volume of landings at CAPAL was very small. Consequently, the volume of marine products that were distributed from CAPAL to markets was also very small. For this reason, the effects on improving the distribution of marine products are considered to be limited in comparison with the planned effects.

3.4 Impacts

3.4.1 Intended Impacts

(1) Vitalization of artisanal fishery in and around Libreville

In order to measure if there has been any impact of the project on vitalizing the artisanal fishery[22] in and around Libreville, a beneficiary survey was conducted involving 18 artisanal fishermen, 2 marine product processing companies, and 3 fish retailers[23] during the ex-post evaluation. As a result of the survey, it turned out that nine artisanal fishermen, one marine product processing company, and two fish retailers confirmed its positive impact. Now that the volume of landings at CAPAL is so low, however, it is difficult to argue with the affirmative

[22] Vitalization of the artisanal fishery means volumes of landings and supplies of artisanal fishery, and others.
[23] At the time of the ex-post evaluation, there were very few artisanal fishermen, marine product processing companies, and fish retailers that used CAPAL. Consequently, there were only 18 male artisanal fishermen, 2 marine product processing companies, and 3 female fish retailers who were available to take the survey. Because of this small sample size, the survey targeted all samples, not randomly selected samples, and took interview forms and collected answers from all.

answers from 11 people and 1 company indicating only that the project has had any impact on vitalizing the artisanal fishery in and around Libreville. Therefore, it is considered that there has been hardly any impact on it.

(2) Sustainable use of marine resources

With the integration of the existing landing places into CAPAL and the allocation of a statistical officer to CAPAL, the project expected that CAPAL would be able to record and keep statistical data on the volume of landings for the sustainable use of marine resources. Furthermore, the project also expected that CAPAL would implement public awareness programs and trainings on sustainable use of marine resources aimed at artisanal fishermen in the conference/seminar room in CAPAL's support centre building. In order to measure if there has been any impact of the project on sustainable use of marine resources, the beneficiary survey was conducted involving the same people and companies indicated above. As it turned out, only one artisanal fisherman confirmed its positive answer. However, his affirmative observation came from only his personal impression, not from any public awareness programs and trainings implemented at CAPAL. As nothing like public awareness programs or trainings ever took place at CAPAL, it is considered that there has been hardly any impact on it.

(3) Hygienic distribution of marine products to consumers

The project expected that marine products landed at CAPAL would be put on ice and distributed to markets in a hygienic manner that would maintain their freshness. In order to measure if there has been any impact of the project on the hygienic distribution of marine products, the beneficiary survey was conducted involving three fish retailers who came to CAPAL. As it turned out, the survey found that there was no fish wholesaler who used ice to take marine products to markets where consumers could buy them. There was also no consumer who took products home using ice. Therefore, it is considered that there has been hardly any impact on it.

3.4.2 Other Impacts

(1) Impacts on the Natural Environment

As there was no construction work that could negatively affect the natural environment, no mitigation measures were taken when implementing the construction for the project. The construction of the project was implemented in line with the following three guidelines: 1) low noise construction machinery should be used to respond to noise concerns, 2) portable toilets should be installed and used water should be properly treated at the construction site, 3) soils and wastes generated from the construction work should be properly treated. According to the Directorate General of the Environment of the Ministry of Fishery and

Animal Husbandry, all construction work was done in line with the guidelines.

(2) Land Acquisition and Resettlement

There was land acquisition at the construction site of CAPAL's support centre building, but there was no resettlement. Although there was an issue between the Government of Gabon and the land owner over the land's acquisition, the Government of Gabon compensated for it based on the legal procedures during the project period. The issue is now completely resolved.

(3) Unintended Positive/Negative Impact

Because most of the fish retailers are female, the beneficiary survey was conducted involving three female fish retailers to measure if the project had had any impact according to gender, such as improvements in the convenience of using CAPAL. However, no sales and processing activities using CAPAL facilities have been taking place, and thus it is considered that impacts on gender are limited. Moreover, the project also expected to bring about impacts on improvement in convenience to consumers (and especially women), who would come to buy marine products. However, the access road to CAPAL that was paved by the project is approximately 1 km distant from town and has few people using it. Besides, another access road to CAPAL that is stretching from the side of the Oloumi market and is several hundred meters away from the main road becomes difficult to use in the rainy season, although it is usable both on foot and by car in the dry season. Consequently, there are hardly any consumers, especially women, at CAPAL. Therefore, it is considered that impacts on gender are limited. The project also assumed that it might negatively affect the operators of ice makers at the existing four landing places, but now it is considered that there has been no negative impact on them because use of the existing landing places remains stable.

As explained above, CAPAL has not been used as much as expected because of numerous factors, both hard and soft. Consequently, the achievement rates of quantitative effects such as the number of artisanal ships, the volume of landings, and the volume of the ice supply are significantly low, and the qualitative effects are also limited. In addition, the expected impacts are also limited because of the limited effects. There is no other noteworthy impact. In light of the above, realizations of effects by the implementation of the project are limited. Therefore, effectiveness and impact of the project are low.

3.5 Sustainability (Rating: ①)

3.5.1 Institutional Aspects of Operation and Maintenance

DGPA managed CAPAL from the project planning until September 2015. However, the

National Agency for Fishery and Aquaculture (ANPA)[24] that was newly created under the Ministry of Fishery and Animal Husbandry in October 2015 started managing all landing places in Gabon including CAPAL on behalf of DGPA. At the time of the ex-post evaluation in February 2016, there were eight staff members at ANPA, i.e., one director general, one general and financial director, one planning officer, one cooperation officer, one aquaculture officer, one surveillance officer, one statistical officer, and one general duties officer. However, ANPA was not able to set up its organizational and planning capabilities without an allocation of any budget from the government since its establishment. Consequently, nothing was decided about the CAPAL Managing Committee[25] that was supposed to have been created under the project.

Meanwhile, the planned and actual deployment of staff members at CAPAL was as follows. Considering the fact that the volume and distributions of landings at CAPAL were significantly lower than planned, the number of staff members that were deployed to CAPAL was not as planned. At the time of the ex-post evaluation, the 14 staff members that were deployed to CAPAL were barely capable of running it. For appropriate operation of CAPAL, it would be desirable for CAPAL to deploy required, albeit minimum, number of staff members in the future, including one statistical officer for recording and keeping the statistical data on the landings for the sustainable use of marine resources.

Table 3: Planned and actual deployment of staff members at CAPAL

Title	Planned	Actual
Centre chief	1	1
Secretary for centre chief	1	1
Centre deputy chief	2	1
Hygienic and quality control officer	1	0
Accountant	1	1
General affairs officer	1	0
Officer for halls and storages	2	1
Maintenance staff for ice makers	2	1
Ice sellers	3	2
Statistician	1	0
Cleaning staff	4	3
Security staff	4	3
Total	23	14

Source: CAPAL

According to the internal regulation of CAPAL, the centre chief was supposed to submit a profit and loss sheet to DGPA every month and DGPA was supposed to send external auditors

[24] Agence Nationale de la Pêche et Aquaculture.

[25] The committee members at the time of the project planning consisted of the director general of DGPA, the director of artisanal fishery of DGPA, the director of legal affairs and surveillance of DGPA, the director of hygiene and quality control of DGPA, the centre chief of CAPAL, and the centre deputy chief of CAPAL.

to CAPAL every quarter. However, there was no record left that indicated that these activities ever took place. Moreover, now that the management of CAPAL is shifted from DGPA to ANPA, the centre chief did not submit one and ANPA did not send an auditor. Therefore, it is hard to say that the management of CAPAL by ANPA and the operation and maintenance of CAPAL are adequate.

3.5.2 Technical Aspects of Operation and Maintenance

Among numerous pieces of equipment that were procured by the project, it was only the ice makers that required some technical guidance. When the ice makers were installed at CAPAL in 2011, engineers from the maker (SOGAFRIC) in Gabon provided eight staff members, who were candidates for maintaining the ice makers, with two days of training on how to operate them. The maker also provided them with one year of on-the-job-training on how to maintain them. There was only one staff member who was still working in maintenance for ice makers at CAPAL, at the time of the ex-post evaluation. To make matters worse, according to the centre chief, the staff did not have sufficient maintenance skills. CAPAL still had the operation and maintenance manual, but did not provide the staff with any training on maintenance. As the staff was able to only operate ice makers, CAPAL entrusted the maker to maintain them even though their required maintenance was minor. Therefore, although there is little problem with operation of ice makers, it is hard to say that the maintenance skills available are sufficient.

3.5.3 Financial Aspects of Operation and Maintenance

CAPAL did not record and keep the financial data properly, and thus there were no data available before 2015. This is partly because reporting and auditing in line with the internal regulation of CAPAL did not occur, as noted above. The data in 2015 which the ex-post evaluation study was able to obtain are summarized in Table 4 below.

Table 4: Net balance of CAPAL

(unit: thousand CFA franc)

Items	Plan[26]	2013	2014	2015
Total revenue	91,000	NA	NA	21,137
Ice sold	77,660	NA	NA	17,679
Facilities Rented	13,340	NA	NA	3,458
Total expenses	83,280	NA	NA	21,011
Human resources	42,480	NA	NA	17,900
Others	31,700	NA	NA	3,111
Reserves	9,100	NA	NA	0
Net Balance	7,720	NA	NA	126

Source: CAPAL

[26] The project did not set a particular year for the plan.

Regarding the data in 2015 that the ex-post evaluation was able to obtain, the unit cost of selling ice per sac of 50kg at 2,000 CFA francs was the same as planned. However, the sales of ice were approximately 23% of the planned sales (77,660 thousand CFA francs) because the volume of sales was less than expected. Similarly, the facilities rental fees were approximately 26% of the planned fees (13,340 thousand CFA francs). The project originally expected that it would make revenue from renting storages and tables to fish retailers, fish-handling spaces, fish-processing facilities, and the engine-repair building. However, as they were hardly used, there was little revenue. The net balance in 2015 was 126 thousand CFA francs but the reserves for repairing facilities and equipment such as ice makers, equivalent to 10% of the total revenue, were not established at all. If they had been established as anticipated, they would have been negative in the final accounting. When the project was planned, if a case arose where CAPAL fell into debt, the DGPA was supposed to compensate for it. Now that the management of CAPAL is shifted from DGPA to ANPA, it is still unclear whether ANPA is going to fulfil this responsibility under the circumstances without an allocation of any budget from the government. In sum, considering that ANPA has not allocated any budget to CAPAL, that the budget management including compensation for deficits at CAPAL has not been institutionalized between ANPA and CAPAL, and that reserves for repairing facilities and equipment have not been established, it is hard to say that the financial aspects of operation and maintenance are adequate.

3.5.4 Current Status of Operation and Maintenance

【Civil engineering facilities】

As there is no major damage on the pier and the access road, artisanal fishermen and CAPAL staff use them more or less. Therefore, there is no particular problem with their current status of operation and maintenance.

【Architectural facilities】

Three janitors at CAPAL clean up the support centre building and halls, and there is no problem with their use. Ice makers, storages, and toilets are also in use. Meanwhile, the engine-repair building and the fish-processing facilities are not in use at all because there is no repairmen or processor. However, they could be used if needed.

【Equipment】

Apart from carts and cool boxes that are used to transport ice from ice makers to small wooden ships (pirogues), no other equipment is in use. However, it could be used if needed.

As mentioned above, sustainability of the project effects as well as institutionalization of the operation and maintenance of the architectural facilities and equipment are insufficient. There is also a partial problem with the technical aspects of the operation and maintenance. Moreover, the financial aspects of the operation and maintenance are far from sufficient, and future prospects are quite unclear. In light of the above, major problems have been observed in terms of the institutional and financial aspects of operation and maintenance. Therefore, sustainability of the project effects is low.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

The objective of the project was to integrate the existing landing places into CAPAL by developing the Centre, thereby contributing to the improvement of a hygienic environment and the supply chain of marine products. The project was in line with the development policies and needs of Gabon as well as Japan's ODA policies. However, it turned out that the project planning was not appropriate enough, and thus its relevance is fair. Although the project cost was as planned, the project period was longer than planned. Moreover, the construction of the access road that was supposed to be completed during the project period by the Government of Gabon was completed after the project period, and thus its efficiency is fair. The quantitative effects (i.e., number of artisanal ships for landings, volume of landings, and volume of ice supply) are significantly lower than planned and the qualitative effects are limited. As a result, the expected impacts are also limited, and thus the effectiveness and impact of the project are low. The sustainability of the project effects is insufficient and so are the institutional aspects of operation and maintenance of the facilities and equipment. The technical aspects of the project have minor problems and its financial aspects have major concerns about its outlook, thus the sustainability of the project effects is low.

In light of the above, the project is evaluated to be unsatisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Implementing Agency

In order to achieve the planned targets and ensure that CAPAL plays its planned roles, it is necessary to take numerous actions with both hard (the objective) and soft (process-oriented) aspects of the project including 1) - 5). Such actions as 1) - 5) below are examples only and necessary actions to be taken are not necessarily limited to them.

1) It has been pointed out that one of the reasons why CAPAL is not used as much as expected is because the existing landing places in and around Libreville are not integrated into CAPAL as was agreed at the time of the project planning. Therefore,

it is important for ANPA to take the necessary policy measures to integrate them into CAPAL at the earliest possible time.

2) It has been pointed out that one of the reasons why CAPAL is not used as much as expected is because a seawall to improve the tranquillity of the seawater in front of the CAPAL pier during high waves was and still is not constructed, and hence artisanal fishermen in Gabon who are not used to using piers avoid using the CAPAL pier, not only under high wave conditions but also under normal wave conditions. Therefore, it is important for ANPA to construct a seawall at the earliest possible time. In a case where it is quite difficult to allocate the budget for constructing the large-scale seawall that was initially planned, it is suggested as a second option that ANPA should construct a small-scale seawall that can ensure some degree of tranquility, in addition to a small-scale sand beach that makes it easier for artisanal fishermen to land fish. Because it will take some time to complete the construction of a seawall, ANPA should, in the meantime, continuously provide technical guidance on how to land fish at the CAPAL pier as the JICA experts have been doing since the completion of the project. In this way, ANPA should eliminate the anxieties that artisanal fishermen hold about landing fish at the CAPAL pier.

3) It has been pointed out that one of the reasons why CAPAL is not used as much as expected is because artisanal fishermen perceive that fish retailers do not come to CAPAL. Therefore, it is important for ANPA to take measures at the earliest possible time to make CAPAL a lively and attractive environment with a lot of fish retailers. In this way, ANPA should change the fishermen's perceptions. For this reason, it is suggested, for example, that ANPA should provide free services of supplying ice, storages, cool boxes, and tables for fish retailers for a year.

4) It has been pointed out that one of the reasons why CAPAL is not used as much as expected is because the access road to CAPAL is about 1 km distant from town and has few people using it; another access road to CAPAL that is stretching from the side of the Oloumi market and is several hundred meters away from the main road is difficult for consumers, and especially women, to use in the rainy season, although it is usable both on foot and by car in the dry season. Therefore, ANPA should construct 50 - 100m of a second access road to connect the main entrance of CAPAL and town which can bring more consumers, and especially women, to CAPAL as well as rehabilitate the access road stretching from the side of the Oloumi market. In this way, ANPA should be able to improve access to CAPAL for consumers.

5) The project had a plan to deploy 23 staff members to CAPAL for its operation. Currently, however, there are only 14 staff members deployed. For appropriate operation of CAPAL, it is important for CAPAL to deploy required, albeit minimum, number of staff. For example, the project expected that CAPAL would contribute to the sustainable use of marine resources, but CAPAL does not currently play such a role because there is no statistical officer deployed. Meanwhile, ANPA has deployed one statistical officer and started working on the sustainable use of marine resources. The statistical officer at ANPA is in charge of statistics on the volume of landings all over the country and is not available solely to CAPAL. It is thus important for CAPAL to deploy a statistical officer to accurately monitor the volume of landings at CAPAL and then promote sustainable use of marine resources by collaborating with the statistical officer at ANPA at some point when the use of CAPAL and the volume of landings have increased. At the same time, CAPAL should promote an appropriate volume of landings by raising public awareness of the sustainable use of marine products and appropriate distribution using ice, and then promote sustainable use of marine products. In this way, CAPAL should be able to decrease the volume of marine products that are wasted without being consumed.

4.2.2 Recommendations to JICA

In order to improve the current status of CAPAL, JICA has been dispatching the JICA experts to Gabon and working with DGPA, ANPA, and artisanal fishermen. It is important for JICA, notably the JICA experts, to continuously monitor and follow up activities by ANPA and CAPAL so that it can ensure that ANPA and CAPAL will implement the aforementioned recommendations.

4.3 Lessons Learned

【Assured implementation of policies and matters by the counter government】

Based on the understanding that it was necessary to integrate the existing landing places in and around Libreville into CAPAL at the time of the project planning, JICA insisted that DGPA should take the necessary policy measures, and JICA confirmed that DGPA had a plan to shut them down. However, DGPA has not done so to date. Moreover, the Government of Gabon was supposed to construct a seawall outside of the project scope, but that has not been constructed either. Therefore, when it comes to policies and matters that can significantly affect the project activities, it is important for JICA to continuously work with the counterpart government and ensure that they are implemented.

【Implementation of project planning of artisanal ports and activities of public awareness that pay due attention to the natural and cultural environment】

One of the reasons why the number of artisanal ships and the volume of landings at CAPAL have not increased is because a seawall to improve the tranquility of the seawater in front of the CAPAL pier during high waves was and still is not constructed and that artisanal fishermen in Gabon who are not used to using piers avoid using the CAPAL pier not only under high wave conditions but also under normal wave conditions. Therefore, when constructing an artisanal port, a project should pay due attention to its project scope by considering the natural environment and also to carrying out such appropriate activities as public awareness by grasping the local practices through stakeholder analyses involving artisanal fishermen, if necessary.

Federal Republic of Nigeria

FY2015 Ex-Post Evaluation of Japanese Grant Aid Project

"The Project for Improvement of Medium Wave Radio Broadcasting Network Phase (I) & (II)"

External Evaluator: Mr. Koichiro Ishimori, Value Frontier Co., Ltd.

0. Summary

The objective of the project was to expand and improve the coverage of medium wave radio broadcast by upgrading medium wave radio transmitters at Kaduna and Enugu Stations, and thereby to contribute to improving access to education for residents in the regions, particularly nomads and sea nomads, whose literacy rates were low and who changed their place of living. The project was fully in line with the development policies and needs of Nigeria as well as Japan's ODA policies, and therefore its relevance is high. Both the project cost and the project period were lower than planned. However, its efficiency is fair because the project was completed without completing the construction of the fence at the periphery of Enugu Station. All the actual figures of the operation and effects indicators to measure the quantitative effects of the project (i.e., the daily operational hours of the medium wave radio transmitters, the areas covered by the radio broadcasts, and the population covered by the radio broadcasts) were either same as planned or even greater. The qualitative effect (i.e., improvement in the sound quality of radio broadcasts) seems to have been realized. Besides, an impact was also observed with regard to access to education through medium wave radio broadcasts. Therefore, the effectiveness and impact of the project are high. No major problems are observed in the institutional, technical, and financial aspects pertinent to the operation and maintenance of the procured equipment as well as in the continuity of the project effects. Therefore, the sustainability of the project effects is high.

In light of the above, the project is evaluated to be highly satisfactory.

1. Project Description

Project Location

Main entrance of Kaduna Station

1.1 Background

Nigeria is situated in the center of West Africa and surrounded by Benin to the west, Niger to the north, and Cameroon to the east and the south. It has approximately 0.92 million square kilometers of land, which is almost equivalent to 2.5 times the land area of Japan, and approximately 182 million people, which is almost equivalent to 1.5 times the population of Japan. It is one of the greatest oil-producing countries in the world, and its economy depends heavily on the oil industries. After the oil boom in the 1970s, however, its economy was so severely affected that almost 70% of the national population lived below a dollar a day. To revive the economy, the government of Nigeria began numerous work in a wide variety of sectors. In the education sector, which is the foundation for the economy, a huge gap existed between the urban and rural areas necessitating measures to improve access to education in rural areas. For this reason, the government was taking strategic measures to provide distance learning via radio that was embedded in the lives of rural people as an educational tool.

1.2 Project Outline

The objective of the project was to expand and improve the coverage of medium wave radio broadcast by upgrading medium wave radio transmitters at Kaduna and Enugu Stations and thereby to contribute to improving access to education for residents in the regions, particularly nomads and sea nomads, whose literacy rates were low and who changed their place of living.

EN Grant Limit /Actual Grant Amount	(I) 642 million yen, (II) 526 million yen /(I) 641 million yen, (II) 523 million yen
Exchange of Notes Date / Grant Agreement Date	(I) August, 2007, (II) June, 2008
Implementing Agency	Federal Radio Corporation of Nigeria (FRCN)
Project Completion Date	(I) February, 2009, (II)February, 2010
Main Contractors	(I)(II) NEC Corporation and Denki Kogyo Company, Limited
Main Consultants	(I)(II) Yachiyo Engineering Co., Ltd.
Basic Design	March, 2007
Detailed Design	-
Related Projects	-

2. Outline of the Evaluation Study

2.1 External Evaluator

Mr. Koichiro Ishimori, Value Frontier Co., Ltd.

2.2 Duration of the Evaluation Study

The ex-post evaluation was conducted according to the following schedule.

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

Duration of the Field (Third Country) Study: March 20, 2016- March 26, 2016, and July 16, 2016 – July 21, 2016

2.3 Constraints during the Evaluation Study

The external evaluator had to conduct the evaluation study remotely from Japan and Senegal considering the security conditions in Nigeria. The local consultant who assisted the external evaluator, therefore, obtained information on the project by making visits to FRCN and the project sites on behalf of the external evaluator. Besides, the external evaluator had to evaluate the project based on substantially limited information, because even the local consultant was unable to visit regions inhabited by the nomads and sea nomads who were the intended beneficiaries of the project because of security reasons.

3. Results of the Evaluation (Rating: A[1])

3.1 Relevance (Rating: ③[2])

3.1.1 Relevance to the Development Plan of Nigeria

National Economic Empowerment and Development Strategy (NEEDS) of 2004, the national development plan of the government of Nigeria at the time of the project planning in 2007, prioritized growth of six sectors: agriculture and rural development, roads, education, health, water supply, and electricity. Although "broadcasts" were not included among the sectors marked for development, they did play a certain role in implementing the measures taken by the government, such as disseminating information on these sectors to the people. Particularly in education, measures taken to provide "access to education" had top priority because they would contribute to alleviating poverty and improving living conditions[3] and "distance learning" was considered one of the tools to achieve this.[4] For the purpose of providing distance learning as well as daily information, the project was attempting to upgrade the radio transmitters at Kaduna and Enugu Stations which covered areas inhabited by many of "6.5 million nomads and 2.8 million sea nomads with a substantially low literacy rates of 0.2 to 2% and who changed their place of living[5]". Therefore, the project was judged to be in line with the development plan of Nigeria.

Nigeria Vision 20: 2020 of 2009, the national development plan of the government of Nigeria at the time of the ex-post evaluation in 2015, prioritizes "optimization of its human and natural resource potentials to achieve economic growth" and "translation of economic growth into equitable social development." In particular, the government gives top priority for "education" to optimize human resource potential[6] and stresses the importance of

[1] A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory
[2] ③: High, ②: Fair, ①: Low
[3] International Monetary Fund (IMF), P35 of *National Economic Empowerment and Development Strategy of 2004*
[4] IMF, P29 of *National Economic Empowerment and Development Strategy of 2004*
[5] Association for the Development of Education in Africa (ADEA), P15 of *Improving the Quality of Nomadic Education in Nigeria: Going Beyond Access and Equity of 2005*
[6] National Planning Commission (NPC), P35 of *Nigeria Vision 20: 2020 of 2009*

"management of information and knowledge" as "education for nomads."[7] Besides, the Federal Ministry of Education considers "broadcasts" as an indispensable tool to achieve social development, particularly in providing access to education,[8] though this is not articulated in the Vision. Therefore, the project to upgrade the radio transmitters at Kaduna and Enugu Station which now cover areas inhabited by many of "9.9 million nomads and 3.2 million sea nomads with substantially low literacy rates of 9.2 to 32% and who changed the place of living".[9] Therefore, the project is judged to be still in line with the development plan of Nigeria.

In light of the above, the project is judged to have been in line with the development plan of Nigeria both at the time of the project planning and the ex-post evaluation.

3.1.2 Relevance to the Development Needs of Nigeria

When the project was planned in 2007, FRCN, the national broadcasting company of Nigeria, provided distance learning as well as daily information to the country, whose average literacy rate was approximately 57%.[10] Due to the severe deterioration of medium wave radio transmitters which had been installed in the 1970s, Kaduna and Enugu Stations were able to cover only approximately 20% of the areas they used to cover when they started their broadcasts. While the internet and mobile phone penetration rates in the country were significantly low, approximately 7% and 27%, respectively,[11] the radio penetration rate was significantly high, approximately 76%,[12] and even higher among nomads and sea nomads, approximately 81% and 82%, respectively.[13] Considering the extremely low literacy rate of nomads and sea nomads, radio was indispensable in their lives. Therefore, the project implemented at Kaduna and Enugu Stations covering areas inhabited by many of the nomads and sea nomads with an extremely low literacy rate was judged to be in line with the development needs of Nigeria.

At the time of the ex-post evaluation in 2015, FRCN continues to provide distance learning as well as daily information to the country, whose average literacy rate is still low, approximately 67%.[14] While the internet and mobile phone penetration rates have skyrocketed to approximately 43% and 78%, respectively,[15] the radio penetration rates

[7] NPC, P37 of *Nigeria Vision 20: 2020 of 2009*
[8] Answer on the questionnaire from the Federal Ministry of Education
[9] Answer on the questionnaire from the Federal Ministry of Education
[10] IMF, P34 of *National Economic Empowerment and Development Strategy of 2004*
[11] World Bank (WB), Statistical data from *World Development Indicators of 2007*
[12] Japan International Cooperation Agency (JICA), citation from *the Summary of the Basic Design Study on the Project for Rehabilitation of Medium Wave Broadcasting Network for the Enhancement of Education*
[13] Interview with the Federal Ministry of Education
[14] United Nations Children's Fund (UNICEF), Statistical data (average of both men and women) from *At a glance: Nigeria of 2013*
[15] WB, Statistical data from *World Development Indicators of 2014*

remain high, particularly among nomads and sea nomads, at approximately 90% and 98%, respectively.[16] Considering the extremely low literacy rates of nomads and sea nomads, radio still continues to be an indispensable part of their lives. Therefore, the project implemented at Kaduna and Enugu Stations covering areas inhabited by many of the nomads and sea nomads is still judged to be in line with the development needs of Nigeria.

In light of the above, the project is judged to have been in line with the development needs of Nigeria both at the time of the project planning and the ex-post evaluation.

3.1.3 Relevance to Japan's ODA Policy

ODA Charter of 2003, the aid policy of the Government of Japan at the time of the project planning in 2007, prioritized cooperation in the area of information and communication technologies in one of its four pillars, sustainable growth. *Mid-term Policy of ODA* of 2005 also prioritized the development of information and communication technologies in one of its four pillars, sustainable growth. Moreover, the *Data book for Nigeria* of 2007 highlighted the importance of cooperation that could directly benefit the basic lives of the Nigerian people, to support Nigeria's self-help efforts in line with NEEDS of 2004.

In light of the above, the project is judged to have been in line with Japan's ODA Policy.

In conclusion, the project has been highly relevant to Nigeria's development plan and development needs, as well as Japan's ODA policy. Therefore, its relevance is high.

3.2 Efficiency (Rating: ②)

3.2.1 Project Outputs

The project comprised two phases, Phase I for Kaduna Station and Phase II for Enugu Station. In Phases I and II, the government of Japan provided the government of Nigeria with grant aid assistance for procuring the medium wave radio transmitters. Then, the government of Nigeria implemented the installation work of the procured transmitters. Project outputs were the same for Phases I and II. Although the procurement and the installation work took place almost as planned, the government of Nigeria was unable to complete the construction of the fence at the periphery of Enugu Station in Phase II by the end of the project period.[17]

[16] Interview with the Federal Ministry of Education

[17] The construction work was not completed by the end of the project period because budget allocation was prioritized to repair a transmitter in another station. However, it was completed around June 2012.

Table 1: Project Outputs in the Phase I and the Phase II

	Planned outputs	Actual outputs
Japanese Side		
Procurement	Medium wave radio transmitters, Dummy loads, Program input equipment rack, Measuring equipment, Automatic Voltage Regulator (AVR), Power Distribution Board (PDB), Spare parts, Consumables, Connecting cables, Medium wave antenna systems, Air conditioners	As planned.
Nigerian Side		
Installation work	Removal work of the existing equipment, Renovation work of the Stations, Construction work of the fence in the periphery of Stations, Electrical work	As planned, with the exception of the fence in the periphery of Enugu Station

Source: Documents from FRCN

3.2.2 Project Inputs

3.2.2.1 Project Cost

While the planned project cost on the Japanese side was 1,168 million yen, the actual cost was lower than planned due to an appreciation in the cost of the yen, at 1,164 million yen. On the contrary, while the planned project cost on the Nigerian side was 30.16 million naira, equivalent to approximately 27 million yen at the exchange rate of 0.9 yen to the naira calculated in the basic design study, the actual cost was higher than planned due to a price hike of materials such as cements and pumps, 32.93 million naira, equivalent to approximately 29.5 million yen at the same exchange rate. However, while the total planned cost on the Japanese and Nigerian sides was 1,195 million yen, the total actual cost was lower than planned, at 1,193.5 million yen (99% of the total planned cost).[18]

Table 2: Project Costs in the Phase I and the Phase II

	Planned costs	Actual costs
Japanese side	1,168 million yen	1,164 million yen
Phase I	642 million yen (Equipment: 591 million yen, Design and supervision: 51 million yen)	641 million yen (Equipment: 591 million yen, Design and supervision: 50 million yen)
Phase II	526 million yen (Equipment: 481 million yen, Design and supervision: 45 million yen)	523 million yen (Equipment: 478 million yen, Design and supervision: 45 million yen)
Nigerian side	30.16 million naira (approximately 27.0 million yen)	32.93 million naira (approximately 29.5 million yen)
Phase I	21.43 million naira (approximately 19.2 million yen)	23.75 million naira (approximately 21.3 million yen)
Phase II	8.73 million naira (approximately 7.8 million yen)	9.18 million naira (approximately 8.2 million yen)

Source: Documents from FRCN

[18] The cost underrun of approx. 4 million yen on the Japanese side absorbed the cost overrun of approx. 2.5 million yen on the Nigerian side, and therefore the total actual cost was lower than planned.

3.2.2.2 Project Period

The planned project period of Phase I was 19 months from August 2007 (E/N date) to February 2009 (completion) and that of Phase II was 18.5 months from June 2008 (E/N date) to December 2009. Therefore, the total planned project period was 37.5 months (excluding the period from E/N date to consulting agreement date). While the actual project period of Phase I was mostly as planned, 18.4 months from August 16, 2007 (consulting agreement date) to February 26, 2009 (completion), that of Phase II was slightly longer than planned, 18.9 months from July 8, 2008 (consulting agreement date) to February 2, 2010 (completion), due to delays in the procurement of foundation materials for the antenna and in the installation work of AVR, PDB, and air conditioners. However, the total actual project period was shorter than planned, at 37.3 months.

In conclusion, while the actual project cost on the Japanese side was lower than planned, the cost on the Nigerian side was higher than planned due to a price hike of the materials needed to be procured. However, the total actual project cost on the Japanese and Nigerian sides was within the plan. Whereas the actual project period of Phase I was mostly as planned, that of Phase II was slightly longer than planned due to the delays in procurement of foundation materials and in the installation work of equipment. However, the total actual project period was within the plan. Meanwhile, from the perspective of appropriateness of project inputs (project cost and project period) to achieve project outputs, it is hard to say whether the project was appropriate enough because the construction of the fence at the periphery of Enugu Station by the Nigerian side, which was important for the safety of the facilities, was not completed by the end of the project without reducing the planned project inputs. Therefore, it is judged that efficiency of the project is fair.

3.3 Effectiveness[19](Rating: ③)

3.3.1 Quantitative Effects (Operation and Effect Indicators)[20]

Table 3: Operation and Effect Indicators

		Baseline	Target	Actual performance	Actual performance	Actual performance
		2006	2010 (I) 2011 (II)	2009 (I) 2010 (II)	2010 (I) 2011 (II)	2011 - 2015 (I) 2012- 2016[21] (II)
		Planned year	One year after project completion	Year of project completion	One year after project completion	Two to six years after project completion
Operation and Effects Indicators						
Indicator 1: Daily operational hours of the medium wave radio transmitters	Kaduna Station	NA	NA	18.5 hours (5:30- 0:00)	18.5 hours (5:30- 0:00)	18.5 hours (5:30- 0:00)
	Enugu Station	NA	NA	19.0 hours (5:15- 0:15)	19.0 hours (5:15- 0:15)	19.0 hours (5:15- 0:15)
Indicator 2: Areas covered by the radio broadcasts	Kaduna Station	Radius of 120km	Radius of 230km	Radius of 250km	Radius of 250km	Radius of 250km
	Enugu Station	Radius of 42km	Radius of 160km	Radius of 160km	Radius of 160km	Radius of 160km
Indicator 3: Population covered by the radio broadcasts	Kaduna Station	9.3 million people	46 million people	49 million people	49 million people	49 million people
	Enugu Station	2.9 million people	40 million people	42 million people	42 million people	42 million people

Source: Documents from FRCN

Indicator 1: Daily operational hours of the medium wave radio transmitters

The daily hours of power supply from the regional power company to Kaduna and Enugu Stations were examined first since demand and supply of electric power in Nigeria were so tight that it could impede the operational hours of the radio transmitters at the Stations. It was found to be approximately seven intermittent hours at Kaduna Station and ten intermittent hours at Enugu Station. In case of blackouts, the Stations switch power to backup generators for emergency use and operate radio transmitters. While it takes Kaduna Station one minute to switch to power backup, it takes Enugu Station one to two minutes to do the same. Despite blackouts, the Stations are able to operate 18.5 hours and 19 hours. Therefore, there is no problem with regard to the daily operational hours of the medium wave radio transmitters.

Indicator 2: Area covered by the radio broadcasts

The area covered by the radio broadcast at Kaduna Station before the project began was a radius of 120 km of the station. When the project was completed, the radius increased to 250 km, greater than the planned expansion of 230 km. Meanwhile, the area covered by the radio

[19] Sub-rating for Effectiveness is to be put with consideration of Impact.
[20] The operation and effect indicator quantitatively set at the time of the project planning was indicator 3 alone. Due to difficulties in correctly evaluating the operational effects of the project in quantitative terms with indicator 3 alone, indicators 1 and 2 were added at the time of ex-post evaluation.
[21] The data in 2016 represent the data until July 2016 when the second field (third country) study was done.

broadcast at Enugu Station before the project began was a radius of 42 km. When the project was completed, the radius increased to 160 km as planned. Therefore, it is considered that indicator 2 was achieved either as planned or greater than the planned target.

Indicator 3: Population covered by the radio broadcasts

The population covered by the radio broadcast at Kaduna Station before the project began was 9.3 million people. It increased to 49 million, greater than the planned figure of reaching 46 million. Meanwhile, the population covered by the radio broadcast at Enugu Station before the project began was 2.9 million people, which increased to 42 million, again greater than the planned figure of reaching 40 million. Therefore, it is considered that indicator 3 was achieved greater than the planned target.

3.3.2 Qualitative Effects (Other Effects)

Indicator 4: Improvement in sound quality of radio broadcasts

There is little point in expanding the area and population covered by the radio broadcasts as per the project if the sound quality is not clear to the listeners. Therefore, the sound quality of radio broadcasts was examined through interviews[22] in the areas near Enugu Station. According to a 41-year-old woman living in Ugwuoba, approximately 2 km from Enugu Station, and a 39-year-old man living in Achi, approximately 30 km away from it, there were problems with the sound quality of the radio broadcasts from Enugu Station, and therefore they used to listen to broadcasts from other stations. After the project, however, they began to listen to the broadcasts from Enugu Station because the sound quality had improved. Since Ugwuoba and Achi were located in areas already covered by the broadcasts from Enugu Station even before the project, it is assumed that the aforementioned effect was brought about by the improvement in the sound quality resulting from the medium wave radio transmitter switching from analog to digital systems, rather than due to the expansion of the areas covered by the broadcast.

In conclusion, the quantitative effects illustrated by the operation and effect indicators are either as planned or even greater than planned, with the qualitative effect also being achieved as planned. Therefore, it is judged that effectiveness of the project is realized.

[22] The local consultant had interviews from two ordinary citizens. They were people whom the local consultant happened to meet at a bus stop and a café near Enugu Station and who kindly accepted to be present at the interviews. Also, they were people who not only had listened to the radio broadcasts before the project but listened now after the project at the time of ex-post evaluation. It should be noted however that the hearing results from two people do not represent all the beneficiaries because Enugu Station reaches out to 42 million people.

3.4 Impacts

3.4.1 Intended Impacts (Access to Education)

(1) Contributions to improving the educational standards through improvement of distance learning in collaboration with educational institutes

FRCN invites teachers from the National Teachers' Institute as guest speakers on a regular basis and broadcasts programs on teaching methods directed toward teachers in the country. Thus, it contributes to improving the educational standards in the country.

(2) Contributions to increasing number of educational programs through an increase in income from advertisements corresponding to the expansion of coverage and reduction in broadcast fees[23]

The weekly share of educational programs among all programs at Kaduna Station has increased from approximately 6% at 7.75 hours out of 129.5 hours in 2009,[24] to approximately 8% at 9.75 hours out of 129.5 hours in 2016, whereas the share at Enugu Station has increased slightly from approximately 3% at 4.5 hours out of 133 hours in 2006 to approximately 4% at 5.5 hours out of 133 hours. As is discussed later, however, the income generated from advertisements has been decreasing of late partly due to the growth in internet penetration,[25] which has not eventually led to a decrease in broadcast fee, though the coverage has expanded. Therefore, it is considered that the intended impact, increase in educational programs, was not realized by the intended logic underlined above.

(3) Contributions to filling the information gap due to the expanded coverage

Kaduna Station broadcasts programs on math, language, science, sociology, history, music, art, health, and morals in the standard language of English and Hausa that the nomads speak. As a result of the expansion in coverage area from only a part of the north west region to the majority of the north west and central regions, the children, including those of nomads, living in the expanded coverage areas are assumed to be able to access education through these programs.

Boy listening to radio

[23] Companies and entities that want to broadcast a radio program become sponsors of the program and purchase a slot, which becomes the fee for the broadcasts.

[24] Kaduna Station has discarded the information on the radio programs that were broadcast before the project, namely, in 2006. Therefore, the ex-post evaluation used the information on the oldest radio programs of 2009 that were retained.

[25] Internet penetration rate has been increasing. According to *World Development Indicators* of the World Bank, the rate is as follows: approx. 7% in 2007 (when the project was planned) → approx. 16% in 2008 → approx. 20% in 2009 → approx. 24% in 2010 → approx. 29% in 2011 → approx. 33% in 2012 → approx. 38% in 2013 → approx. 43% in 2014 → NA in 2015 (when the ex-post evaluation was done).

Enugu Station broadcasts programs on language, sociology, music, art, and morals in the standard language of English and Igbo that the sea nomads speak. As a result of the expansion in the coverage areas from only a part of the south east region to the majority of the south east and the south south regions, the children, including those of sea nomads, are assumed to be able to access education through these programs. According to the interviews,[26] which were done during the ex-post evaluation, three children living near Kaduna Station said that they listened to educational programs from Kaduna Station and enjoyed learning from them. Furthermore, according to the Federal Ministry of Education, the project has been bringing about a huge impact on children, particularly those of nomads and sea nomads, who lived in the expanded coverage areas.

3.4.2 Other Impacts

(1) Impacts on the Natural Environment

According to the responses to the questionnaire from FRCN and the site survey by the local consultant, there has been no negative impact on the natural environment because of the upgraded equipment in the existing facilities. Therefore, there is no problem with it.

(2) Land Acquisition and Resettlement

Similarly, according to the responses to the questionnaire from FRCN and the site survey by the local consultant, there has been no land acquisition and resettlement because of the same reason as above. Therefore, there is no problem with it.

As explained above, the area and population covered by the radio broadcasts from Kaduna and Enugu Stations are either the same as planned or greater than planned, with the sound quality also showing improvement because of the project. The stations broadcast for approximately 19 hours from early morning to midnight daily and deliver educational programs for the benefit of teachers and children. The children living in the newly covered areas are able to access education through these education programs. The Federal Ministry of Education also recognizes that the project has been bringing about a huge impact, particularly on the children of nomads and sea nomads. In conclusion, the project has largely achieved its objectives. Therefore, effectiveness and impact of the project are high.

[26] The local consultant had interviews from three children between the ages of 13 and 16 to whom he was introduced by ordinary citizens living near Kaduna Station and who kindly accepted to be present at the interviews. It should be noted however that the hearing results from three people do not represent all the beneficiaries because Kaduna Station reaches out to 49 million people.

3.5 Sustainability (Rating: ③)

3.5.1 Institutional Aspects of Operation and Maintenance

Presently, the executive directors in charge of Kaduna and Enugu Stations at FRCN HQ manage the overall operations of the two Stations. At the Stations, there are deputy directors in charge of news, programs, marketing, and engineering services, who report to the executive directors. The operation and maintenance of the medium wave radio transmitters procured by the project are taken care of by 264 staff at the department of engineering services at Kaduna Station and 106 staff at the department of engineering services at Enugu Station. Considering that the planned number was 96 at Kaduna Station and 46 at Enugu Station, this is significantly higher. The reason is that FRCN plans to establish sub-stations under the regional stations, including Kaduna and Enugu Stations, according to the plan to establish radio stations in all 36 states. Meanwhile, the radio programs are produced by 240 staff at the department of programs at Kaduna Station and 213 staff at the department of programs at Enugu Station. Considering that the planned number was 144 at Kaduna Station and 52 at Enugu Station, this is again significantly higher for the same reason. Therefore, it is considered that there is no problem with the supervision of Kaduna Station and Enugu Station by FRCN HQ as well as with the institutional aspects of operation and maintenance at the two Stations.

3.5.2 Technical Aspects of Operation and Maintenance

The department of Engineering Services at FRCH HQ provides quarterly training in the operation and maintenance of digital radio transmitters for the staff at the department of engineering services in each region. At Kaduna and Enugu Stations, the members of staff at the department of engineering services who have received technical training under the counterpart training of the project mainly operate and maintain the procured equipment by referring to manuals provided by the manufacturer.[27] As seen above, the two Stations have been able to broadcast for approximately 19 hours from the early hours in the morning to midnight every day, and therefore it is considered that there is no problem with the technical aspects of operation and maintenance.

3.5.3 Financial Aspects of Operation and Maintenance

Government budget has been increased based on the aforementioned plan, and the actual budget in 2015 substantially exceeded the planned budget. Income from advertisements and broadcasting fees increased after 2006, but decreased lately due to the increasing internet penetration. The actual income in 2015 dropped to a degree that had been planned for in the

[27] No public certificate is required for the operation and maintenance.

end. However, the substantial increase in the government budget overly compensated for the decrease in income from advertisements and broadcast fees, resulting in an increase in the total revenue. Total expense also shows an increasing trend since 2006 because of the aforementioned reason, and the actual total expense in 2015 substantially exceeded the planned one. However, the net balance of FRCN for the past three years has been positive, though it is not to the degree expected. The planned budget for 2015 for the operation and maintenance of the procured equipment ((2) B. total expense in Table 4) has been fully covered. FRCN is planning to cover the budget fully for the operation and maintenance, and therefore it is considered that there is no problem with the financial aspects of operation and maintenance.

Table 4: Net Balance of FRCN

(Unit: Million naira)

Items	(1) 2006 baseline	(2) 2015 Plan	(3) 2013 Actual	(4) 2014 Actual	(5) 2015 Actual
A. Total revenue (1-3)	**2,492**	**2,554**	**6,592**	**6,972**	**8,130**
1. Government budget	1,622	1,622	5,237	5,872	7,238
2. Income from ads, broadcast fees	870	885	1,355	1,100	892
3. Others		47	0	0	0
B. Total expense (4-11)	**2,166**	**2,120**	**6,574**	**6,957**	**8,112**
4. HR, Program production	NA	1,368	4,798	5,519	7,031
5. Repair parts		1	87	15	12
6. Maintenance		69	164	206	167
7. Telephone		45	73	36	29
8. Training		38	67	16	13
9. Utilities		207	112	78	60
10. Travel		112	218	163	128
11. Others		280	1,055	924	682
Net balance	**326**	**434**	**18**	**15**	**18**

Source: Documents from FRCN

3.5.4 Current Status of Operation and Maintenance

According to the responses to the questionnaire from FRCN and the site survey by the local consultant, Kaduna and Enugu Stations face no problems in operating and maintaining the procured equipment. Therefore, it is considered that there is no problem with the current status of operation and maintenance.

Medium wave radio transmitter

Program input equipment rack

As explained earlier, no major problems have been observed in the institutional, technical, and financial aspects of the operation and maintenance of the system. Therefore, the sustainability of the project effects is high.

4. Conclusion, Lessons Learned, and Recommendations

4.1 Conclusion

The objective of the project was to expand and improve the coverage of medium wave radio broadcast by upgrading medium wave radio transmitters at Kaduna and Enugu Stations, and thereby to contribute to improving access to education for residents in the regions, particularly nomads and sea nomads, whose literacy rates were low and who changed their place of living. The project was fully in line with the development policies and needs of Nigeria as well as Japan's ODA policies, and therefore its relevance is high. Both the project cost and the project period were lower than planned. However, its efficiency was fair because the project was completed without completing the construction of the fence at the periphery of Enugu Station. All the actual figures of the operation and effects indicators to measure the quantitative effects of the project (i.e., the daily operational hours of the medium wave radio transmitters, the areas covered by the radio broadcasts, and the population covered by the radio broadcasts) were either same as planned or even greater. The qualitative effect (i.e., improvement in the sound quality of radio broadcasts) seems to have been realized. Besides, an impact was also observed with regard to access to education through medium wave radio broadcasts. Therefore, the effectiveness and impact of the project are high. No major problems are observed in the institutional, technical, and financial aspects pertinent to the operation and maintenance of the procured equipment as well as in the continuity of the project effects. Therefore, the sustainability of the project effects is high.

In light of the above, the project is evaluated to be highly satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Implementing Agency

The weekly broadcasting hours of educational programs at Enugu Station have increased slightly from 4.5 hours to 5.5 hours. However, the share of educational programs among all programs is relatively small at approximately 4%. FRCN, the national broadcasting company, has the mandate to "uplift the people and unite the nation," and therefore plays an important role in broadcasting educational programs. Since the project attempts to bring impacts on improving access to education for residents in the region, particularly for the nomads and sea nomads, whose literacy rates are low and who change the place of living, it is desired that FRCN will increase the broadcasting hours of educational programs.

4.2.2 Recommendations to JICA

None

4.3 Lessons Learned

Difficulties in increasing income from advertisements

The project initially expected that increase in income from advertisement due to the expansion of coverage would decrease the broadcasting fees, which in turn would help in broadcasting more varieties of educational programs. Lately, however, there has been a decreasing trend in the income from advertisements at FRCN because there are numerous media, such as television, newspapers, magazines, and the internet besides the radio. If future radio projects are expected to bear the impact based on income from advertisements, it is necessary to do a trial calculation of income from advertisements based on competition from the numerous media and set impacts and impact indicators based on this calculation. If such a realistic calculation proves to be difficult, it is expected to cautiously consider the impact and impact indicators that depend on income from advertisements.