

Republic of Mali

FY2017 Ex-Post Evaluation of Japanese Grant Aid Project

“Project for construction of Bamako Central Fish Market”

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## **0. Summary**

In Mali, consumption of fish per capita was larger than that of meat, and sales of fresh fish in the cities was an important source of income for rural population. In Bamako, the infrastructure of fish markets was not good enough to accommodate the increasing volume of fish for the growing population. The objective of this project was to develop a new distribution center of fish in Bamako by the construction of Bamako Central Fish Market (Marché Central à Poisson de Bamako: MCPB), thereby contributing to the stable supply of quality fresh fish in the city.

While this project was highly relevant to the country’s development plan and development needs as well as Japan’s ODA policy, its relevance is fair because it is not clear whether the project fully examined measures to proceed relocation of wholesalers at the project design. Efficiency of the project is high because both project cost and project period were within the plan. Ice is produced as planned by the icemaking machine in MCPB and contributes to the freshness of fish distributed in Bamako. However, as MCPB does not sell fresh fish yet, the project has not realized creation of new distribution center of fresh fish, as expected as the project effect. It has not produced expected qualitative effects such as hygienic environment and hygienic handling of fresh fish, or impacts such as stable supply and price of fresh fish, or consolidated distribution function of fresh fish. As the project has achieved its objectives only to a limited level compared to the plan, effectiveness and impacts of the project are low. There are no serious problems in the institutional, technical, financial aspects or status of operation and maintenance of the Bamako Central Fish Market Agency (Agence de Gestion du Marché Central à Poisson de Bamako: AGMCPB)<sup>1</sup> and it is likely to function as expected after the sales of fish begins. However, it cannot be concluded at this stage that there is no problem in its sustainability because MCPB is not operating its intended business yet as wholesalers have not relocated and fish are not sold. The expected effects of the project are not realized and their sustainability are not measurable. Therefore, sustainability of the project is fair.

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

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<sup>1</sup> The management agency of this project became Bamako Central Fish Market Agency (Agence de Gestion du Marché Central à Poisson de Bamako: AGMCPB) in August 2010, a public benefit corporation.

## 1. Project Description



Project location



Space intended for fresh fish wholesalers in MCPB

### 1.1 Background

At the project design, fishery was one of the important sectors in Mali with large inland water surface. The fishery sector produced 4.3% of its Gross National Income (GNI) and the workers in the sector were 7.2% of its total labour force. Consumption of fish per capita was larger than that of meat, and sales of fresh fish in the cities was an important source of income for rural population. In Bamako, the infrastructure of fish markets was not good enough to accommodate the increasing volume of fish sold for the growing population. A new distribution center of fresh fish was highly sought after for the stable supply of quality fresh fish.

### 1.2 Project Outline

The objective of this project was to develop a new distribution center of fish in Bamako by the construction of Bamako Central Fish Market (MCPB), thereby contributing to the stable supply of quality fresh fish in the city.

Grant Limit / Actual Grant Amount	1,027 million yen / 734 million yen
Exchange of Notes Date (/Grant Agreement Date)	June 2010 / June 2010
Executing Agency	Ministère de l'Élevage et de la Pêche
Project Completion	December 2011
Main Contractor	Toda Corporation
Main Consultant	Overseas Agri-Fisheries Consultants Co. Ltd.
Outline Design	January 2009-March 2010
Related Projects	African Development Bank: "Project to support inner water surface fishery development" (2005-2012)

## **2. Outline of the Evaluation Study**

### **2.1 External Evaluator**

Akemi Serizawa, TAC International, Inc.

### **2.2 Duration of Evaluation Study**

This ex-post evaluation study was conducted with the following schedule:

Duration of the Study: August 2017-September 2018

Duration of the Field Study: November 14-17, 2017, February 20-23, 2018

### **2.3 Constraints during the Evaluation Study**

Fresh fish wholesalers had not relocated to MCPB by the time of ex-post evaluation and fish were not sold there. The qualitative survey<sup>2</sup> in November 2017 was conducted with fresh fish wholesalers who were going to relocate to MCPB to ask them for their opinion about the existing fish markets where they were working and about their expectations for MCPB. In February 2018, however, the negotiation between MCPB and the cooperative of the fish wholesalers who were going to relocate finally broke, and these fresh fish wholesalers would no longer relocate to MCPB. Therefore, the result of the qualitative survey reflects the situation before the negotiation broke.

## **3. Results of the Evaluation (Overall Rating: D<sup>3</sup>)**

### **3.1 Relevance (Rating: ②<sup>4</sup>)**

#### **3.1.1 Consistency with the Development Plan of Mali**

At the time of project design, the policy document of the fishery sector (2008) by the Ministry of Livestock and Fisheries identified food security, employment creation and poverty reduction as the key roles of the sector. Its priority areas were development of fishery industry, improvement of quality and hygiene of marine products, and development of processing technology (source: project ex-ante evaluation sheet).

The current *National Policy of Fishery and Aquaculture (Politique Nationale de la Pêche et de l'Aquaculture) (2012)* prioritizes development of fishery industry, operation and management of fishery facilities, construction of infrastructure for adding value to marine products, and marketing (source: questionnaire response from the Ministry of Livestock and Fisheries).

From the above, both at the project design and at the ex-post evaluation, this project was in line with the fishery sector policies of Mali which prioritized construction of fishery infrastructure and marketing.

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<sup>2</sup> In the qualitative survey, 20 fresh fish wholesalers were selected and interviewed from 60 who were to relocate to MCPB. Almost equal number of wholesalers were selected from Medina Coura market and BCEAO market.

<sup>3</sup> A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

<sup>4</sup> ③: High, ②: Fair, ①: Low

### 3.1.2 Consistency with the Development Needs of Mali

Mali has a large inland water surface and many people work in the fishery sector. Consumption of fish is also high. For the fishers, sales of fresh fish are an important source of income. While the quantity of fish sold in Bamako increased along with its population growth, existing fish markets had poor infrastructure. At the project design, fish distribution in Bamako was estimated to be 20,000 tons per year (30 tons per day), consisting of about 10,000 tons of fresh fish (about 6,000 tons of local fresh fish and about 4,000 tons of import fresh fish) and 10,000 tons of import frozen fish. There were 34 fish markets of different sizes in Bamako in 2008, among which Medina Coura Market (Marché de Médine, Médina Coura) in the second arrondissement at the north bank of Niger River and BCEAO Market<sup>5</sup> in the third arrondissement also at the north bank were major fresh fish markets. There was large post-harvest loss during handling of fresh fish and the environment was not very hygienic. The objectives of this project were to construct MCPB as a distribution center of fresh fish and to contribute to the distribution of quality, fresh fish. As the north bank where Medina Coura Market and BCEAO Market located was developed urban area, MCPB was constructed in a state-owned land of the south bank of the river (sixth arrondissement) which had experienced population growth and had about 50% of the population of Bamako but was less developed than the north bank. Relocation of fresh fish wholesalers in the Medina Coura Market and BCEAO Market to MCPB was the prerequisite of the project (source: documents provided by JICA).

At the time of ex-post evaluation, volume of fresh fish distribution had decreased in Bamako due to decline of catch by the climate change in Mali, and the portion of frozen fish had increased. According to the estimate by the JICA expert (Fish market management and distribution advisor) who was working in MCPB, the quantity of fish distributed in Bamako was 25,000 tons per year<sup>6</sup> (approximately 70 tons per day) in 2017, among which fresh fish was 5,000 tons per year (14 tons per day) because the import frozen fish was estimated to be 80% of the total quantity. The cramped and unhygienic status of the existing fish markets remained same. As of February 2018, wholesalers had not relocated to MCPB and fresh fish were never sold there. According to the fresh fish wholesalers who were going to relocate to MCPB, while they liked its spacious and hygienic condition, they were reluctant to move because it was far from the existing fish markets and they had to make new arrangements of work and life balance and because there was a risk of losing clients if some move and other stay (source: result of qualitative survey of ex-post evaluation). Since 2017, in these circumstances and following the recommendations of the JICA expert, Bamako Central Fish Market Agency (Agence de Gestion du Marché Central à Poisson de Bamako: AGMCPB) decided to handle frozen fish as well and

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<sup>5</sup> It is called BCEAO because it is near Central Bank of West African States (Banque Centrale des Etats de l'Afrique de l'Ouest: BCEAO).

<sup>6</sup> 25,000 tons per year = 12,000 tons in Medina Coura Market + 3,000 tons in BCEAO Market + 10,000 tons (mostly frozen fish) in Halles de Bamako.

include retailers as users of the market, not limiting to fresh fish wholesalers as originally planned. AGMCPB accommodated other small businesses such as vegetable vendors in the compound as one of the measures to attract general customers to MCPB.

At the time of project design, there was a need to construct MCPB as a new fresh fish distribution center as the existing fish markets did not have enough space and were not very hygienic. At the time of ex-post evaluation, the situation of existing fish markets remained same, and MCPB can play the role of modern fish distribution center. Although the fresh fish wholesalers have not relocated, AGMCPB has decided to handle frozen fish and accommodate retailers as a response to the change of fish distribution situation in these years. Therefore, the project is also in line with the needs at the time of ex-post evaluation.

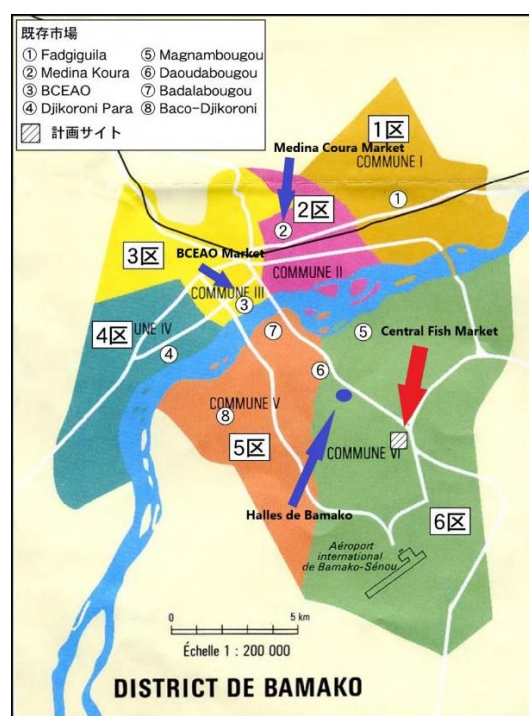


Figure 1. Location of MCPB and other fish markets in Bamako

Source: documents provided by JICA

### 3.1.3 Consistency with Japan's ODA Policy

At the project design, Japan's country assistance rolling plan for Mali listed up "integrated rural development by sustainable natural resource management" including the fishery sector as one of the development issues to support (source: ex-ante evaluation sheet). Japan was to support Mali in poverty reduction, economic reform and peacebuilding through assistance in the areas including basic education, basic life infrastructure especially water supply, agriculture and food security through food aid and support for poor farmers, and economic infrastructure for the development of Mali and the neighbouring countries (source: ODA country databook 2010, the Ministry of Foreign Affairs). The project was to support agriculture and food security as well as

basic economic infrastructure and was therefore in line with Japan's development assistance policy for Mali at the time of project design.

#### 3.1.4 Appropriateness of the Project Plan and Approach

At the time of ex-post evaluation, MCPB had not started selling fresh fish. The actual situation of the market was different from the original plan as follows:

- Due to the political unrest in Mali in 2012, the management of MCPB was stagnated in 2012 and 2013.
- Fresh fish wholesalers had not relocated to MCPB. According to documents provided by JICA and the result of qualitative survey of ex-post evaluation conducted in November 2017, the wholesalers appreciated the facilities of MCPB and were willing to relocate. However, they had challenges for relocation such as its location, which is far from the existing fish markets<sup>7</sup>, lack of means of transport, and fear of losing clients.
- Portion of import frozen fish had increased among fish distributed in Bamako.

According to the Ministry of Livestock and Fisheries and AGMCPB, at the time of ex-post evaluation at least, they were not planning to close the existing fish markets nor to force relocation of fresh fish wholesalers, and they wanted to encourage voluntary relocation by the promotion of advantages of MCPB. AGMCPB has taken following measures to activate MCPB (source: interviews of AGMCPB and JICA expert):

- JICA expert conducted training of fresh fish wholesalers in smoking and hygiene (2017).
- While MCPB was originally intended only for fresh fish wholesalers, AGMCPB decided to include retailers as its users and to handle frozen fish as well. Three hangars to accommodate fresh fish retailers were constructed by February 2018.
- AGMCPB bought import frozen fish and sold them to the fresh fish wholesalers who were going to relocate to MCPB.
- AGMCPB promoted MCPB by media (newspapers, TV, radio) to increase its recognition among fish retailers and citizens as potential customers.
- MCPB accommodated other small businesses such as vegetable vendors in the compound to increase customers to the market.

The negotiation for relocation of wholesalers proceeded as follows (source: documents provided by JICA):

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<sup>7</sup> MCPB is in the south bank of Niger River crossing Bamako and is about 10km from the river. It is next to the airport compound and there are no commercial or residential areas around it. Medina Coura Market and BCEAO Market are in the north bank. Medina Coura is about 3km from the river and BCEAO Market is near the river, and both are in the commercial area. There are only three bridges across the river and it takes time to go to the north bank from the south bank and vice versa.

- 2005: During JICA's preliminary study, the location of MCPB was determined according to the proposal from the Mali side. Representatives of wholesalers' unions and retailers in the existing fish markets were interviewed during the study, and most of them were positive about relocation to MCPB. The preliminary study report did not mention specific measures to support relocation as voluntary relocation was expected (source: Preliminary study report of the Project for construction of Bamako Central Fish Market in Mali, 2005).

- 2010: In the stakeholders meetings during the project preparation study, 60 or more wholesalers in Medina Coura Market and BCEAO Market expressed wish to relocate to MCPB. The preparation study report (2010) recommended that the Ministry of Livestock and Fishery should give sufficient information to the stakeholders in advance and select the wholesalers to relocate with stakeholders' consent, and that it should take measures to promote relocation of wholesalers and attract retailers to MCPB in the new fish distribution system created by its construction. However, the report did not mention specific measures to take such as provision of mode of transport to the wholesalers and retailers.

- 2011: Due to the shortage of rainfall in the source of Niger River, the catch of river fish decreased. As the income of fish wholesalers was poor, they requested AGMCPB to give them some grace period for the payment of user fees of the individual plots in MCPB. AGMCPB counteroffered that it would import sea fish and distribute them to the wholesalers so that they could sell them and increase their income. Both parties agreed on the relocation of wholesalers based on this condition.

- October 2011: The list of 60 wholesalers to relocate to MCPB was prepared.

- Early April 2012: MCPB was almost ready to open. However, due to the political unrest toward the end of March, AGMCPB could not secure business start-up fund of the market. The catch of river fish did not recover. The opening of the market was postponed to 2013 at the earliest.

- March 2013: AGMCPB obtained business start-up fund of the market from the government and it was ready to open in April. The relocation ceremony took place on 8th March. However, the presidential election was held in July 2013 and there was delay of the budget execution. Major wholesalers requested AGMCPB for favourable arrangements and the both parties continued negotiation. Eventually, wholesalers did not relocate in 2013.

- Until February 2018, the Cooperative of Fish Vendors in Mali (Coopérative des Marchands de Poissons du Mali: CMPM), which was established in 1999 and was representing the fresh fish wholesalers to relocate to MCPB, continued negotiations with AGMCPB. In the extraordinary board meeting of AGMCPB in February 2018, the negotiation finally broke and the relocation plan of these wholesalers from the Medina Coura Market and BCEAO Market was cancelled. A

new plan to invite other wholesalers in Halles de Bamako<sup>8</sup> emerged. According to AGMCPB, the fresh fish wholesalers had been explained well about MCPB since the very beginning of the project and they expressed their willingness to relocate there knowing well about its location. Still, they did not make any effort to proceed relocation since 2012 and they just cited its location to win advantages in the negotiation (source: interviews of AGMCPB and the JICA expert).

This project is in line with Mali's country policy and responds to its needs of modern and hygienic fish market as the current fish markets are small and not hygienic. As the percentage of frozen fish increased in Bamako after the project design and the percentage of fresh fish decreased, AGMCPB also responded to the changing needs by expanding its target to retailers and frozen fish, not only fresh fish wholesalers as originally planned. However, at the time of ex-post evaluation, MCPB had never sold fish. The political unrest hindered its operation and fresh fish wholesalers had not relocated citing the disadvantaged location of MCPB. The negotiation for relocation broke in early 2018 as AGMCPB complained that the wholesalers had not made serious efforts to proceed relocation.

Although this project was highly relevant to the country's development plan and development needs as well as Japan's ODA policy, its relevance is fair because it is not clear whether the project fully examined measures to proceed relocation of wholesalers at the time of project design, while it was true that the political unrest in 2012 hindered relocation.

### 3.2 Efficiency (Rating: ③)

#### 3.2.1 Project Outputs

##### 1) Outputs by the Japanese side

Construction of the facilities and procurement of equipment were implemented mostly as planned (source: documents provided by JICA). There were minor changes in the specifications after the Basic Design according to the actual situation of the project site, and they were appropriate.

#### Civil engineering and procurement of equipment

- Construction of fish market for wholesalers (including space for vendors, space for loading and unloading, management office, hygiene examination room, first processing room, icemaking machine and freezer). Locker rooms for wholesalers were provided for changing and

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<sup>8</sup> Les Halles de Bamako. It is in the south bank of Niger River and between MCPB and the river (sixth arrondissement). It was constructed more than ten years earlier to relocate Bamako Central Market (general market, not fish market), but there are many unoccupied plots. After the preparation study of this project in 2010, frozen fish importers settled in the compound. According to the research of JICA expert, there were estimated to be at least about 18 companies in 2017 (source: documents provided by JICA).



luggage storage, considering that most of them were women.

- Construction of public toilets, elevated water tank, receiving and transforming room, waste collection area, rainwater infiltration facility, wastewater treatment facility and concrete paving work in the compound
- Procurement of fresh fish handling equipment such as cool boxes, palettes, platform scales, flat carts, ice cracking machine, and fish processing table
- Procurement of equipment for maintenance of icemaking machine and hygiene control equipment such as radiation-type thermometer and chest freezer

#### Soft component

The project trained seven selected technicians who were going to be employed by MCPB in operation and maintenance of the icemaking machine. Six of them remained there as of February 2018. According to them, the training was conducted as planned.

#### 2) Outputs by the Mali side

Construction work and procurement of equipment by the Mali side were all complete by the time of ex-post evaluation (source: documents provided by JICA and questionnaire response from AGMCPB).

- Construction of the fence surrounding the project site and the gate: completed in 2010
- Connection of electricity, water and telephone: completed in 2011 (electricity and water) and in 2013 (telephone)
- Construction of access road from the main road to the entrance of the project site and roads in the compound: completed by 2012 (access road) and sometime after 2013 (roads in the compound; exact date of completion was unknown)
- Preparation of working capital and procurement of equipment such as office machines and furniture: completed in 2013

Wholesalers have not relocated to MCPB. As of January 2018, 90 wholesalers were on the relocation list. As shown in Table 1, it included 60 fresh fish wholesalers from the two fish markets as originally planned, and 30 import frozen fish wholesalers from Halles de Bamako added later. However, as explained in the section “3.1.4 Appropriateness of the project plan and approach”, the relocation plan from the two original markets was cancelled in February 2018.

Table 1. Number of wholesalers to relocate to MCPB, as of January 2018

Current market	Number	Men	Women
Medina Coura	30	3	27
BCEAO	30	5	25
Halles de Bamako	30	30	0
Total	90	38	52

Source: Questionnaire response from AGMCPB

### 3.2.2 Project Inputs

#### 3.2.2.1 Project Cost

The planned total project cost was 1,120 million yen (1,040 million yen from the Japanese side and 392 million FCFA, equal to approximately 80 million yen from the Mali side) (source: project ex-ante evaluation sheet). The actual project cost of the Japanese side was 730 million yen, and that of the Mali side was not available because AGMCPB did not consolidate information. The actual cost of the Japanese side was lower than planned (70%). According to the project consultant, the bid price was much lower than the planned, but the reason for the lower price such as exchange rate, human resources or price of materials was not available because the person in charge of this project already left the office and information was lost. As no defects of the facilities and equipment constructed or procured by the Japanese side were reported, the lower price than the plan did not compromise the quality of the outputs.

Table 2. Project cost of the Japanese side

(unit: million yen)

	Plan	Actual
1. Construction	894	616
1) Direct construction cost	(749)	(543)
2) Expenses on the site	(82)	(73)
3) Common Temporary facilities	(63)	
2. Equipment	50	23
3. Design and supervision	96	96
(soft component)	(5)	(5)
Total	1,040	730

Source: Documents provided by JICA

Table 3. Project cost of the Mali side

(unit: million FCFA)

	Plan	Actual
1. Exterior wall	203	No information
2. Electricity connection	8	
3. Water pipe connection	33	
4. Telephone line connection	20	
5. Pavement of access road	15	
6. Roads in the compound	33	
7. Purchase of furniture	20	
8. Working capital for start-up of facilities	60	
Total	392	

Source: Documents provided by JICA and questionnaire response of AGMCPB

#### 3.2.2.2 Project Period

The planned project period was 19 months from June 2010 (agreement of grant contract) to January 2012 (handing over) (source: project ex-ante evaluation sheet). The actual project

period was 18 months from June 2010 (agreement of grant contract) to December 2011 (handing over), and it was shorter than planned (95%). The work of the Mali side was complete by the time of ex-post evaluation, but information was not available from AGMCPB as to when the work completed.

Table 4. Project period

Work items	Plan	Actual
Final design in Mali	1st month	Detail design July 2010 - September 2010
Final design in Japan	2nd-3rd months	
Tender and contract	5th-6th months	September – December 2010 Revised contract: July 2011
Construction of facilities	8th-19th months	February – November 2011
Procurement of equipment	15th-18th months	August-November 2011
Soft component	18th month	September-November 2011
Handing over	19th month	Completion ceremony and handing over ceremony: 8 December 2011

Source: Documents provided by JICA

Both the project cost and project period were within the plan. Therefore, efficiency of the project is high.

### 3.3 Effectiveness and Impacts<sup>9</sup> (Rating: ①)

#### 3.3.1 Effectiveness

##### 3.3.1.1 Quantitative Effects (Operation and Effect Indicators)

The project objective was to improve the infrastructure of fish distribution. Three indicators were set at the project design as Operation and Effect indicators as shown in Table 5.

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<sup>9</sup> Sub-rating for Effectiveness is to be put with consideration of Impacts.

Table 5. Quantitative Indicators

	Baseline	Target	Actual		
	2009	2013	2012	2013	2017
		1 Year After Completion	Completion Year	1 Year After Completion	5 Year After Completion
Operation indicators					
Indicator 1. Quantity of ice supplied for transport of fish from neighbouring provinces to Bamako (per day) *1) <sup>10</sup>	30 tons	38 tons	15 tons	30 tons	60 tons
Indicator 2. Ice/fish ratio (per day) during storage of fresh fish by wholesalers *2) <sup>11</sup>	Approx. 10%	20-30%	No data (MCPB does not sell fresh fish)		
Effect indicators					
Indicator 3. Post-harvest loss of fresh fish handled in the market 1) <sup>12</sup>	15%	7.5%	No data (MCPB does not sell fresh fish)		

Source: Documents provided by JICA and questionnaire response from AGMCPB

Note 1) The data of ice quantity were supposed to be collected from the management record of the market.

2) The data of ice/fish ratio were supposed to be collected from the ice sales records of the market.

3) Post-harvest loss was to be calculated by post-harvest loss examination.

Regarding the Indicator 1 (supply of ice), at the project design, it was estimated that 38 tons of ice would be required for the same quantity of fresh fish per day distributed in Bamako. At the time of ex-post evaluation, 14 tons of ice would be required for the same amount of fresh fish according to the estimate of JICA expert. Although quantity of ice produced by other ice manufacturers was unknown, 60 tons of ice supplied by MCPB were sufficient for 14 tons of fresh fish. According to the documents provided by JICA, the icemaking machine started operation in March 2012 and sales of ice started at the same time.

Regarding the Indicator 2 (ice/fish ratio) and Indicator 3 (post-harvest loss), no data were

<sup>10</sup> At the project design, ice production in the fresh fish production areas or fish landing ports was negligible. Ice blocks produced in private factories in Bamako were utilized for collection of fresh fish from the fish production areas and transport to Bamako. In 2009, ice production in Bamako was 30 tons per day.

For the transportation of 10,000 tons of fresh fish per year (=30 tons per day) distributed in Bamako, at least 30 tons of ice per day (same weight as fish) are required. In addition, for 17 tons of fresh fish per day delivered to Medina Coura Market, at least 8.5 tons of ice (=fish weight 17 tons x ice/fish ratio 0.5) per day are required (the minimum ice/fish ratio in the market is 0.5= 0.2 to reduce temperature + 0.3 for storage). In total, 38 tons of ice per day are necessary. Ice produced in MCPB was to cover these needs. (source: documents provided by JICA)

<sup>11</sup> Ice/fish ratio is weight of ice compared to weight of fish. At the project design, as the supply of ice blocks was not sufficient, wholesalers economized use of ice by reducing ice/fish ratio. The ice produced in MCPB was to allow wholesalers to use more ice and ice/fish ratio was to improve. (source: documents provided by JICA)

<sup>12</sup> Post-harvest loss is supposed to be reduced if use of ice increases in the market. Other factors such as shortage of demand could also cause post-harvest loss. At the project design, the Fisheries Department of the Ministry of Livestock and Fisheries calculated post-harvest loss from the rate of reduced prices and quantity lost due to loss of fish compared to the usual price of fish in the existing fish markets. (source: documents provided by JICA and interviews of project consultants)

available at the time of ex-post evaluation as MCPB did not sell fresh fish.

From the above, “improvement of the infrastructure for fish distribution”, the expected effect of the project, was only partially realized because MCPB did not sell fish yet while ice was produced as planned.

### 3.3.1.2 Qualitative Effects (Other Effects)

At the project design, following qualitative effects such as hygienic environment of the fish market, hygienic handling of fresh fish, improvement of working environment, efficient wholesale activities in any weather, efficient loading and unloading of fresh fish, improved storage of fresh fish, supply of quality fresh fish and reduction of wasted fish were expected (source: documents provided by JICA).

#### 1) Survey of wholesalers who were to relocate to MCPB

At the qualitative survey of ex-post evaluation conducted in November 2017, as wholesalers had not relocated to MCPB, those who were on the list of prospective wholesalers to work there were asked about their satisfaction with the current fish markets and their expectations for MCPB. Since the relocation plan was cancelled in February 2018 after the survey, the result of qualitative survey reflected the situation before the cancellation. Twenty fresh fish wholesalers were randomly selected for the survey from the list of 60 people, 30 of which were working in Medina Coura Market and 30 in BCEAO Market, ensuring equal representation of two markets. As most fresh fish wholesalers were women, 19 of the surveyed people were women.

Table 6. Surveyed wholesalers who were to relocate to MCPB

Current market	Men	Women	Total
Medina Coura	1	8	9
BCEAO	0	11	11
Total	1	19	20

The wholesalers were highly satisfied with the current markets about the physical aspects such as the condition of market building and land, equipment to keep fish fresh, and tables and chairs. With other physical aspects, half were satisfied, and half were unsatisfied. Even though the existing markets were not very hygienic, they were satisfied with the cleanliness of the current markets because the markets were cleaned regularly. They were satisfied with access to clients, location, commuting and work-life balance in the current markets. The responses were same between the two markets and between sexes, while there was only one male respondent.

All 20 respondents replied that they wanted to relocate to MCPB. The reasons were that it was spacious and hygienic. They wanted to keep the same level or make their business better after

relocation in terms of quantity and quality of fish as well as income. They gave high marks to the location of MCPB, but since it was on the other side of the river and more than 10km away from the city center with the current fish markets, they considered that commuting, work-life balance and access to clients would be more difficult after relocation. Eighteen of them participated in the training of fish smoking and hygiene conducted by the JICA expert in 2017<sup>13</sup> and they considered it useful.

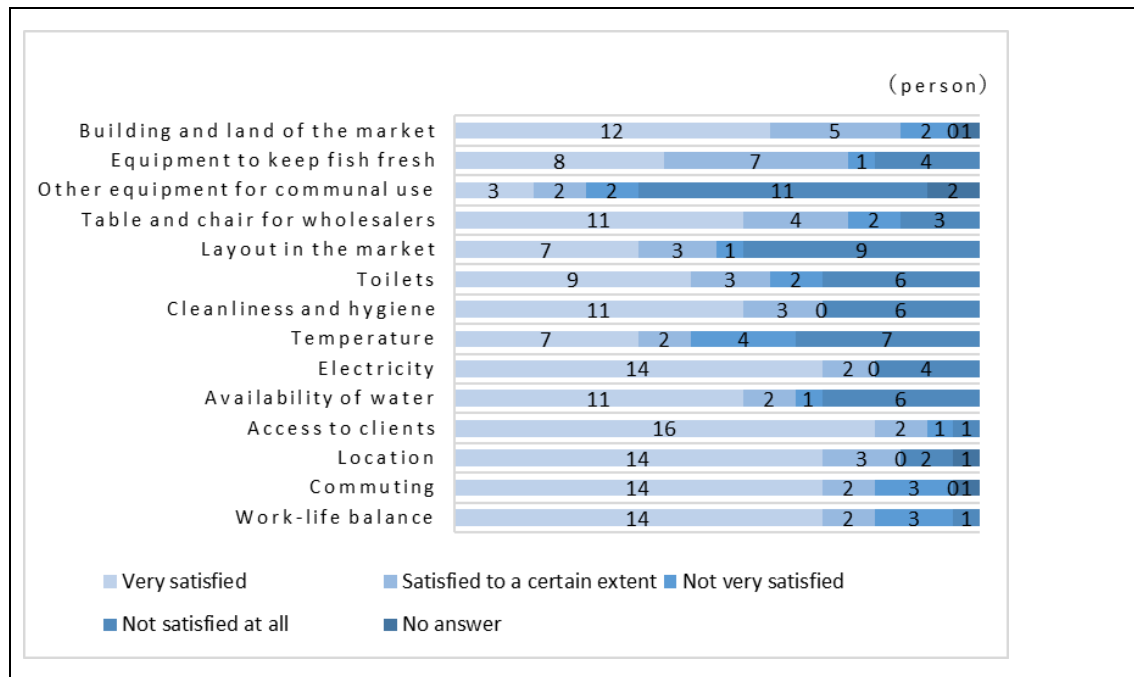


Figure 2. Satisfaction with the current markets: wholesalers to relocate

Source: Result of qualitative survey

<sup>13</sup> The contents of training were as follows (source: information from the JICA expert)  
 “Handling of fish and hygiene education”, 3 sessions in March-April 2017. 51 fresh fish wholesalers who were going to relocate to MCPB participated.  
 “Smoking and hygiene education”, 3 sessions in March-April 2017. 29 fresh fish wholesalers who were going to relocate to MCPB, 11 fish smokers and 10 frozen fish importers participated.

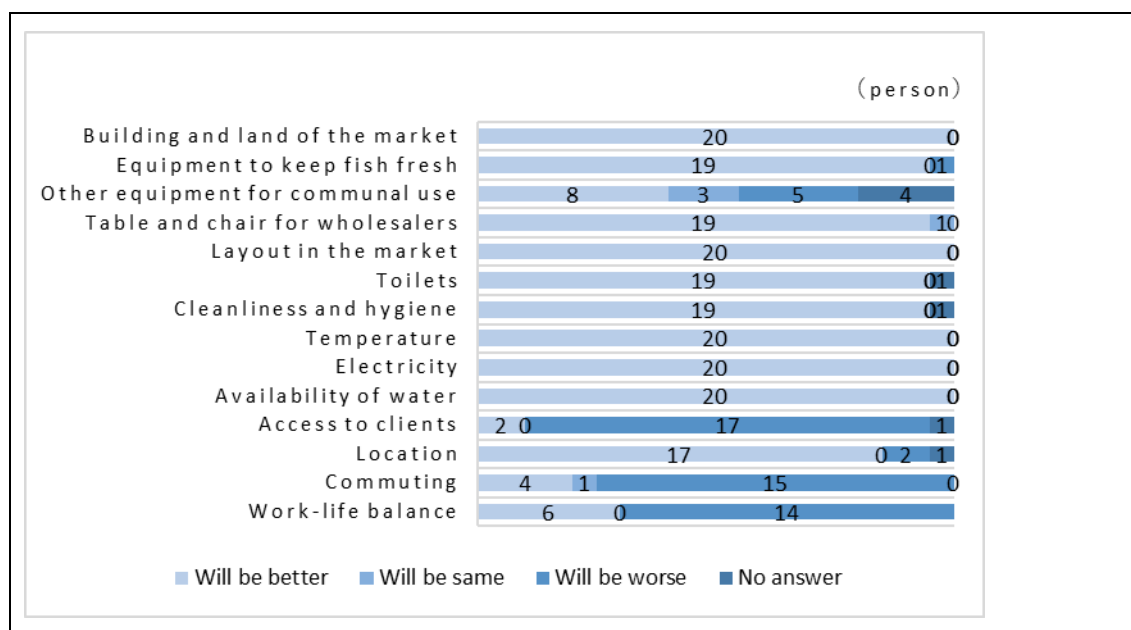


Figure 3. Expectations for MCPB: wholesalers to relocate

Source: Result of qualitative survey

## 2) Survey of clients of existing markets

According to the result of the survey of 20 fresh fish buyers (retailers)<sup>14</sup> in the current fresh fish markets, their satisfaction with the current markets was relatively high. Despite the reduced quantity of fish and raised price these years, they were able to make their business as the current markets had regular customers. They thought that it was difficult to go to MCPB as it was far from the city center.

Table 7. Surveyed clients in the current markets

Current market	Men	Women	Total
Medina Coura	2	10	12
BCEAO	0	8	8
Total	2	18	20

<sup>14</sup> Fresh fish buyers (retailers) in the existing fish markets were randomly approached and interviewed. Most fresh fish retailers are women (source: interview of JICA expert)

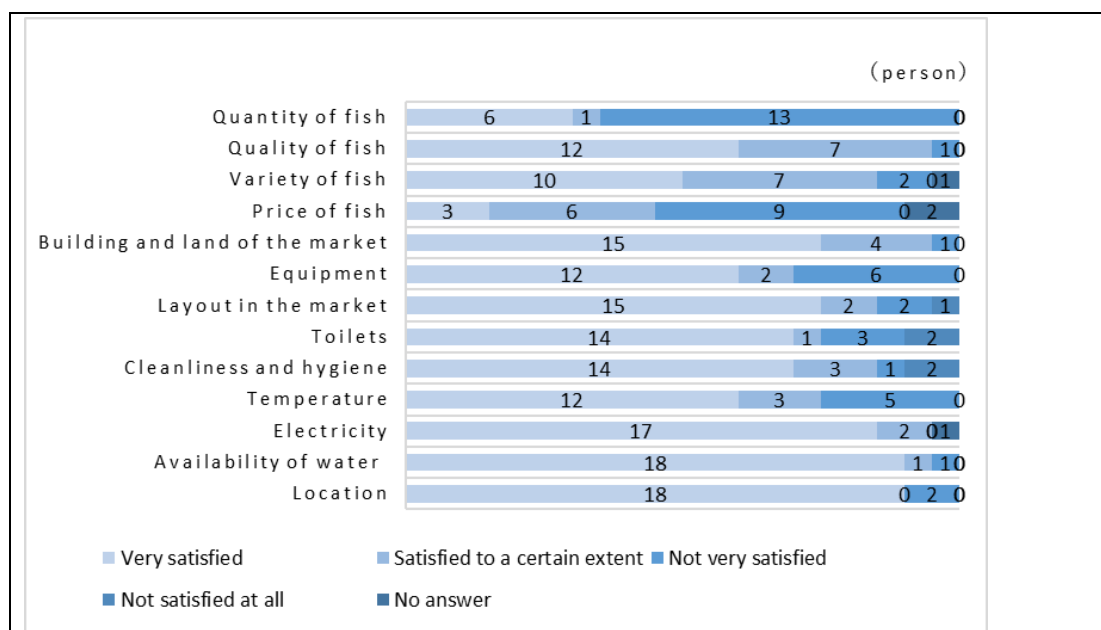


Figure 4. Satisfaction with the current markets: fresh fish buyers

Source: Result of qualitative survey

### 3) Survey of ice buyers of MCPB

Ten ice buyers of MCPB (3 men and 7 women)<sup>15</sup> were surveyed about their satisfaction with the ice. One of them comes to MCPB almost every day; four come there more or less regularly (twice-four times per month); and others come when necessary. Most of them buy about one ton of ice every time at 500,000FCFA, and some buy small quantity in plastic bags (150 FCFA per bag). They were highly satisfied with the ice of MCPB. They were also satisfied with its facilities but were not happy with its location as it was far from the city center.

<sup>15</sup> Ice buyers of MCPB were randomly selected and interviewed.



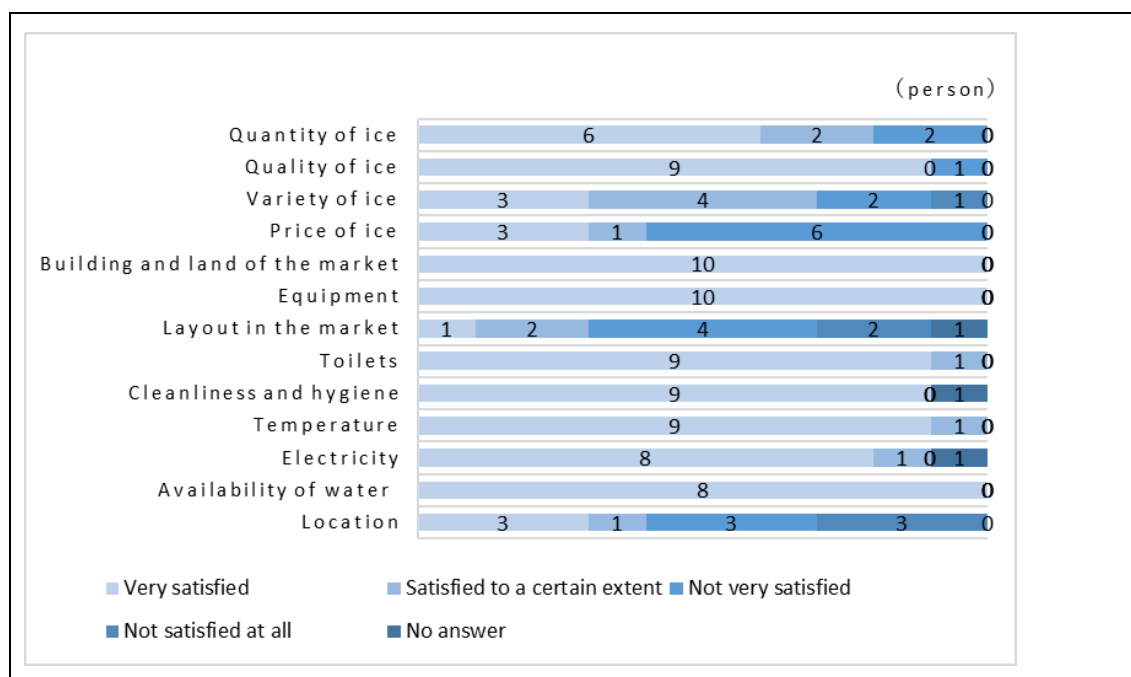


Figure 5. Satisfaction of ice buyers with the ice of MCPB

Source: Result of qualitative survey

The expected qualitative effects such as hygienic environment of the fish market, hygienic handling of fresh fish, improvement of working environment, efficient wholesale activities in any weather, efficient loading and unloading of fresh fish, improved storage of fresh fish, supply of quality fresh fish and reduction of wasted fish, were not realized because MCPB had never sold fresh fish. Since the physical aspects of the market are of high quality, these qualitative effects would be realized once it starts selling fish.

### 3.3.2 Impacts

#### 3.3.2.1 Intended Impacts

“Stable supply of quality fresh fish in Bamako” was expected as the impact of this project. It was also expected that MCPB would contribute to the centralization of fish distribution system in the south bank of the Niger River in Bamako and to the access to safe food by market users and consumers (source: documents provided by JICA). At the time of ex-post evaluation, the ice produced in MCPB contributed to the freshness of fish. However, as the market had never sold fish, most of the expected impacts were not realized.

#### 3.3.2.2 Other Positive and Negative Impacts

##### 1) Impacts on the Natural Environment

At the project design, the project was classified as Category C of the “JICA Guidelines for Environmental and Social consideration” (2010) as its undesirable impacts on environment were

considered minimal (source: project ex-ante evaluation sheet). The Ministry of Environment and Wastewater (Ministère de l'Environnement et de l'Assainissement: MEA) was to conduct environmental impact assessment (EIA) of this project. Monitoring during the construction was the role of Bamako Branch, Department of Fisheries, Ministry of Livestock and Fisheries and MEA. After the opening of MCPB, the Committee of Environmental Control and Monitoring (Comité de Contrôle et de Suivi Environnemental: CCSE) was to be established to monitor hygiene status and waste treatment in the market, and the CCSE and MEA would conduct monthly monitoring to ensure hygienic condition of the market such as carriers of infectious diseases, health condition of employees, waste management and installation of equipment to ensure safety. At the preparation study, "Environmental Checklist" was developed by the Japanese and Mali sides for monitoring during construction and operation of the market. According to the questionnaire response from AGMCPB, EIA was authorized after the completion of construction of the market (specific date and the reason why EIA was after construction were unknown), and the project took measures for environmental protection related to water pollution, waste management and others, according to the checklist. After the completion of construction, AGMCPB employed environment expert and monitoring has been conducted, and there has been no environmental problem. No information was available about specific monitored items or the results of monitoring.

## 2) Resettlement and Land Acquisition

MCPB is in the industrial area in the airport zone managed by Bamako International Airport under Mali Airports (Aéroports du Mali), a public corporation under the Ministry of Equipment and Transport. As the land was owned by the state, the Ministry of Housing, Urbanism and Land Affairs and the Ministry of Livestock and Fisheries closed a lease contract for 50 years, which would be automatically renewed afterwards. There was no resettlement (source: documents provided by JICA and questionnaire response from AGMCPB).

## 3) Unintended Positive/Negative Impacts

There was no difference between sex of the wholesalers in the qualitative survey results. If the relocation takes place, however, women wholesalers would be more affected because work-life balance would be difficult as MCPB is far from the city center. This project provided locker rooms for changing and luggage storage to give sense of security to women wholesalers based on the fact that most fresh fish wholesalers were women. While the locker rooms were not utilized as wholesalers had not relocated, the facility would contribute to the improvement of their working conditions as the existing fish markets do not have such arrangement.

Ice was produced as planned in MCPB and contributed to the freshness of fish distributed in

Bamako. However, as MCPB had never sold fish by the time of ex-post evaluation, expected qualitative effects such as hygienic environment and hygienic handling of fresh fish or impacts such as stable quantity and price of fresh fish and concentration of fresh fish distribution system were not realized. The project has achieved its objectives at a limited level. Therefore effectiveness and impacts of the project are low.

### 3.4 Sustainability (Rating: ②)

#### 3.4.1 Institutional / Organizational Aspect of Operation and Maintenance

At the project design, MCPB of Bamako was an affiliated organization of the Ministry of Livestock and Fisheries. For its mission to create added value and develop market of marine products as well as to train human resources in the sector, AGMCPB was approved as a public benefit corporation by the government on August 4, 2010 (source: documents provided by JICA). The Ministry of Livestock and Fisheries supervises AGMCPB in its policy aspect. The staff composition of AGMCPB was as follows at the time of ex-post evaluation.

Table 8. Staff composition of AGMCPB

Function	Number
President-General Director	1
Vice General Director	1
Secretary	1
Administration and accounting	14
Ice making technicians	7
Workers	14
Drivers	4
Warehouse management	1
Electric technician	1
Maintenance	3
Assistant	1
Security guard	1
Total	50

Source: Questionnaire response from AGMCPB

With the leadership of the President-General Director, AGMCPB developed plans to activate the market. It acquired funding for capital investment from the state in 2016 and constructed facilities for frozen fish and retailers expanding the products handled in the market (source: interviews of AGMCPB and JICA expert). In 2017, just before the broke of the six-year negotiation between AGMCPB and the Cooperative of Fish Vendors in Mali (Coopérative des Marchands de Poissons du Mali: CMPM) since 2012, AGMCPB drafted three-year tripartite contract among itself, CMPM and the state (2018-2020). It defined the roles of MCPB as follows:

- Supply of fish to the citizens of Mali, especially in Bamako

- Storage, preservation and distribution of fish
- Increase of income of the workers in the fishery sector
- Partial industrialization of fish processing
- Employment creation and value chain development
- Capacity development of workers in the fishery sector and provision of modern methods
- Improvement of infrastructure and equipment, ensuring sustainability
- Improvement of hygiene of marine products
- Extension and training of new technology

AGMCPB will prepare a new tripartite three-year plan when other group of wholesalers agrees to relocate. AGMCPB's roles will remain same. A new plan to invite the customs of import fish to MCPB had emerged by February 2018, and it might take place in 2018 at the earliest. Import fish will have to pass MCPB and it will encourage the wholesalers of Halles de Bamako to relocate to there (source: interview with AGMCPB and JICA Expert).

Although MCPB does not sell fish yet, AGMCPB is already an established organization and there is no institutional problem.

### 3.4.2 Technical Aspect of Operation and Maintenance

The soft component of the project trained seven technicians (4 for freezing and 3 for electric) in freezing and refrigerating technology, operation and maintenance of icemaking machine and measures to take in case of break down. The project also provided operating manual of the icemaking machine and freezers (source: documents provided by JICA). Among seven ice making technicians who were working at the time of ex-post evaluation, six were trained by the project. In 2017, one technician participated in JICA training in Japan for two months and other two participated in training course in Mali to obtain certificate of ice making skills. The technicians understand the content of training well and perform what they learned, and utilize the manuals provided by the project. Therefore, there is no problem in operation and maintenance of icemaking machine (source: interviews with the ice making technicians). The wholesalers of Halles de Bamako will perform the same work after relocation and they would not have technical issues. From the above, there are no technical problems.



Ice making  
(MCPB)



Freezer  
(MCPB)

### 3.4.3 Financial Aspect of Operation and Maintenance

Financial status of AGMCPB of the past three years is shown in Table 9 below.

Table 9. Financial status of AGMCPB

(unit: million FCFA)

	2014	2015	2016
Sales of ice	94.2	101.2	98.8
From the state			300.0
Revenue total	94.2	101.2	398.8
Human resources	52.7	47.2	54.2
Management	3.5	3.7	4.3
Maintenance	25.5	40.9	36.9
Capital investment	11.6	8.0	300.9
Expenditure total	93.4	99.8	396.3
Balance	0.9	1.4	2.4

Source: Questionnaire response from AGMCPB

Sales of ice was the only source of income of AGMCPB at the time of ex-post evaluation. According to AGMCPB, until 2016, it sold 30 tons of ice and earned 300 thousand FCFA (approximately 460 euros) per day, which was equivalent to 100 million FCFA (approximately 150 thousand euros) per year. In 2017, the ice sales doubled to 60 tons and it earned 600 thousand FCFA per day, which was equivalent to 200 million FCFA (approximately 300 thousand euros) per year. AGMCPB obtained 300 million FCFA from the state in 2016 and used it for business expansion, including construction of buildings for fresh fish retailers, rehabilitation of facilities and strengthening of public relations. AGMCPB does not collect user fees of individual plots for vendors or of equipment because vendors have not relocated. AGMCPB started putting aside a part of ice sales in the bank account in 2016 and uses the fund for the renewal and maintenance of equipment. The fund put aside in the bank account was about 10% of ice sales in 2016 and 2017.

Table 10. Fund from ice sales in bank account

(unit: million FCFA)

	2016	2017
Deposit	11.1	17.5
Withdrawal	9.9	13.3
Balance	1.2	4.2

Source: Questionnaire response from AGMCPB

As the negotiation with CMPM, a cooperative of wholesalers who were going to relocate to MCPB, broke in February 2018, AGMCPB will modify the three-year tripartite plan with another group of wholesalers and the state. Therefore, at the time of ex-post evaluation, AGMCPB did not have concrete financial plan for the forthcoming years. Ice sales was its only source of income and it covered operation cost of the market. AGMCPB obtained funding for capital investment from the state. After wholesalers relocate to MCPB, AGMCPB will collect user fees of individual plots. From the above, there would be no financial problem.

#### 3.4.4 Status of Operation and Maintenance

At the time of ex-post evaluation, the building and equipment of MCPB were in good condition. The open space for the fresh fish wholesalers in the middle of the building was not occupied. According to AGMCPB's self-evaluation, the building was in very good condition (1st in four ranking), icemaking machine and other equipment for communal use, tables and chairs for fish vendors and toilets were in good condition (2nd), wastewater pipelines, hygiene, temperature and electricity were not in very good condition (3rd). The transformer and compressor broke down so far, and the former was replaced by a new unit, and the latter was repaired with new parts (source: questionnaire response from AGMCPB).

AGMCPB constructed following facilities in the compound for business expansion of the market:

- Three hangars for fresh fish retailers (104 plots) (completed in January 2018)
- Kiosks for retailers of other businesses (completed. Most spaces are not occupied.)

When wholesalers of frozen fish relocate to MCPB, AGMCPB will allow them to bring and install their own freezers and reefer containers (source: interview with JICA expert). After fish vendors settle down, there would be no problem in the condition of the facilities and equipment such as tables, storage rooms and freezers under normal handling. From the above, there is no serious problem in the status of operation and maintenance.

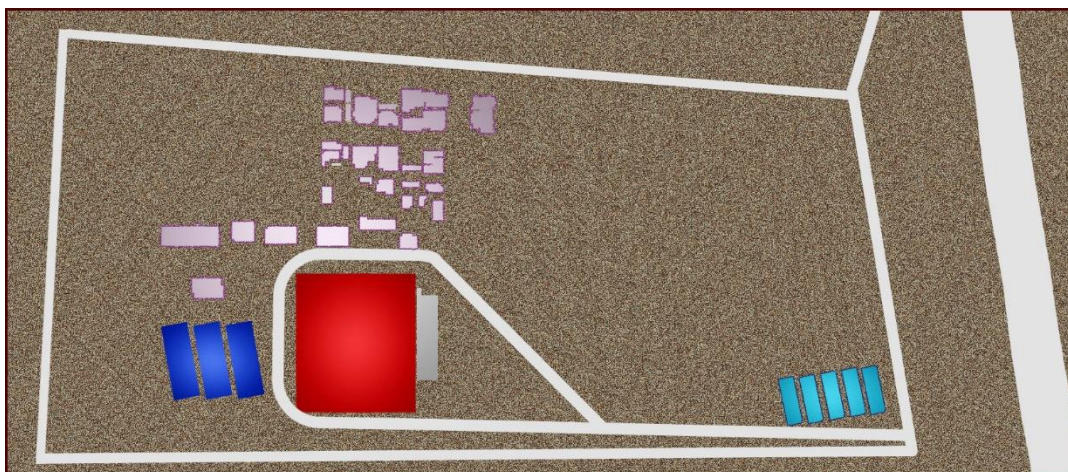


Figure 6. Layout of major buildings of MCPB

Source: Drawn by the evaluator

The large building in center-lower left: main building of fish market constructed by the project

Three buildings in lower-left: hangars for fresh fish retailers constructed by AGMCPB

Five buildings in lower right: kiosks constructed by AGMCPB

Huts in upper left: small businesses such as vegetable vendors

Note: It is rough layout of the major buildings. It does not show exact size of the buildings or exact position.

There are no serious problems in the institutional, technical, financial aspects or status of operation and maintenance of AGMCPB, and it will continue functioning after starting sales of fish. However, since the wholesalers have not relocated yet and fish are not sold, which means AGMCPB is not functioning as planned, it cannot be concluded that there is no problem in its sustainability. The expected effects of the project are not realized, and it is not possible to measure the sustainability of the effects. Therefore, sustainability of the project is fair.



Space for reefer containers of frozen fish wholesalers (MCPB)



Hangar for fresh fish retailers (MCPB)

## 4. Conclusion, Lessons Learned and Recommendations

### 4.1 Conclusion

In Mali, consumption of fish per capita was larger than that of meat, and sales of fresh fish in



the cities was an important source of income for rural population. In Bamako, the infrastructure of fish markets was not good enough to accommodate the increasing volume of fish for the growing population. The objective of this project was to develop a new distribution center of fish in Bamako by the construction of MCPB, thereby contributing to the stable supply of quality fresh fish in the city.

While this project was highly relevant to the country's development plan and development needs as well as Japan's ODA policy, its relevance is fair because it is not clear whether the project fully examined measures to proceed relocation of wholesalers at the project design. Efficiency of the project is high because both project cost and project period were within the plan. Ice is produced by the icemaking machine as planned in MCPB and contributes to the freshness of fish distributed in Bamako. However, as MCPB does not sell fresh fish yet, the project has not realized creation of new distribution center of fresh fish, as expected as the project effect. It has not produced expected qualitative effects such as hygienic environment and hygienic handling of fresh fish, or impacts such as stable supply and price of fresh fish, or consolidated distribution function of fresh fish. As the project has achieved its objectives only to a limited level compared to the plan, effectiveness and impacts of the project are low. There are no serious problems in the institutional, technical, financial aspects or status of operation and maintenance of AGMCPB and it is likely to function as expected after the sales of fish begins. However, it cannot be concluded at this stage that there is no problem in its sustainability because MCPB is not operating its intended business yet as wholesalers have not relocated and fish are not sold. The expected effects of the project are not realized and their sustainability are not measurable. Therefore, sustainability of the project is fair.

## 4.2 Recommendations

### 4.2.1 Recommendations to the Executing Agency

As a strategy to promote relocation of wholesalers, AGMCPB's does not force them but wants to encourage voluntary relocation by making MCPB an attractive place for fish vendors by expanding its business covering frozen fish and retailers and attracting general customers. It has made efforts such as construction of hangars for retailers. To start fish sales and the make the business run, it is recommended that AGMCPB should continue preparation of facilities for fresh and frozen fish vendors and retailers and negotiation with vendors to relocate.

With the leadership of President-General Director, MCPB decided to expand its business items and constructed necessary facilities by securing funding from the state. To prepare for personnel changes in the future, it is recommended that AGMCPB should consider regular employment or training of staff with expertise in market management and activation.



#### 4.2.2 Recommendations to JICA

JICA despatched an expert for market activation. He made recommendations to AGMCPB on what kind of fish to sell (to increase frozen fish) and on the facilities to prepare, and conducted technical training for wholesalers to relocate. The fact that MCPB was constructed by Japanese assistance can be an attraction for the customers to the market. Therefore, it is recommended that JICA should continue assistance for market management by Japanese expert to the extent possible.

#### 4.3 Lessons Learned

##### Identification of problems caused by market relocation and preparation for countermeasures

Wholesalers of the existing fish markets have not relocated to MCPB. The wholesalers insist that the location of the new market is the main reason for their reluctance. On the other hand, AGMCPB states that the project has well explained to the wholesalers from the very first stage and that the list of wholesalers was made after they were fully informed of the conditions of the new market including its location. The project preparatory study report at the project design did not mention disadvantages for wholesalers caused by relocation and preparation for measures to take. In general, in projects involving relocation of market, vendors can be reluctant to relocate when they have worries about commuting, work-life balance and access to clients. JICA and executing agencies should identify such problems and formulation of countermeasures at the project design.

End